2021

GHS INDEX
GLOBAL **HEALTH SECURITY** INDEX

ADVANCING COLLECTIVE ACTION AND ACCOUNTABILITY AMID GLOBAL CRISIS

Index developed with

ECONOMIST IMPACT

20 YEARS OF NTI
BUILDING A SAFER WORLD

JOHNS HOPKINS
BLOOMBERG SCHOOL *of* PUBLIC HEALTH
Center for Health Security

This report is dedicated to the memory of our esteemed colleague Dr. Indira Nath, a renowned immunologist and member of our international panel of experts. Dr. Nath's influence can be seen throughout the framework of this report, and her contribution to global health security is immeasurable. She has left an indelible mark on our community and her kindness and generosity of spirit will be greatly missed.

We give special thanks for the generosity of the funders which made this research for the 2021 GHS Index possible: Open Philanthropy Project, the Bill & Melinda Gates Foundation, and The Rockefeller Foundation.

Open Philanthropy Project

Bill & Melinda Gates foundation

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December 2021

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Just months after the release of the inaugural Global Health Security (GHS) Index in 2019, the first cases of COVID-19 were reported. Although important strides have been made to bring the pandemic under control, the virus continues to ravage populations and economies around the world. We are indebted to so many who still are in the throes of responding to this prolonged public health crisis, including healthcare workers, public health teams, non-healthcare essential workers, and political leaders across every level of government.

We are grateful for the experienced, knowledgeable, and committed team that helped bring this 2021 edition of the GHS Index to life at a time when COVID-19 was placing extraordinary demands on the public health community. Team members were spread across multiple time zones, and each faced his or her own unique challenges generated by the pandemic. The publication of the 2021 GHS Index is a testament to their commitment to the project's mission to encourage investments in preparedness measures that will prevent a pandemic like COVID-19, or worse, from happening again.

We thank Nuclear Threat Initiative (NTI) Co-Chair and CEO Ernest J. Moniz, Co-Chair Sam Nunn, President and COO Joan Rohlfing, and NTI's Board of Directors for their leadership and commitment to reducing global catastrophic biological risks. Former NTI Executive Vice President Deborah G. Rosenblum, Senior Vice President Carmen MacDougall, and Interim Vice President for Global Biological Policy and Programs Dr. Margaret A. Hamburg made invaluable contributions to this project. We also thank Anita Cicero, deputy director, Sanjana Ravi and Lane Warmbrod, senior analysts, of the Johns Hopkins Center for Health Security at the Bloomberg School of Public Health for providing critical insights that further strengthened the GHS Index.

Members of our International Panel of Experts, which includes some of the world's most highly respected experts, were extremely generous with their time and expertise and helped us reexamine the GHS Index in the context of the ongoing response to COVID-19. We also appreciate the contributions of our zoonotic disease policy advisor, Dr. Catherine Machalaba, to this project. We have done our best to ensure that this report reflects their collective wisdom.

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Note: Since the inaugural edition of the GHS Index in 2019, the individuals on our International Panel of Experts have provided guidance in their personal capacities or in their capacities as representatives of advising organizations. The judgments and recommendations reflected in the GHS Index do not necessarily reflect the views of panel members or their respective employers, other affiliations, or governments.

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Executive Summary

The 2021 Global Health Security (GHS) Index finds that despite significant steps taken by countries to respond to the COVID-19 pandemic, all countries remain dangerously unprepared to meet future epidemic and pandemic threats. Importantly, countries now have a more acute understanding of what this lack of preparedness means for their health and prosperity. This understanding presents an opportunity to convert high levels of political awareness about pandemics to long-term gains in preparedness by sustaining newly developed tools and building out additional capacities to better protect lives and livelihoods against the next pandemic.

Much is at stake. Countries continue to suffer harm from the COVID-19 pandemic as a result of insufficient health security capacity. This lack of capacity comes at a time when political and security risks have increased in nearly all countries, and enduring financial investment necessary to sustain capacities has yet to be demonstrated. Such weaknesses leave a world acutely vulnerable to future health emergencies, including those potentially more devastating than COVID-19.

These are sobering conclusions revealed by the 2021 GHS Index. With data captured during a period when countries wrestled with COVID-19,[1] researchers used a revised framework and updated data collection to glean hard truths about pandemic preparedness while assessing and benchmarking health security capacities across 195 countries.[2]

Even as many countries proved they could ramp up new capacities during the emergency —including setting up labs and creating cohorts of contact tracers to follow the spread of COVID-19—some responses were crippled by long-unaddressed weaknesses, such as lack of healthcare surge capacity and critical medical

[1] Research was conducted between August 2020 and June 2021. Throughout this timeframe, the research team recognized the impact of the COVID-19 pandemic on data availability and made notes when countries developed specific COVID-19-related capacities.

[2] As of April 1, 2013, there were 196 States Parties to the World Health Organization (WHO) 2005 International Health Regulations (IHR), including the Holy See. The Holy See is a sovereign juridical entity under international law, but it was not included in the country-specific research for this Index in light of the Holy See's lack of an independent health system. This report refers to the assessed "States Parties" as "195 countries."

supplies. Some countries found that even a foundation for preparedness did not necessarily translate into successfully protecting against the consequences of the disease because they failed to also adequately address high levels of public distrust in government and other political risk factors that hindered their response. Further, some countries had the capacity to minimize the spread of disease, but political leaders opted not to use it, choosing short-term political expediency or populism over quickly and decisively moving to head off virus transmission.

Those factors do not excuse but may explain why countries that received some of the top marks in the 2019 GHS Index[3] responded poorly during the COVID-19 pandemic. As a measure of health security, the Index assigns the highest scores to countries with the most extensive capacities to prevent and respond to epidemics and pandemics. With its vast wealth and scientific capacities, the United States was ranked first in the 2019 GHS Index and again in the 2021 edition, although in both cases, the highest position was still measured to have critical weaknesses. Despite its ranking, the United States has reported the greatest number of COVID-19 cases, and its response to the pandemic has generally been viewed as extremely poor. The result highlights that although the GHS Index can identify preparedness resources and capacities available in a country, it cannot predict whether or how well a country will use them in a crisis. The GHS Index cannot anticipate, for example, how a country's political leaders will respond to recommendations from science and health experts or whether they will make good use of available tools or effectively coordinate within their government. The Index does, however, provide evidence of the tools that countries have and the risks they need to address to protect their communities. Countries that fail to use those tools or address those risks to thereby enable an effective response should be held accountable. Shortcomings observed during COVID-19 must be fixed before the next public health emergency.

Despite some notable stumbles, having preparedness capacities in place before a crisis unequivocally offers the best protection. Actions taken to minimize the consequences of COVID-19 proved that countries need those tools and that they are capable of developing them even in a crisis. With its focus on the long-term, sustained capacities necessary to maximize preparedness, the GHS Index credited countries with specific COVID-19-focused improvements linked to commitments to sharing data, establishing emergency preparedness and response plans, creating non-pharmaceutical intervention plans, conducting testing, providing surveillance, and supporting contact tracing. For example, although some countries were able to stand up COVID-19 testing and scale laboratory capacity, the GHS Index counted it as a partial credit unless the plan or strategy also included other novel pathogens that would ensure it became a durable tool available for other health threats. Even with partial credit given for those new capacities, this research reflects only a portion of the overall measures required for a strong and durable national health security posture.

Leaders now have a choice: Will they sustain new capacities and use the resources and attention generated by COVID-19 to fill in remaining preparedness gaps for the long term—or will they fall back into the decades-long cycle of panic and neglect that will leave the world at grave risk for the inevitable health threats of the future?

In the face of COVID-19's staggering toll, national and global leaders have an obligation to sustain and expand upon new preparedness capacities that will serve countries far beyond the current pandemic and to foster the political and social environments that will ensure they are used effectively. The need has never been clearer. COVID-19 continues to generate death and disruption, stress health systems, and exhaust social protections and government budgets—and it will not be the last global health emergency the world will face. Global travel, urbanization, climate change, population growth and movements, advances in biotechnology, and threats from deliberately engineered bioweapons will lead to greater risk of more frequent pandemics. Only by

[3] Elizabeth E. Cameron, Jennifer B. Nuzzo, and Jessica A. Bell, *"Global Health Security Index: Building Collective Action and Accountability,"* 2019. https://www.ghsindex.org/wp-content/uploads/2020/04/2019-Global-Health-Security-Index.pdf.

LEARNING FROM THE COVID-19 PANDEMIC

Nearly two years after the World Health Organization (WHO) recognized COVID-19 as a Public Health Emergency of International Concern, some lessons from the pandemic are clear:

- Countries' ability to measure the number of COVID-19 cases and deaths depend on their having public health capacities such as diagnostic and screening tests, which were not adequately established in many countries before the pandemic. For example, the WHO has estimated that six of every seven COVID-19 infections in Africa go undetected due to limited testing capacity.[a] As a result, official country reports of cases and deaths may not accurately reflect the full impact of COVID-19.

- The availability of health security capacities in countries does not automatically translate into protection from illness, death, and economic consequence. Successful outcomes during a pandemic depend on political will and government readiness and flexibility to use available capacities in a way that aligns with evolving evidence-based public health recommendations for disease containment and mitigation. The public must trust advice from health officials and not face hurdles, such as lost income, if protective recommendations are to be followed.

- National risk environments—measured by disorderly transfers of power, social unrest, international tensions, and distrust in medical and health advice from the government—can have an outsized impact on a country's ability to successfully use its health security capacities to respond to an emerging outbreak. The success of disease-mitigation efforts is contingent upon public trust in government, healthcare institutions, and public health professionals. In the absence of trust, public cooperation and compliance with recommendations—including physical distancing, mask mandates, and shutdowns—are likely to fail and be more vulnerable to corrosive misinformation. Countries with those risk factors must develop strategies to minimize their influence—such as working to foster trust and prevent the politicization of a crisis—to enable a successful response.

- Public health and health system capacities must be coupled with policies and programs that enable all people to comply with public health recommendations. Universal health coverage, paid sick leave, subsidized childcare, income assistance, and food and housing assistance are examples of policies that helped populations comply with protective public health measures of the COVID-19 pandemic. For example, Ghana and Ukraine both provide wraparound services, such as economic or medical support, to infected patients and their contacts to self-isolate or quarantine. New Zealand raised its minimum wage and began providing weekly benefits to support participation of public health measures in society. Portugal extended temporary citizenship to asylum seekers and migrants during the pandemic, thereby dismantling barriers to accessing healthcare among those populations.

[a] See World Health Organization, "Six in Seven COVID-19 Infections Go Undetected in Africa," October 14, 2021. https://www.afro.who.int/news/six-seven-covid-19-infections-go-undetected-africa.

acting now to make their countries pandemic-ready can leaders ensure a safer future for all. The GHS Index provides insights for this path forward.

THE FOUNDATION FOR THE GHS INDEX

Although other frameworks exist for measuring public health capacities, the GHS Index uniquely offers a broad assessment of preparedness gaps in all 195 States Parties[4] to the International Health Regulations (IHR [2005]), the global treaty governing country requirements to mitigate cross-border health threats.

The GHS Index is built upon three fundamental principles:

- **Rewarding transparency:** The GHS Index can assess only transparent and available data.
- **Recognizing that many factors contribute to preparedness:** From core public health and healthcare preparedness capacities, the GHS Index also measures cross-cutting factors related to effective biological threat mitigation, socioeconomic resilience, and societal vulnerabilities.
- **Expanding accountability and responsibility:** The GHS Index is prepared with the understanding that measuring countries' capacities and risks will increase accountability and motivate countries, inter-governmental organizations, donors, and the private sector to work together to ensure that countries are prepared for health security threats.

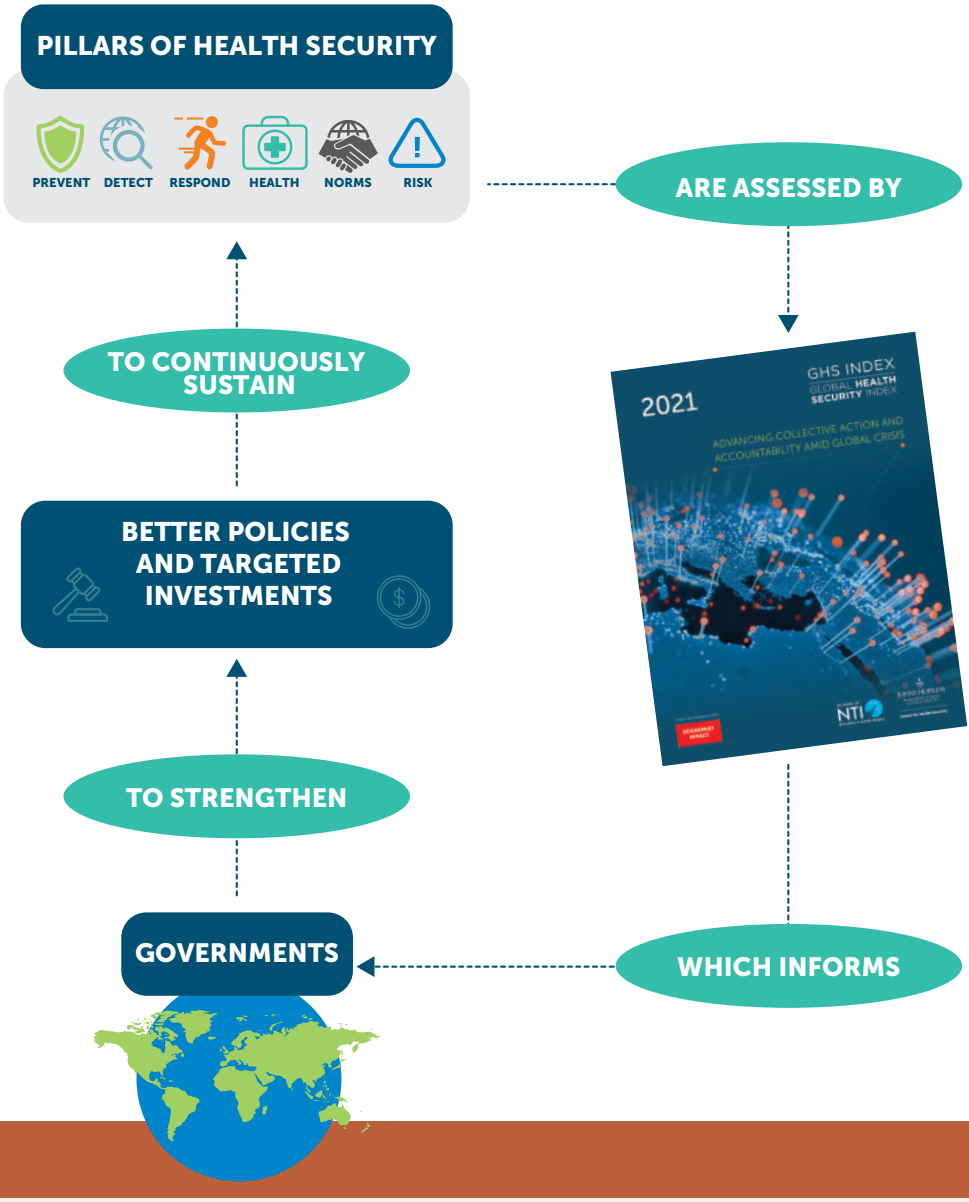
As COVID-19 has demonstrated, capacity is not a direct predictor of health emergency performance—contextual social, political, and cultural phenomena also affect how well a country responds to a biological event. As a result, the GHS Index cannot predict how well available resources will be deployed when a crisis occurs. Instead, it can tell leaders the foundational elements that are necessary to prepare their countries for future outbreaks and where they should prioritize planning and funding.

In light of the poor performance by the United States and other high-resourced countries in responding to the COVID-19 pandemic, the GHS Index team carefully studied countries' responses to the pandemic and identified additional factors that affected success or lack of success. As a result, changes were made to the 2021 GHS Index framework. New measures were added, including the ability to scale testing, capacity for contact tracing, standing up laboratory facilities during an emergency, implementation of non-pharmaceutical interventions during an epidemic or pandemic, and availability of medical and laboratory national stockpiles (for a full list, see Evolution of the GHS Index, page 42).

The team identified other important factors that clearly had an influence on countries' pandemic responses, but woefully insufficient data sources are available to collect and measure those responses. Governance is a key example. Some political leaders had an outsized role in directing their governments' responses either toward or away from public health best practices. Although the politicization of the pandemic is well documented and criticized, incorporating this factor into a benchmarking tool in an objective and standardized way is not easy. Whether or not countries had national or locally controlled responses also was cited frequently as an example of differences in countries' response to the pandemic, but whether this dimension was important for all countries remains unclear. In future years, as new data become available and better understood, the GHS Index will evolve in response.

[4] Cameron, Nuzzo, and Bell, "Global Health Security Index: Building Collective Action and Accountability."

THEORY OF CHANGE



The GHS Index can be used to help understand gaps in national health security capacities and inform and update policies, plans, and exercises to help prepare for future epidemics and pandemics. By assessing these capacities every two to three years, the GHS Index aims to stimulate political will and action to prioritize addressing these gaps and exercising important preparedness systems.

THEORY OF CHANGE

The GHS Index plays an important role within the global health security field by providing baseline data related to country preparedness capacities and risks. Countries can use these data to inform preparedness efforts, and international governmental and other global organizations can use country-level data to monitor and advocate for better preparedness for health emergencies.

GHS Index data supports efforts of the Global Preparedness Monitoring Board (GPMB), a panel of international experts convened by the WHO, and the World Bank to advocate for investments in national and global health preparedness. The GHS Index provides a data-driven foundation for reinvigorated national and global conversations about how to develop needed capacities and support the political, financial, and social environments needed to improve global preparedness for infectious disease threat. It also provides data-driven support for the recommendations from the GPMB and other international panels, including the G20 High Level Independent Panel on Financing the Global Commons for Pandemic Preparedness and Response and the Independent Panel for Pandemic Preparedness and Response.

Although measuring and understanding preparedness gaps is important for holding states and other actors accountable for progress toward enhanced global health security, identifying the gaps is just the first step in the dynamic process of developing improved capacity. Decision makers at the national, regional, and international levels must acknowledge existing gaps and then develop policies, allocate resources, and fully engage in the process necessary to fill them. To support this critical effort, the GHS Index will be responsive to new information and adjust as necessary to help ensure preparedness for biological threats. Ultimately, the goal is to promote mutual accountability, encourage transparency, and urge progress toward a safer world.

THE IMPORTANCE OF DATA TRANSPARENCY

Data related to epidemic and pandemic preparedness, such as disease surveillance, health systems, and response capacity data, should be publicly available so that officials within and beyond country borders understand the nature and magnitude of the threat and the tools available to contain it.

Data transparency allows for better decision making related to, but not limited to, healthcare facilities, the workforce, and medical supplies so that resources can be increased where necessary. When an outbreak starts in a country, other nations will need to understand what capacities and resources the affected country has to combat the spread of disease so that they can assess risks for their own populations and determine whether and how to offer support. Within all countries, individuals need access to the best data to understand the outbreak situation and what their government's plans and resources are so that they can protect themselves and participate in the response meaningfully.

As has been shown with COVID-19, every country must be transparent about its capabilities to limit the spread of disease. Health security data in every country should be transparent and regularly measured. The GHS Index is based on data transparency out of the firm belief that all countries are safer and more secure if they understand each other's gaps in epidemic and pandemic preparedness. This means that although countries may possess certain capacities, they will not receive points toward the Index unless public evidence of those capacities exists. Countries wishing to improve their scores and ranking have the opportunity to do so by improving public access to information about their health security capacities. Since the 2019 GHS Index was published, some countries have improved the information they have publicly available and have improved scores as a result.

KEY FINDINGS AND RECOMMENDATIONS

OVERALL

Although many countries were able to quickly develop capacities to address COVID-19, all countries remain dangerously unprepared for meeting future epidemic and pandemic threats. A great opportunity exists, however, to make new capacities more durable to further long-term gains in preparedness.

Despite some signs of hope in the unprecedented levels of health security investments in the COVID-19 rapid response, the 2021 GHS Index continues to show that all countries still lack some critical capacities, which hinders their ability to respond effectively to COVID-19 and reduces their preparedness for future epidemic and pandemic threats. The average country score in 2021 was 38.9 out of 100, which is essentially unchanged from 2019. Looking at overall index scores, no country placed in the top tier[5] of the GHS Index, signaling that significant gaps exist for all countries and across all GHS Index categories and reinforcing that preparedness remains fundamentally weak at all country income levels.[6]

Although evidence shows that countries built new capacities during the COVID-19 pandemic, many of them are temporary, short-term, COVID-19-specific measures and were therefore not given full credit by the GHS Index. To receive a full score, a country must demonstrate that it is building enduring capacities that can be applied to a range of disease threats. Encouraging evidence reveals that COVID-19 spurred countries to develop some capacities identified as lacking by the 2019 GHS Index. Whether countries will strengthen their preparedness for future epidemic and pandemic threats by adapting and sustaining those gains post-pandemic, however—or whether those gains will disappear once the acute phase of the pandemic is over—is currently unclear. The 2021 GHS Index does not give full scores for short-term or temporary capacities developed in response to COVID-19. It does give full credit, however, if the countries can show that they established enduring capacities by demonstrating plans, policies, regulations, and actions taken toward broader disease threats.

[5] The GHS Index scoring system includes five tiers with groupings of scores of 0–20; 20.1–40; 40.1–60; 60.1–80, and 80.1–100.

[6] World Bank Country and Lending Groups. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

The GHS Index includes six categories, each covering a range of indicators and questions. Results at this level provide insights into the overall finding:

PREVENTION: The global average for the prevention of the emergence or release of pathogens is 28.4 out of 100, making it the lowest-scoring category within the GHS Index. One hundred thirteen countries show little to no attention to zoonotic diseases within national planning, surveillance, or reporting for diseases—such as those caused by coronaviruses—that are transmitted from animals to humans.

DETECTION AND REPORTING: This category shows major gaps in the strength and quality of laboratory systems, laboratory supply chain, real-time surveillance, and reporting capacities for epidemics of potential international concern. Only three countries (Australia, Thailand, and the United States) score in the top tier in the category of early detection and reporting of epidemics of potential international concern. Only 37% of countries have made a public commitment to share surveillance data, and only five (Brunei, Indonesia, Malaysia, the Philippines, and Singapore) made commitments to share data specifically for COVID-19.

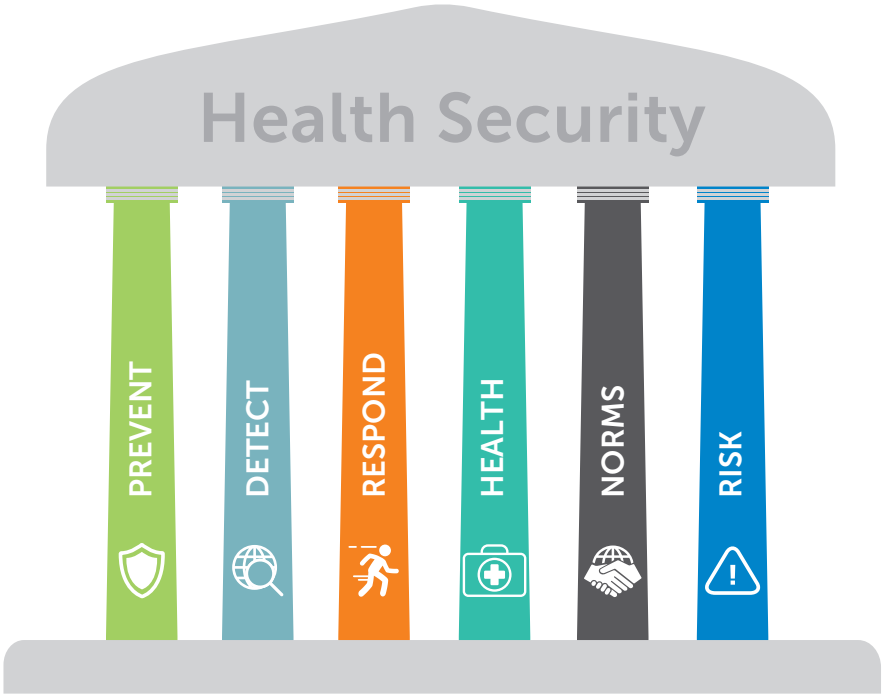
RAPID RESPONSE: No countries scored in the top tier for this category, with 58% of countries scoring below average for rapid response to and mitigation of the spread of an epidemic. Only 69 countries have an overarching national public health emergency response plan in place that addresses planning for multiple communicable diseases with epidemic and pandemic potential. Although those numbers indicate serious gaps in exercising response plans, risk communication, and linking public health with health security authorities, COVID-19 has produced some new, evolving capacity in the rapid response and mitigation of a novel virus, such as non-pharmaceutical interventions (NPI) planning.

HEALTH SYSTEM: The average score in the health system category is 31.5 out of 100, with 73 countries scoring in the bottom tier. Sixty-nine countries have insufficient capacity at health clinics, hospitals, and community centers. Ninety-one percent of countries do not have a plan, program, or guidelines in place for dispensing medical countermeasures, such as vaccines and antiviral drugs, for national use during a public health emergency. Altogether, the health systems category shows little progress since 2019 and identifies serious gaps in capacity in national-level medical workforce, facilities, and healthcare access.

COMMITMENTS TO IMPROVING NATIONAL CAPACITY, FINANCING, AND GLOBAL NORMS: Twenty-three countries—19 of which are high- or upper-middle-income countries—have not submitted their IHR reports to the World Health Organization (WHO), and only four countries have identified funding in their national budgets to address gaps identified in their WHO Joint External Evaluation (JEE). The 2021 GHS Index shows a lack of progress toward enhanced global coordination and lagging commitment to international norms, which are important for accountability and necessary for collective action in addressing the most challenging aspects of health security. For instance, in the past three years, only 50% of countries have submitted Confidence-Building Measures to the Biological Toxins and Weapons Convention.

RISK ENVIRONMENT: As seen with COVID-19, national risk environment factors, such as orderly transfer of power, social unrest, international tensions, and trust in medical and health advice from the government, can have an outsized impact on a country's response to a public health threat. One hundred fourteen countries demonstrate a moderate to very high threat of international disputes or tensions that would have a negative effect on daily operations—including public services, governing, and civil society—with 24 high-income countries scoring below the global average.

PILLARS OF HEALTH SECURITY



The GHS Index is organized by six categories aimed at assessing country capability to prevent, detect, and respond to biological threats as well as factors that can hinder or enhance that capability such as health systems, norms, and risks.

HOW THE UNITED STATES SQUANDERED ITS CAPACITIES TO RESPOND TO THE PANDEMIC

With more reported cases and more deaths than any other country, the United States' poor response to the COVID-19 pandemic shocked the world. As documented by the 2019 GHS Index, the United States had more global health security capacities in place to prevent and respond to epidemics and pandemics than any other country. How could a country with so much capacity at the start of the pandemic have gotten its response so wrong?

Even with a number-one ranking in the GHS Index, the United States joined the rest of the world in being unprepared for a pandemic, according to both the 2019 and the current GHS Indexes. The 2021 GHS Index identified that the United States had important capacity gaps at the start of the pandemic. The most significant: it had the lowest possible score on public confidence in the government—a factor that has been identified as key among countries with high numbers of COVID-19 cases and deaths. Such lack of confidence can undermine public adherence to disease-control measures, such as wearing masks or complying with stay-at-home recommendations or vaccination protocols, which have been reported among the ongoing challenges to the U.S. COVID-19 response. Over nearly two years, U.S. politicians have questioned the motives and messages of health officials and debated the seriousness of the virus and the effectiveness and safety of vaccines. The result: in many areas of the country, people have been unwilling to comply with public health recommendations that would slow the spread of the virus.

Other gaps identified by the 2019 GHS Index that continue in the current data: weaknesses in the U.S. health system, limited access to care without cost barriers, and lower numbers of healthcare personnel and hospital beds per capita than many other high-income countries. The GHS Index documented that failure to guarantee Americans' access to medical care would compromise its ability to rapidly treat and stop the spread from infected patients.

The GHS Index measures capacities that exist at the national level. In countries with a federal system of government, such as the United States, local governments may take the lead in responding to public health emergencies. Deficiencies in capacities and capabilities at the local level may undermine national readiness for events. Indeed, in the United States, local health officials had been warning before the pandemic that declining budgets to support preparedness had been eroding local public health capacities.[a] This is the context in which the United States found itself at the start of the COVID-19 pandemic, but rather than trying to address those shortcomings at the start of the pandemic, the U.S. response was delayed and inadequate.

Despite those gaps, U.S. leaders initially expressed overconfidence in the country's abilities to respond to the pandemic and chose not to address its shortcomings. They also failed to examine whether documented capacities would be likely to function as intended. This failure turned out to have devastating consequences when assets that existed on paper were found to be lacking in reality. For example, although the United States had a national stockpile of personal protective equipment, it had not been sufficiently replenished after the 2009 H1N1 pandemic. When signs of a new outbreak surfaced in 2020, officials who knew that the stockpile was lacking were ignored when they called for funds to replenish and augment the supplies.[b] In addition, although the United States has world-class laboratories with the capability to develop their own tests for SARS-CoV-2, federal restrictions initially prevented the labs from doing so, severely constraining the number of tests the United States could conduct and likely allowing the virus to spread undetected until the restrictions eventually were modified on February 29, 2020. Even now, unaddressed shortages in testing supplies continue to limit the country's ability to identify and control the spread of SARS-CoV-2.

A change in political leadership in 2021 has created the opportunity to reset the U.S. approach. The United States should use this change to make improvements in both the short and long term. As in other countries, the question is whether it can continue those improvements long term and whether changes in leadership can change the trajectory for the better.

[a] Robin Taylor Wilson, Catherine L. Troisi, and Tiffany L. Gary-Webb, "A Deficit of More than 250,000 Public Health Workers Is No Way to Fight Covid-19," STAT, April 5, 2021. https://www.statnews.com/2020/04/05/deficit-public-health-workers-no-way-to-fight-covid-19/.

[b] Daniel Joseph Finkenstadt, Robert Handfield, and Peter Guinto, "Why the U.S. Still Has a Severe Shortage of Medical Supplies," *Harvard Business Review*, September 17, 2020. https://hbr.org/2020/09/why-the-u-s-still-has-a-severe-shortage-of-medical-supplies.

The GHS Index includes five additional high-level findings

- **Most countries, including high-income nations, have not made dedicated financial investments in strengthening epidemic or pandemic preparedness.** One hundred fifty-five out of 195 countries have not allocated national funds within the past three years to improve their capacity to address epidemic threats; among those who have, only two low-income countries have evidence of allocating funds. Ninety countries have not fulfilled their full financial contribution to the WHO; 14 of those countries are high-income countries.

- **Most countries saw little or no improvement in maintaining a robust, capable, and accessible health system for outbreak detection and response.** Seventy percent of countries show insufficient health capacity in clinics, hospitals, and community health centers, including human resources and facilities capacity. Only 25% of countries, or 49, have published an updated health workforce strategy over the past five years to address staffing shortages.

- **Political and security risks have increased in nearly all countries, and those with the fewest resources have the highest risk and greatest preparedness gaps.** Trust in government, which has been a key factor associated with success in countries' responses to COVID-19, is low and decreasing. One hundred sixty-one countries have low to moderate levels of public confidence in their government. Only 16 countries score in the top tier for government effectiveness.

- **Countries are continuing to neglect the preparedness needs of vulnerable populations, exacerbating the impact of health security emergencies**. Only 33 countries have an overarching emergency preparedness and response plan in place that includes considerations for vulnerable populations. One hundred forty-nine of 195 countries do not identify how risk communication messages will reach populations and sectors with different communication needs related to language, location, and media reach.

- **Countries are not prepared to prevent globally catastrophic biological events that could cause damage on a larger scale than COVID-19.** Nearly two-thirds, or 126, countries have not published and implemented an overarching national public health emergency response plan for diseases with epidemic or pandemic potential. Seventy-three percent of countries do not have the ability to provide expedited approval for medical countermeasures, such as vaccines and antiviral drugs, during a public health emergency. One hundred seventy-eight countries score less than 50 out of 100 points for whole-of-government biosecurity systems, training, personnel vetting, transport of infectious substances, and cross-border transfer and screening.

Recommendations

On the basis of those findings, the following recommendations are offered to improve capacities and ensure that the world is prepared for the next pandemic.

COUNTRIES should:

- Prioritize the building and maintaining of health security capacities in national budgets. Those capacities are not just beneficial for health security emergencies; they are important for responding to routine health threats and can provide important benefits to countries' overall health and development.
- Conduct assessments using findings from the 2021 GHS Index to identify their risk factors and capacity gaps and develop a plan to address them.
- Develop, cost, and make financial arrangements to support National Action Plans for Public Health Security (NAPHS) if they have completed JEEs.
- Undertake a JEE to better understand their gaps if they have not done so already. Data from the 2021 GHS Index may be used to update JEE data and supplement it with additional data regarding health systems and risk factors.
- Be more transparent with their capacities and risk factors. National decision makers need readily available information about their countries' plans and other capacities, and increased transparency is essential for global prevention, detection, and response to epidemics and pandemics.
- Conduct comprehensive after-action COVID-19 pandemic reports so that they can learn from this crisis and ensure that capacities developed during the pandemic are expanded and sustained for future public health emergencies.

INTERNATIONAL ORGANIZATIONS such as the United Nations (UN), World Health Organization (WHO), and World Bank should:

- Use the findings of the 2021 GHS Index to identify countries that may benefit most from additional support to improve their readiness for future disease emergencies, prioritizing assistance to countries with higher political and socioeconomic risk factors.
- Support countries in addressing the urgent global need to strengthen health systems as part of countries' public health capacity-building efforts.
- Work with countries to make available more data, especially standardized data, that can be used to assess the strength of health systems, particularly with respect to their preparedness for infectious disease emergencies.
- Use data from the 2021 GHS Index to supplement their efforts to monitor ongoing and future disease emergencies to identify where rapid deployment of international assistance may help to mitigate the impact of events and prevent cross-border spillover.
- Support the formation of a dedicated international normative body to promote the early identification and reduction of global catastrophic biological risks.
- Work to improve coordination among national and global actors to address high-consequence biological events, including deliberate attacks. Specifically, the Office of the UN Secretary-General should work in concert with the WHO, the UN Office for the Coordination of Humanitarian Affairs, and the UN Office for Disarmament Affairs to designate a permanent facilitator or unit for high-consequence biological events and call a heads-of-state-level summit on biological threats that is focused on creating sustainable health security financing and new international emergency response capabilities.

The PRIVATE SECTOR should:

- Use the 2021 GHS Index to partner with governments to help address gaps in country preparedness and to assess likely vulnerabilities in countries where they operate. Companies and other private organizations should use these findings to encourage governments to make improvements.
- Identify and support private-sector resources, plans, and programs that can augment government capacities, especially in countries with few developed capacities.
- Increase their sustainable development and health security portfolios in research, development, and capacity building, using the 2021 GHS Index to identify priority areas aimed at preventing epidemics and pandemics from causing catastrophic damage on a global scale.

PHILANTHROPIES and FUNDERS should:

- Create new financing mechanisms, such as a global health security matching fund, and expand the availability of World Bank International Development Association (IDA) allocations to allow for investments to fill epidemic and pandemic preparedness gaps for countries in need.
- Use the 2021 GHS Index to prioritize resources. Countries with low scores related to risk environment—including political and security, socioeconomic, infrastructure, environmental, and public health risks—should be identified as priorities for capacity development and should receive prompt international assistance when infectious disease emergencies occur within their borders.
- Advocate to country governments to make available national resources to support preparedness and capacity development.

PREPAREDNESS FOR PANDEMICS MEANS ACTING NOW

COVID-19 has demonstrated the inadequacy of current global capacities to help countries respond to pandemics. The pervasive and protracted nature of pandemics distinguishes them from epidemics, which are more limited in geographic scope. In an epidemic, unaffected nations may be able to contribute funds, personnel, and other resources to assist the affected country. In a pandemic, however, that model is generally not applicable because many, if not all, countries may be affected at once. In that case, resources held by the WHO, World Bank, and other international organizations that typically are used to help countries respond to significant outbreaks and epidemics will have to be spread among a greater number of countries, diluting the resources for targeted assistance. With the need for support exceeding the availability of global resources, countries must rely on domestic resources to stop a pandemic spread.

The development of and access to COVID-19 vaccines shows that when all countries are worried about protecting their people, they will prioritize national needs ahead of global interests. Although global recovery from a pandemic requires that all people have access to vaccines, no global agreement ensures that all countries have access to vaccines.

The lack of global response agreements means that countries may have to rely heavily on national resources to mount a response to a pandemic. During COVID-19, higher-income countries were better able to develop emergency response capacities, likely due to greater existing financial reserves to cover the costs.

To ensure that countries have the capacities they need to respond to a pandemic, countries should act now to fund and develop the necessary health security capacities. By waiting for the next crisis before they act, they risk not being able to respond effectively before capacity is developed and likely will incur greater financial costs than if they had developed, tested, and exercised capacities in advance.

GHS INDEX MAP AND RESULTS

The map and tables on the following pages provide high-level results for the 2021 GHS Index. The tables provide country rankings and scores, overall and by each category.

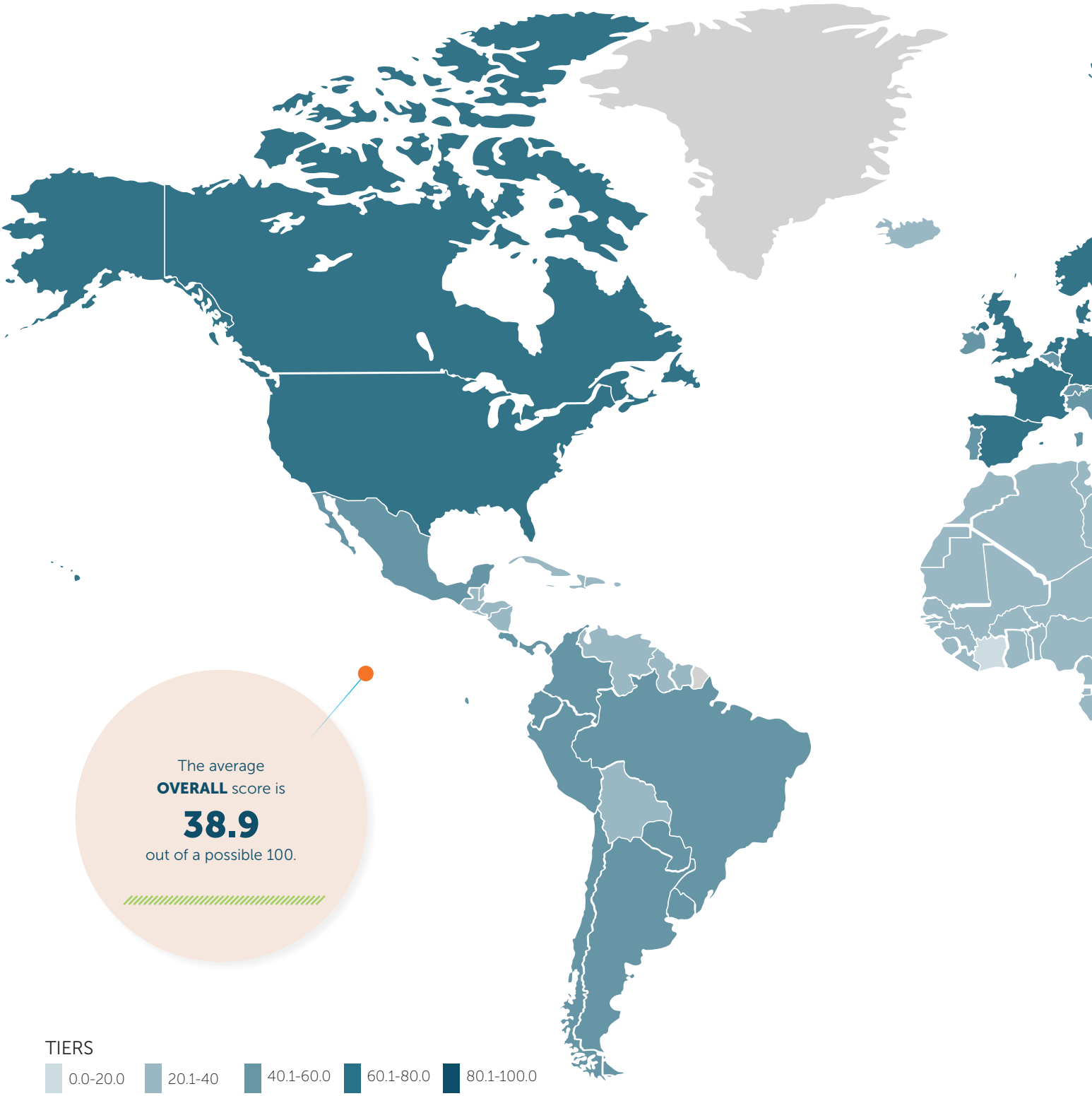
The overarching conclusions of the 2019 and 2021 GHS Indexes are consistent: no country is fully prepared for a serious pandemic. No country has all capacities measured in the GHS Index, and whereas some score highly in some areas, they are severely lacking in others. Although countries are ranked using those scores, the GHS Index is a benchmarking tool that is scored on an absolute scale, meaning that gaps in any capacities could cripple countries in their response to health emergencies. As in cooking, a single missing ingredient can greatly change the outcome.

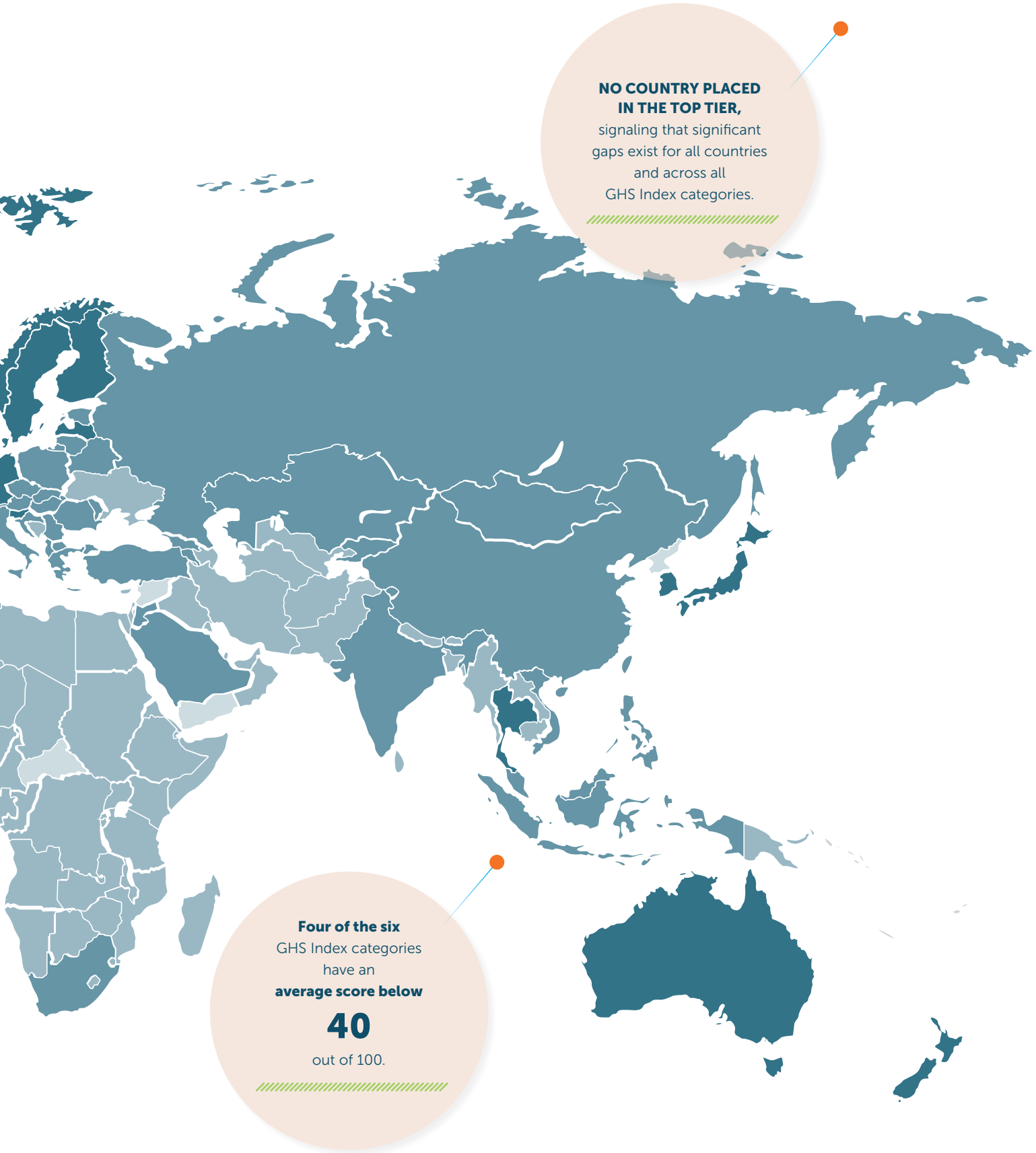
The existence of capacities—as shown in the scoring in the subsequent pages and in the full data model—does not guarantee that countries will be able to use them, or choose to use them, to their fullest capacity in a crisis. Tools that are not maintained properly to ensure that they work may not be functional in an emergency. Similarly, plans on paper may not be sufficient for guiding a response to a health crisis.

The scores and rankings for each country should be used to better understand the current gaps in national-level health security capacities and to stimulate discussions about priorities, funding, and accountability toward continued investment.

Visit *www.ghsindex.org* for the methodology, full data sets, data model, complete list of scores, country pages summarizing results, data sources for each question by country, and justifications for the score for each question.

GHS INDEX MAP





NO COUNTRY PLACED IN THE TOP TIER, signaling that significant gaps exist for all countries and across all GHS Index categories.

Four of the six GHS Index categories have an **average score below**

40

out of 100.

GHS Index Results

NO COUNTRY SCORED IN THE TOP TIER OVERALL.

OVERALL

TIERS

0.0-20.0 | 20.1-40 | 40.1-60.0 | 60.1-80.0 | 80.1-100.0

Rank	Country	Score	Change
1	United States of America	75.9	-0.3
2	Australia	71.1	-2.1
3	Finland	70.9	-1.1
4	Canada	69.8	+2.2
5	Thailand	68.2	-0.7
6	Slovenia	67.8	-0.8
7	United Kingdom	67.2	-1.1
8	Germany	65.5	-0.2
9	South Korea	65.4	-0.5
10	Sweden	64.9	-1.5
11	Netherlands	64.7	-3.0
12	Denmark	64.4	-2.9
13	New Zealand	62.5	+6.7
=14	France	61.9	-0.7
=14	Latvia	61.9	+2.1
16	Armenia	61.8	-1.4
17	Spain	60.9	+0.5
18	Japan	60.5	+1.7
19	Norway	60.2	-1.2
20	Bulgaria	59.9	-1.5
21	Lithuania	59.5	+4.6
22	Belgium	59.3	-2.6
23	Switzerland	58.8	-1.6
24	Singapore	57.4	+1.6
25	Mexico	57.0	+1.9
26	Austria	56.9	-0.5
27	Malaysia	56.4	+1.3
28	Chile	56.2	+3.2
29	Poland	55.7	+1.4
30	Estonia	55.5	-0.1
31	Ireland	55.3	+0.2
32	Peru	54.9	+1.1
33	Portugal	54.7	-4.0
=34	Argentina	54.4	-1.7
=34	Hungary	54.4	-0.6
=34	Slovakia	54.4	+2.4
37	Panama	53.5	+3.1
38	Colombia	53.2	+3.2
39	Czech Republic	52.8	-2.2
40	Georgia	52.6	+4.4
41	Italy	51.9	0.0
42	Greece	51.5	+0.9
43	Brazil	51.2	+0.2
44	Ecuador	50.8	+2.6
45	Indonesia	50.4	+1.2
46	Turkey	50.0	+0.2
47	Russia	49.1	+2.0
48	Croatia	48.8	-1.0
49	Qatar	48.7	+3.6
50	Iceland	48.5	+0.9
51	Luxembourg	48.4	-0.2
52	China	47.5	-1.5
53	Israel	47.2	-3.5
54	Liechtenstein	46.4	+1.4
55	Kazakhstan	46.1	+1.4
56	South Africa	45.8	-1.7
=57	Philippines	45.7	+2.2
=57	Romania	45.7	+0.2
=59	Albania	45.0	-1.2
=59	Serbia	45.0	0.0
61	Saudi Arabia	44.9	-0.1
62	Montenegro	44.1	+3.3
63	Belarus	43.9	+2.1
64	Brunei	43.5	+10.5
65	Vietnam	42.9	+0.7
=66	India	42.8	-0.8
=66	Jordan	42.8	+1.6
68	Kyrgyz Republic	42.4	-0.6
69	North Macedonia	42.2	+2.1
70	Cyprus	41.9	-0.4
=71	Moldova	41.0	+0.2
=71	Mongolia	41.0	+0.1
=73	Costa Rica	40.8	+0.3
=73	El Salvador	40.8	-2.1
=75	Paraguay	40.3	+0.5
=75	Uruguay	40.3	+1.2
77	Malta	40.2	+0.9
78	Bhutan	39.8	-1.0
79	Mauritius	39.7	+1.4
80	United Arab Emirates	39.6	-0.5
81	Oman	39.1	-1.8
82	Uzbekistan	39.0	+1.3
83	Ukraine	38.9	+2.0
84	Kenya	38.8	-4.3
85	Myanmar	38.3	+0.5
86	Nigeria	38.0	+1.0
87	Ethiopia	37.8	+0.4
=88	Kuwait	36.8	-3.3
=88	Trinidad and Tobago	36.8	-0.9
=90	Iran	36.5	-3.0
=90	Uganda	36.5	-2.5
=92	Bahrain	36.3	-2.6
=92	Nicaragua	36.3	-3.7
94	Liberia	35.7	+1.2
95	Bangladesh	35.5	+0.1
96	Bosnia and Herzegovina	35.4	-1.0
97	Suriname	35.0	+1.8
98	Barbados	34.9	+2.7
99	Laos	34.8	+2.0

All data are normalized to a scale of 0 to 100, where 100 = most capacities in health security conditions.

The average OVERALL score is

38.9

out of a possible 100.

Rank	Country	Score	Change
=100	Andorra	34.7	+4.2
=100	Azerbaijan	34.7	+0.5
=100	St. Lucia	34.7	+0.5
103	Dominican Republic	34.5	-1.3
104	Ghana	34.3	+2.7
=105	Cabo Verde	34.1	+1.5
=105	Sri Lanka	34.1	+1.0
107	Nepal	34.0	-1.6
=108	Botswana	33.6	+2.5
=108	Morocco	33.6	-2.0
110	St. Vincent and the Grenadines	33.5	+0.8
111	Lebanon	33.4	-3.4
112	Monaco	33.3	-0.5
113	Rwanda	33.1	+2.0
114	San Marino	32.9	+0.7
115	Senegal	32.8	-3.1
116	Sierra Leone	32.7	-1.4
117	Zimbabwe	32.4	-1.0
118	Maldives	32.0	+1.2
119	Turkmenistan	31.9	-1.4
=120	Jamaica	31.8	+0.9
=120	Seychelles	31.8	-1.4
122	St. Kitts and Nevis	31.7	+0.9
123	Tunisia	31.5	-0.6
124	Tanzania	31.3	-0.9
125	Côte d'Ivoire	31.2	-1.7
126	Cambodia	31.1	+0.1
127	Lesotho	30.9	-1.7
128	Guyana	30.8	+0.8
129	Cuba	30.5	-1.8
=130	Haiti	30.4	+0.3
=130	Madagascar	30.4	-0.5
=130	Mozambique	30.4	+0.8
=130	Pakistan	30.4	-0.9
134	Namibia	30.3	-0.6
135	Bahamas	30.1	+0.5
136	Antigua and Barbuda	30.0	-0.2
137	Bolivia	29.9	-2.1
138	Burkina Faso	29.8	-4.6
139	Belize	29.7	-0.5
=140	Eswatini	29.3	-1.4
=140	Tajikistan	29.3	-0.5
=142	Angola	29.1	+3.9
=142	Guatemala	29.1	-1.9
144	Mali	29.0	-1.6
=145	Afghanistan	28.8	+0.9
=145	Samoa	28.8	-0.9
=147	Gambia	28.7	-0.8
=147	Niger	28.7	-1.0
149	Cameroon	28.6	-3.6
=150	Malawi	28.5	+0.7
=150	Micronesia, Federated States of	28.5	-2.0
152	Sudan	28.3	-1.7
153	Egypt	28.0	-2.3
=154	Timor-Leste	27.8	+3.6
=154	Togo	27.8	+1.7
156	Guinea	26.8	-1.7
157	Grenada	26.7	+1.1
158	São Tomé and Príncipe	26.6	+5.7
159	Zambia	26.5	-1.5
=160	Dominica	26.4	-0.7
=160	Tonga	26.4	+1.9
162	Congo (Brazzaville)	26.3	+2.4
=163	Algeria	26.2	-0.6
=163	Honduras	26.2	-0.1
=163	Kiribati	26.2	+4.6
=163	Mauritania	26.2	+0.8
167	Congo (Democratic Republic)	26.1	+0.1
168	Vanuatu	25.9	-1.1
169	Fiji	25.8	+0.4
170	Palau	25.5	+5.6
171	Benin	25.4	-1.6
172	Libya	25.3	+2.0
173	Djibouti	25.2	+1.3
174	Papua New Guinea	25.0	-1.3
175	Comoros	24.9	-0.3
176	Marshall Islands	24.6	+5.8
177	Iraq	24.0	+0.7
=178	Chad	23.9	-0.6
=178	Cook Islands	23.9	+2.8
180	Solomon Islands	23.3	+1.5
181	Burundi	22.1	-0.6
182	Gabon	21.8	+1.9
=183	Eritrea	21.4	-1.1
=183	Guinea-Bissau	21.4	+2.1
185	South Sudan	21.3	-0.3
186	Venezuela	20.9	-0.5
187	Niue	20.1	-1.6
188	Tuvalu	20.0	-0.2
189	Central African Republic	18.6	-2.1
190	Nauru	18.0	-1.5
191	Equatorial Guinea	17.4	-0.6
192	Syria	16.7	-2.0
=193	North Korea	16.1	-2.8
=193	Yemen	16.1	-3.8
195	Somalia	16.0	-1.9

GHS Index Results

Category 1. PREVENTION OF THE EMERGENCE OR RELEASE OF PATHOGENS

TIERS

0.0-20.0 | 20.1-40 | 40.1-60.0 | 60.1-80.0 | 80.1-100.0

Rank	Country	Score	Change
1	United States of America	79.4	+0.8
2	Armenia	79.3	+4.3
3	Sweden	77.3	-3.3
4	Canada	70.4	+0.6
5	Bulgaria	66.8	+0.1
6	Slovenia	65.7	-0.5
7	Australia	65.2	-3.3
8	Denmark	64.3	-3.4
9	United Kingdom	63.5	+0.2
10	Thailand	59.7	-4.2
11	France	59.4	-3.3
12	Finland	58.2	-3.4
13	Netherlands	57.8	-2.2
14	Georgia	55.2	+4.1
15	Kazakhstan	54.9	-0.1
16	Belgium	54.2	-3.3
17	Norway	53.8	+4.2
18	Austria	53.3	0.0
19	Ireland	52.9	0.0
20	Portugal	52.8	0.0
21	Latvia	51.6	+2.3
22	Slovakia	51.3	-0.6
23	Turkey	51.1	+0.8
24	Colombia	50.9	+3.7
25	Ecuador	50.5	+1.1
26	Switzerland	50.2	0.0
27	Brazil	49.7	+0.1
28	Hungary	49.4	-3.3
29	Germany	49.1	0.0
30	South Korea	48.8	-4.4
31	Croatia	47.7	-3.6
32	Spain	47.5	-0.2
=33	Chile	47.2	+0.6
=33	Italy	47.2	0.0
35	Singapore	46.8	-3.4
36	Czech Republic	46.1	-0.6
37	Russia	45.5	+3.4
38	Uruguay	45.3	+4.2
39	New Zealand	45.0	-3.4
40	Greece	44.8	-7.5
41	Cyprus	44.1	-0.2
42	Serbia	44.0	0.0
43	China	43.9	0.0
44	Poland	43.5	-3.3
45	Japan	43.1	-4.1
46	Iran	42.9	0.0
47	Estonia	42.5	0.0
48	Panama	42.3	+5.5
49	Albania	42.0	0.0
50	Mexico	41.9	+0.2
=51	Israel	41.6	0.0
=51	Moldova	41.6	+4.3
53	Argentina	41.5	0.0
54	Liechtenstein	41.2	+8.4
55	Uzbekistan	40.6	+4.4
56	Paraguay	40.5	+1.3
57	Vietnam	40.3	-3.4
58	Iceland	40.0	+6.8
=59	Romania	39.0	-3.4
=59	United Arab Emirates	39.0	0.0
61	Lithuania	38.2	+1.2
=62	Malaysia	37.7	-7.5
=62	Peru	37.7	0.0
64	Bolivia	37.4	-3.4
65	Nicaragua	37.3	+0.8
66	Qatar	36.4	+4.3
67	Malta	36.2	+4.2
68	North Macedonia	35.7	-4.2
69	Oman	35.4	0.0
70	Belarus	34.0	+2.8
71	Montenegro	33.8	-2.5
72	Saudi Arabia	33.4	0.0
73	Azerbaijan	32.6	0.0
74	South Africa	32.1	-3.4
75	Costa Rica	31.9	0.0
76	Indonesia	31.8	-3.4
77	Ukraine	31.4	-1.4
78	Kenya	31.0	-3.4
79	Nepal	30.6	-3.4
80	Bosnia and Herzegovina	30.4	-4.2
=81	Jordan	30.3	0.0
=81	Luxembourg	30.3	0.0
83	Mongolia	30.2	-3.4
84	Brunei	30.1	+8.1
85	India	29.7	0.0
86	Morocco	29.3	-0.1
87	Bahrain	28.6	-3.3
88	Kyrgyz Republic	27.8	+0.3
=89	Belize	27.7	+4.3
=89	Philippines	27.7	0.0
91	Mauritius	27.3	0.0
=92	Cuba	27.2	-3.5
=92	Kuwait	27.2	-7.5
94	Andorra	27.1	+8.1
95	Ghana	27.0	0.0
96	Bhutan	26.6	-7.5
97	Rwanda	25.4	-4.3
98	Cambodia	24.8	+7.3
99	Eswatini	24.0	+0.2

All data are normalized to a scale of 0 to 100, where 100 = most capacities in health security conditions.

The average overall PREVENTION score is

28.4

out of a possible 100.

Rank	Country	Score	Change
100	Barbados	23.8	0.0
101	Bangladesh	23.7	+0.8
=102	Ethiopia	22.5	0.0
=102	Sudan	22.5	-0.1
=104	Cabo Verde	22.3	+2.2
=104	Trinidad and Tobago	22.3	0.0
=106	Tajikistan	22.1	-8.7
=106	Turkmenistan	22.1	+0.1
108	Tunisia	21.9	-3.4
=109	Myanmar	21.7	-3.3
=109	Sri Lanka	21.7	+0.2
111	Guyana	21.1	0.0
112	Dominican Republic	20.9	-0.1
113	Maldives	20.8	0.0
114	Nigeria	20.1	-3.4
115	Uganda	19.5	-3.4
116	Mozambique	19.2	+4.1
117	Bahamas	19.1	+4.1
=118	Haiti	18.9	-3.3
=118	Niger	18.9	-3.4
120	Laos	18.7	+7.9
=121	Chad	18.1	0.0
=121	Zimbabwe	18.1	-3.3
123	Madagascar	17.5	0.0
124	San Marino	17.4	0.0
125	Malawi	17.3	0.0
=126	Pakistan	17.1	+0.1
=126	St. Vincent and the Grenadines	17.1	0.0
128	Tonga	16.9	0.0
=129	Antigua and Barbuda	16.7	0.0
=129	North Korea	16.7	0.0
=129	St. Kitts and Nevis	16.7	0.0
=129	Timor-Leste	16.7	+6.9
133	Guatemala	16.3	+0.1
134	Djibouti	16.1	+3.4
135	Fiji	16.0	0.0
136	Egypt	15.7	-3.4
=137	Iraq	15.4	-1.9
=137	Tanzania	15.4	-3.4
139	Algeria	15.3	-4.1
140	Suriname	14.8	+1.4
=141	Angola	14.7	+1.3
=141	Botswana	14.7	0.0
=143	Guinea	14.6	-3.4
=143	Honduras	14.6	-0.1
145	São Tomé and Príncipe	14.4	+14.4
146	Burundi	14.2	+3.9
147	St. Lucia	14.0	+0.1
148	Jamaica	13.7	-4.1
149	Dominica	13.6	0.0
150	Venezuela	13.0	0.0
151	Syria	12.9	+3.2
=152	Eritrea	12.5	-3.5
=152	Lesotho	12.5	-9.1
=154	Congo (Democratic Republic)	12.4	0.0
=154	Côte d'Ivoire	12.4	-3.3
156	South Sudan	12.1	-3.3
157	Afghanistan	12.0	-3.4
158	El Salvador	11.7	-8.4
159	Somalia	11.4	0.0
=160	Libya	11.1	-4.4
=160	Papua New Guinea	11.1	+2.7
162	Senegal	11.0	-3.3
163	Micronesia, Federated States of	10.9	-0.1
164	Gambia	10.8	0.0
165	Samoa	10.6	0.0
=166	Central African Republic	10.5	-3.3
=166	Mali	10.5	-3.4
168	Togo	10.2	-3.4
=169	Burkina Faso	9.7	0.0
=169	Cook Islands	9.7	0.0
171	Niue	9.4	0.0
172	Benin	9.3	+0.1
173	Namibia	9.2	-3.3
174	Sierra Leone	9.0	-8.4
=175	Lebanon	8.6	-8.4
=175	Seychelles	8.6	+0.3
=177	Comoros	8.4	0.0
=177	Guinea-Bissau	8.4	0.0
=179	Kiribati	8.3	+4.1
=179	Nauru	8.3	+4.1
=179	Vanuatu	8.3	-8.5
182	Liberia	7.6	0.0
183	Monaco	7.5	0.0
184	Cameroon	6.5	-8.7
185	Zambia	5.6	-8.4
186	Grenada	5.3	+4.2
187	Gabon	4.6	+1.4
=188	Palau	4.2	+3.4
=188	Tuvalu	4.2	0.0
190	Mauritania	1.9	0.0
=191	Congo (Brazzaville)	1.1	-8.4
=191	Solomon Islands	1.1	0.0
193	Yemen	0.8	-8.4
=194	Equatorial Guinea	0.0	0.0
=194	Marshall Islands	0.0	0.0

GHS Index Results

Category 2. EARLY DETECTION & REPORTING EPIDEMICS OF POTENTIAL INTERNATIONAL CONCERN

TIERS

0.0-20.0 | 20.1-40 | 40.1-60.0 | 60.1-80.0 | 80.1-100.0

Rank	Country	Score	Change
1	Thailand	91.5	+8.3
2	Australia	82.2	+2.6
3	United States of America	80.1	+4.8
4	Latvia	77.1	+4.2
5	New Zealand	75.3	+27.7
6	South Korea	73.8	+6.3
7	Malaysia	72.5	+15.0
8	Germany	72.4	+2.1
9	Japan	71.1	+15.0
=10	Canada	70.8	+6.2
=10	Slovenia	70.8	+4.1
=10	Spain	70.8	+6.2
=10	United Kingdom	70.8	+8.3
14	Armenia	69.6	+1.7
15	Finland	67.5	+2.1
16	Georgia	65.1	+13.6
17	Denmark	64.6	+4.2
18	Lithuania	64.3	+2.1
19	Sweden	62.5	-2.1
20	Bulgaria	61.7	0.0
21	Singapore	61.1	+12.1
22	Chile	58.1	+14.6
23	Colombia	57.9	+14.6
24	Peru	57.8	+8.9
25	Netherlands	57.1	-4.2
26	Argentina	56.7	+2.1
27	Kenya	55.7	+4.2
28	Indonesia	55.4	+10.0
29	Vietnam	55.1	+13.0
30	Mexico	54.3	+4.2
31	Brazil	53.6	+2.1
32	Belgium	52.9	0.0
33	Philippines	52.6	+18.3
34	El Salvador	52.5	+2.1
35	Saudi Arabia	52.1	+2.1
36	Ecuador	51.5	+6.2
=37	Ireland	50.4	+0.5
=37	Panama	50.4	-1.3
39	South Africa	50.0	-2.1
40	Italy	49.7	0.0
41	Greece	48.9	0.0
42	China	48.5	0.0
43	Myanmar	46.8	+8.3
44	Israel	46.7	+3.4
45	Norway	46.3	-6.2
46	France	45.7	+0.6
47	Brunei	44.7	+23.7
48	Romania	44.0	+10.4
49	Bangladesh	43.8	+4.2
50	Russia	43.6	+8.3
51	India	43.5	+6.3
52	Portugal	42.6	-2.1
=53	Poland	42.5	+11.5
=53	Switzerland	42.5	+4.2
=55	Austria	41.4	+2.6
=55	Turkey	41.4	+6.3
57	Estonia	41.3	0.0
58	Zimbabwe	40.4	0.0
59	Albania	40.0	-5.4
60	Qatar	39.7	+6.2
61	Lebanon	38.9	-2.1
62	Haiti	38.3	0.0
63	Hungary	38.1	0.0
=64	Laos	37.9	0.0
=64	Mongolia	37.9	0.0
=64	Nigeria	37.9	+2.1
=67	Croatia	37.8	0.0
=67	Czech Republic	37.8	0.0
69	Bahrain	37.2	+3.7
=70	Cambodia	37.1	+4.2
=70	North Macedonia	37.1	+6.3
=70	Slovakia	37.1	+3.2
73	Iceland	36.4	+4.2
=74	Sri Lanka	35.6	+2.7
=74	Uganda	35.6	+0.6
=76	Rwanda	34.6	+10.0
=76	Togo	34.6	+7.5
78	Belarus	34.4	+8.3
79	Moldova	34.2	0.0
80	Burkina Faso	33.9	-3.7
81	Oman	33.5	0.0
=82	Bhutan	33.3	+6.2
=82	Luxembourg	33.3	0.0
=84	Costa Rica	33.1	0.0
=84	Ghana	33.1	+10.5
86	Ukraine	32.8	+9.5
87	Jordan	32.5	+5.3
88	Mauritius	32.2	-3.6
89	Montenegro	32.1	+14.6
90	Namibia	31.8	-3.6
91	Madagascar	31.7	+4.2
92	Sierra Leone	31.4	0.0
=93	Cameroon	30.8	-0.6
=93	Guatemala	30.8	0.0
95	Dominican Republic	30.0	+2.1
96	Ethiopia	29.7	+6.2
97	Côte d'Ivoire	29.6	-4.2
98	Botswana	29.3	+10.4
=99	Congo (Democratic Republic)	29.2	0.0

All data are normalized to a scale of 0 to 100, where 100 = most capacities in health security conditions.

The average overall DETECTION score is

32.3

out of a possible 100.

Rank	Country	Score	Change
=99	Kazakhstan	29.2	+6.8
=99	Pakistan	29.2	+4.2
102	Iran	28.9	+4.2
103	Serbia	28.6	0.0
=104	Guinea	28.3	0.0
=104	Libya	28.3	+6.2
=104	Mozambique	28.3	+4.1
=104	Paraguay	28.3	-2.1
=104	Senegal	28.3	0.0
109	Nepal	28.1	+4.2
110	Morocco	27.9	0.0
111	Turkmenistan	27.6	+0.5
=112	Kyrgyz Republic	26.7	0.0
=112	Mauritania	26.7	+2.1
114	Tanzania	25.6	-4.1
115	Mali	25.1	+0.5
=116	Cyprus	25.0	+3.6
=116	Micronesia, Federated States of	25.0	0.0
=118	Liberia	24.6	+0.8
=118	Timor-Leste	24.6	+6.3
=120	Iraq	24.2	+8.4
=120	Niger	24.2	-4.1
=120	Suriname	24.2	+4.2
123	Nicaragua	23.3	-7.5
124	Gambia	22.9	+2.1
125	United Arab Emirates	22.6	-2.5
126	Malta	21.8	+2.1
=127	Azerbaijan	21.7	0.0
=127	Eswatini	21.7	+0.6
129	San Marino	21.4	+4.2
130	Bolivia	21.3	0.0
131	Maldives	20.8	+4.1
=132	Afghanistan	20.6	+0.6
=132	Monaco	20.6	0.0
=132	St. Lucia	20.6	-4.1
=135	Belize	20.4	0.0
=135	Marshall Islands	20.4	+18.7
=135	Tunisia	20.4	0.0
=138	Jamaica	19.3	+0.5
=138	Zambia	19.3	+0.5
140	Egypt	18.9	+0.6
141	Seychelles	18.8	-4.1
142	Uzbekistan	18.5	-1.5
143	Chad	18.3	0.0
=144	Comoros	17.9	+2.1
=144	Kuwait	17.9	0.0
146	Palau	17.5	+15.8
147	Liechtenstein	17.1	0.0
148	Guinea-Bissau	16.7	+4.2
149	Sudan	15.8	0.0
150	Uruguay	15.0	0.0
151	Cabo Verde	14.7	+4.1
=152	Papua New Guinea	14.6	-4.2
=152	South Sudan	14.6	-2.1
=154	Bahamas	14.2	+2.1
=154	Benin	14.2	-4.1
=154	Burundi	14.2	0.0
=154	Djibouti	14.2	+4.2
=154	Dominica	14.2	+4.2
159	Bosnia and Herzegovina	13.9	+0.6
160	Barbados	13.8	+5.9
161	Angola	13.3	0.0
162	Cuba	13.1	+6.3
=163	Algeria	12.6	+4.1
=163	Trinidad and Tobago	12.6	+0.5
=165	Central African Republic	12.5	0.0
=165	Honduras	12.5	0.0
167	Somalia	11.7	-4.1
168	Guyana	11.0	0.0
=169	Malawi	10.6	-4.1
=169	Tajikistan	10.6	+4.8
171	Eritrea	10.4	0.0
172	St. Kitts and Nevis	10.1	+2.0
173	Grenada	10.0	+4.2
174	Congo (Brazzaville)	9.6	+5.4
175	St. Vincent and The Grenadines	9.4	+4.1
176	Lesotho	8.5	0.0
177	Tonga	8.3	+4.1
178	São Tomé and Príncipe	7.9	+2.1
179	Gabon	7.5	+4.2
180	Vanuatu	6.8	+2.6
181	Fiji	6.3	0.0
182	Antigua and Barbuda	5.8	0.0
183	Kiribati	4.7	+4.1
=184	Samoa	4.2	+4.2
=184	Solomon Islands	4.2	0.0
=184	Syria	4.2	-4.1
=184	Venezuela	4.2	+4.2
=184	Yemen	4.2	-4.1
189	Cook Islands	3.8	+2.1
190	Andorra	2.2	0.0
=191	Equatorial Guinea	0.0	0.0
=191	Nauru	0.0	0.0
=191	Niue	0.0	0.0
=191	North Korea	0.0	-4.2
=191	Tuvalu	0.0	0.0

GHS Index Results

Category 3. RAPID RESPONSE TO AND MITIGATION OF THE SPREAD OF AN EPIDEMIC

TIERS

0.0-20.0 | 20.1-40 | 40.1-60.0 | 60.1-80.0 | 80.1-100.0

Rank	Country	Score	Change
1	Finland	70.7	-10.8
2	Thailand	67.3	-11.3
3	United States of America	65.7	-7.1
4	South Korea	65.0	-9.9
5	Switzerland	64.9	-6.4
=6	Mexico	64.8	+3.3
=6	United Kingdom	64.8	-3.3
8	Panama	63.5	+1.7
9	South Africa	62.0	+0.7
10	Australia	61.6	-6.9
11	Malaysia	61.4	-3.6
12	Singapore	61.3	-3.3
13	Slovenia	59.9	-4.3
=14	Chile	59.5	-1.3
=14	Japan	59.5	-3.6
16	Lithuania	58.7	+9.7
17	Netherlands	58.2	-12.5
18	Norway	57.5	-10.6
=19	Armenia	56.3	-16.3
=19	Brazil	56.3	-8.5
=19	Germany	56.3	-11.7
22	Estonia	56.2	-6.7
23	Qatar	55.2	+1.0
24	Spain	54.6	-7.2
25	Suriname	54.5	+2.7
26	Poland	53.3	-6.6
27	Lebanon	52.0	-5.0
28	Denmark	51.8	-26.3
29	Latvia	51.2	-7.3
30	New Zealand	50.3	-5.0
31	Indonesia	50.2	-10.2
=32	Czech Republic	50.1	-5.2
=32	Hungary	50.1	-6.2
34	Colombia	49.8	-5.9
35	Canada	49.2	-0.8
36	Iceland	47.9	+3.1
37	France	47.7	-8.5
38	Bhutan	47.2	-8.3
39	Greece	46.7	-5.0
=40	Belgium	46.4	-11.1
=40	Luxembourg	46.4	-4.6
42	Georgia	46.1	+2.3
43	Ethiopia	45.9	+3.9
=44	Lesotho	45.8	-1.1
=44	Peru	45.8	-4.4
46	Russia	44.7	-10.0
47	Israel	44.4	-8.2
48	Kiribati	44.3	+10.1
49	Brunei	44.0	+6.5
50	Slovakia	43.7	+6.8
51	Argentina	43.6	-8.4
=52	Italy	43.2	-5.9
=52	Nigeria	43.2	+1.4
=52	Trinidad and Tobago	43.2	-1.0
55	Sudan	42.9	-7.7
56	Costa Rica	42.6	+3.0
57	Belarus	42.2	-7.2
58	Ecuador	42.0	-2.2
59	Tunisia	41.9	-7.0
=60	Austria	41.8	-6.1
=60	Jordan	41.8	-3.4
62	Portugal	41.5	-22.2
63	Ireland	41.4	-2.5
64	Senegal	41.3	-8.2
65	Mongolia	41.1	-3.4
66	Kuwait	40.3	-12.1
67	St. Lucia	40.1	+0.9
68	Sweden	39.8	-6.3
69	Montenegro	39.7	-2.6
=70	Andorra	39.5	+6.1
=70	Dominican Republic	39.5	-7.0
72	Bulgaria	38.9	-10.1
73	Philippines	38.8	-7.9
74	Micronesia, Federated States of	38.6	-14.4
=75	Cabo Verde	38.5	+1.1
=75	China	38.5	-10.3
77	Laos	38.3	-0.1
78	Samoa	38.2	-1.9
79	Albania	38.1	-5.4
80	Myanmar	37.8	-4.7
=81	Liechtenstein	37.7	-5.2
=81	Uruguay	37.7	+8.7
=83	Cook Islands	37.5	+5.9
=83	United Arab Emirates	37.5	-4.6
=85	Sierra Leone	37.3	-1.8
=85	St. Kitts and Nevis	37.3	+0.9
87	St. Vincent and the Grenadines	37.2	+0.1
88	Paraguay	36.9	+0.2
89	Bosnia and Herzegovina	36.7	+0.7
=90	San Marino	36.6	+7.8
=90	Turkey	36.6	-9.8
=92	Kazakhstan	36.5	-3.2
=92	Papua New Guinea	36.5	+2.3
94	Iran	36.4	-14.8
=95	Fiji	36.3	+2.4
=95	Serbia	36.3	-4.9
97	Congo (Brazzaville)	36.2	+8.2
98	Barbados	36.0	-1.1

All data are normalized to a scale of 0 to 100, where 100 = most capacities in health security conditions.

The average overall RESPOND score is

37.6

out of a possible 100.

Rank	Country	Score	Change
=99	Guyana	35.7	+0.2
=99	Moldova	35.7	-4.3
101	Monaco	35.6	+4.8
=102	El Salvador	35.5	-12.3
=102	Jamaica	35.5	+4.3
=104	Côte d'Ivoire	35.3	-3.5
=104	Maldives	35.3	-2.5
106	North Macedonia	35.2	-5.0
107	Mauritius	35.0	+5.1
108	Zambia	34.9	+1.9
109	Marshall Islands	34.7	+5.2
110	Cyprus	34.0	-4.0
111	Uganda	33.8	-11.3
112	Tonga	33.6	+1.4
113	Bahrain	33.5	-11.3
114	Haiti	32.9	+2.2
=115	Kyrgyz Republic	32.8	-3.7
=115	Palau	32.8	+1.2
117	Saudi Arabia	32.7	-6.7
118	Liberia	32.6	-2.1
=119	Cuba	32.5	-2.9
=119	Seychelles	32.5	-4.9
=121	Azerbaijan	32.4	-1.0
=121	Burkina Faso	32.4	-15.3
123	Mali	32.2	-0.9
=124	Antigua and Barbuda	32.1	+2.2
=124	São Tomé and Príncipe	32.1	+2.7
126	Oman	31.7	-14.2
=127	Angola	31.6	+10.7
=127	Solomon Islands	31.6	+5.8
=129	Ghana	31.4	-2.8
=129	Zimbabwe	31.4	-5.5
=131	Libya	31.1	+9.6
=131	Namibia	31.1	+3.7
133	Croatia	31.0	-6.0
134	Gambia	30.9	-6.4
135	Bahamas	30.8	-2.4
=136	Honduras	30.6	-3.7
=136	Vietnam	30.6	-4.7
138	Rwanda	30.5	+2.0
139	India	30.3	-11.8
140	Dominica	30.2	+0.9
=141	Cameroon	29.5	-4.3
=141	Vanuatu	29.5	-1.7
=143	Benin	29.3	-2.3
=143	Tajikistan	29.3	-5.2
145	Djibouti	29.1	+2.2
=146	Bangladesh	28.6	-0.7
=146	Uzbekistan	28.6	-7.1
=148	Madagascar	28.5	-7.4
=148	Mauritania	28.5	-2.5
150	Gabon	28.4	+0.5
=151	Bolivia	28.0	-3.0
=151	Morocco	28.0	-8.1
=151	Nicaragua	28.0	-15.8
154	Guatemala	27.9	-5.9
155	Nauru	27.7	-5.4
156	Malta	27.4	-4.1
157	Togo	27.0	-3.3
=158	Mozambique	26.9	-3.3
=158	Nepal	26.9	-13.7
160	Niger	26.7	+1.7
161	Tanzania	26.4	-3.5
=162	Congo (Democratic Republic)	26.2	-3.6
=162	Sri Lanka	26.2	-7.0
164	Ukraine	26.1	-11.6
165	Eswatini	25.9	-4.2
166	Somalia	25.8	-3.1
167	Chad	25.7	-3.9
168	Algeria	25.6	-5.5
=169	Guinea	25.4	-8.3
=169	South Sudan	25.4	+4.1
=169	Venezuela	25.4	-4.0
=172	Botswana	25.3	-5.0
=172	Guinea-Bissau	25.3	+0.5
174	Niue	25.1	-3.6
175	Malawi	24.9	+1.4
176	Romania	24.7	-8.0
177	Afghanistan	24.5	-2.6
=178	Timor-Leste	24.0	-5.1
=178	Tuvalu	24.0	-3.1
180	Grenada	22.6	-5.1
181	Comoros	22.4	-9.0
182	Belize	22.1	-6.8
183	Turkmenistan	21.8	-10.9
184	Burundi	21.5	-8.5
=185	Cambodia	21.3	-6.2
=185	Iraq	21.3	-5.4
187	Equatorial Guinea	21.2	-3.7
188	Egypt	20.9	-11.8
189	Central African Republic	20.6	-7.2
190	Eritrea	19.9	-3.7
191	Kenya	19.3	-19.1
192	Pakistan	18.8	-9.9
193	Syria	18.0	-6.6
194	Yemen	17.5	-7.2
195	North Korea	3.6	-14.3

GHS Index Results

Category 4. SUFFICIENT & ROBUST HEALTH SYSTEM TO TREAT THE SICK & PROTECT HEALTH WORKERS

TIERS

0.0-20.0 | 20.1-40 | 40.1-60.0 | 60.1-80.0 | 80.1-100.0

Rank	Country	Score	Change
1	United States of America	75.2	0.0
2	Slovenia	72.8	+7.1
3	Peru	71.7	+6.0
4	France	70.4	+2.3
5	Australia	69.2	+2.3
6	Finland	68.7	+4.6
7	United Kingdom	68.3	+2.3
8	Canada	67.3	+2.3
9	Netherlands	66.7	-0.3
10	Thailand	64.7	+2.4
11	Denmark	64.5	+4.8
12	Argentina	64.4	0.0
13	Belgium	64.2	-0.1
14	Slovakia	62.7	+3.2
15	South Korea	62.5	+3.7
16	Bulgaria	60.8	+2.5
17	Latvia	60.6	+4.7
18	Lithuania	59.9	+8.1
19	Russia	58.9	+9.3
20	Armenia	58.8	+3.8
21	Ecuador	56.7	+7.1
22	Germany	56.0	+2.3
23	Czech Republic	55.8	0.0
24	Israel	55.2	+2.4
25	Panama	55.0	+7.0
26	Mexico	54.7	+2.2
27	Hungary	54.6	-2.4
28	Austria	54.0	0.0
=29	Portugal	53.9	+3.2
=29	Turkey	53.9	+4.8
31	Sweden	53.5	-0.1
=32	Chile	52.9	+4.7
=32	Spain	52.9	+3.2
34	Poland	52.7	-2.4
35	Iceland	52.2	+4.7
36	China	51.8	+2.4
37	Ireland	51.7	+2.4
38	Japan	51.6	+2.3
39	Croatia	51.4	0.0
=40	Serbia	50.9	+4.7
=40	Switzerland	50.9	0.0
42	Brazil	50.3	0.0
43	Estonia	49.4	+3.0
44	Ukraine	49.1	+16.4
45	New Zealand	48.9	+2.3
46	Colombia	48.5	+4.8
47	Moldova	48.3	+1.5
48	Romania	47.9	+2.5
49	Nicaragua	47.5	0.0
50	Albania	47.4	+9.6
51	Singapore	47.3	+2.4
52	Jordan	47.1	+7.1
53	Liechtenstein	46.6	+2.3
54	Philippines	46.5	+0.2
55	Greece	46.2	+4.0
56	India	46.1	0.0
57	Belarus	45.7	+2.4
58	Norway	45.0	-0.1
59	Kuwait	42.5	0.0
60	Qatar	42.4	+2.4
=61	Bosnia and Herzegovina	41.7	+2.4
=61	Montenegro	41.7	+4.7
=63	Bahrain	41.2	+2.3
=63	Indonesia	41.2	+2.3
65	Monaco	40.9	0.0
66	Saudi Arabia	40.7	+2.3
67	Kyrgyz Republic	40.4	-0.1
68	Italy	40.2	-0.1
69	Paraguay	40.0	-0.1
70	Iran	39.4	0.0
71	El Salvador	38.4	0.0
72	North Macedonia	38.3	+9.5
73	Nepal	37.9	+2.4
74	Bhutan	37.7	+2.4
75	Luxembourg	36.7	-0.1
76	Malaysia	36.6	-2.4
77	Liberia	36.4	+7.2
78	Uruguay	36.3	-0.1
79	Brunei	34.9	+12.3
80	Kazakhstan	34.6	+2.3
=81	Georgia	33.7	+10.4
=81	Trinidad and Tobago	33.7	+4.0
83	Costa Rica	32.8	0.0
84	Cyprus	32.3	+0.8
85	Sierra Leone	31.0	+0.4
86	Morocco	30.8	-0.1
87	Turkmenistan	30.6	-0.6
88	Uzbekistan	30.3	+5.9
89	St. Vincent and the Grenadines	29.8	+5.1
90	South Africa	29.2	-0.1
=91	Oman	28.6	+2.4
=91	San Marino	28.6	0.0
93	Ethiopia	28.2	0.0
94	Lesotho	27.2	0.0
95	Pakistan	26.8	+2.7
96	Malta	26.4	+2.3
97	Bangladesh	25.6	+2.4
98	São Tomé and Príncipe	25.2	+14.3
99	Tajikistan	24.8	-0.1

All data are normalized to a scale of 0 to 100, where 100 = most capacities in health security conditions.

The average overall HEALTH score is

31.5

out of a possible 100.

Rank	Country	Score	Change
100	Mongolia	24.3	+0.2
101	Azerbaijan	24.1	+2.4
=102	Mozambique	24.0	0.0
=102	Niger	24.0	0.0
=102	Vietnam	24.0	0.0
105	Nigeria	23.4	0.0
=106	Angola	23.1	+6.3
=106	Cabo Verde	23.1	+1.6
=106	Mauritius	23.1	+2.4
109	Afghanistan	23.0	+2.4
110	Ghana	22.7	+7.1
111	Malawi	22.3	+2.4
112	Laos	22.0	+0.4
113	Lebanon	21.6	+2.4
114	Kenya	21.5	-2.4
115	Suriname	21.3	+2.4
116	Zambia	21.1	+0.3
117	Mauritania	21.0	0.0
118	Botswana	20.9	+2.4
119	Uganda	20.4	0.0
=120	Cameroon	20.3	+2.4
=120	Guinea	20.3	+2.3
122	Iraq	20.2	+5.2
=123	Cuba	19.5	+2.4
=123	Myanmar	19.5	+4.8
=123	South Sudan	19.5	+2.4
=123	United Arab Emirates	19.5	+2.4
127	Jamaica	19.3	+4.8
=128	Honduras	18.9	+2.4
=128	Solomon Islands	18.9	+2.4
=130	Egypt	18.8	+2.3
=130	Maldives	18.8	+2.4
=132	Guyana	18.5	+2.4
=132	Rwanda	18.5	-2.4
134	Seychelles	18.2	+2.4
135	Venezuela	18.1	+0.1
136	Mali	17.3	+2.8
137	Bolivia	17.2	0.0
138	Côte d'Ivoire	17.1	+2.4
=139	Dominican Republic	16.8	0.0
=139	Guatemala	16.8	-0.1
=139	Namibia	16.8	+2.4
=139	Zimbabwe	16.8	+2.4
143	Antigua and Barbuda	16.7	+4.6
144	Bahamas	16.3	+4.7
145	Congo (Democratic Republic)	16.2	0.0
=146	Papua New Guinea	16.1	+0.1
=146	Sri Lanka	16.1	+2.5
148	Madagascar	15.8	0.0
149	Gambia	15.5	-2.4
150	Andorra	15.4	-0.1
151	Algeria	15.0	+2.4
152	Senegal	14.6	+0.3
153	St. Lucia	14.4	+2.4
154	Grenada	14.2	+2.4
=155	Comoros	14.0	+2.4
=155	Djibouti	14.0	0.0
157	Togo	13.8	+2.3
158	Burkina Faso	13.7	+2.4
159	Syria	13.4	0.0
160	Cook Islands	13.1	0.0
=161	Libya	13.0	-0.1
=161	Tunisia	13.0	-0.1
=161	Vanuatu	13.0	+2.4
164	Sudan	12.8	0.0
165	Cambodia	12.3	0.0
166	Timor-Leste	12.1	+2.4
=167	Barbados	12.0	+2.4
=167	Yemen	12.0	0.0
169	Haiti	11.9	0.0
170	Eswatini	11.8	+2.4
=171	Gabon	11.7	+2.4
=171	Samoa	11.7	0.0
173	Tanzania	11.0	0.0
174	Belize	10.9	-0.1
175	Marshall Islands	10.6	+5.5
176	Chad	10.2	0.0
177	Fiji	10.1	0.0
178	Dominica	9.4	-0.1
=179	Burundi	9.1	0.0
=179	St. Kitts and Nevis	9.1	0.0
181	Tonga	8.9	+2.4
182	Kiribati	8.7	0.0
183	Eritrea	8.6	0.0
184	Micronesia, Federated States of	8.4	0.0
=185	Central African Republic	8.3	0.0
=185	Equatorial Guinea	8.3	0.0
=185	Tuvalu	8.3	0.0
188	Congo (Brazzaville)	8.2	0.0
189	Benin	7.7	+0.1
190	Nauru	7.6	0.0
191	Guinea-Bissau	7.2	0.0
192	North Korea	7.0	0.0
193	Palau	6.6	+0.7
194	Niue	5.4	0.0
195	Somalia	1.3	0.0

GHS Index Results

Category 5. COMMITMENTS TO IMPROVING NATIONAL CAPACITY, FINANCING PLANS TO ADDRESS GAPS, AND ADHERENCE TO GLOBAL NORMS

TIERS

0.0-20.0 | 20.1-40 | 40.1-60.0 | 60.1-80.0 | 80.1-100.0

Rank	Country	Score	Change
1	United States of America	81.9	0.0
2	Canada	79.2	+4.2
=3	Finland	77.8	0.0
=3	New Zealand	77.8	+18.1
5	Germany	75.0	+4.2
6	Sweden	73.6	+4.2
=7	Australia	72.2	-4.2
=7	Poland	72.2	+8.8
=9	Bulgaria	69.4	0.0
=9	Norway	69.4	+4.6
=9	South Korea	69.4	+2.7
=12	Indonesia	68.9	+7.3
=12	Thailand	68.9	+2.4
=14	Mexico	68.1	0.0
=14	Netherlands	68.1	+0.6
16	Uganda	67.2	0.0
=17	Estonia	66.7	+0.6
=17	Japan	66.7	0.0
19	Liberia	66.5	-0.9
20	Kyrgyz Republic	66.1	-0.9
=21	France	65.3	+4.2
=21	Italy	65.3	+5.6
=23	Austria	63.9	0.0
=23	Georgia	63.9	-3.6
=23	Greece	63.9	+10.3
=23	Slovenia	63.9	-12.5
=23	Spain	63.9	+0.5
28	Myanmar	63.7	+1.9
29	Congo (Brazzaville)	63.0	+8.8
=30	Nigeria	62.8	+8.1
=30	Uzbekistan	62.8	+5.5
=32	Hungary	62.5	+4.7
=32	Lithuania	62.5	0.0
=32	United Kingdom	62.5	-12.5
35	Kenya	62.3	-4.2
=36	Colombia	61.5	0.0
=36	Peru	61.5	-3.6
=38	Belgium	61.1	+0.5
=38	Denmark	61.1	+4.2
40	Afghanistan	60.9	+6.7
=41	Argentina	59.7	-5.1
=41	Croatia	59.7	+4.7
=41	Latvia	59.7	+4.7
=41	Portugal	59.7	-3.7
=41	Slovakia	59.7	+1.4
=41	Switzerland	59.7	-8.4
=41	Turkey	59.7	0.0
48	Ethiopia	59.4	-5.5
=49	Armenia	59.2	+0.5
=49	Montenegro	59.2	+5.2
51	Tanzania	58.9	+5.8
52	Kazakhstan	58.7	0.0
53	Luxembourg	56.9	+1.3
54	Malaysia	56.4	+6.1
=55	Mali	56.1	-2.1
=55	St. Lucia	56.1	+0.5
57	Philippines	55.9	+2.4
=58	Belarus	55.6	+8.9
=58	Ireland	55.6	0.0
=58	Malta	55.6	+0.6
=58	Romania	55.6	+0.6
62	Barbados	54.7	+7.5
63	Mauritius	54.5	+3.3
64	Senegal	54.0	-2.8
65	Vietnam	53.3	-1.4
=66	Chile	53.1	+0.5
=66	Ecuador	53.1	+7.4
=66	El Salvador	53.1	-0.9
69	St. Kitts and Nevis	53.0	+1.1
70	Cyprus	52.8	+0.5
71	Madagascar	52.6	0.0
72	Cambodia	52.4	-5.1
73	Albania	52.1	-2.9
=74	Burkina Faso	51.9	0.0
=74	Malawi	51.9	+4.0
=76	Czech Republic	51.4	-7.8
=76	Liechtenstein	51.4	+1.4
=76	Russia	51.4	0.0
=76	Serbia	51.4	+0.5
80	Cameroon	51.0	-5.3
81	Saudi Arabia	49.5	+0.2
82	Singapore	48.6	+1.9
=83	Botswana	48.3	+6.6
=83	St. Vincent and the Grenadines	48.3	-5.9
85	Jordan	48.1	0.0
86	Comoros	47.9	0.0
=87	Angola	47.7	+4.6
=87	Bahamas	47.7	+0.5
=87	Côte d'Ivoire	47.7	-2.3
=87	Guyana	47.7	+1.9
91	North Macedonia	47.4	+4.2
=92	India	47.2	0.0
=92	Sierra Leone	47.2	-1.4
=92	Ukraine	47.2	-3.7
95	Benin	46.9	-3.1
96	Qatar	46.7	+2.9
=97	Belize	46.4	-0.8
=97	Chad	46.4	+4.7

All data are normalized to a scale of 0 to 100, where 100 = most capacities in health security conditions.

The average overall NORMS score is

47.8

out of a possible 100.

Rank	Country	Score	Change
=97	Niger	46.4	+4.7
=97	Trinidad and Tobago	46.4	-8.3
=101	Haiti	46.2	+1.4
=101	Mongolia	46.2	+4.0
103	Pakistan	45.8	-1.6
104	Seychelles	45.7	+0.6
105	Antigua and Barbuda	45.5	-9.2
106	Grenada	45.0	0.0
107	Suriname	44.8	+0.5
108	Dominican Republic	44.6	-1.1
=109	Laos	44.1	+1.9
=109	Paraguay	44.1	+6.1
111	United Arab Emirates	43.9	+0.5
=112	Cabo Verde	43.6	+4.2
=112	Jamaica	43.6	0.0
=112	Mozambique	43.6	+2.6
=112	Samoa	43.6	-8.3
116	Nicaragua	43.4	+1.4
=117	Andorra	43.2	+10.2
=117	Panama	43.2	+1.0
119	South Africa	43.1	-4.1
=120	Congo (Democratic Republic)	42.7	+0.5
=120	Lesotho	42.7	-0.9
=120	Zimbabwe	42.7	+0.5
=123	Bangladesh	42.2	-7.8
=123	Vanuatu	42.2	-1.4
125	Guatemala	42.0	+2.1
=126	Brazil	41.7	+4.7
=126	Guinea-Bissau	41.7	+7.0
=126	Sudan	41.7	0.0
=129	Brunei	41.5	+11.8
=129	Oman	41.5	+1.9
=129	Timor-Leste	41.5	+10.4

Rank	Country	Score	Change
132	Tajikistan	41.1	+1.7
=133	Gambia	40.6	+0.5
=133	Honduras	40.6	+1.2
=133	Namibia	40.6	-0.9
=136	Eswatini	40.1	-8.3
=136	Lebanon	40.1	+0.5
138	Sri Lanka	39.6	+0.7
139	Rwanda	39.4	+5.5
=140	Algeria	38.9	+1.6
=140	Bosnia and Herzegovina	38.9	-6.4
=140	China	38.9	0.0
=140	Moldova	38.9	0.0
=144	Costa Rica	38.5	+0.5
=144	Solomon Islands	38.5	+1.2
=144	Togo	38.5	+5.2
147	Azerbaijan	38.4	+0.6
=148	Dominica	38.0	-9.2
=148	Turkmenistan	38.0	0.0
=150	Kiribati	37.8	+0.5
=150	Mauritania	37.8	+4.6
=152	Cuba	37.5	-9.2
=152	Eritrea	37.5	0.0
=152	Gabon	37.5	+2.1
=152	Yemen	37.5	0.0
=156	Bhutan	37.3	0.0
=156	Guinea	37.3	+0.5
158	Maldives	35.9	+1.2
=159	Burundi	34.4	+1.1
=159	Ghana	34.4	+0.5
=159	Iceland	34.4	-12.5
=159	Palau	34.4	+8.9
=159	Zambia	34.4	-0.8
=164	Central African Republic	33.9	+2.1

Rank	Country	Score	Change
=164	São Tomé and Príncipe	33.9	-0.8
=164	Uruguay	33.9	-5.5
167	Tunisia	33.7	+4.5
168	Egypt	33.3	-0.9
=169	Djibouti	33.2	0.0
=169	Micronesia, Federated States of	33.2	0.0
=169	Morocco	33.2	+0.6
172	Marshall Islands	33.0	+4.7
173	Iraq	32.8	+3.3
174	North Korea	32.6	+5.5
=175	Libya	31.3	+2.1
=175	South Sudan	31.3	0.0
=177	Nepal	31.1	+0.5
=177	Tonga	31.1	+1.4
179	Israel	30.9	-12.5
180	Venezuela	30.2	-1.4
=181	Equatorial Guinea	29.2	0.0
=181	Kuwait	29.2	-1.4
=181	Papua New Guinea	29.2	-9.7
184	Tuvalu	28.1	+1.0
185	Iran	27.1	0.0
186	Bolivia	26.0	-4.2
187	Syria	24.5	+0.5
188	Fiji	23.8	-3.1
189	Cook Islands	22.9	0.0
=190	Bahrain	21.9	-7.3
=190	Somalia	21.9	-4.1
192	Niue	21.5	-8.4
193	Monaco	19.1	-7.8
194	San Marino	18.8	-7.8
195	Nauru	16.3	-7.8

GHS Index Results

Category 6. OVERALL RISK ENVIRONMENT AND COUNTRY VULNERABILITY TO BIOLOGICAL THREATS

TIERS

0.0-20.0 | 20.1-40 | 40.1-60.0 | 60.1-80.0 | 80.1-100.0

Rank	Country	Score	Change
1	Norway	89.0	+0.8
2	Austria	87.2	+0.7
3	Luxembourg	86.5	+2.1
4	Switzerland	84.6	+0.7
5	Liechtenstein	84.4	+1.3
6	Germany	83.9	+1.4
7	France	82.9	+0.3
8	Sweden	82.7	-1.1
9	Finland	82.6	+1.2
10	Canada	81.8	+0.5
11	Andorra	80.5	+0.6
12	Netherlands	80.2	+0.6
=13	Denmark	79.9	-1.0
=13	Iceland	79.9	-0.8
=13	Ireland	79.9	+1.0
16	Singapore	79.5	-0.1
17	New Zealand	77.7	+0.8
18	Portugal	77.5	+0.3
19	Belgium	77.2	-1.2
20	Estonia	76.9	+2.7
=21	Australia	76.0	-3.5
=21	Monaco	76.0	0.0
=23	Czech Republic	75.6	+0.6
=23	Spain	75.6	+0.3
=25	San Marino	74.7	+0.2
=25	United Arab Emirates	74.7	+0.8
27	Malaysia	73.9	+0.6
28	Malta	73.8	+0.6
29	Uruguay	73.6	-0.2
30	Slovenia	73.4	+0.7
=31	Lithuania	73.3	+6.5
=31	United States of America	73.3	-0.4
33	South Korea	73.1	-1.0
34	United Kingdom	73.0	-2.0
35	Slovakia	72.2	+0.5
=36	Hungary	71.7	+3.5
=36	Qatar	71.7	+4.7
38	Latvia	71.3	+4.0
39	Japan	70.9	+0.6
40	Poland	70.1	+0.3
41	Barbados	69.5	+1.7
42	Seychelles	67.3	-2.5
43	Panama	66.4	+4.6
44	Mongolia	66.3	+3.1
45	Chile	66.2	-0.2
=46	Brunei	65.9	+0.8
=46	Costa Rica	65.9	-1.9
=46	Italy	65.9	+0.6
49	Mauritius	65.8	+0.8
50	Sri Lanka	65.5	+7.4
51	Croatia	65.0	-1.2
52	Samoa	64.3	+0.2
=53	Israel	64.2	-6.2
=53	Oman	64.2	-0.5
55	St. Kitts and Nevis	64.1	+1.3
56	Kuwait	63.9	+1.1
=57	China	63.4	-1.2
=57	Grenada	63.4	+1.4
=59	Botswana	63.3	+0.9
=59	Romania	63.3	-0.4
61	Antigua and Barbuda	63.2	+1.4
=62	Cyprus	62.9	-3.3
=62	Kazakhstan	62.9	+2.4
=64	St. Lucia	62.7	+3.0
=64	Trinidad and Tobago	62.7	-0.8
66	Cabo Verde	62.5	-4.0
67	Fiji	62.3	+3.4
68	Bulgaria	61.7	-1.8
69	Saudi Arabia	61.2	+1.5
70	Argentina	60.6	+1.3
71	Kyrgyz Republic	60.4	+0.3
72	Egypt	60.3	-0.7
=73	India	60.2	+1.1
=73	Maldives	60.2	+1.8
75	North Macedonia	59.7	+2.1
76	Jamaica	59.4	-0.2
77	Azerbaijan	59.3	+1.5
78	Tonga	59.2	+1.7
79	Niue	59.1	+2.6
80	St. Vincent and The Grenadines	59.0	+1.3
=81	Serbia	58.5	-0.4
=81	South Africa	58.5	-0.9
83	Greece	58.3	+3.3
=84	Mexico	57.9	+1.1
=84	Montenegro	57.9	+0.3
86	Tunisia	57.7	+1.7
87	Palau	57.3	+3.0
=88	Ghana	57.2	+0.8
=88	Thailand	57.2	-1.7
=88	Turkey	57.2	-0.6
91	Jordan	57.1	+0.6
92	Bhutan	56.6	+0.8
93	Cook Islands	56.1	+8.2
94	Brazil	55.9	+3.1
95	Vanuatu	55.8	0.0
96	Tuvalu	55.5	+1.0
97	Bahrain	55.2	+0.2
=98	Indonesia	55.0	+1.2
=98	Peru	55.0	-0.3

All data are normalized to a scale of 0 to 100, where 100 = most capacities in health security conditions.

The average overall RISK score is

55.8

out of a possible 100.

Rank	Country	Score	Change
100	Dominican Republic	54.9	-1.9
101	Micronesia, Federated States of	54.7	+2.1
102	Vietnam	53.9	+0.3
103	El Salvador	53.4	+6.8
=104	Kiribati	53.3	+8.9
=104	Uzbekistan	53.3	+0.6
106	Cuba	53.2	-4.1
107	Dominica	52.9	+0.2
108	Philippines	52.8	+0.3
109	Bahamas	52.7	-5.8
110	Morocco	52.5	-4.5
111	Namibia	52.2	-1.7
112	Eswatini	52.1	+0.8
113	Paraguay	51.7	-2.7
=114	Belarus	51.6	-2.2
=114	Georgia	51.6	-0.4
116	Gambia	51.4	+1.2
117	Turkmenistan	51.1	+2.3
118	Colombia	51.0	+2.3
119	Ecuador	50.9	-4.3
=120	Belize	50.7	+0.6
=120	Bosnia and Herzegovina	50.7	+0.8
122	Albania	50.6	-3.1
=123	Guyana	50.5	+0.2
=123	Russia	50.5	+0.9
=123	Suriname	50.5	-0.1
=123	Tanzania	50.5	-0.3
127	Rwanda	50.1	+0.9
128	Algeria	49.7	-2.3
129	Bolivia	49.3	-2.1
130	Nepal	49.2	+0.3
131	Marshall Islands	49.0	+0.7
132	Bangladesh	48.9	+1.5
133	Lesotho	48.8	+0.7
=134	Tajikistan	48.0	+4.5
=134	Timor-Leste	48.0	+0.6
=136	Nauru	47.8	0.0
=136	Senegal	47.8	-4.1
=138	Armenia	47.6	-2.7
=138	Laos	47.6	+1.7
140	Moldova	47.5	0.0
141	Ukraine	46.7	+2.7
142	Liberia	46.6	+1.9
=143	Equatorial Guinea	46.0	+0.6
=143	São Tomé and Príncipe	46.0	+1.3
=145	Côte d'Ivoire	45.2	+0.9
=145	Solomon Islands	45.2	-0.5
=147	Benin	45.0	+0.1
=147	Djibouti	45.0	-1.6
149	Zimbabwe	44.9	0.0
150	Pakistan	44.8	-0.9
151	Iran	44.4	-7.5
152	Malawi	44.2	+1.0
153	Angola	43.9	+0.2
154	Zambia	43.5	-2.9
155	Kenya	43.1	-0.7
156	Togo	42.6	+1.7
157	Uganda	42.4	-1.0
158	Papua New Guinea	42.3	+0.5
159	Mauritania	41.3	+0.5
=160	Ethiopia	41.2	-2.0
=160	Gabon	41.2	+0.7
162	Guatemala	40.9	-7.5
163	Nigeria	40.7	-1.9
164	Mozambique	40.5	-2.6
165	Myanmar	40.4	-4.0
166	Sierra Leone	40.3	+2.6
=167	Congo (Brazzaville)	40.0	+0.8
=167	Honduras	40.0	-0.2
169	Burundi	39.4	+0.4
170	Eritrea	39.3	+0.5
171	Lebanon	39.0	-7.9
172	Comoros	38.8	+2.5
173	Cambodia	38.4	-0.2
174	Nicaragua	38.3	-1.1
175	Burkina Faso	37.4	-11.0
176	Libya	36.7	-1.8
=177	Madagascar	36.6	+0.5
=177	North Korea	36.6	-4.2
179	Guinea	35.1	-0.9
180	Venezuela	34.7	-1.9
181	Haiti	34.4	+2.0
182	Sudan	34.1	-2.7
183	Cameroon	33.8	-5.0
184	Mali	32.7	-6.4
185	Niger	31.9	-5.2
186	Afghanistan	31.6	+1.2
187	Iraq	30.1	-5.3
188	Congo (Democratic Republic)	29.9	+3.5
189	Guinea-Bissau	29.1	+0.8
190	Syria	27.4	-4.6
191	Central African Republic	26.2	-3.7
192	South Sudan	25.1	-2.7
193	Chad	25.0	-4.2
194	Yemen	24.9	-2.9
195	Somalia	23.6	-0.6

About the Index

INTRODUCTION

In 2020, *pandemic* became a household word. Biological threats—naturally occurring, accidental, or deliberate—are now conversation points for those outside the fields of national security and public health. Even if SARS-CoV-2, the virus that causes Coronavirus Disease 2019 (COVID-19), fades from our daily lives, global travel, urbanization, changes in land use, climate change, advances in biotechnology, and the threat of biological weapons ensure that future epidemic and pandemic threats will occur. The risk of more significant biological threats in the future underscores the continued need to identify weaknesses, measure progress, and strengthen global health security.

CAPACITY VERSUS CAPABILITY

The words *capacity* and *capability* often are used interchangeably, but there are important differences. Capacity is thought of as the resources one has to complete a task—plans, tools, personnel, and funds—at a given moment. Capability reflects the knowledge, abilities that can be used, developed, or improved to complete a task. Having capacities that function as needed may be essential in having the capability to complete a task.

Having the resources to complete a task (capacity) does not directly translate into being able to use them to their fullest extent (capability). That fact has been evident throughout the COVID-19 pandemic.

The impact of an infectious disease threat—including health, economic, and social impacts—is shaped by many factors, including political decision making, the type of disease and its mode of infection, and even chance. To assess preparedness, the GHS Index reviews factors that are measurable and have transparent and available data that allow them to be observed. The GHS Index cannot predict how resources will be used when a crisis occurs.

The response to COVID-19 has shown that many factors—including public health and healthcare capacities, scientific understanding and countermeasure distribution, and social and economic resilience—play a pivotal role in how countries are able to respond during a pandemic. Across the globe, weaknesses in each of those areas have contributed to a devastating loss of human life and crippled economies; however, some countries successfully implemented new national-level capacities to respond to this public health emergency with contact tracing, case investigation, active risk communications, and economic support. Their development of impromptu capacities should galvanize countries and the global community to take action to create a durable system to ensure that never again is the world so unprepared for an epidemic or pandemic.

WHAT IS PREPAREDNESS?

The United Nations and World Health Organization define *preparedness* as the ability of governments, professional response organizations, communities, and individuals to anticipate, detect, and respond effectively to, and recover from, the impact of likely, imminent, or current health emergencies, hazards, events, or conditions. It means putting in place mechanisms that will allow national authorities, multilateral organizations, and relief organizations to be aware of risks and deploy staff and resources quickly once a crisis strikes.

UNDERLYING PRINCIPLES OF THE GHS INDEX

The GHS Index is built upon three fundamental principles: rewarding transparency, recognizing that many factors contribute to preparedness, and understanding that measuring countries' capacities and risks will increase accountability and motivate countries, inter-governmental organizations, donors, and the private sector to work together to ensure that countries are prepared for health security threats.

Rewarding transparency

The Index relies solely on open-source information as a way to address data availability challenges and promote knowledge sharing. This transparency allows countries to understand their own vulnerabilities to infectious diseases and to understand the abilities of others and the risk of international spread.

Recognizing that a multitude of factors contribute to preparedness

To ensure a comprehensive assessment of country capacities, the GHS Index incorporates elements beyond the prevent, detect, and respond categories that are typically measured in assessment tools. The Index includes three additional categories that influence a country's preparedness for outbreaks: health systems, compliance with international norms and financing, and overall risk environment.

Measuring and motivating improvements in health security

Improving countries' preparedness capacities should be a continuous effort as part of strengthening national and global resiliency. To do so requires dedicated political will. The GHS Index seeks to encourage decision makers to improve country preparedness for infectious disease outbreaks by understanding and acting upon the strengths and weaknesses highlighted in the GHS Index.

Although political attention to biological threats is currently high, unless the global community closes gaps in countries' abilities to respond to biological threats, the world will face COVID-19's staggering tolls—or worse—again. The panic-and-neglect cycle that has marked the response to previous epidemics—in which high-level attention during a crisis is followed by limited long-term prioritization or investment to address vulnerabilities—will continue if significant action is not taken now to strengthen countries' readiness for future health emergencies.

The GHS Index, an assessment and benchmarking of health security and related capabilities across the 195 countries that make up the States Parties[7] to the International Health Regulations (IHR [2005]), aims at helping to break that cycle.[8] Developed through a partnership between the Nuclear Threat Initiative (NTI) and the Johns Hopkins Center for Health Security at the Bloomberg School of Public Health, working with Economist Impact, the GHS Index was first launched in October 2019. It provides an evolving benchmark analysis of existing capacities to prompt governments, international and regional organizations, and philanthropies to address some of the most pervasive threats to international health security.

The GHS Index measures indicators directly related to epidemic and pandemic preparedness alongside indicators related to political, security, and socioeconomic factors that could shape countries' abilities to prevent, detect, and rapidly respond to outbreaks. This second edition of the GHS Index allows for comparison over time and shows changes made within national-level health security related to policies, plans, access, and confidence in overarching systems. It complements ongoing efforts to build accountability for national preparedness, including through the Global Preparedness Monitoring Board (GPMB), the Joint External Evaluation (JEE), the Global Health Security Agenda (GHSA), and the World Bank Health Emergency Preparedness and Response Multi-Donor Fund.

Countries continue to experience extreme stress on their health systems due to the ongoing pandemic, which limits their ability to prioritize longer-term preparedness needs. However, because research for the 2021 GHS Index was conducted in the midst of the COVID-19 pandemic from August 2020 through June 2021, the research team was able to observe changes in countries' capacities developed in response to the pandemic and in the types of data countries made publicly available. As a result, the 2021 findings offer a snapshot into how countries adapted during a time of crisis and how unaddressed gaps in health security may have hindered their ability to respond.

Without such regular assessments of capacities and capabilities, governments will not likely know their levels of preparedness. The GHS Index helps decision makers at the national, regional, and international levels recognize gaps, develop policies around how to fill them, allocate the necessary resources, and take the steps needed to create better systems for response and preparedness.

[7] As of April 1, 2013, there were 196 States Parties to the World Health Organization (WHO) 2005 International Health Regulations (IHR), including the Holy See. The Holy See is a sovereign juridical entity under international law, but it was not included in the country-specific research for this Index in light of the Holy See's lack of an independent health system. This report refers to the assessed "States Parties" as "195 countries."

[8] The WHO *IHR* (2005) is the foundational set of international standards for health. It is a binding legal instrument to address cross-border public health risks. The goal of the IHR (2005) is to prevent, protect, control, and respond without disrupting international trade and traffic. The IHR (2005) provided the guiding regulations behind many of the indicators included in the GHS Index.

HOW DID COVID-19 AFFECT THE DEVELOPMENT OF THE 2021 GHS INDEX?

The world will be assessing the factors that contributed to the trajectory of the COVID-19 pandemic for years to come. GHS Index team members took stock of the current information and thinking about what factors mattered most in responding to the virus as they developed the 2021 GHS Index framework, researched the data, and analyzed the results.

The United States and the United Kingdom were previously ranked #1 and #2, respectively; however, with the updated framework and, therefore, scoring, the overall score for the United States decreased between 2019 and 2021, although not as severely as the score for the United Kingdom. The United States had losses in planning for zoonotic disease, which was offset by gains in immunization. The United States also had increases in surveillance data availability and transparency, case-based investigation, and exercising response plans. However, the United States score decreased in the areas of risk communication, trade and travel restrictions, and political and security risks.

The gains that were made by the United Kingdom in the detection category were offset by large losses in the health systems category. Although progress was made in laboratory strengthening, case-based investigation, exercising response plans, risk communication, and healthcare capacity, the United Kingdom slid down in its score on cross-border agreements, trade and travel restrictions, Joint External Evaluation and World Organisation for Animal Health (OIE) Performance of Veterinary Services (PVS) Pathway, and environmental risks.

The GHS Index framework has evolved on the basis of this work, and 31 questions were added to address laboratory strength and quality, supply chains, national-level policies and plans, and government effectiveness. As a result, scores and rankings are available for each country for 2021, and new scores and rankings have been calculated for each country for 2019, based on public information that was available through 2019, using the updated framework. Those modifications allow for the 2021 and 2019 data to be directly compared to assess progress made by countries over the past two years.

With the framework updates and back calculations of 2019 data, countries now have adjusted 2019 scores and rankings (see Evolution of the GHS Index on pages 41–43). Future editions of the GHS Index also will evolve as the availability of reliable global data to track the spread and impact of COVID-19 improves and additional studies are conducted.

EVOLUTION OF THE GHS INDEX

Although the GHS Index measures capacities and identifies preparedness gaps, it cannot predict how leaders will use national assets when a crisis occurs. The COVID-19 pandemic revealed that some of the countries identified by the 2019 GHS Index to have the greatest health security capacities, such as the United States and the United Kingdom, so far have suffered some of the highest reported numbers of virus-related cases and deaths. The experiences of those two countries differs from the experiences of those that, regardless of income level or measured readiness, rapidly recognized the threat COVID-19 presented and acted quickly and coherently to use existing capacities or immediately develop new ones to contain the disease. National variations in COVID-19 experiences are still being analyzed, but factors such as trust in government, social cohesion, and politicization of public health responses likely are pivotal to each country's success in addressing outbreaks.

Although the GHS Index cannot predict whether or how well countries will use the assets and capacities they have in a crisis, because some countries with high scores in the 2019 GHS Index failed to respond well to COVID-19, questions arise about how best to assess preparedness. To capture valuable information related to countries' response to COVID-19 and ensure the GHS Index remains a critical tool for national and global leaders, researchers studied how countries performed on external assessments against their performance during the COVID-19 pandemic, based on excess deaths per capita.[9] The analysis found that, more than a year into the pandemic, COVID-19 outcomes were significantly associated with a set of sociodemographic, political, and governance variables that were not measured in the 2019 GHS Index. As a result, researchers for the 2021 GHS Index measured additional variables that influenced country responses to the pandemic to capture the most comprehensive risk profile possible.

With those additions, the GHS Index should continue to be used as an assessment tool that improves understanding of the existing capacities countries have to prevent, detect, and respond to outbreaks, whether naturally occurring, accidental, or deliberate; it should not be used as a predictive model. The true impacts of an infectious disease threat (health, economic, and social) are shaped by many factors, including political decision making, the effective and strategic deployment of existing capacities, the rapid scale-up and use of new capacities created during a response, the type of disease, its mode of infection, and even chance.

[9] *The Economist*, "How We Estimated the True Death Toll of the Pandemic," May 13, 2021. https://www.economist.com/graphic-detail/2021/05/13/how-we-estimated-the-true-death-toll-of-the-pandemic.

EVOLUTION OF THE GHS INDEX

	INDICATORS IN THIS CATEGORY
Prevention *Prevention of the emergence or release of pathogens,* particularly those that may constitute a Public Health Emergency of International Concern.	▪ Antimicrobial resistance ▪ Zoonotic disease ▪ Biosecurity ▪ Biosafety ▪ Dual-use research & the culture of responsible science ▪ Immunization
Detection and reporting *Early detection and reporting of epidemics of potential international concern,* which may spread beyond national or regional borders.	▪ Laboratory systems strength & quality ▪ Laboratory supply chains ▪ Real-time surveillance & reporting ▪ Surveillance data accessibility & transparency ▪ Case-based investigation ▪ Epidemiology workforce
Rapid response *Rapid response to and mitigation of the spread of an epidemic.*	▪ Emergency preparedness & response planning ▪ Exercising response plans ▪ Emergency response operation ▪ Linking public health & security authorities ▪ Risk communication ▪ Access to communications infrastructure ▪ Trade and travel restrictions
Health system *Sufficient and robust health system to treat the sick and protect healthcare workers.*	▪ Health capacity in clinics, hospitals, & community care centers ▪ Supply chain or health systems & healthcare workers ▪ Medical countermeasures & personnel deployment ▪ Healthcare access ▪ Communication with healthcare workers during a public health emergency ▪ Infection control practices ▪ Capacity to test & approve new countermeasures
Compliance with international norms *Commitments to improving national capacity, financing plans to address gaps, and adhering to global norms.*	▪ IHR reporting compliance & disaster risk reduction ▪ Cross-border agreements on public health emergency response ▪ International commitments ▪ Completion & publication of WHO JEE & the OIE PVS ▪ Financing ▪ Commitment to sharing of genetic & biological data & specimens
Risk environment *Overall risk environment and country vulnerability to biological threats.*	▪ Political & security risk ▪ Socioeconomic resilience ▪ Infrastructure adequacy ▪ Environmental risks ▪ Public health vulnerabilities

MEASURES ADDED FOR 2021	DATA FROM NEW MEASURES
▪ Risk identification & reduction for zoonotic disease spillover	▪ 169 countries do not have a law/plans including zoonotic disease spillover risks
▪ Scaling capacity for novel pathogen testing, contact tracing, & laboratory facilities during emergencies ▪ Availability of health surveillance data ▪ Wraparound services ▪ Border control cooperation	▪ 128 countries have no plan for testing novel pathogens, scaling capacity, and goals for testing during a PHE ▪ Only 6 countries have national support to conduct contact tracing in the event of a PHE
▪ Non-pharmaceutical interventions (NPIs) during an epidemic ▪ Primary government spokesperson during a public health emergency (PHE) ▪ Misinformation or disinformation shared by senior leaders	▪ Only 59 countries have policy in place to implement NPIs during an epidemic and pandemic ▪ 149 countries do not designate a government spokesperson during a PHE ▪ 25 countries have evidence of leaders sharing mis/disinformation on infectious diseases
▪ Ability to expand isolation capacity ▪ Medical & laboratory national stockpiles ▪ Domestic manufacturing & procurement plans ▪ Paid medical leave	▪ 182 countries do not have a stockpile of lab supplies for use during PHE ▪ 94 countries do not have plan to expand isolation capacity ▪ 186 countries do not have annual review of national stockpile to ensure sufficient supply
▪ Contribution to WHO ▪ National financing for epidemic preparedness	▪ 155 countries have not allocated national funds to improve capacity to address epidemic threats ▪ 90 countries have not fulfilled WHO contributions
▪ Policy development ▪ Quality of bureaucracy ▪ Vested interests ▪ Corruption ▪ Accountability of public officials ▪ Human rights risk ▪ Societal resilience ▪ Public health vulnerabilities	▪ 83 countries have greater than 50% share of employment in the informal sector ▪ 44 countries have very low coverage of social insurance programs

NEW ZEALAND: A CASE STUDY IN PROGRESS

Since the release of the 2019 GHS Index, New Zealand has made improvements in detection and reporting and compliance with international norms, which led to it jumping up 12 positions in rank. In particular, New Zealand showed increased capacity across laboratory system strength and quality, supply chains, and epidemiological workforce. Its response to the COVID-19 pandemic also highlights the capacities it was able to leverage and develop to respond swiftly and communicate the risk effectively. Country leaders cited preparedness assessments, specifically the GHS Index, as providing the roadmap and impetus for their exemplary performance during the COVID-19 pandemic.

Siouxsie Wiles, a renowned infectious disease expert and advisor to New Zealand Prime Minister Jacinda Ardern, told the *Winnipeg Free Press* that the GHS Index report "really saved us" as New Zealand implemented a transparent and science-based decision-making process to lock down the country to eliminate the novel coronavirus. "The GHS Index and the unmitigated willingness of key decision makers to own the country's shortcomings may have spared the lives of hundreds, if not thousands, of Kiwis," the newspaper reported.

By 2020, New Zealand had undergone a Joint External Evaluation (JEE) and made the report publicly available. The information on the prevention, detection, and response capacities as evaluated by the JEE is included as a key data source for the 2021 GHS Index and is part of the reason for New Zealand's increase in score.

DEVELOPING THE 2021 GHS INDEX

The GHS Index was developed in collaboration with a diverse international panel of experts who helped to ensure that geographical, economic, and social contexts are represented. The resulting 2021 GHS Index framework incorporates new questions that were driven by the panel members' expertise and their experience from the COVID-19 pandemic and past epidemics and pandemics, such as Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), and Ebola. In addition to receiving guidance provided by the international panel of experts, the GHS Index team completed a thorough analysis of the peer-reviewed literature and employed a standardized data collection methodology involving more than 80 experienced field-based researchers from Economist Impact. The research team collected publicly available data focused on six aspects of each country's preparedness: prevention, detection and reporting, rapid response, health systems, compliance with international norms, and risk environment.[10]

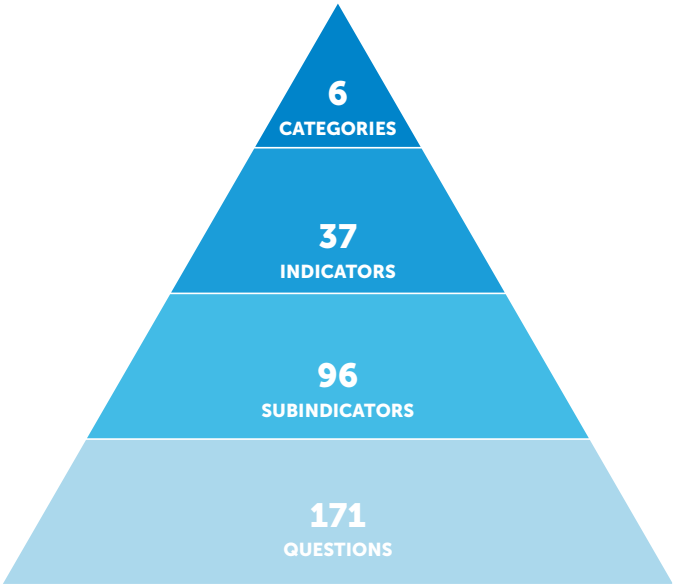
[10] Sanjana J. Ravi, Diane Meyer, Elizabeth Cameron, Michelle Nalabandian, Beenish Pervaiz, and Jennifer B. Nuzzo, "Establishing a Theoretical Foundation for Measuring Global Health Security: A Scoping Review," *BMC Public Health* 19, 954 (2019). https://link.springer.com/article/10.1186/s12889-019-7216-0.

GHS Index data are drawn from individual countries, institutions, and a wide variety of publicly available sources. Those sources include governments and international organizations such as the World Health Organization (WHO), the World Organisation for Animal Health (OIE), the World Bank, the Food and Agriculture Organization of the United Nations (FAO), and academic publications. The GHS Index builds off other measurement tools, including WHO's JEE, States Parties Self-Assessment Report (SPAR), and the OIE Performance of Veterinary Services Pathway. Whereas the JEEs and SPARs assess a country's legislative and policy support for health emergency preparedness in addition to its ability to measure prevention, detection, and response capacities, the GHS Index provides an expanded assessment of capacity by taking into consideration key enabling factors of health security, such as health systems, compliance with international norms, and risk environments.

TRANSPARENCY IN SCORING

Transparency is a cornerstone of global cooperation around health security capacity building and emergency response. It enables decision makers to track how global health initiatives are financed, detect and respond quickly to emergent outbreaks, coordinate responses with international partners, and ensure accountability in public–private partnerships. COVID-19 has reaffirmed the importance of transparency in case reporting, surveillance, and containment, especially as countries take steps to resume routine economic, social, and educational activities. Transparency in scientific practice also has proven crucial during COVID-19. For example, open exchanges of clinical data, biological samples, genetic sequence data, modeling parameters and assumptions, and epidemiological data support evidence-based policymaking around reopening economies, forecasting demand for healthcare services, and allocating scarce resources equitably. To reinforce a transparent approach, the second edition of data collection and analysis for the GHS Index includes more than 65,000 data points, all made publicly available with details on scores, justifications, and references as to where the data were collected.

GLOBAL HEALTH SECURITY INDEX FRAMEWORK



The GHS Index is comprised of 6 categories, broken down by 37 indicators, 96 subindicators, and with a total of 171 questions.

HOW AND WHEN WERE THE DATA GATHERED?

To undertake the research, Economist Impact employed country experts and regional specialists with a wide variety of necessary linguistic skills from its global network of more than 900 researchers and analysts. Researchers were asked to gather data from primary legal texts; government and academic publications; and websites of government authorities, international organizations, and non-governmental organizations. Researchers also reviewed local and international news media reports.

Research was conducted between August 2020 and June 2021, with the country validation period running from August through September 2021. Throughout this timeframe, the research team recognized the impact of the COVID-19 pandemic on data availability and made notes when countries developed specific COVID-19-related capacities.

BUILDING ON THE JOINT EXTERNAL EVALUATION PROCESS

By regularly releasing data on countries' health security capacities, the GHS Index aims to generate additional political will for resources to fill identified gaps. By design, the GHS Index is meant to bolster the Joint External Evaluation (JEE) process, which is a WHO-led independent, collaborative, and multisectoral assessment of countries' health capacities related to the prevention, detection, and response to health threats. The GHS Index builds on the JEE process by using data from countries' completed JEE reports and by collecting data on countries that have not yet participated in the JEE process. The GHS Index also expands the amount of data available globally by providing assessments of dimensions not well covered by JEEs, such as the strength of countries' health systems, compliance with international norms, health security financing, and risk environments. By collecting data on nearly every country, the GHS Index markedly increases transparency about health security strengths and gaps around the world.

2021 Rank		Score	Score Change	Rank Change
4	Canada	69.8	2.2 ▲	4 ▲
13	New Zealand	62.5	6.7 ▲	12 ▲
27	Malaysia	56.4	1.3 ▲	2 ▲
40	Georgia	52.6	4.4 ▲	10 ▲
=57	Philippines	45.7	2.2 ▲	4 ▲
62	Montenegro	44.1	3.3 ▲	12 ▲
64	Brunei	43.5	10.5 ▲	47 ▲
69	North Macedonia	42.2	2.1 ▲	8 ▲
79	Mauritius	39.7	1.4 ▲	7 ▲
=105	Cabo Verde	34.1	1.5 ▲	10 ▲
=140	Tajikistan	29.3	-0.5 ▼	5 ▲
=142	Angola	29.1	3.9 ▲	23 ▲
=150	Malawi	28.5	0.7 ▲	4 ▲
=154	Timor-Leste	27.8	3.6 ▲	16 ▲
158	São Tomé & Príncipe	26.6	5.7 ▲	25 ▲
162	Congo (Brazzaville)	26.3	2.4 ▲	9 ▲
170	Palau	25.5	5.6 ▲	17 ▲
176	Marshall Islands	24.6	5.8 ▲	16 ▲
177	Iraq	24.0	0.7 ▲	-4 ▼
182	Gabon	21.8	1.9 ▲	4 ▲
=183	Guinea-Bissau	21.4	2.1 ▲	7 ▲

0.0-20.0 20.1-40 40.1-60.0 60.1-80.0 80.1-100.0

Countries that have published JEEs since the 2019 GHS Index showed increases in their overall GHS Index scores or rank.

Since the release of the 2019 GHS Index and by the end of the 2021 GHS Index research period, an additional 21 countries have published a JEE. All of those countries have shown an increase in score, rank, or both for their overall GHS Index scores. The Marshall Islands, Palau, São Tomé and Principe, Brunei, and New Zealand all saw more than a five-point increase in their overall score. The Philippines saw an almost 20-point increase in its score for the detection category, and Georgia showed a more-than-10-point increase in the health systems category.

The publication of data on health security capacities allows for increased global support for the JEE process and, more importantly, for countries to better understand their gaps in preparedness.

Key Findings

OVERALL

Although many countries were able to quickly develop capacities to address COVID-19, all countries remain dangerously unprepared for meeting future epidemic and pandemic threats. A great opportunity exists, however, to make new capacities more durable to further long-term gains in preparedness.

The 2021 GHS Index analysis finds that all countries continue to be dangerously unprepared for epidemics or pandemics. The average global score across all countries is 38.9 out of 100, and not a single country scored in the top tier. Four of the six categories—prevention, detection and reporting, response, and health systems—showed average scores below 40 out of 100. Three categories—prevention, response, and risk environment—showed overall decreases since 2019. Countries have significant national-level gaps to address.

The COVID-19 pandemic has made clear that when a disease emergency begins in one part of the world, all countries may be at risk, regardless of income and geographical location. Long-standing vulnerabilities in national and regional health security architectures around the world were exposed during the COVID-19 pandemic. Those weaknesses—including depleted health workforces, limited testing capacities, and unwillingness to implement potentially restrictive or unpopular non-pharmaceutical interventions—impeded public health and healthcare responses, disrupted routine services, and resulted in a considerable number of cases of death and disease.

Throughout the research for the 2021 GHS Index, evidence showed that numerous countries developed ad hoc systems to respond to COVID-19. Partial credit was provided to countries who showed single-disease plans and policies, including COVID-19-focused plans and policies, for international data-sharing commitments, public health emergency preparedness and response plans, contact tracing, non-pharmaceutical interventions (NPIs), and testing during a public health emergency. Other efforts included the development of formal systems for monitoring and tracking the number of SARS-CoV-2 infections among healthcare workers and new communications systems for public health officials and healthcare workers during an emergency. However, countries do not receive full credit for those actions in the final GHS Index results because no evidence is present yet of continued capability beyond addressing specific COVID-19 response needs. For example, many countries developed the capacity to test for the virus that causes COVID-19 but did not develop an overarching testing strategy that outlined how it would develop and scale testing in future public health emergencies. In addition, the number of countries completing and publishing their National Action Plan for Health Security (NAPHS) decreased when compared with the 2019 GHS Index findings, and little evidence emerged of countries conducting exercises to identify and address gaps in their preparedness and response activities, likely because most countries were in crisis mode.

Although, notably, high-income countries suffered high numbers of cases and deaths, one cannot conclude that the pandemic had a disproportionate impact on higher-income countries. To the contrary, excess death analyses suggest that the true tolls of COVID-19 may be undercounted, particularly in countries with fewer resources to test, diagnose, and enumerate COVID-19 cases and deaths. Inequities between high- and low-income countries, however, may have affected countries' overall response capability. High-income countries that lack capacities may have been able to use their financial resources to quickly manufacture and distribute vaccines. Countries with fewer resources may not have been able to act as quickly to procure, develop or scale the COVID-19 capacities, such as vaccines or personal protective equipment, needed to support a prolonged emergency response.

Those developments indicate that (1) national capacities are important for responding to epidemic and pandemic threats; and (2) some countries can develop missing capacities, even in the middle of an emergent crisis, because they can make emergency investments. Having tools, plans, and resources already in place provides a more effective and less costly response than developing them as a crisis unfolds. Enhancing global preparedness for future threats will require that countries expand their COVID-19-specific capacities, integrate them into existing health systems and programs, and develop new ones.

THE DATA

- The global average is 38.9 out of 100, with effectively no change since 2019, showing continued, severe weaknesses in global health security.
- Four of the six GHS Index categories have an average score below 40 out of 100, indicating the need for more concerted action in the prevention, detection and reporting, response, and health systems areas of capacity building.
- Since 2019, average scores in three of the six categories—prevention, response, and risk environment—saw a decrease, highlighting the lack of progress during a public health emergency.
- Out of 195 countries, of the 64 with publicly available national public health emergency response plans for specific diseases, 32 countries have evidence of COVID-19-specific plans.
- Forty-nine countries have a national system in place to provide support at the sub-national level to conduct contact tracing in the event of a public health emergency, and 37 of those countries had created it for their response to COVID-19.

- Of the 37 countries providing wraparound services to individuals, such as economic support and medical attention, 12 countries received first-time credit in 2021 for providing such services to enable self-isolation and quarantine in response to COVID-19.
- The number of countries with policies and plans for NPIs more than doubled between 2019 and 2021. Of the 148 countries with NPI plans, 89 countries have plans to implement NPIs that cover only one disease, and most (94%) of those are for COVID-19.
- Since 2019, the number of countries that provide subnational support to conduct contact tracing in response to active public health emergencies has increased more than eightfold, from 5 to 43 countries. Yet only six countries have a national system to provide support for the training or funding to conduct contact tracing in the event of future public health emergencies.
- The number of countries with any plan or agreement between the public health system and border control authorities nearly tripled, from 20 in 2019 to 59 in 2021. Among those, 90% of the increase in countries' health-focused efforts at ports of entry is attributable to COVID-19-specific plans.
- Although many countries report improved laboratory capacities, no country has a plan that includes testing for novel pathogens, scaling capacity to meet demands in future pandemics, and defining a strategy and goals for testing.
- The number of countries regularly using online social media platforms, either during emergencies or otherwise, increased, with 188 of 195 countries sharing messages to inform the public about ongoing public health concerns or dispel rumors, misinformation, or disinformation.

Most countries, including high-income nations, have not made dedicated financial investments in strengthening epidemic or pandemic preparedness.

Preparing for the next pandemic requires long-term, sustainable, and transparent national-level financing. However, many countries are under a great deal of stress as they address challenges to the ongoing COVID-19 pandemic response. It is, in large part, the historical lack of funding for long-term planning that has allowed national and global health systems to collapse as quickly (and therefore require such high emergency supplemental funding) as has been shown in 2020 and 2021. For low-income countries, the average score for socioeconomic resiliency is 33.5 out of 100 points.

The global community has experienced decades of underinvestment at all levels of national, sub-national, and global health security. COVID-19 has highlighted the impact. The GHS Index finds that although high-income countries show the highest average international commitments to improve domestic or foreign capacity related to epidemic threats, they consistently have the lowest averages for all other financing indicators related to epidemic preparedness, including financing under external evaluations and gap analyses and emergency response. High-income countries are showing less follow-through with their performing external evaluations and specifically identifying funding to address the gaps raised within those assessments. Although high-income countries may have greater financial reserves to address gaps in existing capacities when emergencies strike, countries' experiences in previous events highlight the peril of waiting until an emergency occurs to try to build capacities. For example, the United States' efforts to increase surveillance and control efforts in response to the threat posed by the Zika virus was delayed and, ultimately, underfunded due to lack of political will in Congress.

Government investments in health security face multiple challenges, including the challenge of understanding what is being financed through a national-level budget and identifying which funds are to be used for near-term response and which are reserved for longer-term preparedness. In addition, because multiple agencies or ministries play a role in national-level health security financing, internal prioritization fluctuates depending on the country, type of government, and socioeconomic position.

The ad hoc nature of pandemic preparedness planning has put nations and the broader global community in a perpetual cycle of panic and neglect. All financing indicators in the GHS Index showed a slight increase from 2019, with the exception of one: country contributions to the WHO, revealing a lack of international commitment to preparedness financing, which is particularly disturbing in the midst of a global pandemic.

THE DATA

- The overall average score for national-level financing is 35.2 out of 100.
- 90 countries have not fulfilled their full commitment to contribute to the WHO; of those, 14 are high-income countries.
- 66 countries have not identified special emergency public financing mechanisms and funds that the country can access in the face of a public health emergency; of those, 32 are high-income countries.
- 155 countries have not allocated non-emergency national funds within the past three years to improve their capacity to address epidemic threats; among those, only two low-income countries have evidence of allocated funds.
- The average score for national financing for epidemic preparedness is 21 out of 100; low-income countries have an average score of 7 out of 100.
- Financing for emergency response has a global average score of 66. High-income countries have the lowest average score of 46; low-income countries have the highest average, with 93.
- Only four countries (Eritrea, Indonesia, Liberia, and Timor-Leste) have a JEE or NAPHS that describes specific funding from the national budget to address previously identified gaps.
- High-income and upper-middle-income countries receive the lowest scores for financing when reviewed under the JEE and OIE Performance of Veterinary Services (PVS) Pathway assessments and related to financing for emergency response.
- The average score for financing under the JEE and PVS report is 1 out of 100; this score reflects the provisions for funding IHR implementation through the national budget or other mechanisms.

Most countries saw little or no improvement in maintaining a robust, capable, and accessible health system for outbreak detection and response.

The COVID-19 pandemic has laid bare stark deficiencies in many countries' health systems. In addition to overwhelming intensive care units and emergency rooms, continued community transmission of SARS-CoV-2 has impeded countries' abilities to provide essential and routine health services, exacerbating the toll of the pandemic. Some analyses show that despite relatively low numbers of reported COVID-19 deaths, low-income countries may have experienced some of the highest levels of excess deaths during the COVID-19 pandemic.[11] This finding indicates that the global tolls of COVID-19 are not yet fully enumerated.

A robust health sector is important for ensuring preparedness for infectious disease threats. The overall GHS Index score for each country correlates strongly with capacities for treating the sick and protecting health workers. A country's commitment to ensuring safe management of patients is reflective of its commitment to developing other preparedness capacities. Ninety-one countries have not published or completed JEEs, including five that are among the highest populated in the world (Brazil, China, Mexico, India, and Russia) and nine of the 20 highest-ranking countries in the health systems category, underscoring a need for greater transparency around available health system capacities to inform healthcare surge-planning activities.

The 2021 GHS Index scores in the health systems category were lower than those reported in most other GHS Index categories: 73 countries are in the bottom tier of scores, highlighting the lack of critical health system capacities—such as clinics and hospitals, supply chains, healthcare access, and infection control practices—around the world. Most of the lowest-scoring countries for health systems are in Africa, the Middle East, and Southeast Asia. In the ongoing pandemic, the availability of human resources for health systems has been an important rate-limiting factor in countries' capacities to treat infected patients, as demonstrated in health capacity in clinics, hospitals, and community centers. Although countries can manufacture hospital beds, identifying additional healthcare personnel to tend to patients in those beds is much more difficult in an emergency.

Health worker density varies widely by region, indicating major geographic inequities in access to needed services.

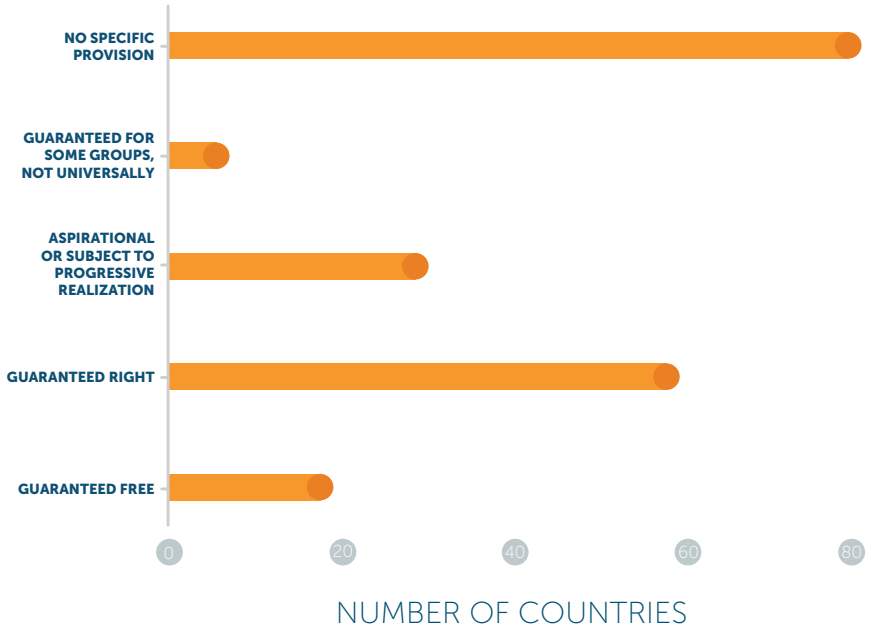
THE DATA

- The overall average score for health systems remains low across all countries, at 31.5 out of 100.
- 69 countries have insufficient health capacity in clinics, hospitals, and community centers.
- For key measures on health capacity in clinics, hospitals, and community centers, scores remain unchanged and low. Those measures include available human resources, such as physicians, nurses, and midwives; strategies for growing the healthcare workforce; and number of hospital beds, scoring an average 30 out of 100, with low- and low-middle-income countries showing averages below 20 out of 100.
- The global data on available human resources and hospital beds are not routinely updated, creating a dated understanding of baseline capacity.
- Only 49 countries have published an updated health workforce strategy that identifies fields with an insufficient workforce and provides strategies for addressing those shortcomings.

[11] *The Economist*, "There Have Been 7m–13m Excess Deaths Worldwide During the Pandemic," May 15, 2021. https://www.economist.com/briefing/2021/05/15/there-have-been-7m-13m-excess-deaths-worldwide-during-the-pandemic.

- Deficiencies in healthcare access exist across all income levels. Although the United States may rank first overall for the health system category, it is 183rd globally on measures of healthcare access and ranked 55 out of 59 among high-income countries on measures of out-of-pocket health expenditures. The United States was one of just five high-income countries that does not provide paid sick leave.
- In the WHO Region of the Americas, Cuba ranks highest in physician density (842.2 doctors per 100,000 people), whereas the highest-ranking country in the African Region, Mauritius, reports only 253.3 doctors per 100,000 people.
- 40% of countries do not have a constitution that explicitly guarantees citizens' right to medical care, a statistic that does not vary greatly even across income groups.
- High-income countries scored the lowest in terms of constitutional guarantees of medical care. North American countries scored the lowest of all regions, with a striking score of 0.0, whereas the Middle East and Northern Africa regions[12] scored the highest in this indicator, at 52.5.

CONSTITUTIONAL GUARANTEE OF CITIZENS' RIGHT TO MEDICAL CARE



The 2021 GHS Index framework includes a revised question asking if a country's constitution explicitly guarantees citizens' rights to medical care. Seventy-eight countries (40%) have no specific provision in their constitution; 19 countries (10%) provide guaranteed rights to free medical care. Source: World Policy Analysis Center.

[12] World Bank Country and Lending Groups. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

Political and security risks have increased in nearly all countries, and those with the fewest resources have the highest risk and greatest preparedness gaps.

The GHS Index measures political and security risks related to government effectiveness, orderly transfer of power, social unrest, illicit activities by non-state actors, armed conflict, government territorial control, social cohesion, and international tensions. As has been exposed by the COVID-19 pandemic, broader national risk environments directly contribute to a country's ability to effectively prevent, detect, and respond to disease outbreaks. For example, trust in government emerged as a factor that was highly linked to how many COVID-19 deaths countries reported. Those with the highest political and security risks—mainly low-income countries and those in conflict-affected regions—often have the fewest resources with which to respond to epidemics and pandemics. Globally, the level of social unrest and regional conflict has increased and, with it, collective vulnerability to health emergencies. The GHS Index reveals an overall average increase in political and security concerns. Within this indicator is a widening gap of specific risks related to vested interests and cronyism, human rights, organized criminal activity, armed conflict and government territorial control, and government effectiveness.

In addition to political and security risks, the average overall score for socioeconomic resiliency is 60.9 out of 100, and the risk of natural disasters increased in 40 countries. Both factors will negatively affect global development in the coming years.

Political and security risks can impede a nation's ability to respond to an epidemic or pandemic by undermining health systems, causing societal polarization, and weakening national, regional, and global economies. High-consequence biological events can overwhelm national and international assistance systems, exacerbate existing risks, and cause long-lasting national and regional instability. As the pandemic continues, the threat of instability increases in the absence of strong leadership and resource sharing.

THE DATA

- The average country score for public confidence in government is 44.4 out of 100, with El Salvador, Mexico, and Tajikistan showing the largest increases in scores.
- 114 countries demonstrate a moderate to very high threat of international disputes or tensions that would have a negative effect on daily operations—such as those related to public services, governing, and civil society—and 24 high-income countries score below the global average.
- Only 16 countries score in the top tier for government effectiveness, with 129 countries scoring below 50 out of 100. This indicator includes measures such as policy formation, quality of bureaucracy, excessive bureaucracy, cronyism, corruption, accountability of public officials, and human rights.
- No low-income countries score above 50 out of 100 for the orderly transfer of power, revealing little to no clear, established, accepted constitutional mechanisms for transfer from one government to another.
- An increased number of countries show greater risk of social unrest, with 78 showing a high to very high risk of elements that could cause considerable disruption or seriously challenge government control of the country. The social unrest subindicator was the largest drop across all political and security risk subindicators.
- 34% of countries show evidence of a moderate to very high threat of terrorist attacks with a frequency or severity that causes substantial disruption.

- Low-income countries saw the most significant increase in risk with respect to armed conflict and government territorial control, with an average score of 37 out of 100, as opposed to high-income countries, which had an average score of 94.9 for armed conflict and 98.3 for government territorial control, indicating significantly lower risk.
- 65% of all countries scored below the global average for political risks related to vested interests and cronyism.
- Socioeconomic resiliency decreased across countries in all income levels except in high-income countries.
- The average score for trust in medical and health advice from the government is 52.3. The average country score for public trust in medical and health advice from medical providers is slightly higher, at 68.5 out of 100.

Countries are continuing to neglect the preparedness needs of vulnerable populations, which exacerbates the impact of health security emergencies.

Just as preparedness and response plans must be tailored for each country, some populations may have increased vulnerabilities in infectious disease emergencies, and tailored plans may be needed to address their specific needs. For example, during the COVID-19 pandemic, the elderly and people with chronic illness experienced the greatest risk of developing severe illness. In addition, many countries, including the United States, have seen wide disparities in tolls among different racial, ethnic, and income groups and among those in specific job categories. Women worldwide have disproportionately felt the impacts of COVID-19 disruptions and are experiencing some of the worst economic harms.

The GHS Index shows that few countries recognize the importance of preparedness and response planning and communications for vulnerable populations. Deficits include gender equality, tailored risk communication, and adequate medical and social support for all citizens.

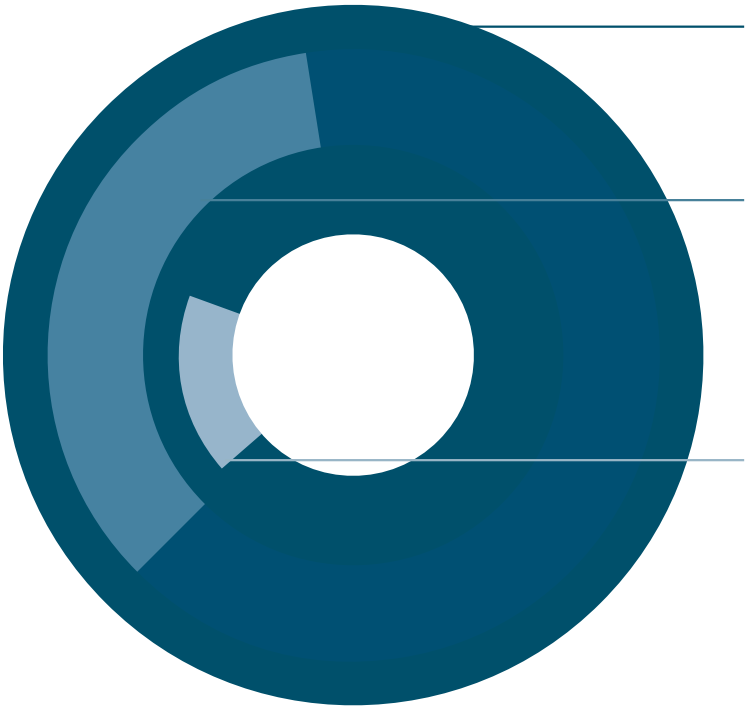
The global community will reach adequate levels of preparedness against public health threats only when the needs of vulnerable populations are explicitly addressed. Although some nations have taken important steps toward this goal, the 2021 GHS Index finds significant room for improvement in identifying, communicating, and including vulnerable populations in pandemic preparedness planning on global, national, and sub-national scales.

It is important to remember that not all vulnerable groups require the same—or even similar—interventions to prevent disease transmission. During COVID-19, analyses of cases among vulnerable groups, such as internally displaced persons, people experiencing homelessness, and elderly persons, revealed significant transmission and mortality compared with less-vulnerable populations.[13, 14] The needs of homebound, elderly persons are significantly different from the needs of internally displaced persons living in congregate refugee camps. It also is a mistake to assume that these sometimes-isolated groups do not have a significant impact on the larger population; the failure to address disease within vulnerable groups makes the entire community susceptible to the spread of disease.

[13] Organisation for Economic Co-operation and Development (OECD), "The Impact of Coronavirus (COVID-19) on Forcibly Displaced Persons in Developing Countries," June 15, 2020. https://www.oecd.org/coronavirus/policy-responses/the-impact-of-coronavirus-covid-19-on-forcibly-displaced-persons-in-developing-countries-88ad26de/.

[14] Melissa Perri, Naheed Dosani, and Stephen W. Hwang, "COVID-19 and People Experiencing Homelessness: Challenges and Mitigation Strategies," *Canadian Medical Association Journal* 192, no. 26 (2020): E716–E719. doi:10.1503/cmaj.200834.

EMERGENCY PREPAREDNESS AND RESPONSE PLANS FOR VULNERABLE POPULATIONS



195

COUNTRIES SCORED

69

COUNTRIES HAVE AN OVERARCHING EMERGENCY PREPAREDNESS AND RESPONSE PLAN IN PLACE

33

COUNTRIES HAVE PLANS THAT INCLUDE CONSIDERATIONS FOR VULNERABLE POPULATIONS

Most countries do not include considerations for pediatric and/or other vulnerable populations in overarching national public health emergency response plans.

THE DATA

- Global progress toward closing gaps between vulnerable and non-vulnerable groups has slowed, decreased, or shown no change since the 2019 GHS Index.
- Very few countries have planning or legislation to address vulnerable populations in public health preparedness; 69 countries have an overarching plan in place, but only 33 countries include considerations for vulnerable populations in their plans.
- Average scores for gender equality, including reproductive health, empowerment, and economic status, have decreased since 2019, averaging 58.4 out of 100.
- 76% of countries do not outline how risk communication messages will reach populations and sectors with different communication needs related to language, location, and media reach.
- Although most countries include social and financial assurances of paid medical leave, with 93% of countries having paid medical leave, this trend notably does not include nine upper-middle- and high-income countries (Cook Islands, Marshall Islands, Nauru, Niue, Palau, South Korea, Tonga, Tuvalu, and the United States).
- 81% of countries do not provide wraparound services, such as economic and medical attention, to enable infected people and their contacts to self-isolate or quarantine as recommended.

Countries are not prepared to prevent globally catastrophic biological events that could cause damage on a larger scale than COVID-19.

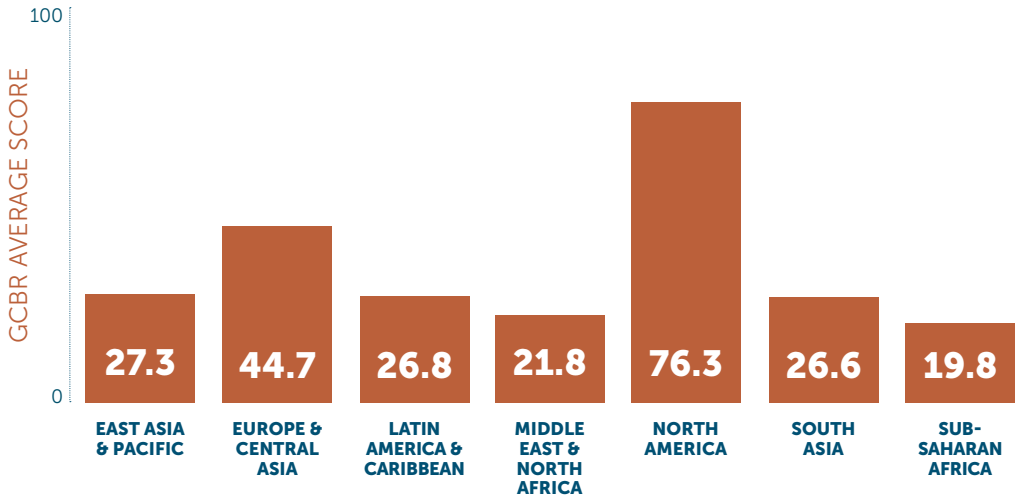
The next pandemic could be far worse than the COVID-19 pandemic, and it could be right around the corner. Naturally emerging or reemerging biological agents, deliberately created and released agents, and laboratory-engineered pathogens all pose risks.

Although a globally catastrophic biological event likely would affect all countries, the GHS Index shows that few countries have demonstrated progress toward the capacities required for preparedness for such high-consequence events.

Preventing the next pandemic is a collective responsibility, yet the GHS Index prevention category shows the lowest average score across all categories, with 28.4 out of a possible 100. One hundred sixty-nine countries score below 50 out of 100 for capacities related to preventing the emergence or release of potential epidemic- or pandemic-causing pathogens.

The investment required for pandemic prevention and preparedness is magnitudes smaller than the cost of pandemic response.[15] Prioritizing building and strengthening prevention capacities improves countries' preparedness for all sources of biological threats. Attention to safety and security oversight and prioritizing of whole-of-government planning is particularly important when preparing for a pandemic caused by deliberately released engineered pathogens.

PREPAREDNESS FOR GLOBALLY CATASTROPHIC BIOLOGICAL EVENTS



Average scores by World Bank region for the GCBR-relevant indicators: Biosecurity, biosafety, dual-use research and culture of responsible science, real-time reporting systems, preparedness and response plans, emergency response operations, linking public health and security authorities, risk communications, medical countermeasures, international agreements, and financing for emergency response.

[15] Michelle Gavin, Alice C. Hill, Jennifer Hillman, and Jennifer Nuzzo, Council on Foreign Relations, "Visualizing 2021: Trends to Watch," December 17, 2020. https://www.cfr.org/article/visualizing-2021-trends-watch.

Decision makers are not yet planning for globally catastrophic biological events despite global trends related to technological advances and increases in trade, travel, and national and international terrorism. The risk of an event with lasting, population-wide damage is increasing, but progress on measures relevant to staving off a globally catastrophic biological event is stalled.

THE DATA

- 65% of countries do not have an overarching national public health emergency response plan for diseases with epidemic or pandemic potential.
- 178 countries score below 50 out of 100 points for biosecurity measures, including whole-of-government biosecurity systems, biosecurity training and practices, personnel vetting and regulating access to sensitive locations, secure and safe transport of infectious substances, and cross-border transfer and screening.
- 94% of countries have no national-level oversight measures for dual-use research, which includes national laws or regulation on oversight, an agency responsible for the oversight, or evidence of a national assessment of dual-use research.
- 144 countries have no national and subnational reporting surveillance system that includes ongoing or real-time laboratory data.
- 73% of countries do not have the ability to provide expedited approval for human medical countermeasures, such as vaccines and antiviral drugs, during a public health emergency.
- 152 countries have not demonstrated linkages or established procedures or guidance between public health and national security authorities for responding to a biological event.

BIGGER THAN COVID-19: PREPAREDNESS FOR GLOBALLY CATASTROPHIC BIOLOGICAL EVENTS

Global Catastrophic Biological Risks (GCBRs) **refer to biological risks of unprecedented scale, with devastating outcomes that are orders of magnitude greater than what the world has witnessed with the COVID-19 pandemic. Such events could cause such significant and irreparable damage to human civilization that they undermine its long-term potential.**

Although the effects of the pandemic have been severe, it should be treated as a warning shot. Increasing urbanization and human expansion, declining biodiversity and a changing climate, and upticks in travel, trade, and terrorism all contribute to increasing the risk of a globally catastrophic biological event. At the same time, the use of advanced biotechnologies in the absence of strong, normative guidance on responsible science increases the chances that a GCBR will emerge by human hands, either accidentally or deliberately.

The GHS Index framework includes consideration of countries' readiness for GCBRs through 21 subindicators that are tailored to measure national capacity to prevent, detect, and respond to high-consequence biological events before they become catastrophic. Despite the grave nature of those risks, decision makers are still not planning for catastrophic events, such as those that could be caused by novel or engineered biological agents.

In 2019, the GHS Index found that national capacity in those areas was generally weak, with 75% of countries receiving a low score for biosecurity, oversight for dual-use research, emergency response operations, linking of public health and security authorities, and medical countermeasure dispensing.

The 2021 analysis of the same capacities suggests that even when confronted with a global pandemic, national capacities to manage large-scale biological events have not been prioritized and continue to be neglected. On average, the world scores 29.6 out of a possible 100 in GCBR-relevant subindicators.

Recommendations

The COVID-19 pandemic has provided a devastating demonstration that no country was fully prepared for significant infectious disease emergencies, as was the main finding in the 2019 GHS Index.

The ongoing crisis has spurred ad hoc improvements in some areas, highlighted by the 2019 GHS Index. Political attention and government investment have increased, and this is a key development in strengthening national health security capacities, but there is still much more to do. Governments, inter-governmental agencies such as the World Health Organization (WHO), donor organizations, and the private sector can and must build on this increased level of political and public attention to further strengthen and sustain capacities and capabilities implemented during the pandemic.

Despite the new and necessary high level of global attention on health security, the 2021 GHS Index, developed during the COVID-19 pandemic, has identified significant gaps in countries' readiness for future epidemics and pandemics, including those caused by deliberate or accidental releases. Many countries continue to lack core public health and healthcare capacities for preventing, detecting, and responding to infectious disease threats. For countries with existing capacities, the pandemic created an opportunity to evaluate the functionality of those capacities and assess whether additional improvements are needed. Countries' struggles to contain the spread of the virus and mitigate its impacts indicate that preexisting capacities did not function as needed.

Given what has been learned from the COVID-19 pandemic thus far, the following recommended actions would strengthen the global and national preparedness for the next pandemic.

[16] Ibid.

Countries should do the following:

- Prioritize the building and maintaining of health security capacities in national budgets. Those capacities are not just beneficial for health security emergencies; they are important for responding to routine health threats and can provide important benefits to countries' overall health and development.
- Conduct assessments, using findings from the 2021 GHS Index, to identify their risk factors and capacity gaps, and develop a plan to address them.
- Develop, cost, and make financial arrangements to support a National Action Plan for Health Security if they have completed Joint External Evaluations (JEE).
- Undertake a JEE to better understand their gaps if they have not done so already. Data from the 2021 GHS Index may be used to update JEE data and supplement it with additional data regarding health systems and risk factors.
- Be more transparent with their capacities and risk factors. National decision makers need readily available information about their country's plans and other capacities, and increased transparency is essential for global prevention, detection, and response to epidemics and pandemics.
- Conduct comprehensive after-action COVID-19 pandemic reports so that they can learn from this crisis and ensure that capacities developed during the pandemic are expanded and sustained for future public health emergencies.

International Organizations such as the UN, WHO, and World Bank should do the following:

- Use the findings of the 2021 GHS Index to identify countries that may benefit most from additional support to improve their readiness for future disease emergencies, prioritizing assistance to countries with higher political and socioeconomic risk factors.
- Support countries in addressing the urgent global need to strengthen health systems as part of countries' public health capacity-building efforts.
- Work with countries to make available more data, especially standardized data, that can be used to assess the strength of health systems, particularly with respect to their preparedness for infectious disease emergencies.
- Use data from the 2021 GHS Index to supplement their efforts to monitor ongoing and future disease emergencies to identify where rapid deployment of international assistance may help to mitigate the impact of events and prevent cross-border spillover.
- Support the formation of a dedicated international normative body to promote the early identification and reduction of global catastrophic biological risks.
- Work to improve coordination among national and global actors to address high-consequence biological events, including deliberate attacks. Specifically, the Office of the UN Secretary-General should work in concert with the WHO, the UN Office for the Coordination of Humanitarian Affairs, and the UN Office for Disarmament Affairs to designate a permanent facilitator or unit for high-consequence biological events and call a heads-of-state-level summit on biological threats that is focused on creating sustainable health security financing and new international emergency response capabilities.

The private sector should do the following:

- Use the 2021 GHS Index to partner with governments to help address gaps in country preparedness and to assess likely vulnerabilities in countries where they operate. Companies and other private organizations should use these findings to encourage governments to make improvements.
- Identify and support private-sector resources, plans, and programs that can augment government capacities, especially in countries with few developed capacities.
- Increase their sustainable development and health security portfolios in research, development, and capacity building, using the 2021 GHS Index to identify priority areas aimed at preventing epidemics and pandemics from causing catastrophic damage on a global scale.

Philanthropies and funders should do the following:

- Create new financing mechanisms, such as a global health security matching fund, and expand availability of World Bank International Development Association allocations to allow for investments to fill epidemic and pandemic preparedness gaps for countries in need.
- Use the 2021 GHS Index to prioritize resources. Countries with low scores related to risk environment—including political and security, socioeconomic, infrastructure, environmental, and public health risks—should be identified as priorities for capacity development and should receive prompt international assistance when infectious disease emergencies occur within their borders.
- Advocate to country governments to make available national resources to support preparedness and capacity development.

Methodology

The first edition of the GHS Index was published in October 2019. An initiative of the Nuclear Threat Initiative (NTI) and the Center for Health Security at the Johns Hopkins Bloomberg School of Public Health (JHU), with Economist Impact, the GHS Index is based on the extensive knowledge and existing understanding of what factors influence country preparedness to prevent, detect, and respond to infectious disease threats. Only a few months later, a novel coronavirus emerged and tested the established understanding with a global pandemic.

Although the world will be assessing the factors that propelled the trajectory of the COVID-19 pandemic for years to come, the 2021 GHS Index team sought to take stock of the current understanding around what factors mattered most. The team conducted a combination of consultations with experts on the International Panel of Experts, reviews of academic literature, media scans, and quantitative analysis based on the existing data sets related to the COVID-19 impact as of early 2021. On the basis of those conversations and studies, the GHS Index framework has been adjusted to reflect findings from the first iteration of the Index and from the COVID-19 pandemic to date. As the availability of reliable global data to track the spread and impact of COVID-19 improves and additional studies are conducted, additional information will likely need to be incorporated into future editions of the Index. Although the Index has been adapted with lessons learned from this latest pandemic, the intent was to create an Index that applies to future infectious disease threats more broadly, including deliberate, accidental, and naturally occurring outbreaks.

The 2021 GHS Index includes research for the same 195 countries included in the inaugural edition. Country research was conducted from August 2020 through June 2021. Economist Impact conducted the research for this Index through a combination of qualitative assessments of publicly available country information and examinations of existing quantitative data sets. Given the complex nature of global health security, Economist Impact developed a multidimensional

analytical framework, commonly known as a benchmarking index, to create an objective, country-level assessment tool. A multidimensional framework is a useful way of measuring performance that cannot be directly observed, such as a country's economic competitiveness or, in this case, a country's health security conditions. Indices, in such cases, have been shown to be effective in several ways: (a) they can aggregate a wide range of related data and evaluate it in a consistent manner; (b) they can track outcomes over time; and (c) they can spur countries to improve performance, especially relative to other countries in the index. In those ways, indices can be a useful tool for public policy reforms.

Indices, however, are not without their limitations. The GHS Index should be used as an assessment that improves understanding of countries' existing capacities of countries to prevent, detect, and respond to outbreaks, whether deliberate, accidental, or naturally occurring, and their inherent political, social, economic, and environmental risks regarding those events. It is not a predictive tool. The impacts of an infectious disease threat (health, economic, and social) are shaped by many factors, including political decision making in the midst of a crisis, the type of disease, its mode of infection, and even chance.

Although many factors influence country capacity, the GHS Index can only include factors that are able to be measured and have transparent, available data that allow them to be observed. For this specific Index, Economist Impact also relied on data sources and information that was publicly available (rather than gathered through expert interviews or internal knowledge), which further limited possible data sources. The decision to include publicly available data was made for two reasons: (1) to reduce the reporting burden on individual countries and (2) to incentivize countries to publicly share their capacities with the rest of the world.

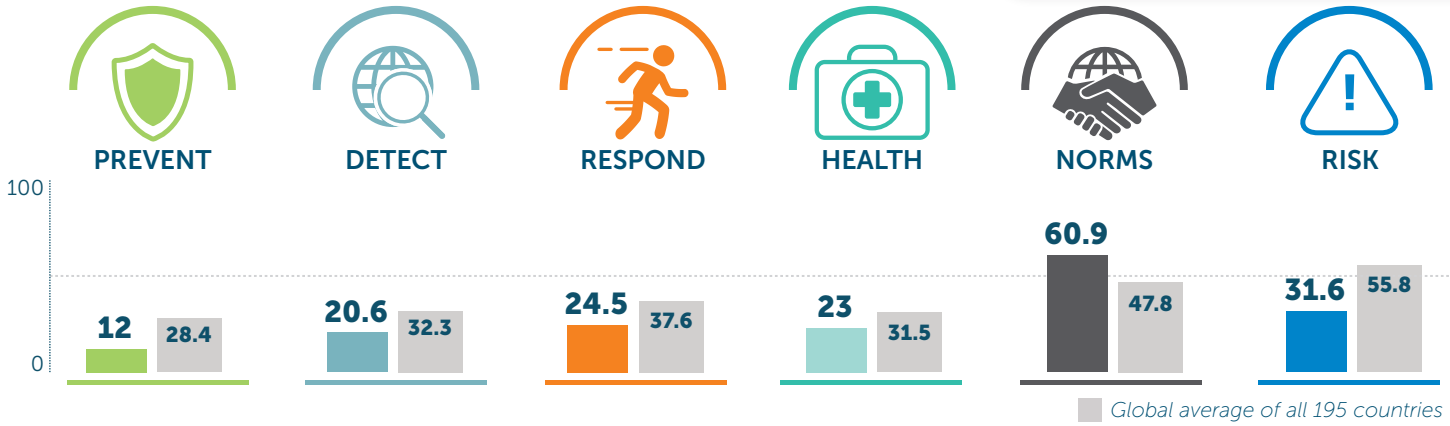
The full GHS Index methodology can be found at www.ghsindex.org.

Country Profiles

Individual country profiles on the following pages include scores across the six categories of the GHS Index and compare those scores to the global average. Visit *www.ghsindex.org* for more information on each country, to download individual country profiles, download the data model, and more.

Afghanistan

28.8 Index Score **145**/195



Global average of all 195 countries

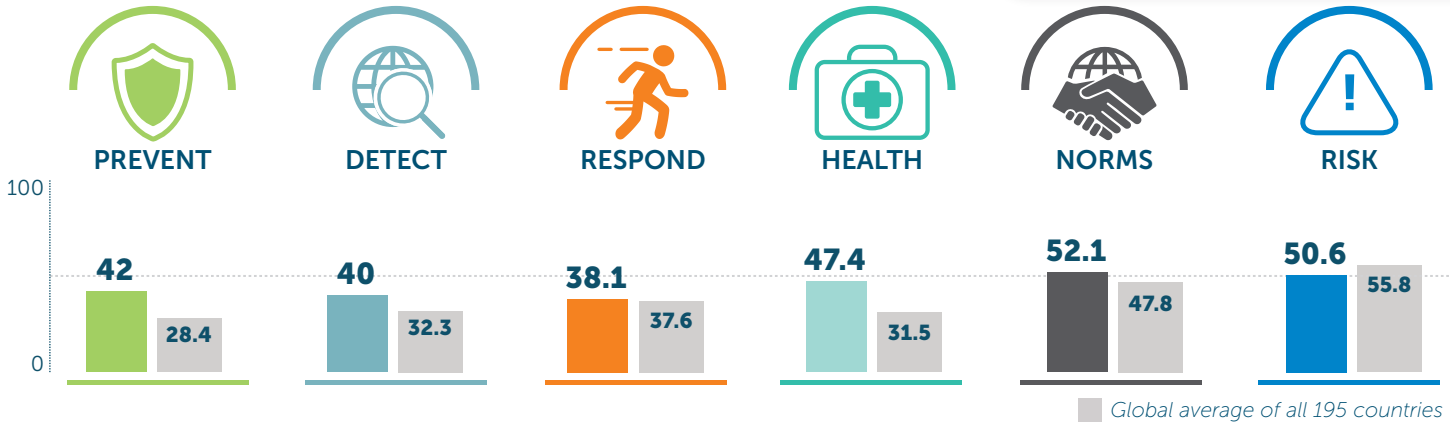
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**15.4**	**12**	**28.4**
Antimicrobial resistance (AMR)	16.7	16.7	45.3
Zoonotic disease	25.6	5.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**20**	**20.6**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	20	23.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**27.1**	**24.5**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	25	57.9
Access to communications infrastructure	27.2	17.4	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**20.6**	**23**	**31.5**
Health capacity in clinics, hospitals, and community care centers	34.4	51	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60	60	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54.2**	**60.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	75	90.6	56.1
JEE and PVS	50	75	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**30.4**	**31.6**	**55.8**
Political and security risk	4.9	5	58.1
Socio-economic resilience	45	46.6	60.9
Infrastructure adequacy	0	0	50.2
Environmental risks	58.6	61.3	54.7
Public health vulnerabilities	43.5	45.1	55.3

Albania

45 Index Score **59**/195



Global average of all 195 countries

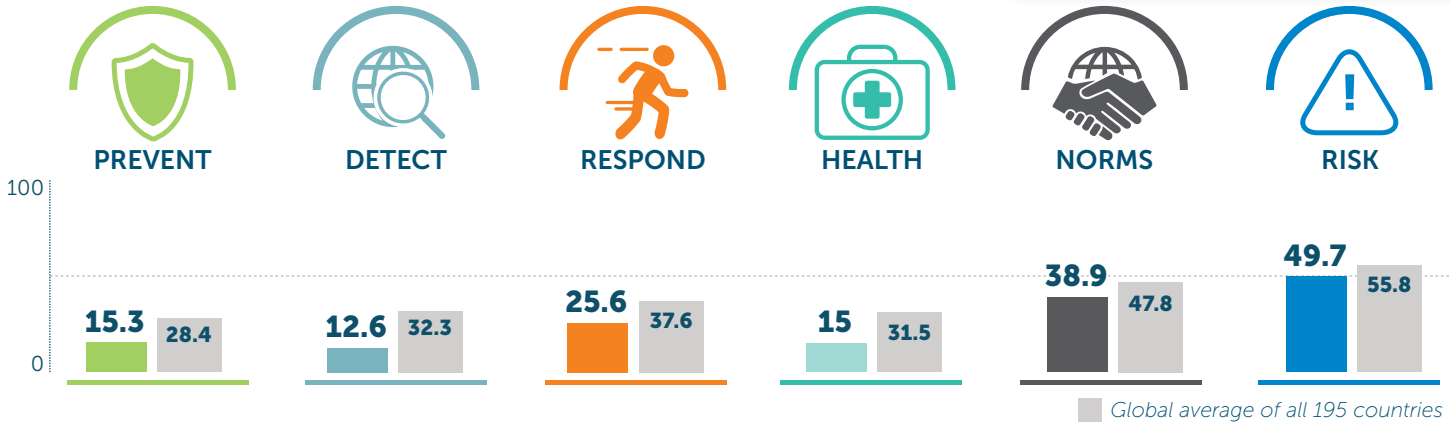
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**42**	**42**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	24.5	24.6	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**45.4**	**40**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	60	40	34.7
Case-based investigation	50	37.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**43.5**	**38.1**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	100	100	57.9
Access to communications infrastructure	71.3	66.4	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**37.8**	**47.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	8.8	42.1	30
Supply chain for health system and healthcare workers	44.4	77.8	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	61.7	61.8	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55**	**52.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	46.9	37.5	56.1
JEE and PVS	25	25	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**53.7**	**50.6**	**55.8**
Political and security risk	63	62.5	58.1
Socio-economic resilience	70.6	62.3	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	54.8	48.4	54.7
Public health vulnerabilities	46.9	46.5	55.3

Algeria

26.2 Index Score **163**/195



Global average of all 195 countries

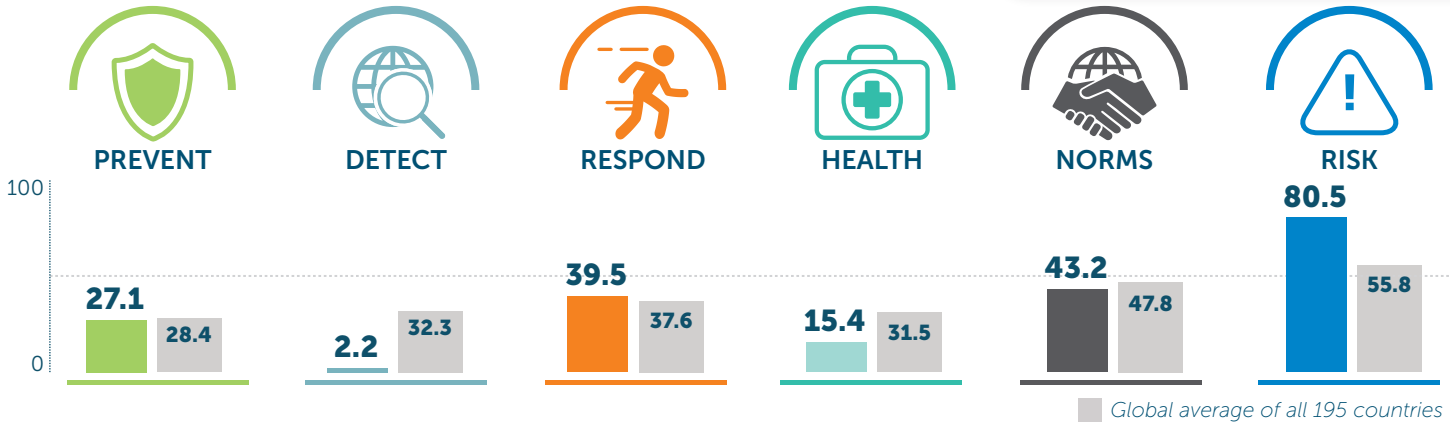
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**19.4**	**15.3**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	8.2	8.4	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	50	63.3
DETECTION AND REPORTING	**8.5**	**12.6**	**32.3**
Laboratory systems strength and quality	0	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**31.1**	**25.6**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	59.6	66.4	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**12.6**	**15**	**31.5**
Health capacity in clinics, hospitals, and community care centers	6.8	23.5	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.5	56.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37.3**	**38.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	40.6	50	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**52**	**49.7**	**55.8**
Political and security risk	46.1	41.6	58.1
Socio-economic resilience	64.9	56.5	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	57.5	59.8	54.7
Public health vulnerabilities	49.5	49	55.3

Andorra

34.7 Index Score **100**/195



Global average of all 195 countries

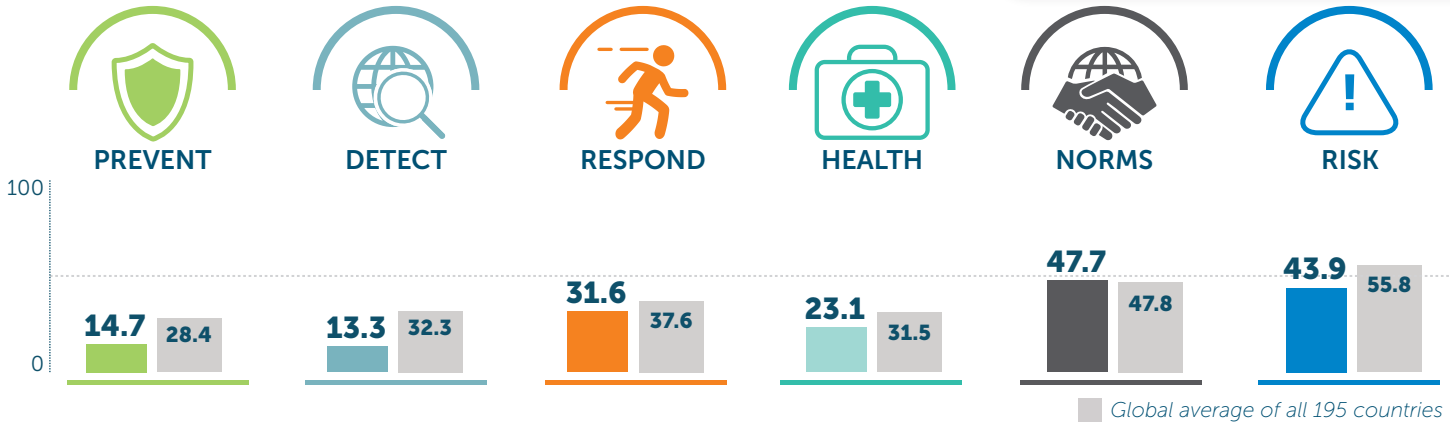
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**19**	**27.1**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	18.8	42.4	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**2.2**	**2.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**33.4**	**39.5**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	79.4	81	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**15.5**	**15.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	29.4	29.4	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	45.5	45.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33**	**43.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	31.3	34.4	56.1
JEE and PVS	0	0	18.7
Financing	0	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**79.9**	**80.5**	**55.8**
Political and security risk	92.2	92.2	58.1
Socio-economic resilience	84.9	84.3	60.9
Infrastructure adequacy	100	100	50.2
Environmental risks	59.6	62.4	54.7
Public health vulnerabilities	63	63.5	55.3

Angola

29.1 Index Score **142**/195



Global average of all 195 countries

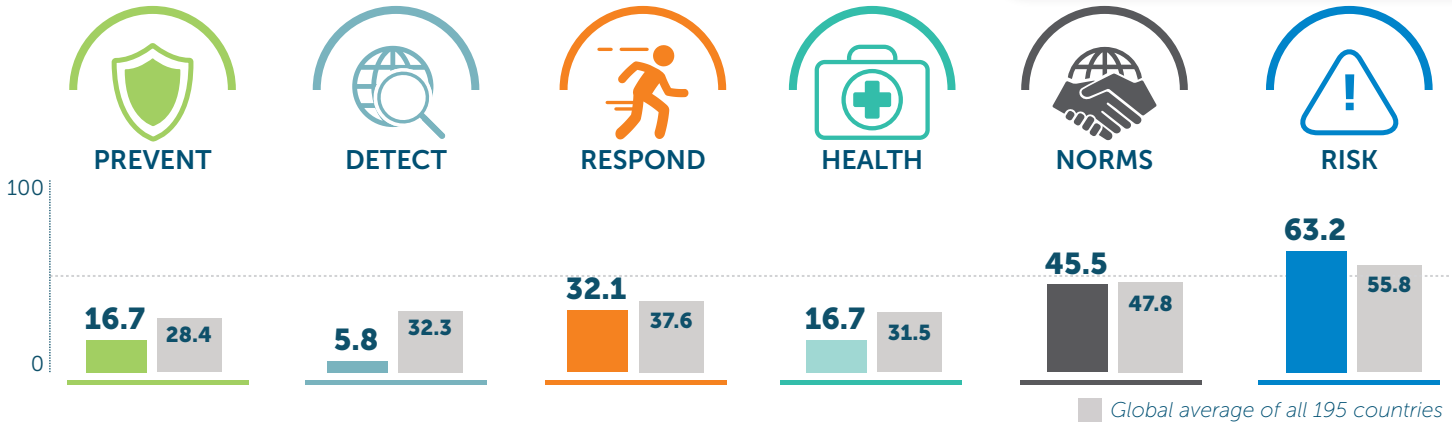
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13.4**	**14.7**	**28.4**
Antimicrobial resistance (AMR)	25	33.3	45.3
Zoonotic disease	5.2	5.1	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**13.3**	**13.3**	**32.3**
Laboratory systems strength and quality	0	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**20.9**	**31.6**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	87.5	57.9
Access to communications infrastructure	46.5	41.7	65.7
Trade and travel restrictions	75	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.8**	**23.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.5	18.2	30
Supply chain for health system and healthcare workers	33.3	61.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	57.4	57.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.1**	**47.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	25	28.1	56.1
JEE and PVS	0	25	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**43.7**	**43.9**	**55.8**
Political and security risk	60.1	60.2	58.1
Socio-economic resilience	42.8	40.7	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	43.2	45.6	54.7
Public health vulnerabilities	39.1	39.6	55.3

Antigua and Barbuda

30 Index Score **136**/195



Global average of all 195 countries

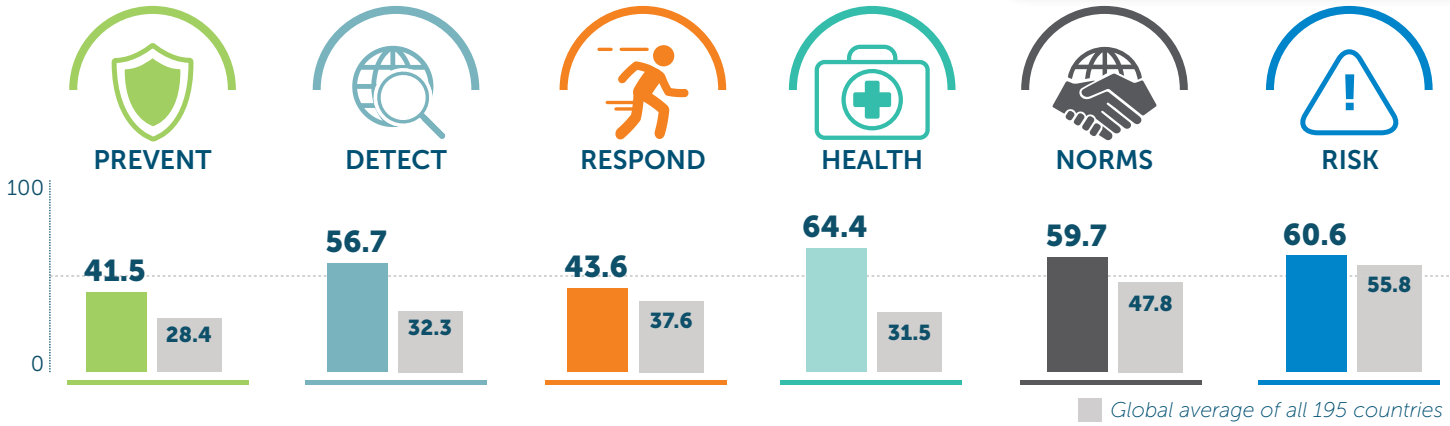
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16.7**	**16.7**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**5.8**	**5.8**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**29.9**	**32.1**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	84.6	87.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**12.1**	**16.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	14	46.2	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.1	53.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54.7**	**45.5**	**47.8**
IHR reporting compliance and disaster risk reduction	100	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	28.1	31.3	56.1
JEE and PVS	0	0	18.7
Financing	33.3	25	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**61.8**	**63.2**	**55.8**
Political and security risk	80	83.5	58.1
Socio-economic resilience	57.9	58.2	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	47.5	50.6	54.7
Public health vulnerabilities	56.9	57.1	55.3

Argentina

54.4 Index Score **34**/195



Global average of all 195 countries

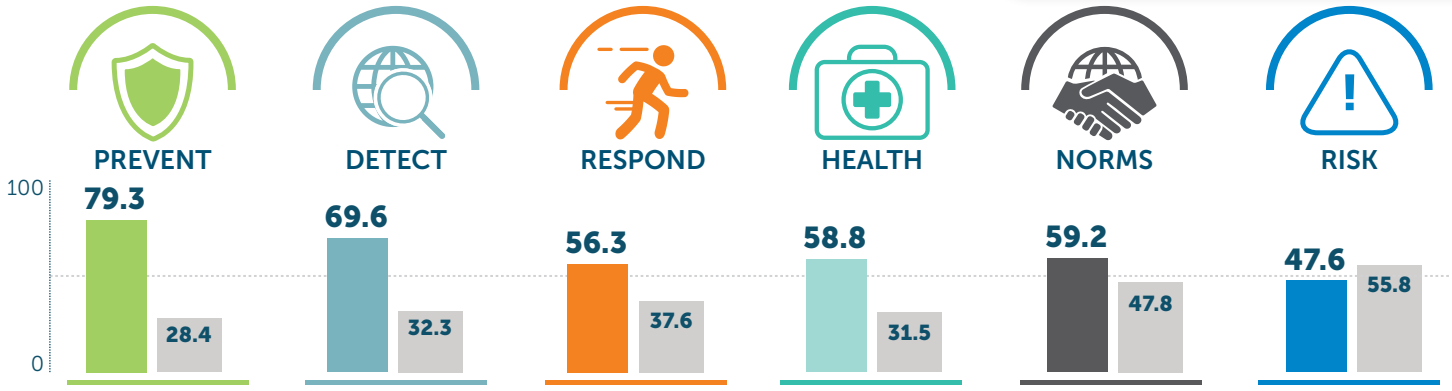
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**41.5**	**41.5**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	46.5	46.5	19.8
Biosecurity	44	44	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**54.6**	**56.7**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	90	90	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**52**	**43.6**	**37.6**
Emergency preparedness and response planning	54.2	70.8	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	84.8	84.2	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**64.4**	**64.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	32.6	32.6	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	54.3	54.2	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**64.8**	**59.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	96.9	100	56.1
JEE and PVS	25	0	18.7
Financing	66.7	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**59.3**	**60.6**	**55.8**
Political and security risk	67	62.4	58.1
Socio-economic resilience	75	75	60.9
Infrastructure adequacy	41.7	50	50.2
Environmental risks	48.1	51.1	54.7
Public health vulnerabilities	65	64.7	55.3

Armenia

61.8 Index Score **16**/195



Global average of all 195 countries

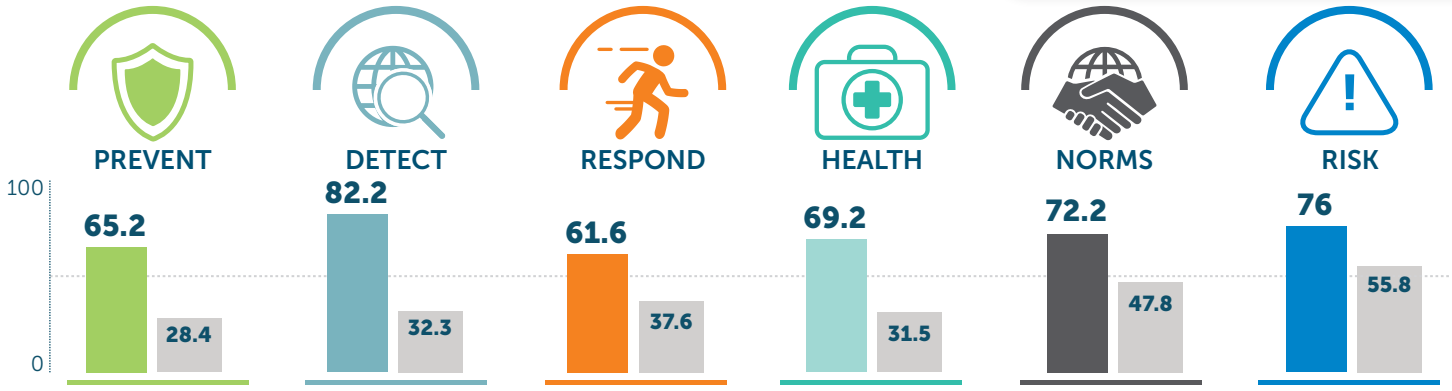
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**75**	**79.3**	**28.4**
Antimicrobial resistance (AMR)	75	83.3	45.3
Zoonotic disease	32	49.7	19.8
Biosecurity	76	76	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	66.7	66.7	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**67.9**	**69.6**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	70	80	34.7
Case-based investigation	75	75	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**72.6**	**56.3**	**37.6**
Emergency preparedness and response planning	41.7	41.7	30.4
Exercising response plans	37.5	25	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	79.1	77.6	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**55**	**58.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	35.4	52	30
Supply chain for health system and healthcare workers	72.2	83.3	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	52.2	51.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**58.7**	**59.2**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	43.8	46.9	56.1
JEE and PVS	25	25	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**50.3**	**47.6**	**55.8**
Political and security risk	47	38.9	58.1
Socio-economic resilience	73.6	65.3	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	44	46.8	54.7
Public health vulnerabilities	53.5	53.5	55.3

Australia

71.1 Index Score **2**/195



Global average of all 195 countries

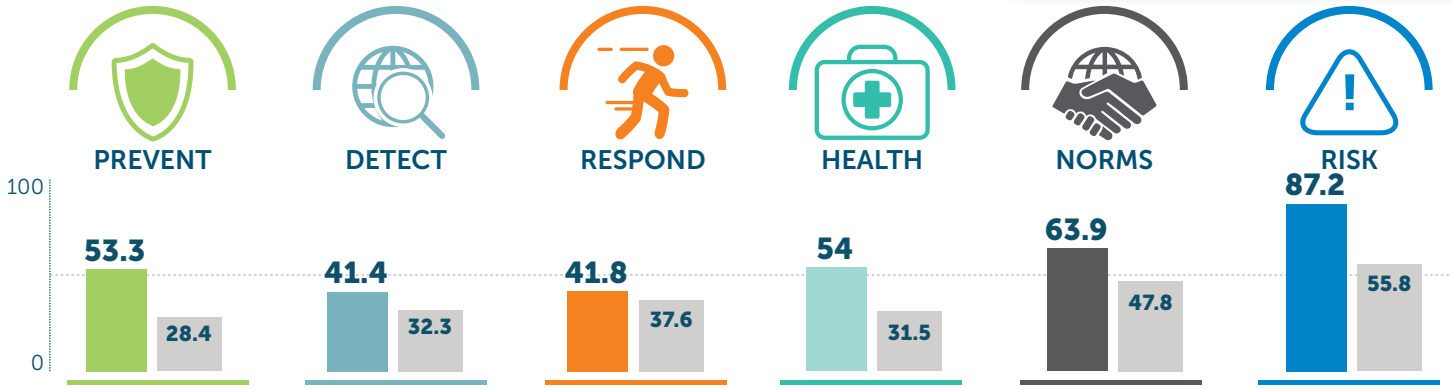
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**68.5**	**65.2**	**28.4**
Antimicrobial resistance (AMR)	100	100	45.3
Zoonotic disease	73.5	53.5	19.8
Biosecurity	62.7	62.7	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	50	50	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**79.6**	**82.2**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	90	93.3	34.7
Case-based investigation	50	62.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**68.5**	**61.6**	**37.6**
Emergency preparedness and response planning	66.7	66.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	100	100	57.9
Access to communications infrastructure	79.5	81.3	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**66.9**	**69.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	55.4	72.2	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.5	51.4	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**76.4**	**72.2**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	75	50	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**79.5**	**76**	**55.8**
Political and security risk	83.7	80.1	58.1
Socio-economic resilience	86.2	86.3	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	61.3	47.4	54.7
Public health vulnerabilities	82.9	83	55.3

Austria

56.9 Index Score **26**/195



Global average of all 195 countries

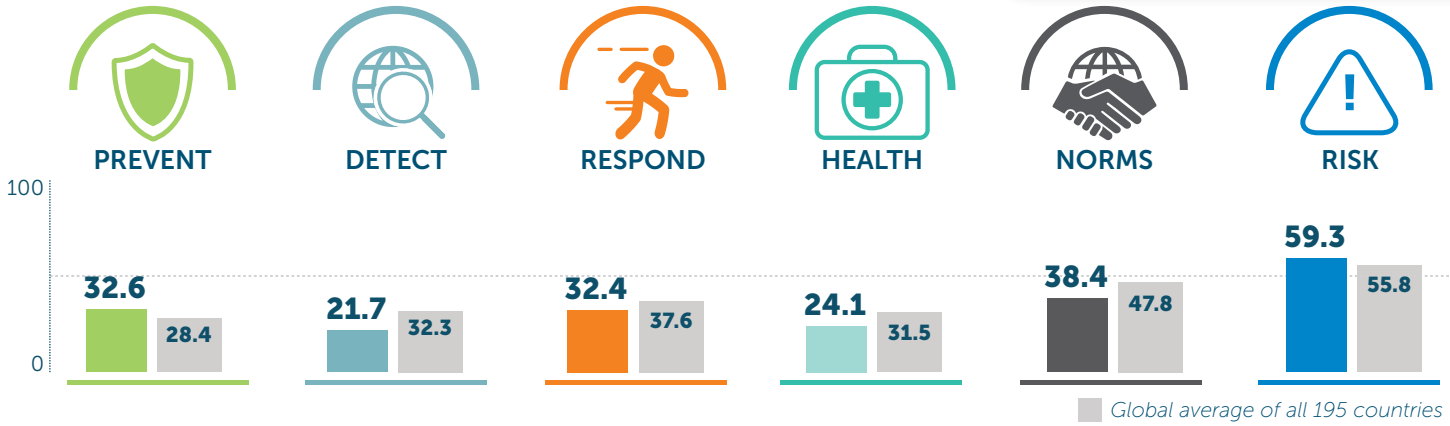
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**53.3**	**53.3**	**28.4**
Antimicrobial resistance (AMR)	100	100	45.3
Zoonotic disease	50.9	50.8	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**38.8**	**41.4**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	70	73.3	34.7
Case-based investigation	12.5	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**47.9**	**41.8**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	76.6	84	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**54**	**54**	**31.5**
Health capacity in clinics, hospitals, and community care centers	41.8	41.4	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	50.4	50.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**63.9**	**63.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**86.5**	**87.2**	**55.8**
Political and security risk	86.9	88.1	58.1
Socio-economic resilience	88.3	88.2	60.9
Infrastructure adequacy	100	100	50.2
Environmental risks	71.9	74.6	54.7
Public health vulnerabilities	85.2	85.2	55.3

Azerbaijan

34.7 Index Score **100**/195



Global average of all 195 countries

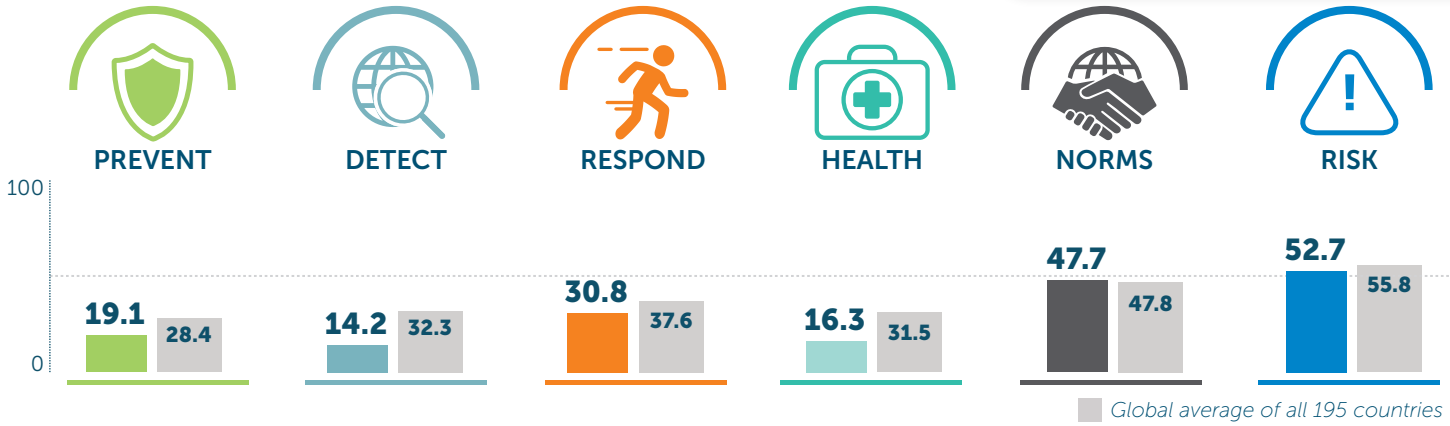
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**32.6**	**32.6**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	38.4	38.4	19.8
Biosecurity	24	24	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**21.7**	**21.7**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**33.4**	**32.4**	**37.6**
Emergency preparedness and response planning	20.8	20.8	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	66.7	57.9
Access to communications infrastructure	63.2	68.6	65.7
Trade and travel restrictions	75	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**21.7**	**24.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	17.7	34.5	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.4	59.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37.8**	**38.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	93.8	96.9	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57.8**	**59.3**	**55.8**
Political and security risk	30.4	26.3	58.1
Socio-economic resilience	62.7	70.9	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	65.5	68.4	54.7
Public health vulnerabilities	63.9	64.2	55.3

Bahamas

30.1 Index Score **135**/195



Global average of all 195 countries

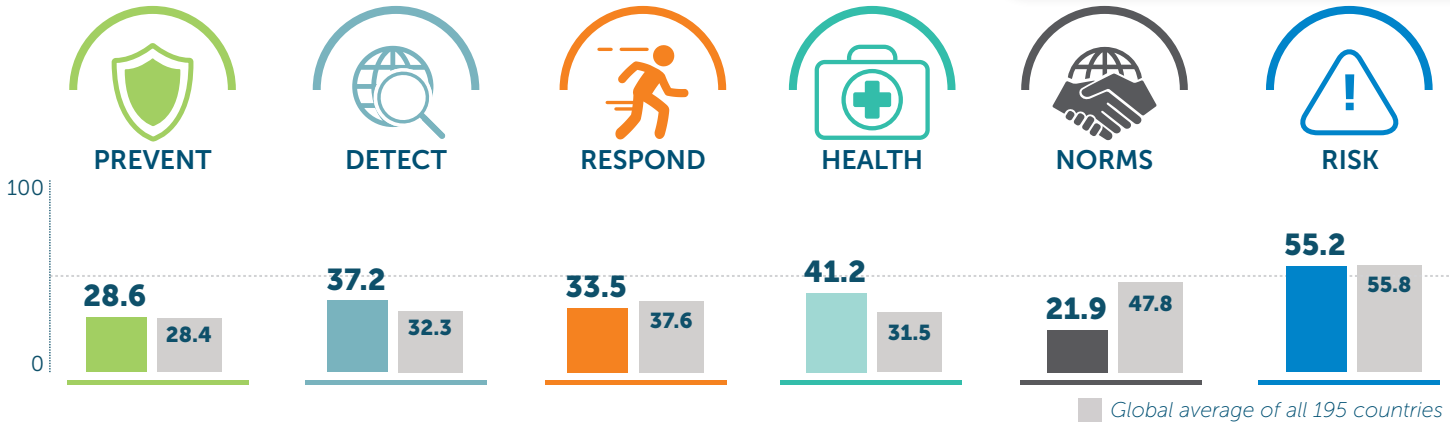
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**15**	**19.1**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	14.8	14.8	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	75	63.3
DETECTION AND REPORTING	**12.1**	**14.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	12.5	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**33.2**	**30.8**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	74	78.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11.6**	**16.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	11.1	44.5	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.1	53	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.2**	**47.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	25	28.1	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**58.5**	**52.7**	**55.8**
Political and security risk	78.2	79.9	58.1
Socio-economic resilience	61.3	61	60.9
Infrastructure adequacy	66.7	33.3	50.2
Environmental risks	28.3	31	54.7
Public health vulnerabilities	58.3	58.5	55.3

Bahrain

36.3 Index Score **92**/195



Global average of all 195 countries

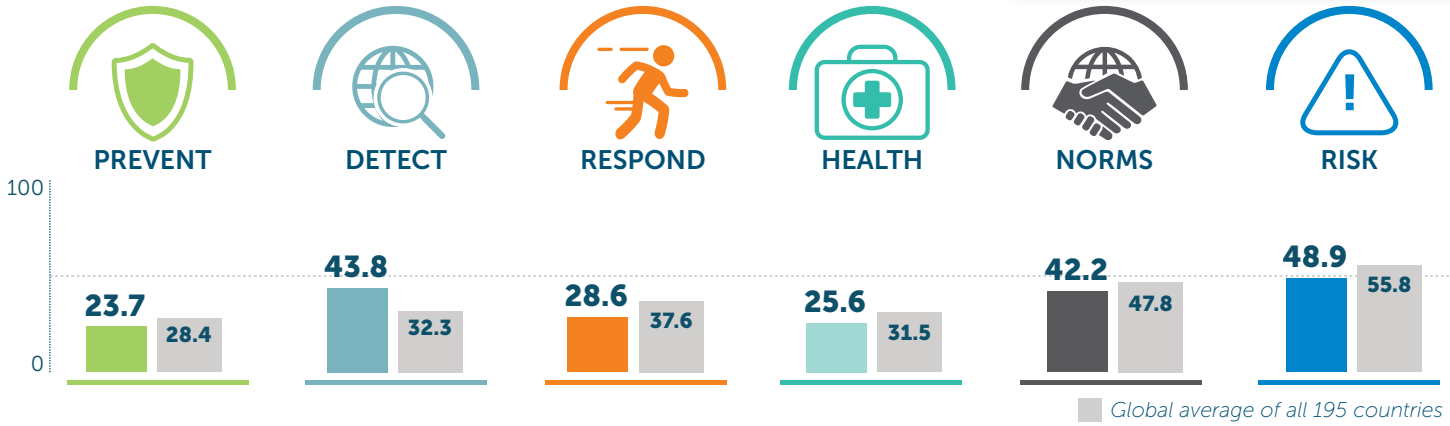
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**31.9**	**28.6**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	21	0.9	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**33.5**	**37.2**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	13.3	23.3	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**44.8**	**33.5**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	92.4	88.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**38.9**	**41.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	6.1	22.5	30
Supply chain for health system and healthcare workers	55.6	55.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60.8	60.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.2**	**21.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	31.3	56.1
JEE and PVS	25	25	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**55**	**55.2**	**55.8**
Political and security risk	41	41.2	58.1
Socio-economic resilience	46.6	46.8	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	59.5	62.3	54.7
Public health vulnerabilities	61	59	55.3

Bangladesh

35.5 Index Score **95**/195



Global average of all 195 countries

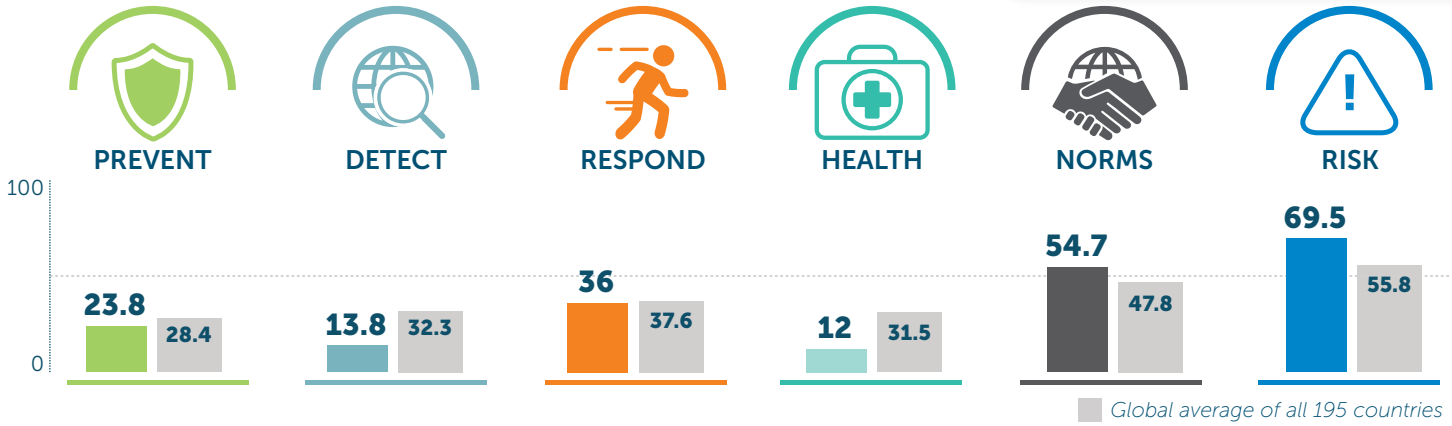
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22.9**	**23.7**	**28.4**
Antimicrobial resistance (AMR)	16.7	16.7	45.3
Zoonotic disease	45.4	25.3	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**39.6**	**43.8**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**29.3**	**28.6**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	38.1	33.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**23.2**	**25.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	18.9	35.6	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.6	54.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**50**	**42.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	75	78.1	56.1
JEE and PVS	75	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**47.4**	**48.9**	**55.8**
Political and security risk	53.8	50.2	58.1
Socio-economic resilience	61	61.1	60.9
Infrastructure adequacy	16.7	25	50.2
Environmental risks	45.9	48.4	54.7
Public health vulnerabilities	59.6	59.9	55.3

Barbados

34.9 Index Score **98**/195



Global average of all 195 countries

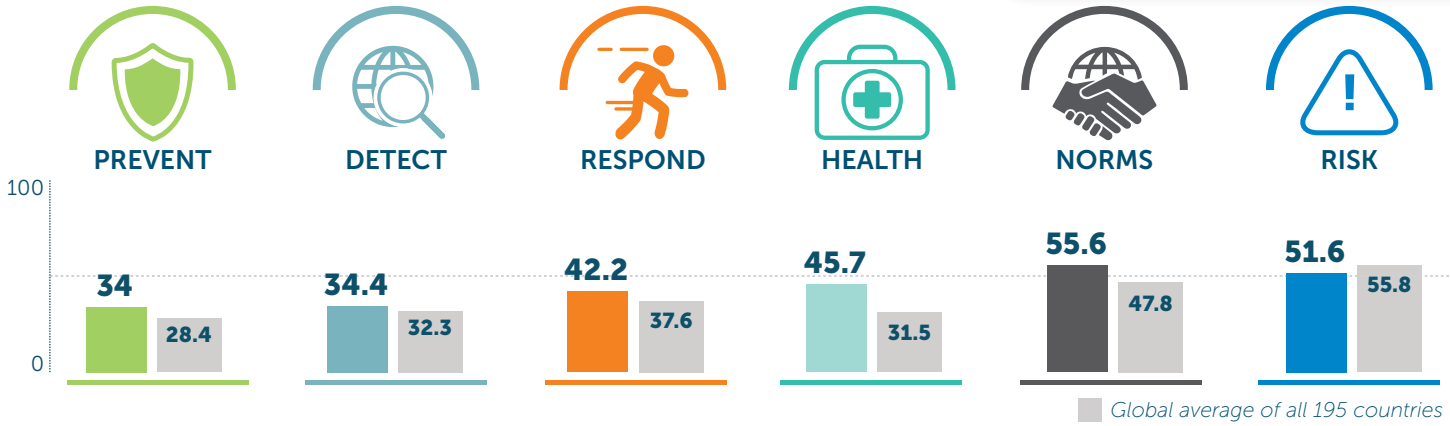
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**23.8**	**23.8**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	1.1	1.1	19.8
Biosecurity	0	0	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**7.9**	**13.8**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	10	20	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**37.1**	**36**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	76.1	77.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**9.6**	**12**	**31.5**
Health capacity in clinics, hospitals, and community care centers	14.3	31.2	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.6	52.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.2**	**54.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	25	28.1	56.1
JEE and PVS	0	0	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**67.8**	**69.5**	**55.8**
Political and security risk	81.7	86.9	58.1
Socio-economic resilience	76.6	77.1	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	48	50.9	54.7
Public health vulnerabilities	57.9	57.4	55.3

Belarus

43.9 Index Score **63**/195



Global average of all 195 countries

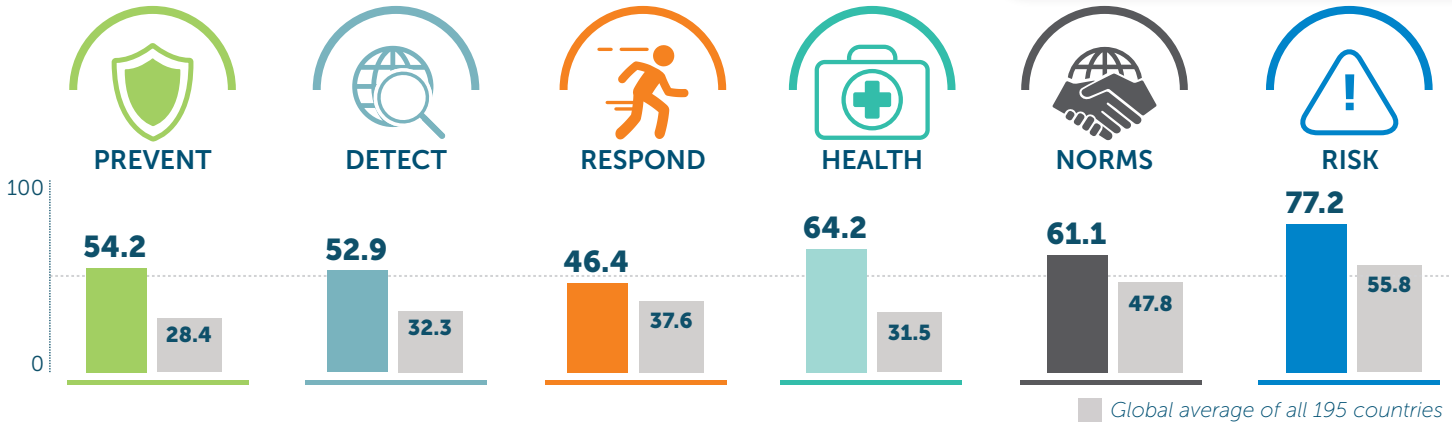
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**31.2**	**34**	**28.4**
Antimicrobial resistance (AMR)	8.3	25	45.3
Zoonotic disease	35	35	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**26.1**	**34.4**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	56.7	56.7	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**49.4**	**42.2**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	58.3	57.9
Access to communications infrastructure	79.1	79	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**43.3**	**45.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	49.3	65.7	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	65.3	65.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**46.7**	**55.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	46.9	50	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**53.8**	**51.6**	**55.8**
Political and security risk	50.2	28.9	58.1
Socio-economic resilience	73	73.2	60.9
Infrastructure adequacy	33.3	41.7	50.2
Environmental risks	57.2	59.2	54.7
Public health vulnerabilities	55.2	55	55.3

Belgium

59.3 Index Score **22**/195



Global average of all 195 countries

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**57.5**	**54.2**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	42.5	22.7	19.8
Biosecurity	44	44	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**52.9**	**52.9**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	62.5	37.5	34.6
Surveillance data accessibility and transparency	80	80	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**57.5**	**46.4**	**37.6**
Emergency preparedness and response planning	12.5	12.5	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	81.6	78.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**64.3**	**64.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	46.2	45.5	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	59.7	59.6	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**60.6**	**61.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	25	25	18.7
Financing	25	25	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**78.4**	**77.2**	**55.8**
Political and security risk	75	75	58.1
Socio-economic resilience	98.9	90.6	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	56.4	58.8	54.7
Public health vulnerabilities	78.6	78.3	55.3

Belize

29.7 Index Score **139**/195

Global average of all 195 countries

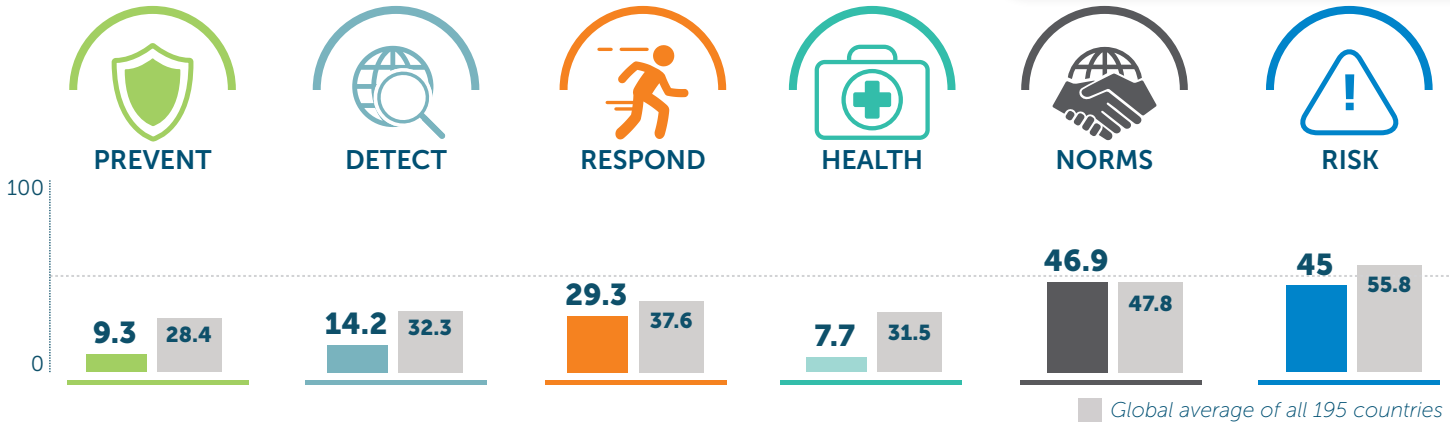
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**23.4**	**27.7**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	7.1	7.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**20.4**	**20.4**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**28.9**	**22.1**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	60.8	62.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11**	**10.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	22.2	21.9	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.6	54.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.2**	**46.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	25	28.1	56.1
JEE and PVS	0	0	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**50.1**	**50.7**	**55.8**
Political and security risk	61.2	62.4	58.1
Socio-economic resilience	57.7	57.5	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	34.2	36.4	54.7
Public health vulnerabilities	55.6	55.6	55.3

Benin

25.4 Index Score **171**/195



Global average of all 195 countries

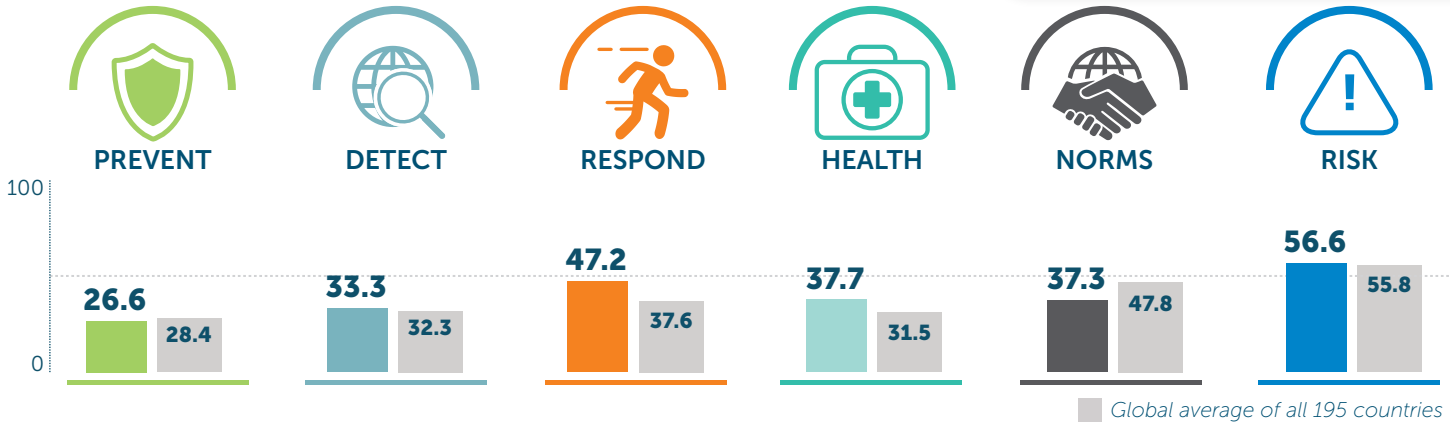
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.2**	**9.3**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	5.4	5.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**18.3**	**14.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	25	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**31.6**	**29.3**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	12.5	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	45.9	30.1	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**7.6**	**7.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	0.9	0.9	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.6	52.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**50**	**46.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	25	31.3	56.1
JEE and PVS	75	50	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44.9**	**45**	**55.8**
Political and security risk	63.2	60.9	58.1
Socio-economic resilience	36.5	36.4	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	66.8	69.3	54.7
Public health vulnerabilities	24.9	25	55.3

Bhutan

39.8 Index Score **78**/195



Global average of all 195 countries

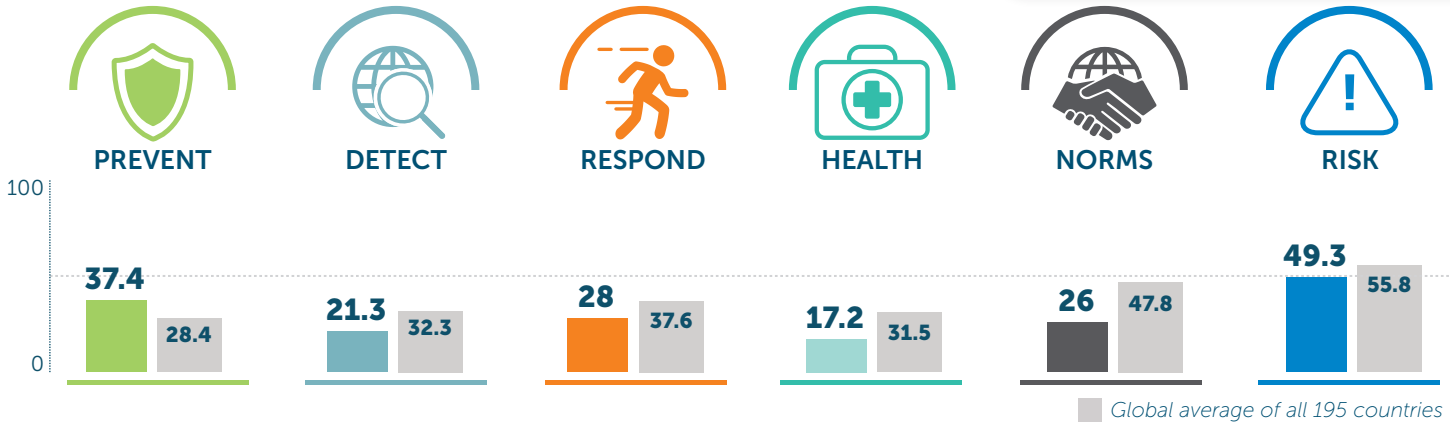
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**34.1**	**26.6**	**28.4**
Antimicrobial resistance (AMR)	41.7	41.7	45.3
Zoonotic disease	58.8	38.8	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**27.1**	**33.3**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**55.5**	**47.2**	**37.6**
Emergency preparedness and response planning	66.7	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	71.8	71.9	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**35.3**	**37.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	20.9	37.6	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.5	59.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37.3**	**37.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	40.6	40.6	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**55.8**	**56.6**	**55.8**
Political and security risk	80.1	73	58.1
Socio-economic resilience	50.6	59.8	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	47.1	48.6	54.7
Public health vulnerabilities	51.2	51.6	55.3

Bolivia

29.9 Index Score **137**/195



Global average of all 195 countries

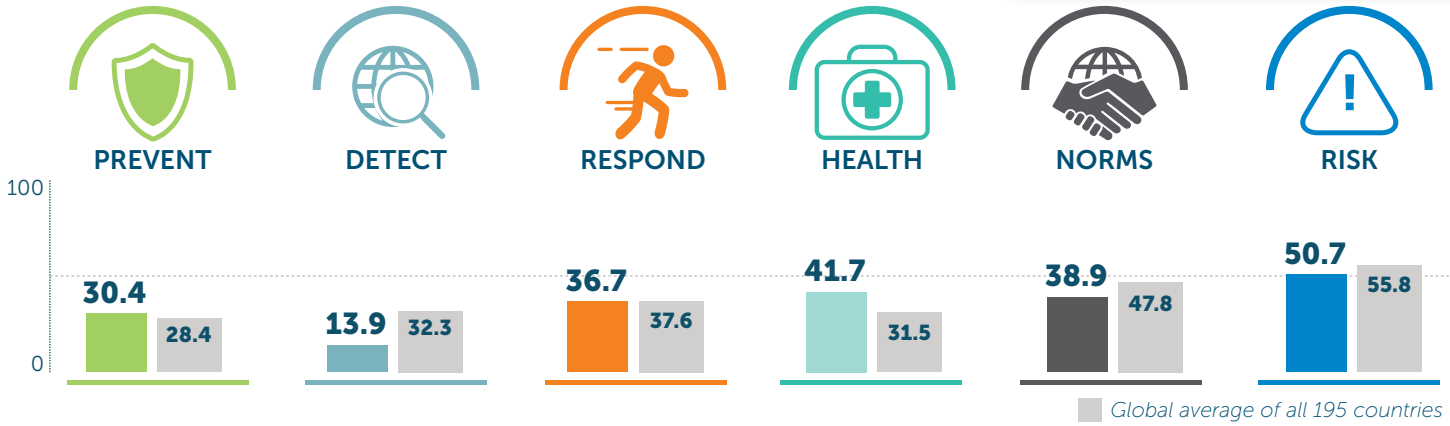
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**40.8**	**37.4**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	46.7	26.2	19.8
Biosecurity	40	40	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**21.3**	**21.3**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**31**	**28**	**37.6**
Emergency preparedness and response planning	0	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	58.9	54.5	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**17.2**	**17.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.6	5.8	30
Supply chain for health system and healthcare workers	50	50	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	64.8	64.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**30.2**	**26**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	31.3	31.3	56.1
JEE and PVS	25	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**51.4**	**49.3**	**55.8**
Political and security risk	55.4	58.5	58.1
Socio-economic resilience	64.5	47.9	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	46.3	48.8	54.7
Public health vulnerabilities	49	49.8	55.3

Bosnia and Herzegovina

35.4 Index Score **96**/195



Global average of all 195 countries

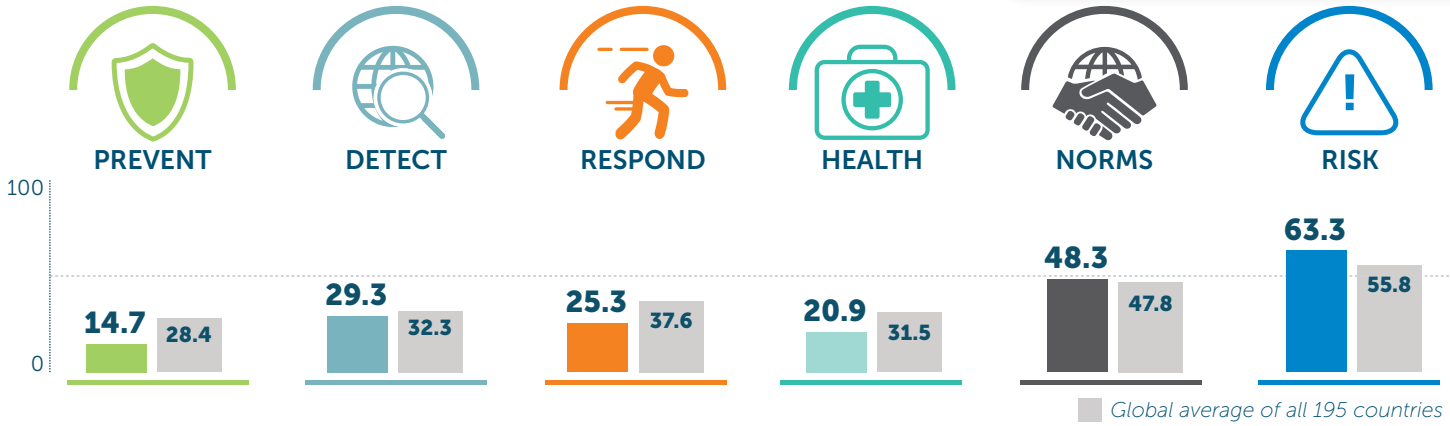
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**34.6**	**30.4**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	24.2	24.3	19.8
Biosecurity	0	0	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	50	63.3
DETECTION AND REPORTING	**13.3**	**13.9**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	30	33.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**36**	**36.7**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	66.7	57.9
Access to communications infrastructure	77.1	77.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**39.3**	**41.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	13.1	13.1	30
Supply chain for health system and healthcare workers	33.3	50	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54	53.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**45.3**	**38.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	46.9	50	56.1
JEE and PVS	0	0	18.7
Financing	8.3	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**49.9**	**50.7**	**55.8**
Political and security risk	42.6	43.7	58.1
Socio-economic resilience	63.6	63.6	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	52.6	55.7	54.7
Public health vulnerabilities	48.9	48.6	55.3

Botswana

33.6 Index Score **108**/195



Global average of all 195 countries

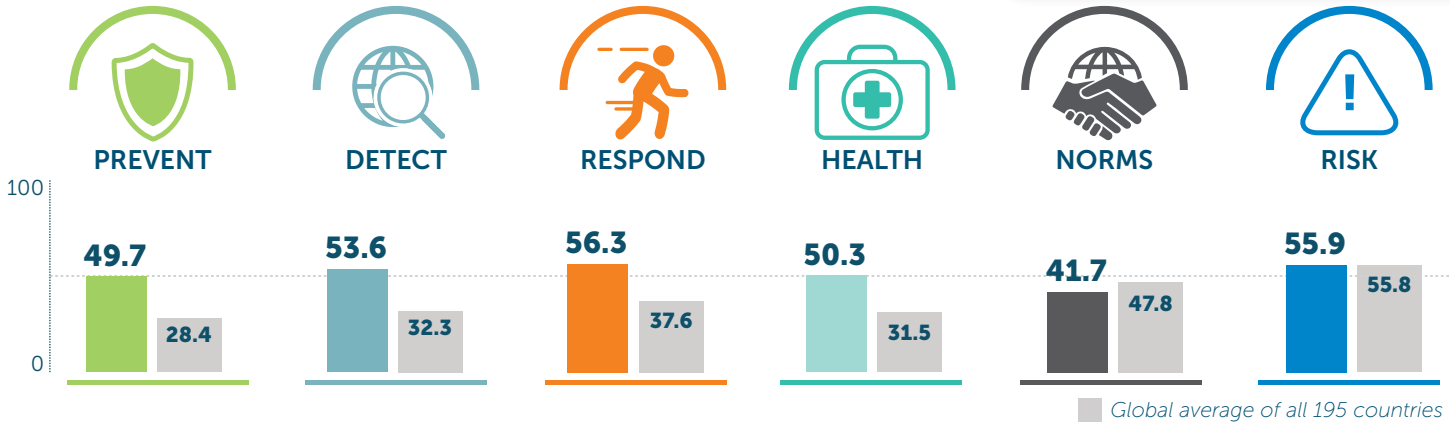
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**14.7**	**14.7**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	13	13	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**18.9**	**29.3**	**32.3**
Laboratory systems strength and quality	25	62.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	25	50	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**30.3**	**25.3**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	62.1	60.3	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**18.5**	**20.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	7.5	24.2	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	55.4	55.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**41.7**	**48.3**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	31.3	56.1
JEE and PVS	25	50	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**62.4**	**63.3**	**55.8**
Political and security risk	80.5	81.7	58.1
Socio-economic resilience	59.6	58.9	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	63	65.2	54.7
Public health vulnerabilities	50.8	52.3	55.3

Brazil

51.2 Index Score **43**/195



Global average of all 195 countries

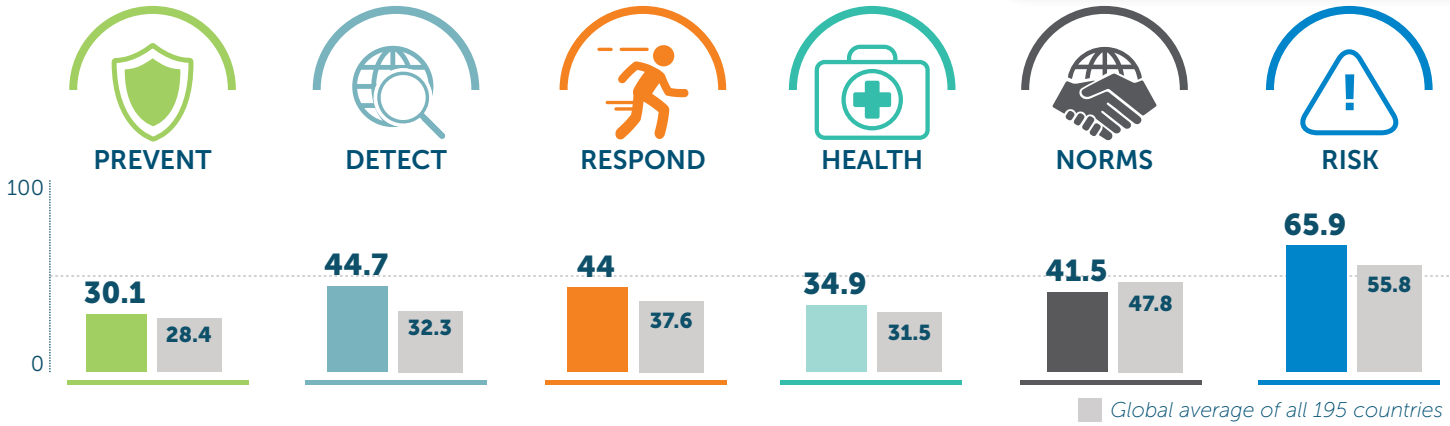
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**49.6**	**49.7**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	57.9	58.3	19.8
Biosecurity	48	48	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	33.3	33.3	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**51.5**	**53.6**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	87.5	87.5	34.6
Surveillance data accessibility and transparency	46.7	46.7	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**64.8**	**56.3**	**37.6**
Emergency preparedness and response planning	58.3	75	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	58.3	57.9
Access to communications infrastructure	78.5	77.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**50.3**	**50.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	48.5	48.4	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.2	59.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37**	**41.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	50	50
International commitments	46.9	50	56.1
JEE and PVS	25	0	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**52.8**	**55.9**	**55.8**
Political and security risk	63	65.4	58.1
Socio-economic resilience	57	57.4	60.9
Infrastructure adequacy	33.3	41.7	50.2
Environmental risks	54.4	58.2	54.7
Public health vulnerabilities	56.3	56.6	55.3

Brunei

43.5 Index Score **64**/195



Global average of all 195 countries

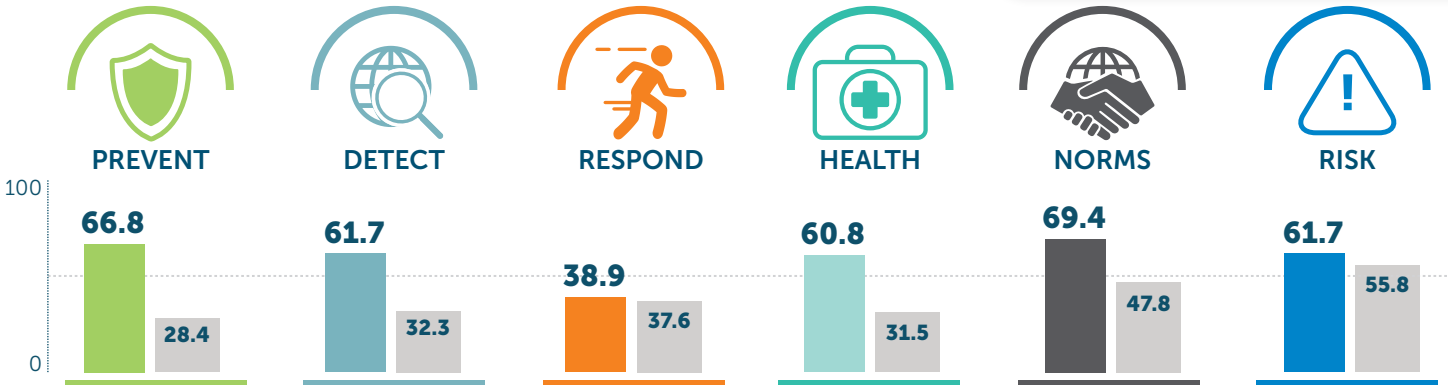
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22**	**30.1**	**28.4**
Antimicrobial resistance (AMR)	25	58.3	45.3
Zoonotic disease	7	18.4	19.8
Biosecurity	0	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**21**	**44.7**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	50	15.9
Real-time surveillance and reporting	37.5	75	34.6
Surveillance data accessibility and transparency	13.3	43.3	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**37.5**	**44**	**37.6**
Emergency preparedness and response planning	8.3	33.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	83.3	57.9
Access to communications infrastructure	83.3	83.3	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**22.6**	**34.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	27.8	61.3	30
Supply chain for health system and healthcare workers	0	27.8	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	55.1	55.1	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.7**	**41.5**	**47.8**
IHR reporting compliance and disaster risk reduction	0	0	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	40.6	56.1
JEE and PVS	0	25	18.7
Financing	33.3	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**65.1**	**65.9**	**55.8**
Political and security risk	74.6	75.7	58.1
Socio-economic resilience	49.9	49.9	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	61.2	65	54.7
Public health vulnerabilities	64.6	63.7	55.3

Bulgaria

59.9 Index Score **20**/195



Global average of all 195 countries

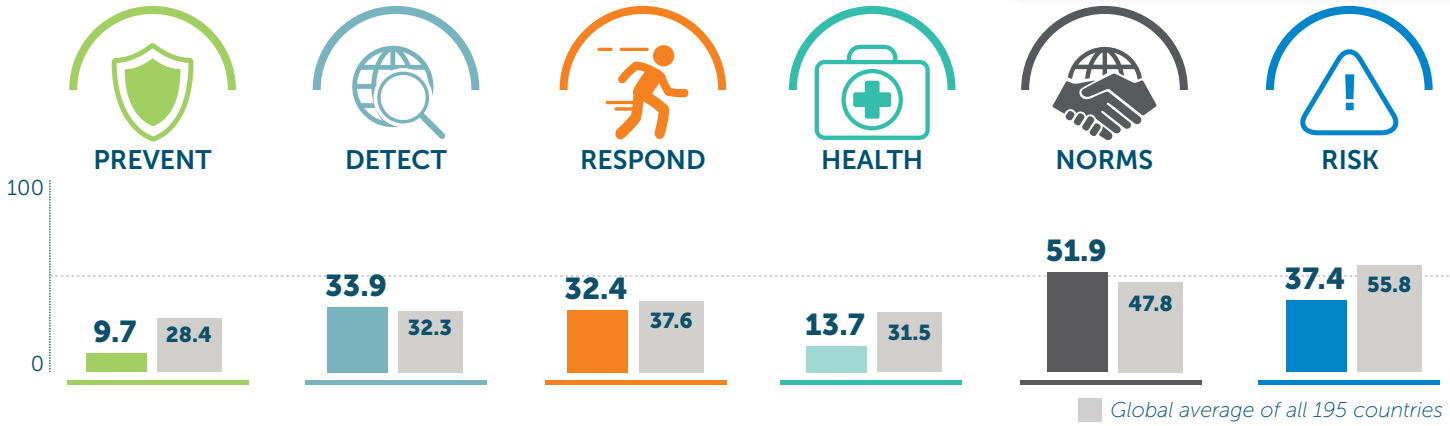
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**66.7**	**66.8**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	32.7	33.2	19.8
Biosecurity	76	76	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	50	50	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**61.7**	**61.7**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	70	70	34.7
Case-based investigation	100	100	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**49**	**38.9**	**37.6**
Emergency preparedness and response planning	83.3	83.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	76.6	80.7	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**58.3**	**60.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	53.4	70.8	30
Supply chain for health system and healthcare workers	66.7	66.7	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	63	63	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**69.4**	**69.4**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	50	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**63.5**	**61.7**	**55.8**
Political and security risk	71.9	69.1	58.1
Socio-economic resilience	80.5	72.1	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	60.9	62.6	54.7
Public health vulnerabilities	46	46.2	55.3

Burkina Faso

29.8 Index Score **138**/195



Global average of all 195 countries

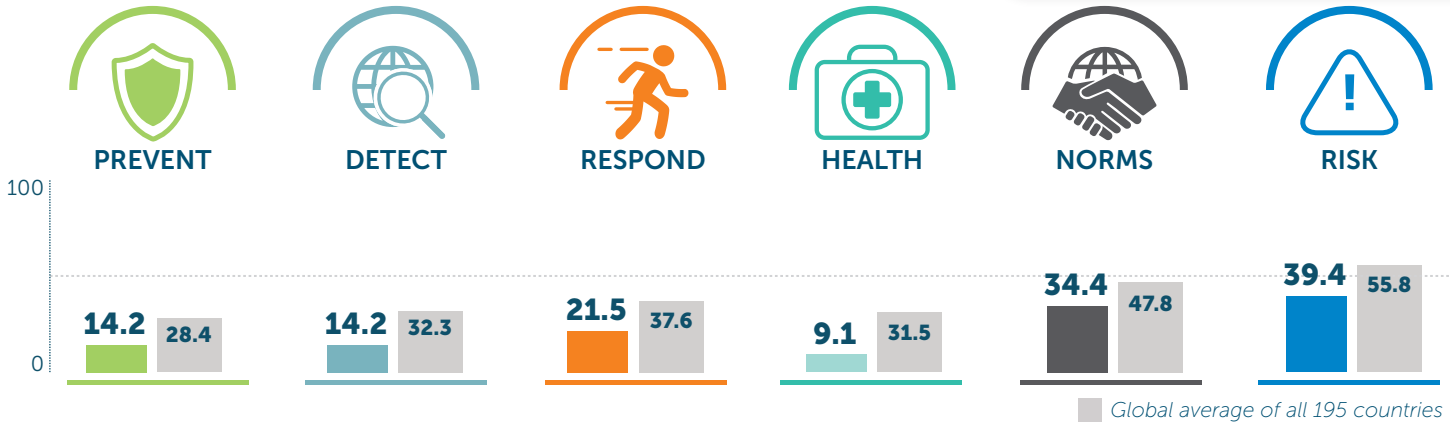
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.7**	**9.7**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	8.4	8.3	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**37.6**	**33.9**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	50	34.6
Surveillance data accessibility and transparency	63.3	53.3	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**47.7**	**32.4**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	87.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	58.8	47.6	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11.3**	**13.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.2	17.8	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.9	52.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**51.9**	**51.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	78.1	78.1	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**48.4**	**37.4**	**55.8**
Political and security risk	46.1	22.4	58.1
Socio-economic resilience	50	41.6	60.9
Infrastructure adequacy	33.3	16.7	50.2
Environmental risks	78.7	72.9	54.7
Public health vulnerabilities	33.7	33.7	55.3

Burundi

22.1 Index Score **181**/195



Global average of all 195 countries

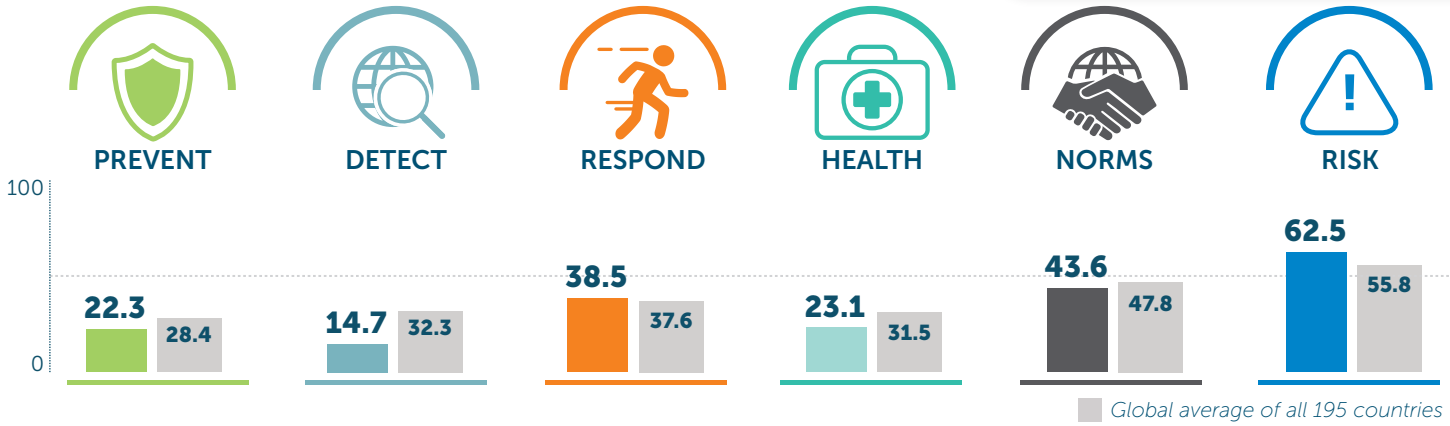
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**10.3**	**14.2**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	3.2	1.8	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	75	63.3
DETECTION AND REPORTING	**14.2**	**14.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**30**	**21.5**	**37.6**
Emergency preparedness and response planning	0	4.2	30.4
Exercising response plans	12.5	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	54.2	29.2	57.9
Access to communications infrastructure	43.6	41.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**9.1**	**9.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.7	1.7	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62	62	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33.3**	**34.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	31.3	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**39**	**39.4**	**55.8**
Political and security risk	18.5	26.9	58.1
Socio-economic resilience	37.5	28.1	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	69.9	72.5	54.7
Public health vulnerabilities	52.4	52.7	55.3

Cabo Verde

34.1 Index Score **105**/195



Global average of all 195 countries

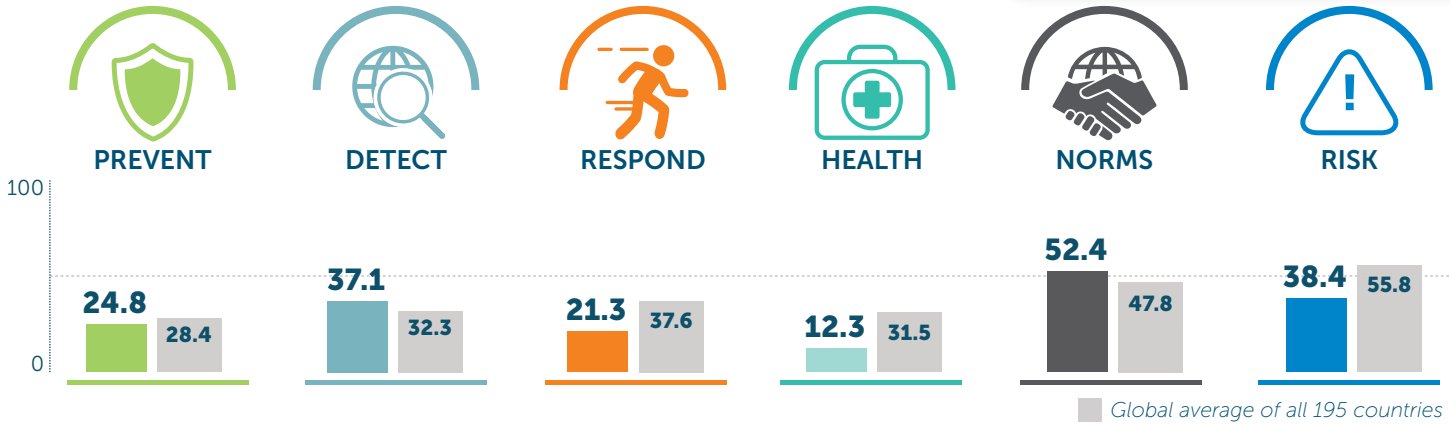
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**20.1**	**22.3**	**28.4**
Antimicrobial resistance (AMR)	25	33.3	45.3
Zoonotic disease	20.8	5.7	19.8
Biosecurity	0	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**10.6**	**14.7**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**37.4**	**38.5**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	12.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	83.3	57.9
Access to communications infrastructure	66.2	61.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**21.5**	**23.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5	5	30
Supply chain for health system and healthcare workers	33.3	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.4	62.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**39.4**	**43.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	28.1	56.1
JEE and PVS	0	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**66.5**	**62.5**	**55.8**
Political and security risk	79.2	79.2	58.1
Socio-economic resilience	65.6	67.8	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	69.7	47.2	54.7
Public health vulnerabilities	51.2	51.6	55.3

Cambodia

31.1 Index Score **126**/195



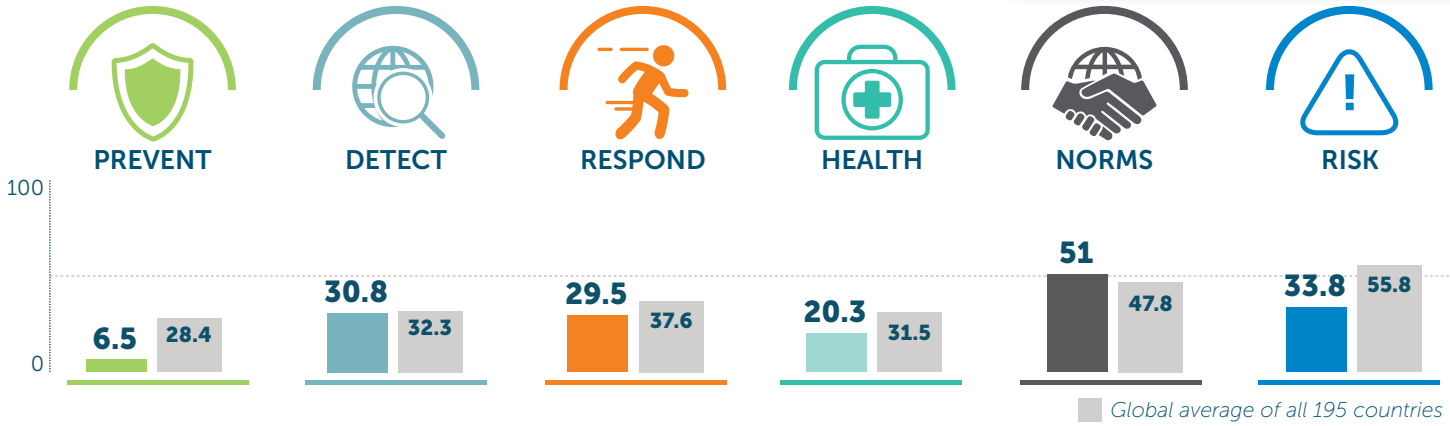
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.5**	**24.8**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	21.6	40.6	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	75	63.3
DETECTION AND REPORTING	**32.9**	**37.1**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	62.5	34.6
Surveillance data accessibility and transparency	60	60	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**27.5**	**21.3**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	29.2	57.9
Access to communications infrastructure	51.1	57.2	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**12.3**	**12.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.7	1.8	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.1	59.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**57.5**	**52.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	78.1	81.3	56.1
JEE and PVS	50	25	18.7
Financing	50	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**38.6**	**38.4**	**55.8**
Political and security risk	50.1	47.7	58.1
Socio-economic resilience	44.4	44.3	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	29.4	29.3	54.7
Public health vulnerabilities	44.3	45.8	55.3

Cameroon

28.6 Index Score **149**/195



Global average of all 195 countries

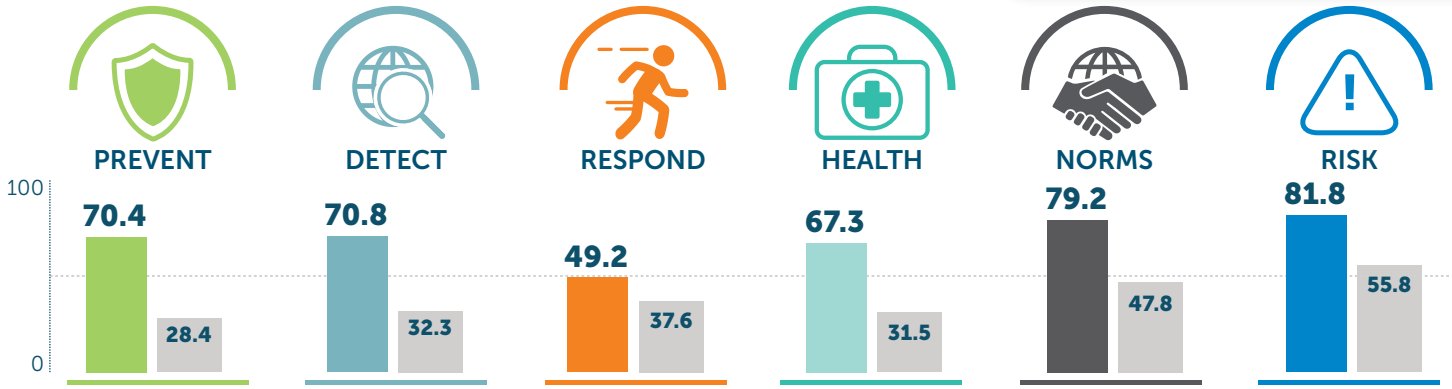
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**15.2**	**6.5**	**28.4**
Antimicrobial resistance (AMR)	16.7	16.7	45.3
Zoonotic disease	20.3	18.3	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	0	63.3
DETECTION AND REPORTING	**31.4**	**30.8**	**32.3**
Laboratory systems strength and quality	50	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	13.3	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**33.8**	**29.5**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	61.7	56.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**17.9**	**20.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19	35.6	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	50.7	50.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**56.3**	**51**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	37.5	31.3	56.1
JEE and PVS	50	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**38.8**	**33.8**	**55.8**
Political and security risk	23.8	21.4	58.1
Socio-economic resilience	45.4	37.1	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	61.1	46.9	54.7
Public health vulnerabilities	38.5	38.5	55.3

Canada

69.8 Index Score **4**/195



Global average of all 195 countries

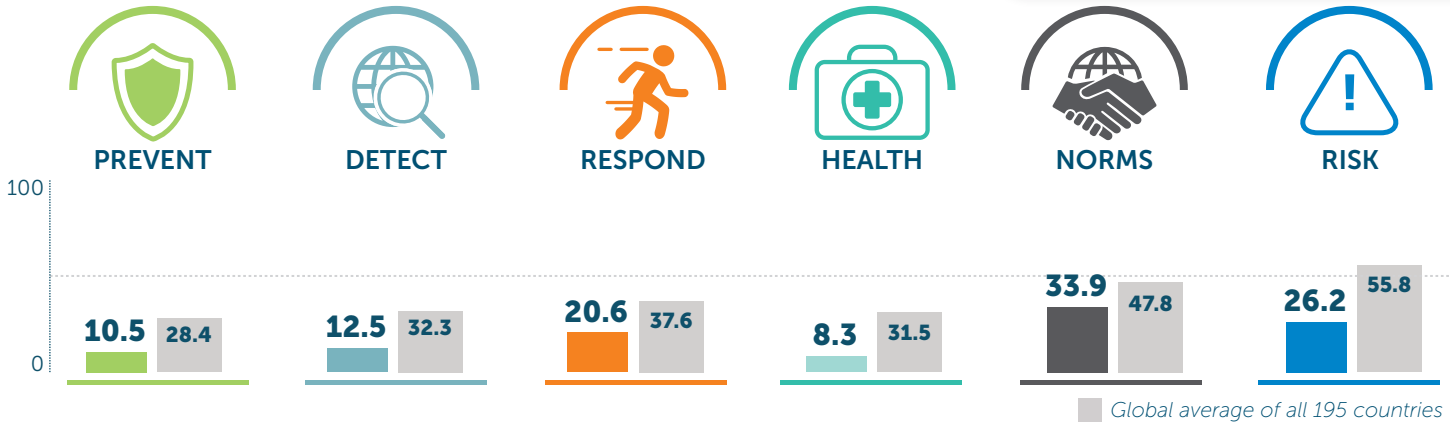
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**69.8**	**70.4**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	36.3	35.6	19.8
Biosecurity	82.7	86.7	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	50	50	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**64.6**	**70.8**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	100	100	34.7
Case-based investigation	12.5	50	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**50**	**49.2**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	100	57.9
Access to communications infrastructure	75.2	77.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**65**	**67.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	33.2	49.6	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	100	100	10.3
Healthcare access	52.1	52	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**75**	**79.2**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	25	50	18.7
Financing	25	25	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**81.3**	**81.8**	**55.8**
Political and security risk	87.9	87.8	58.1
Socio-economic resilience	95.3	95.5	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	62.1	64.8	54.7
Public health vulnerabilities	78	77.7	55.3

Central African Republic

18.6 Index Score **189**/195



Global average of all 195 countries

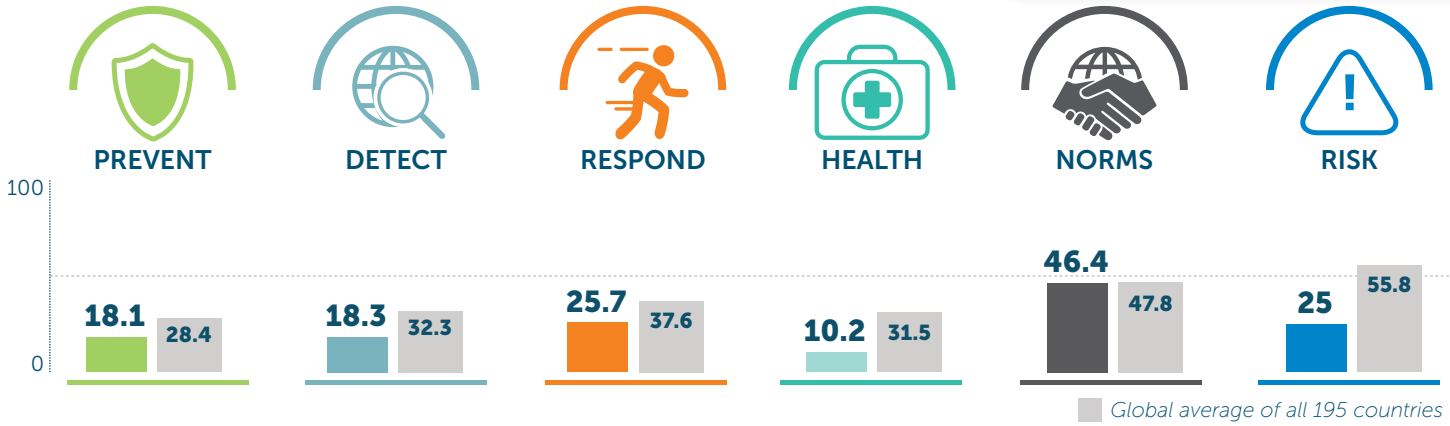
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13.8**	**10.5**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	20.6	0.5	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**12.5**	**12.5**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**27.8**	**20.6**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	44.8	44.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**8.3**	**8.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.3	1.3	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.5	56.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**31.8**	**33.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	15.6	28.1	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**29.9**	**26.2**	**55.8**
Political and security risk	12.3	13.5	58.1
Socio-economic resilience	20.8	20.6	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	68.3	45.9	54.7
Public health vulnerabilities	31.4	34.4	55.3

Chad

23.9 Index Score **178**/195



Global average of all 195 countries

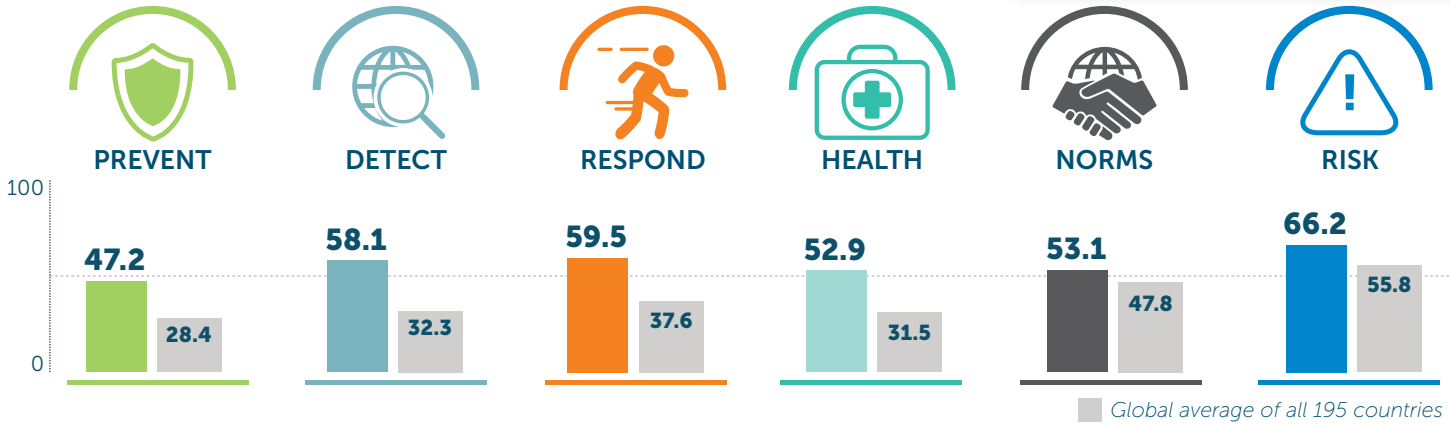
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**18.1**	**18.1**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	0.5	0.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**18.3**	**18.3**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**29.6**	**25.7**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	54.2	57.9
Access to communications infrastructure	40.6	29.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**10.2**	**10.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	0.6	0.6	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	45.5	45.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**41.7**	**46.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	0	3.1	56.1
JEE and PVS	50	75	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**29.2**	**25**	**55.8**
Political and security risk	22.8	24.1	58.1
Socio-economic resilience	14.8	15	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	74.5	52.2	54.7
Public health vulnerabilities	17.3	17.1	55.3

Chile

56.2 Index Score **28**/195



Global average of all 195 countries

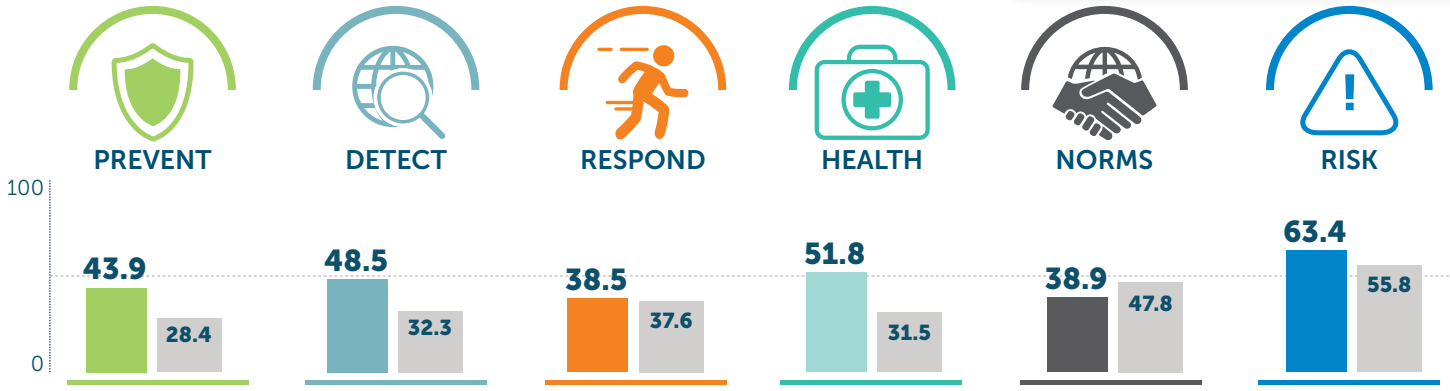
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**46.6**	**47.2**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	19.1	18.9	19.8
Biosecurity	52	56	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**43.5**	**58.1**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	87.5	34.6
Surveillance data accessibility and transparency	73.3	73.3	34.7
Case-based investigation	0	50	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**60.8**	**59.5**	**37.6**
Emergency preparedness and response planning	41.7	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	83.8	83.3	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**48.2**	**52.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	18.7	51.8	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60.6	60.4	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**52.6**	**53.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	90.6	93.8	56.1
JEE and PVS	0	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**66.4**	**66.2**	**55.8**
Political and security risk	78.9	73.8	58.1
Socio-economic resilience	74	74.6	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	46.7	49.6	54.7
Public health vulnerabilities	57.4	57.8	55.3

China

47.5 Index Score **52**/195



Global average of all 195 countries

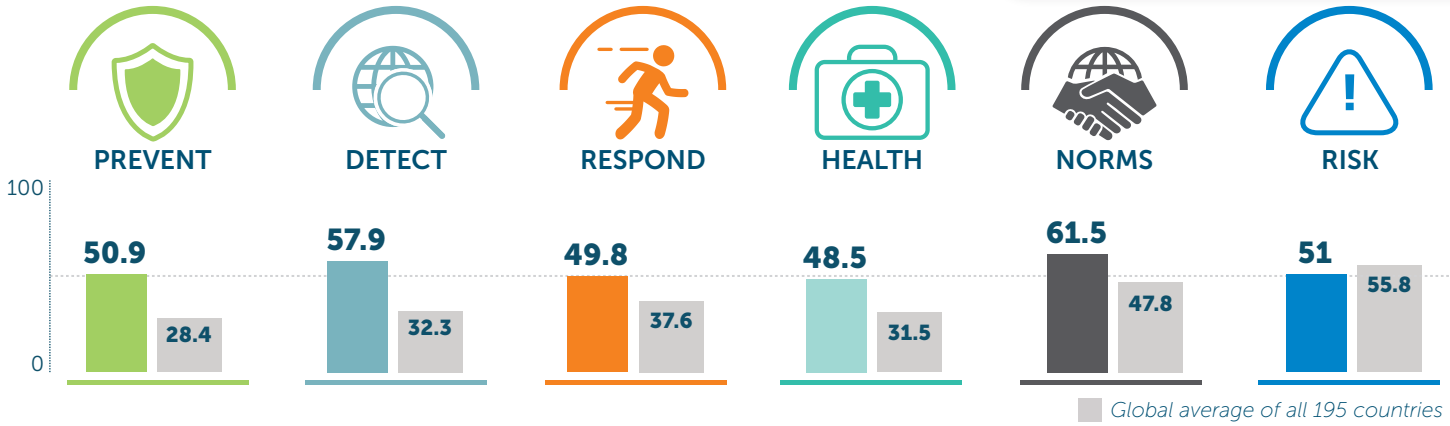
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**43.9**	**43.9**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	28.3	28.3	19.8
Biosecurity	52	52	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**48.5**	**48.5**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	53.3	53.3	34.7
Case-based investigation	37.5	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**48.8**	**38.5**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	75	77.8	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**49.4**	**51.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	27.7	44.5	30
Supply chain for health system and healthcare workers	83.3	83.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.8	59.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**38.9**	**38.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	50	50	56.1
JEE and PVS	0	0	18.7
Financing	50	50	35.2
Commitment to sharing of genetic and biological data and specimens	33.3	33.3	68.4
RISK ENVIRONMENT	**64.6**	**63.4**	**55.8**
Political and security risk	54.2	62.6	58.1
Socio-economic resilience	66.7	66.5	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	67.1	52.2	54.7
Public health vulnerabilities	60.1	60.8	55.3

Colombia

53.2 Index Score **38**/195



Global average of all 195 countries

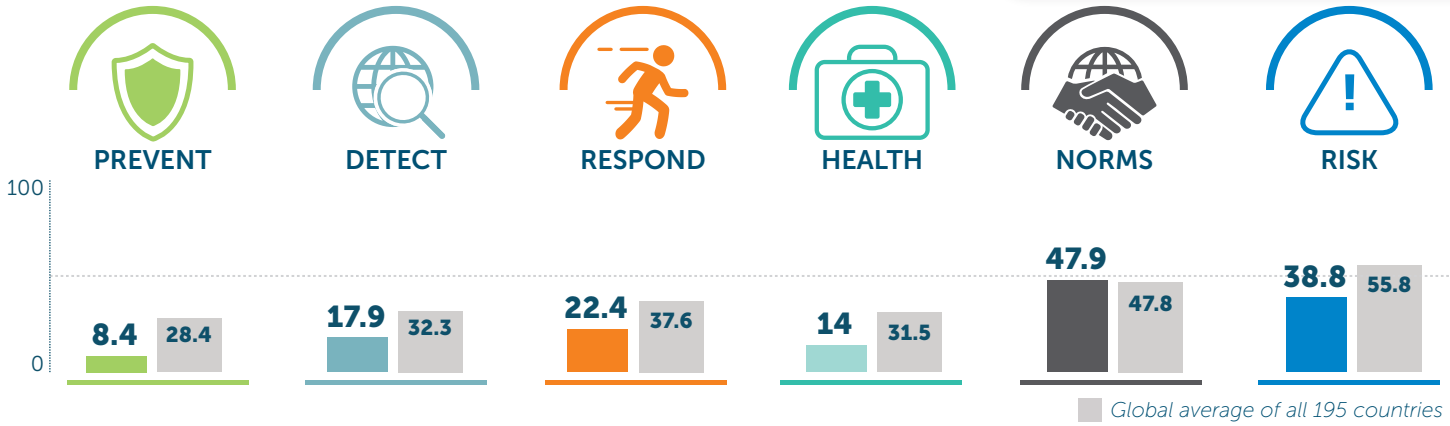
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**47.2**	**50.9**	**28.4**
Antimicrobial resistance (AMR)	75	83.3	45.3
Zoonotic disease	68.2	48.8	19.8
Biosecurity	40	48	18.7
Biosafety	25	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**43.3**	**57.9**	**32.3**
Laboratory systems strength and quality	25	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	75	62.5	34.6
Surveillance data accessibility and transparency	60	60	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**55.7**	**49.8**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	69	77.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**43.7**	**48.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	23.7	57.3	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.5	62.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**61.5**	**61.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	93.8	93.8	56.1
JEE and PVS	50	50	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**48.7**	**51**	**55.8**
Political and security risk	46.1	46.7	58.1
Socio-economic resilience	54.2	61.9	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	34.7	37.2	54.7
Public health vulnerabilities	58.6	59	55.3

Comoros

24.9 Index Score **175**/195



Global average of all 195 countries

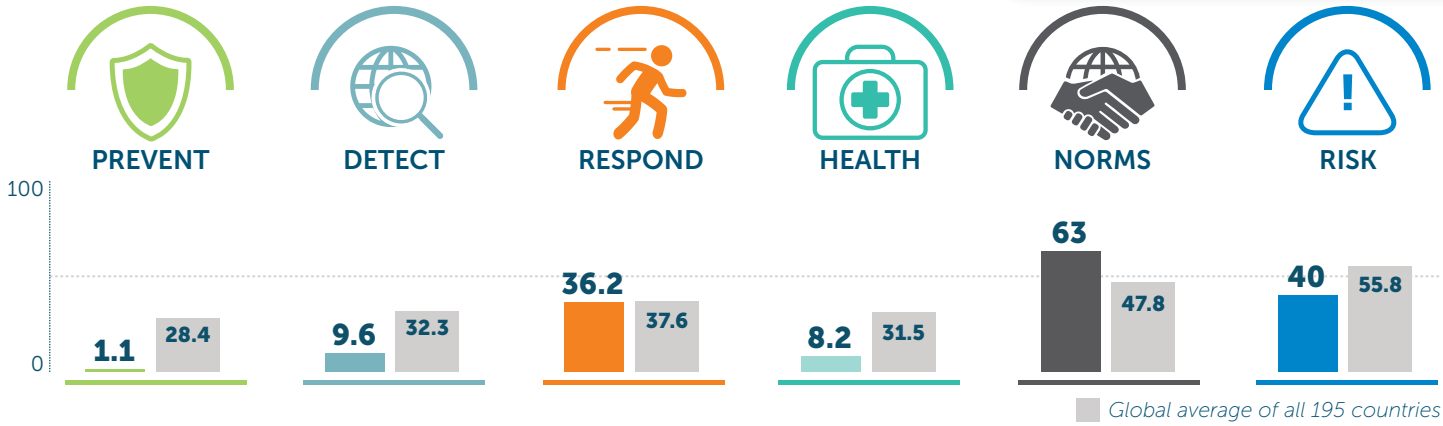
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**8.4**	**8.4**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	0.3	0.3	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**15.8**	**17.9**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**31.4**	**22.4**	**37.6**
Emergency preparedness and response planning	0	29.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	25	57.9
Access to communications infrastructure	36.3	28	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11.6**	**14**	**31.5**
Health capacity in clinics, hospitals, and community care centers	3.5	20.1	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53	52.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.9**	**47.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	12.5	12.5	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**36.3**	**38.8**	**55.8**
Political and security risk	50.6	51.6	58.1
Socio-economic resilience	41.8	42.1	60.9
Infrastructure adequacy	8.3	8.3	50.2
Environmental risks	44.3	55.5	54.7
Public health vulnerabilities	36.3	36.3	55.3

Congo (Brazzaville)

26.3 Index Score **162**/195



Global average of all 195 countries

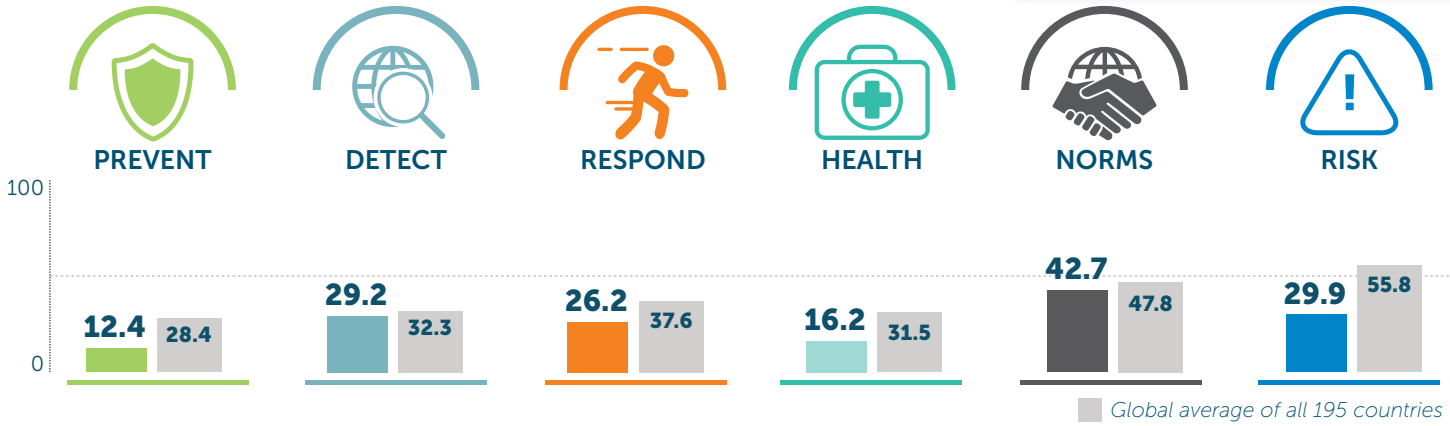
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.5**	**1.1**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	7.1	6.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	0	63.3
DETECTION AND REPORTING	**4.2**	**9.6**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	37.5	34.6
Surveillance data accessibility and transparency	0	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**28**	**36.2**	**37.6**
Emergency preparedness and response planning	0	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	70.8	57.9
Access to communications infrastructure	58.5	53.4	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**8.2**	**8.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	2.6	2.6	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.5	54.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54.2**	**63**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	75	78.1	56.1
JEE and PVS	0	50	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**39.2**	**40**	**55.8**
Political and security risk	31.7	32.9	58.1
Socio-economic resilience	45.8	45.8	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	50.5	53	54.7
Public health vulnerabilities	26.2	26.6	55.3

Congo (Democratic Republic)

26.1 Index Score **167**/195



Global average of all 195 countries

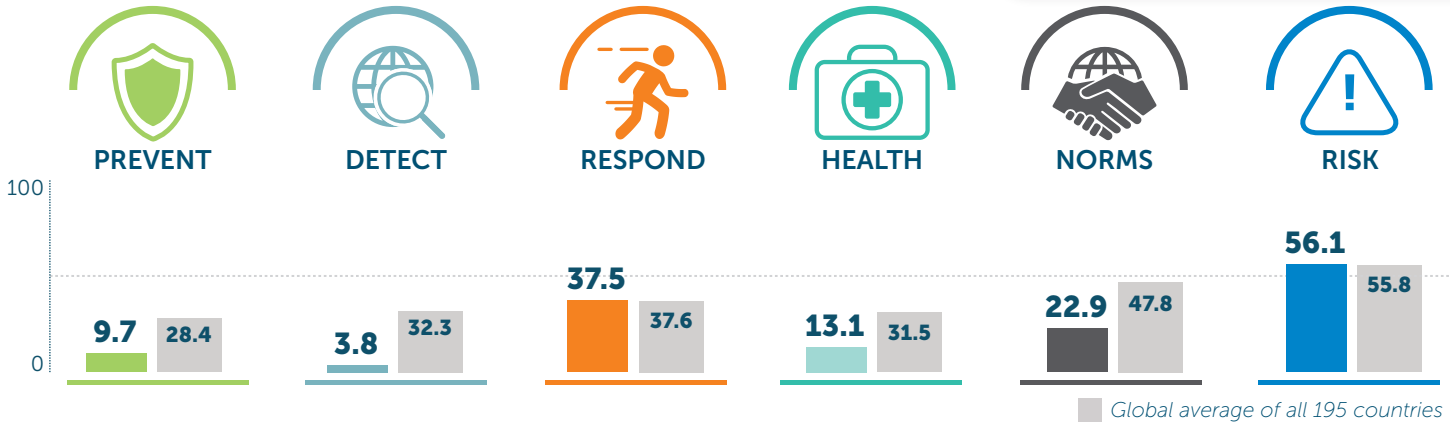
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**12.4**	**12.4**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	12.1	12.1	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**29.2**	**29.2**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	62.5	62.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**29.8**	**26.2**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	54.2	57.9
Access to communications infrastructure	37.4	33.6	65.7
Trade and travel restrictions	100	50	39

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.2**	**16.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	18.5	18.5	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53	53	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**42.2**	**42.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	31.3	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**26.4**	**29.9**	**55.8**
Political and security risk	6.2	22.1	58.1
Socio-economic resilience	33.1	33	60.9
Infrastructure adequacy	0	0	50.2
Environmental risks	60.2	62	54.7
Public health vulnerabilities	32.4	32.5	55.3

Scores are normalized (0–100, where 100 = most favorable)

Cook Islands

23.9 Index Score **178**/195



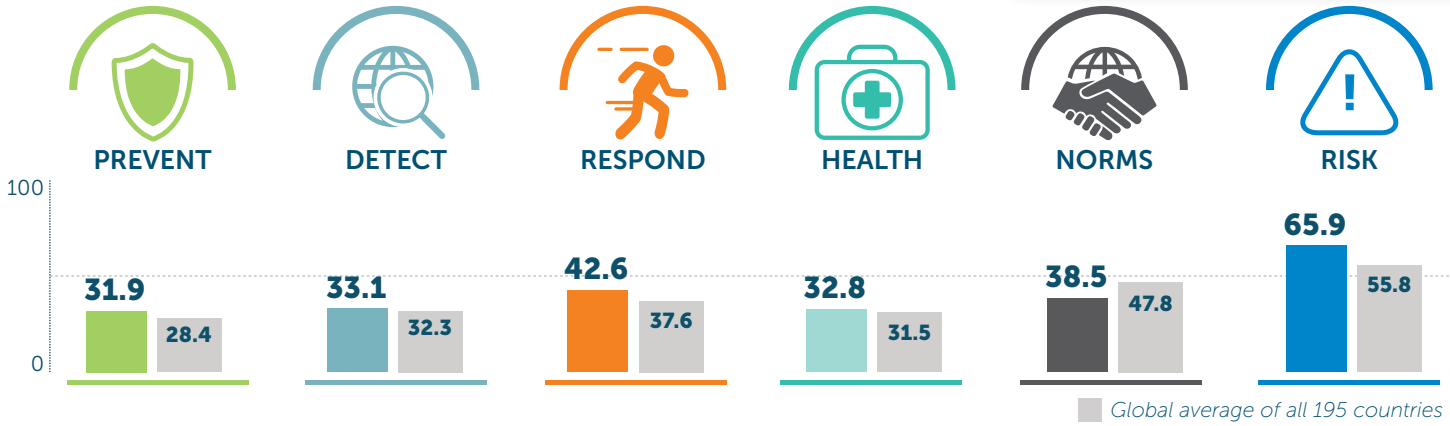
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.7**	**9.7**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**1.7**	**3.8**	**32.3**
Laboratory systems strength and quality	0	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**31.6**	**37.5**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	67.3	66.8	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**13.1**	**13.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	27.9	27.9	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	38.7	38.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**22.9**	**22.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	12.5	12.5	56.1
JEE and PVS	0	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**47.9**	**56.1**	**55.8**
Political and security risk	65.3	62.9	58.1
Socio-economic resilience	63.5	62.3	60.9
Infrastructure adequacy	16.7	58.3	50.2
Environmental risks	39.6	42.2	54.7
Public health vulnerabilities	54.3	55	55.3

Costa Rica

40.8 Index Score **73**/195



Global average of all 195 countries

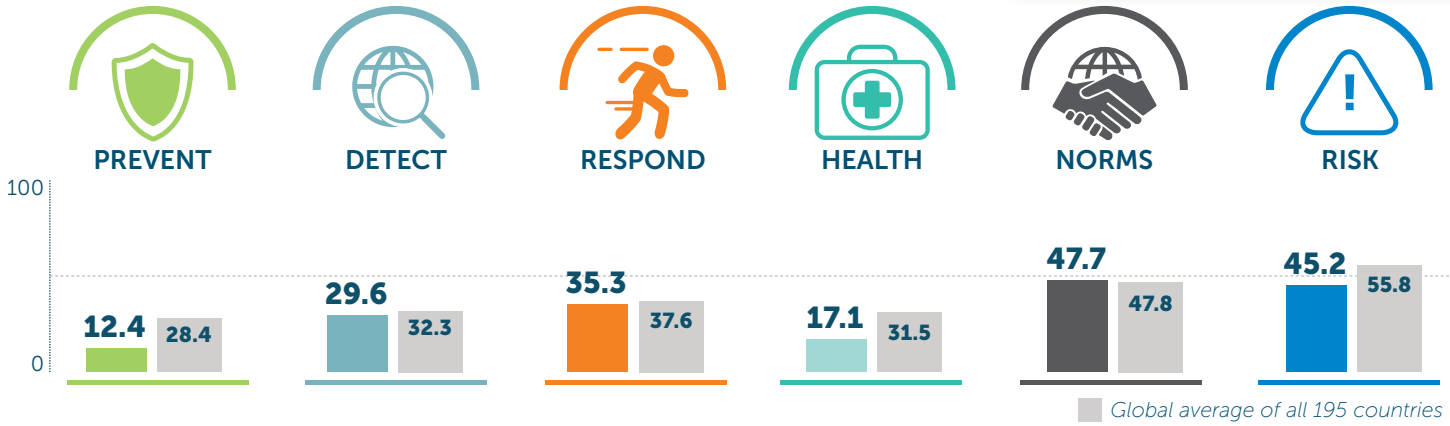
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**31.9**	**31.9**	**28.4**
Antimicrobial resistance (AMR)	41.7	41.7	45.3
Zoonotic disease	24.9	24.9	19.8
Biosecurity	0	0	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**33.1**	**33.1**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**39.6**	**42.6**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	58.3	83.3	57.9
Access to communications infrastructure	85.7	90.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**32.8**	**32.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	9.8	9.7	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53	53.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**38**	**38.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	31.3	56.1
JEE and PVS	0	0	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**67.8**	**65.9**	**55.8**
Political and security risk	77.2	72.6	58.1
Socio-economic resilience	77.4	69.4	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	67.2	70.5	54.7
Public health vulnerabilities	67.2	67.2	55.3

Côte d'Ivoire

31.2 Index Score **125**/195



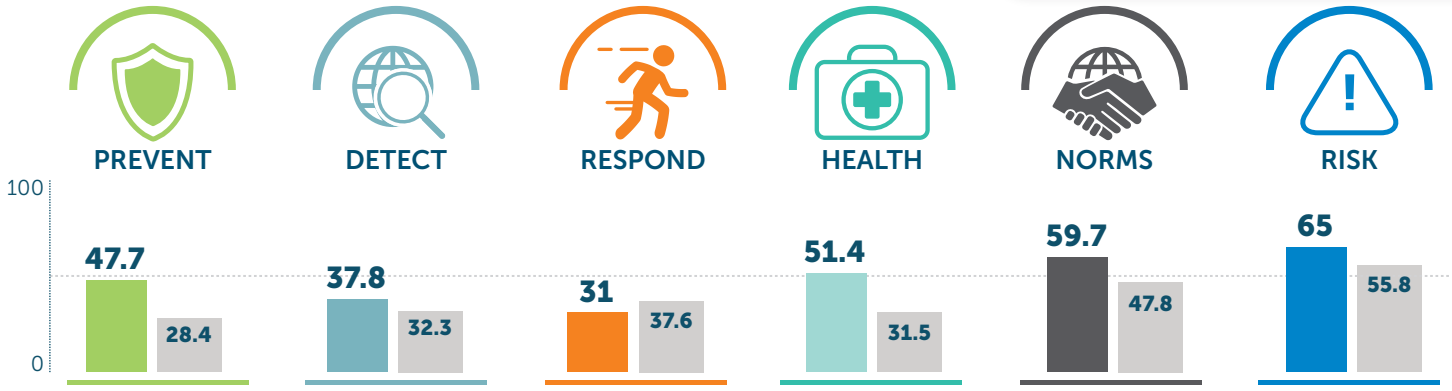
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**15.7**	**12.4**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	32	11.9	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**33.8**	**29.6**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	37.5	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**38.8**	**35.3**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	83.3	57.9
Access to communications infrastructure	59.3	59.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14.7**	**17.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.2	17.9	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60.3	60.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**50**	**47.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	25	28.1	56.1
JEE and PVS	75	50	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44.3**	**45.2**	**55.8**
Political and security risk	53.1	53.1	58.1
Socio-economic resilience	40.8	42.3	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	58.8	61.4	54.7
Public health vulnerabilities	27.3	27.6	55.3

Croatia

48.8 Index Score **48**/195



Global average of all 195 countries

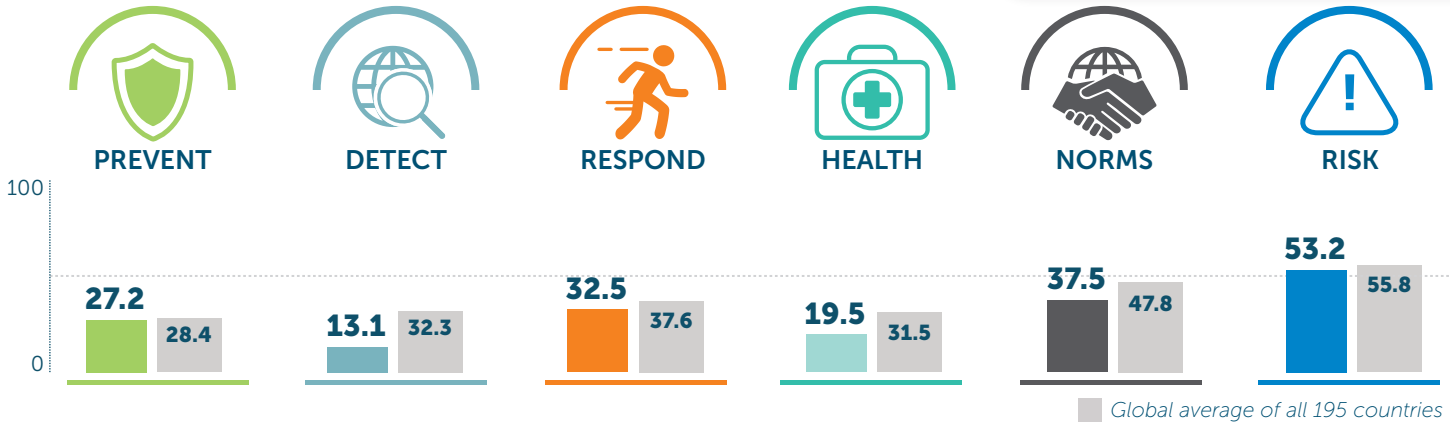
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**51.3**	**47.7**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	47.1	25.8	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**37.8**	**37.8**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	76.7	76.7	34.7
Case-based investigation	25	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**37**	**31**	**37.6**
Emergency preparedness and response planning	8.3	25	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	67.3	71.1	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**51.4**	**51.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	36	35.9	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	63	63	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55**	**59.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**66.2**	**65**	**55.8**
Political and security risk	72.1	63.7	58.1
Socio-economic resilience	70.8	70.8	60.9
Infrastructure adequacy	75	83.3	50.2
Environmental risks	54.8	49.2	54.7
Public health vulnerabilities	58.1	58.1	55.3

Cuba

30.5 Index Score **129**/195



Global average of all 195 countries

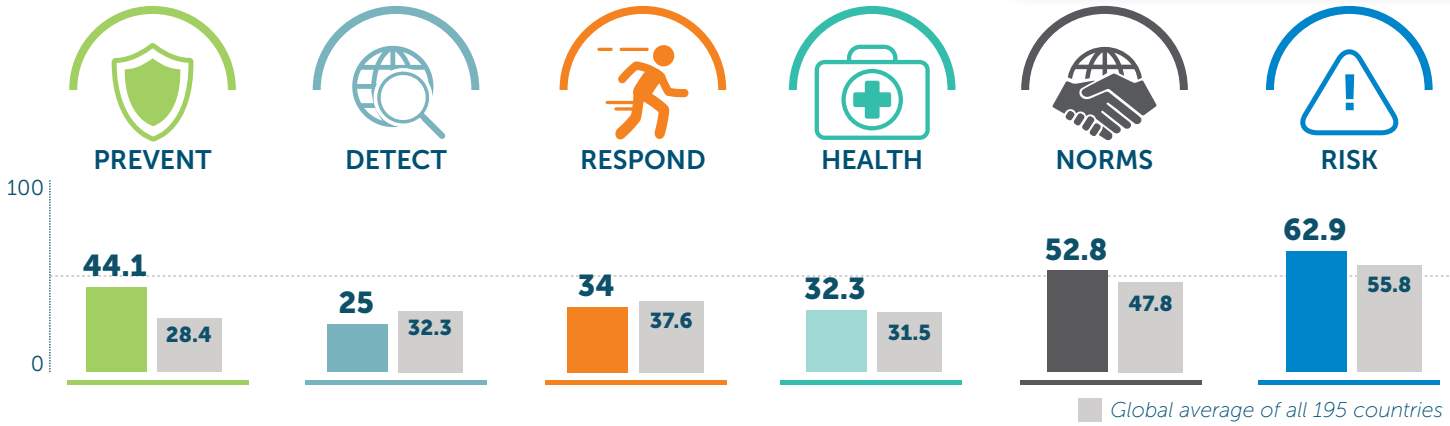
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**30.7**	**27.2**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	42.6	22.2	19.8
Biosecurity	8	8	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**6.8**	**13.1**	**32.3**
Laboratory systems strength and quality	25	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	3.3	3.3	34.7
Case-based investigation	12.5	37.5	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**35.4**	**32.5**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	60.3	64.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**17.1**	**19.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	29.1	45.9	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	65.4	65.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**46.7**	**37.5**	**47.8**
IHR reporting compliance and disaster risk reduction	100	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	46.9	50	56.1
JEE and PVS	0	0	18.7
Financing	16.7	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57.3**	**53.2**	**55.8**
Political and security risk	64.6	61	58.1
Socio-economic resilience	68.2	68	60.9
Infrastructure adequacy	33.3	25	50.2
Environmental risks	57.8	50.5	54.7
Public health vulnerabilities	62.5	61.7	55.3

Cyprus

41.9 Index Score **70**/195



Global average of all 195 countries

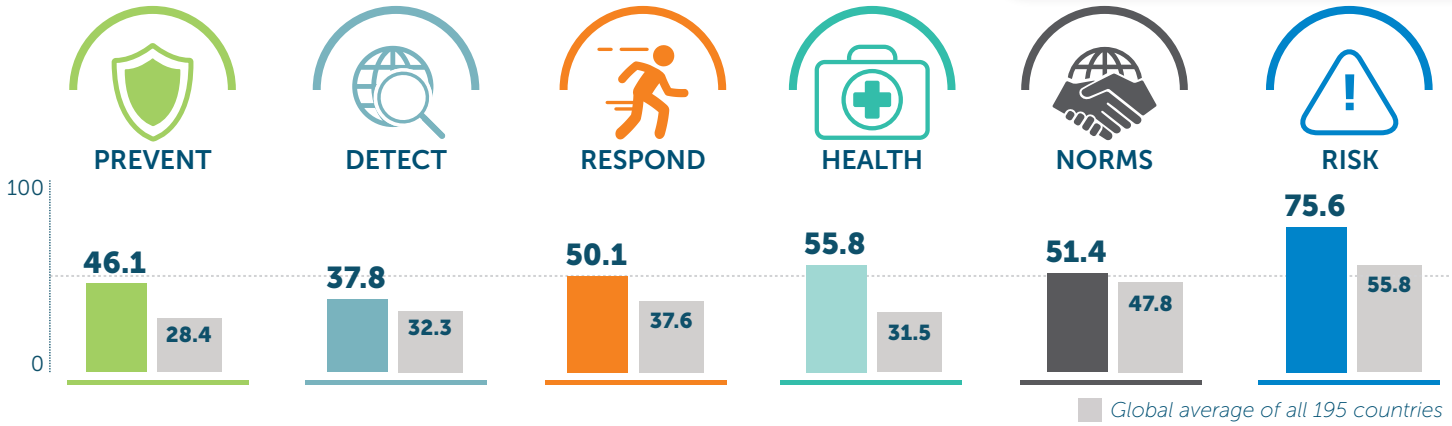
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**44.3**	**44.1**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	50.5	49.8	19.8
Biosecurity	40	40	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**21.4**	**25**	**32.3**
Laboratory systems strength and quality	25	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	53.3	50	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**38**	**34**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	78.4	84	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**31.5**	**32.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	45.5	45.5	30
Supply chain for health system and healthcare workers	50	55.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	50.3	50.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**52.3**	**52.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	0	0	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**66.2**	**62.9**	**55.8**
Political and security risk	58.9	48.1	58.1
Socio-economic resilience	85.1	76.7	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	67.8	70.6	54.7
Public health vulnerabilities	52.5	52.7	55.3

Czech Republic

52.8 Index Score **39**/195



Global average of all 195 countries

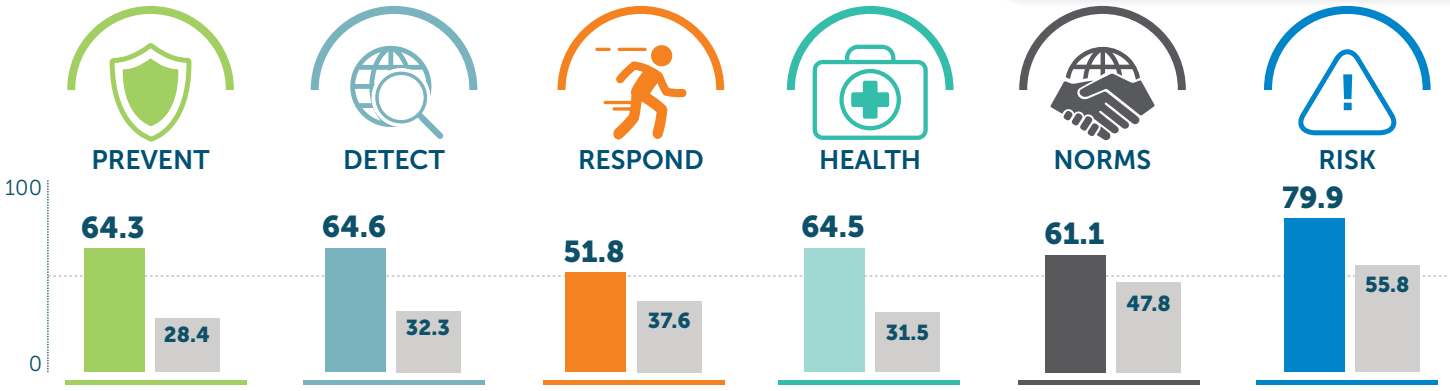
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**46.7**	**46.1**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	50.5	47	19.8
Biosecurity	54.7	54.7	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**37.8**	**37.8**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	76.7	76.7	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**55.3**	**50.1**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	78.5	79.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**55.8**	**55.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	39.5	39.6	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	64.8	64.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**59.2**	**51.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**75**	**75.6**	**55.8**
Political and security risk	77.9	86.1	58.1
Socio-economic resilience	89.8	81.2	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	57.3	60	54.7
Public health vulnerabilities	74.9	75.9	55.3

Denmark

64.4 Index Score **12**/195



Global average of all 195 countries

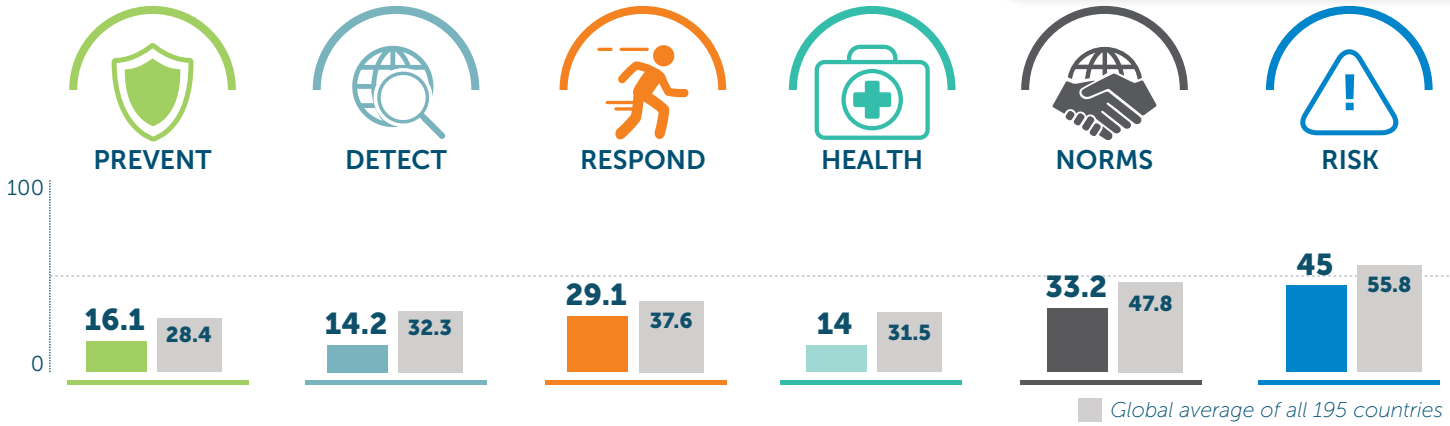
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**67.7**	**64.3**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	50	30	19.8
Biosecurity	89.3	89.3	18.7
Biosafety	75	75	20.9
Dual-use research and culture of responsible science	33.3	33.3	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**60.4**	**64.6**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	87.5	62.5	34.6
Surveillance data accessibility and transparency	100	100	34.7
Case-based investigation	0	50	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**78.1**	**51.8**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	87.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	58.3	57.9
Access to communications infrastructure	84.2	87.4	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**59.7**	**64.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	52.7	69.5	30
Supply chain for health system and healthcare workers	38.9	55.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.5	51.3	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**56.9**	**61.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	25	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**80.9**	**79.9**	**55.8**
Political and security risk	85.3	85.8	58.1
Socio-economic resilience	98.6	90.3	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	63.5	66.1	54.7
Public health vulnerabilities	82	82.2	55.3

Djibouti

25.2 Index Score **173**/195



Global average of all 195 countries

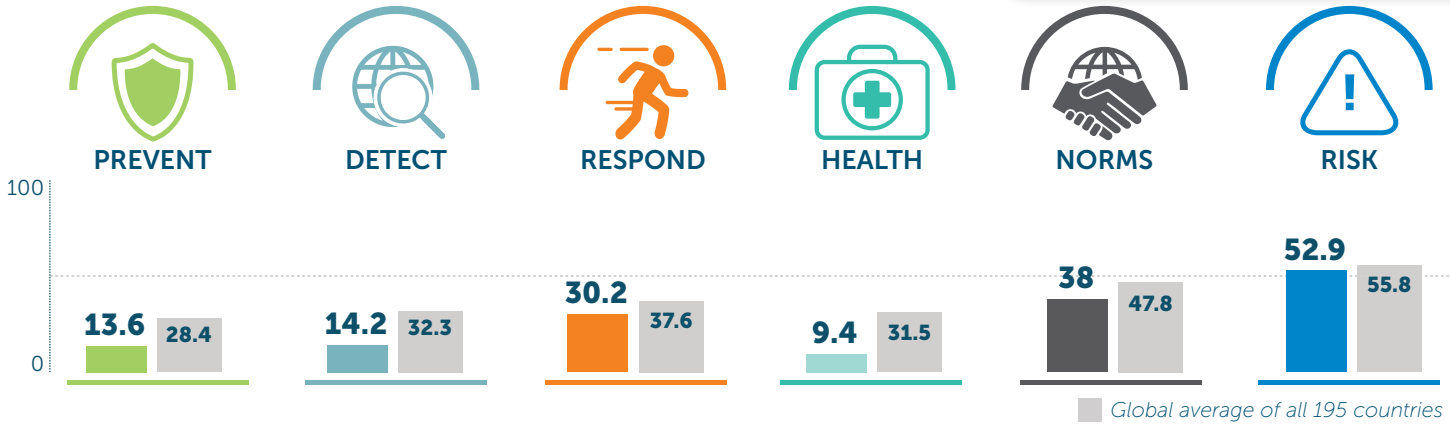
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**12.7**	**16.1**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	1.3	21.4	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**10**	**14.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**26.9**	**29.1**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	50	57.9
Access to communications infrastructure	59.4	57.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14**	**14**	**31.5**
Health capacity in clinics, hospitals, and community care centers	2.5	2.5	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.9	53.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33.2**	**33.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	15.6	15.6	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**46.6**	**45**	**55.8**
Political and security risk	30.7	35.9	58.1
Socio-economic resilience	44.3	44.6	60.9
Infrastructure adequacy	66.7	50	50.2
Environmental risks	46.9	49.6	54.7
Public health vulnerabilities	44.5	44.9	55.3

Dominica

26.4 Index Score **160**/195



Global average of all 195 countries

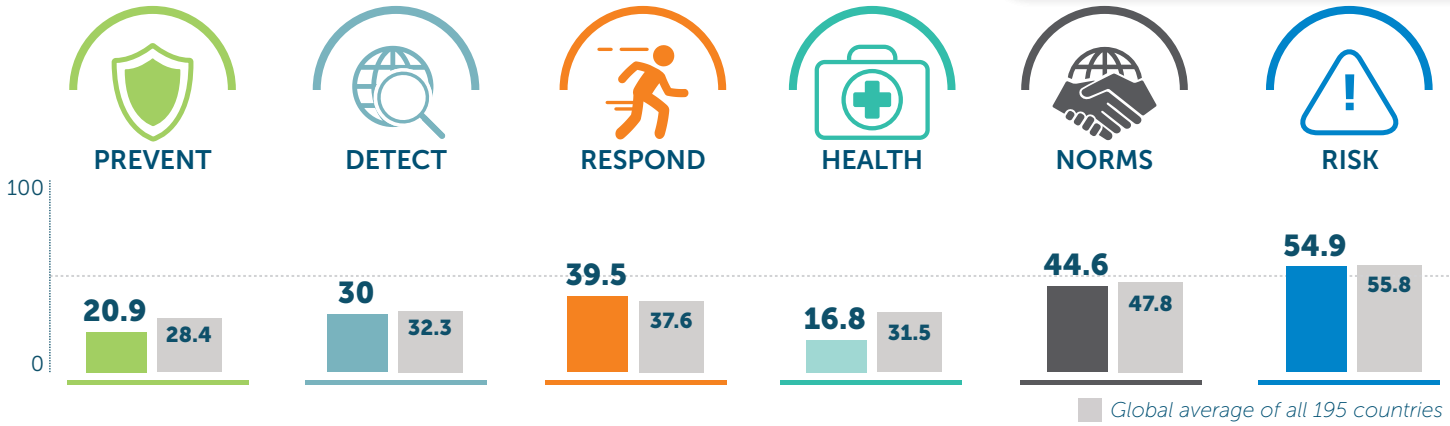
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13.6**	**13.6**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	6.7	6.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	25	25	63.3
DETECTION AND REPORTING	**10**	**14.2**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**29.3**	**30.2**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	71.8	73.8	65.7
Trade and travel restrictions	75	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**9.5**	**9.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	12	12	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.3	54.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.2**	**38**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	25	28.1	56.1
JEE and PVS	0	0	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**52.7**	**52.9**	**55.8**
Political and security risk	72.8	69.1	58.1
Socio-economic resilience	63	63.3	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	33.1	35.7	54.7
Public health vulnerabilities	53.1	54.5	55.3

Dominican Republic

34.5 Index Score **103**/195



Global average of all 195 countries

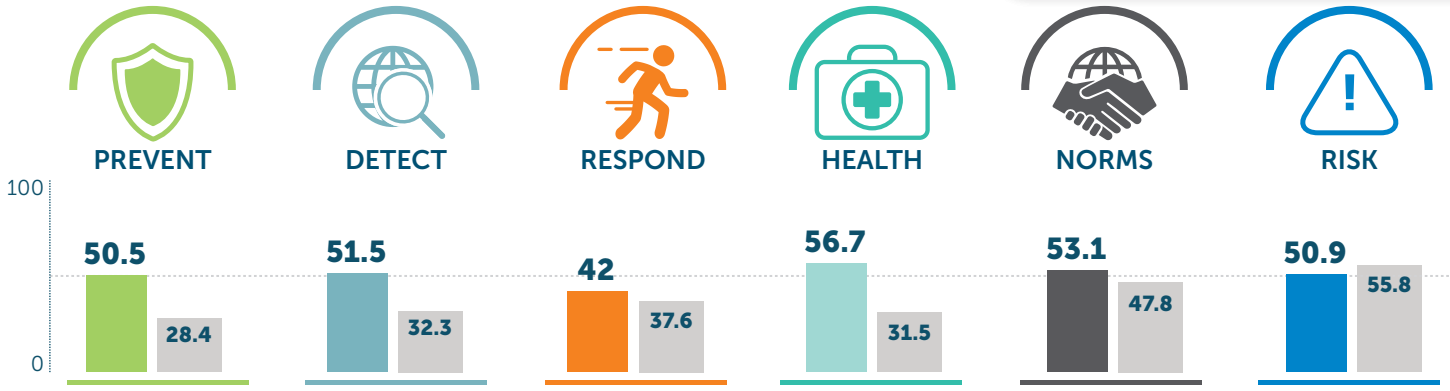
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**21**	**20.9**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	17.8	17.3	19.8
Biosecurity	0	0	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**27.9**	**30**	**32.3**
Laboratory systems strength and quality	0	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	50	50	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**46.5**	**39.5**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	71.2	72.6	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.8**	**16.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	6	5.9	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.9	61.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**45.7**	**44.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	40.6	34.4	56.1
JEE and PVS	0	0	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**56.8**	**54.9**	**55.8**
Political and security risk	67.6	64	58.1
Socio-economic resilience	65	56.6	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	40.7	42.8	54.7
Public health vulnerabilities	60.7	61.1	55.3

Ecuador

50.8 Index Score **44**/195



Global average of all 195 countries

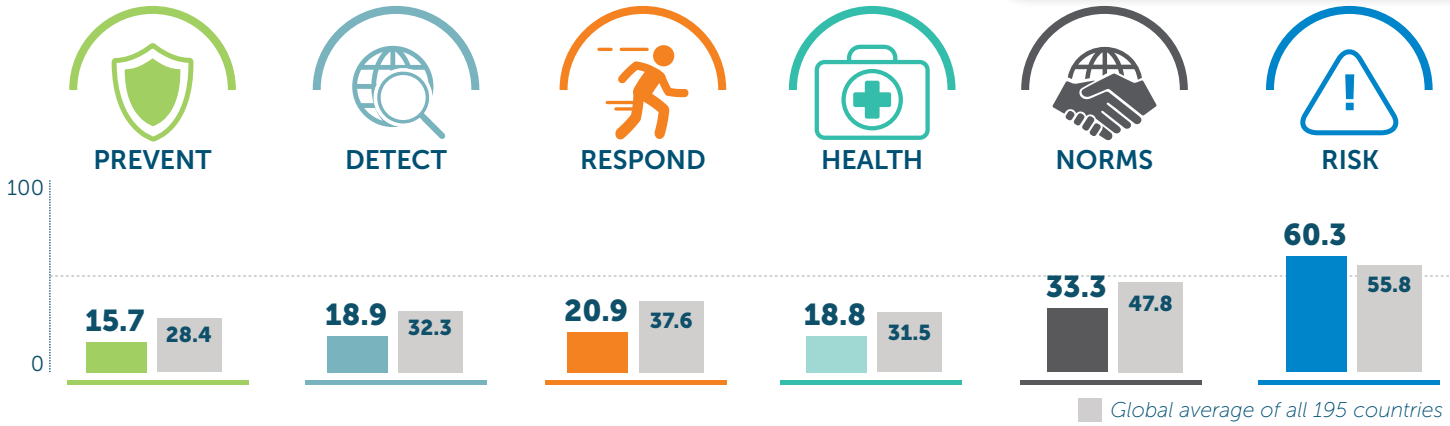
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**49.4**	**50.5**	**28.4**
Antimicrobial resistance (AMR)	66.7	83.3	45.3
Zoonotic disease	55.8	45.7	19.8
Biosecurity	24	24	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**45.3**	**51.5**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	50	34.6
Surveillance data accessibility and transparency	96.7	96.7	34.7
Case-based investigation	0	50	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**44.2**	**42**	**37.6**
Emergency preparedness and response planning	58.3	91.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	58.3	70.8	57.9
Access to communications infrastructure	59.1	73.5	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**49.6**	**56.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	24.4	24.3	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	50	100	10.3
Healthcare access	64.5	64.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**45.7**	**53.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	40.6	43.8	56.1
JEE and PVS	0	0	18.7
Financing	66.7	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**55.2**	**50.9**	**55.8**
Political and security risk	57.8	49.6	58.1
Socio-economic resilience	56.3	47.8	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	39.6	34.1	54.7
Public health vulnerabilities	55.7	56.2	55.3

Egypt

28 Index Score **153**/195



Global average of all 195 countries

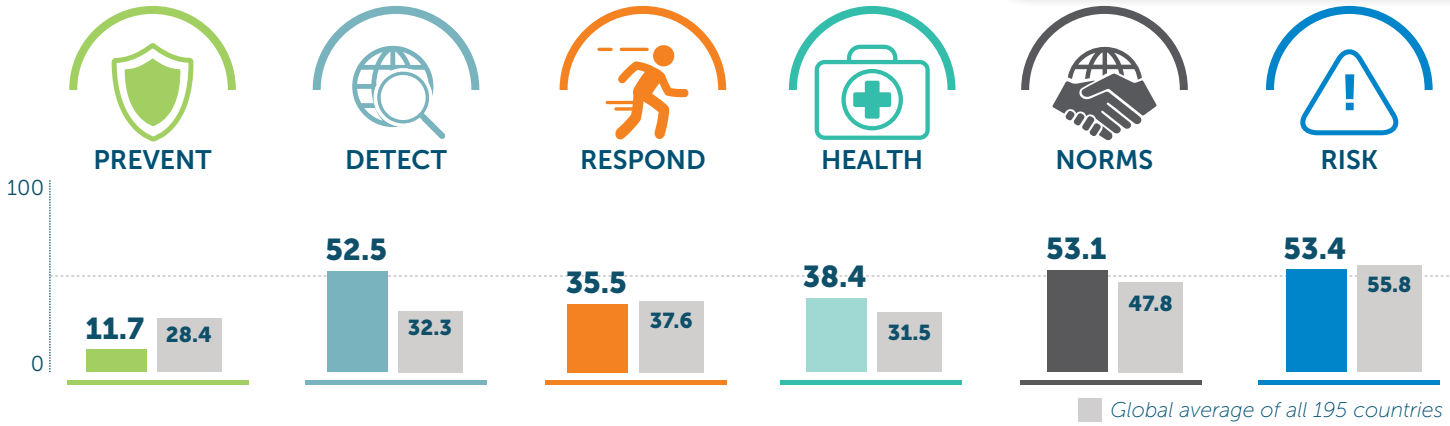
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**19.1**	**15.7**	**28.4**
Antimicrobial resistance (AMR)	16.7	16.7	45.3
Zoonotic disease	22.9	2.8	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**18.3**	**18.9**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	10	13.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**32.7**	**20.9**	**37.6**
Emergency preparedness and response planning	0	25	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	70.8	45.8	57.9
Access to communications infrastructure	57.8	50.4	65.7
Trade and travel restrictions	75	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.5**	**18.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	4.2	20.7	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.2	61.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**34.2**	**33.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	21.9	25	56.1
JEE and PVS	0	0	18.7
Financing	16.7	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**61**	**60.3**	**55.8**
Political and security risk	62.6	56.6	58.1
Socio-economic resilience	49.7	49.6	60.9
Infrastructure adequacy	66.7	75	50.2
Environmental risks	60.2	54.8	54.7
Public health vulnerabilities	65.6	65.3	55.3

El Salvador

40.8 Index Score **73**/195



Global average of all 195 countries

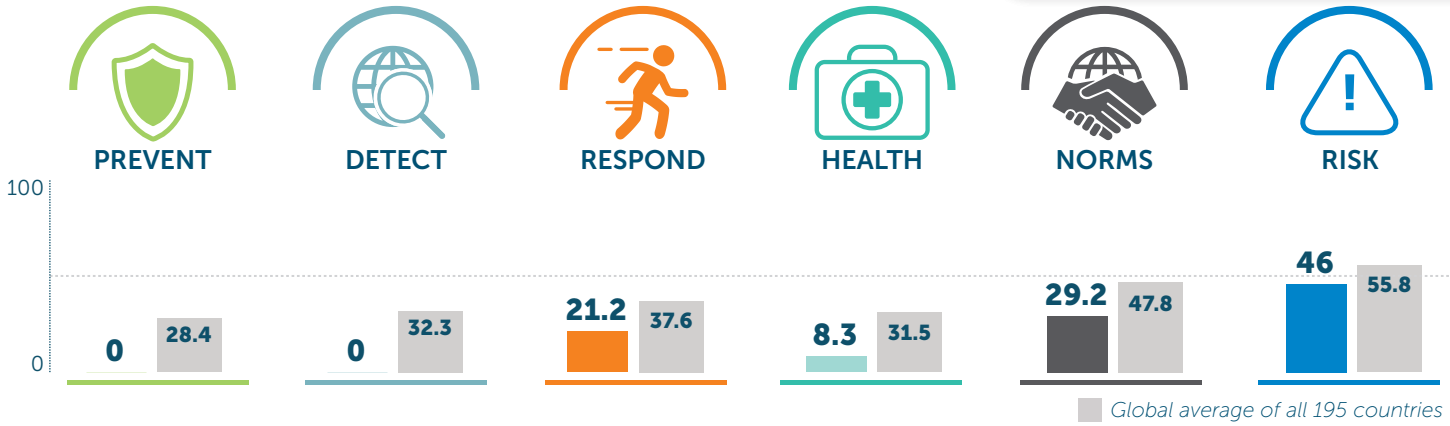
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**20.1**	**11.7**	**28.4**
Antimicrobial resistance (AMR)	16.7	16.7	45.3
Zoonotic disease	28.9	28.3	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	25	63.3
DETECTION AND REPORTING	**50.4**	**52.5**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	90	90	34.7
Case-based investigation	25	25	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**47.8**	**35.5**	**37.6**
Emergency preparedness and response planning	33.3	50	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	58.3	57.9
Access to communications infrastructure	59.3	56.5	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**38.4**	**38.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	22.7	22.5	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	63.1	63.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54**	**53.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	40.6	43.8	56.1
JEE and PVS	0	0	18.7
Financing	66.7	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**46.6**	**53.4**	**55.8**
Political and security risk	47	53.5	58.1
Socio-economic resilience	52.6	69.1	60.9
Infrastructure adequacy	41.7	50	50.2
Environmental risks	36.8	39.1	54.7
Public health vulnerabilities	55.1	55.3	55.3

Equatorial Guinea

17.4 Index Score **191**/195



Global average of all 195 countries

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**0**	**0**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	0	63.3
DETECTION AND REPORTING	**0**	**0**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**24.9**	**21.2**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	49.5	44.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**8.3**	**8.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	3.6	3.6	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.3	54.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.2**	**29.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	25	56.1
JEE and PVS	0	0	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**45.4**	**46**	**55.8**
Political and security risk	48.5	49.6	58.1
Socio-economic resilience	32.9	32.3	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	51.8	54.3	54.7
Public health vulnerabilities	43.8	43.6	55.3

Eritrea

21.4 Index Score **183**/195

Global average of all 195 countries

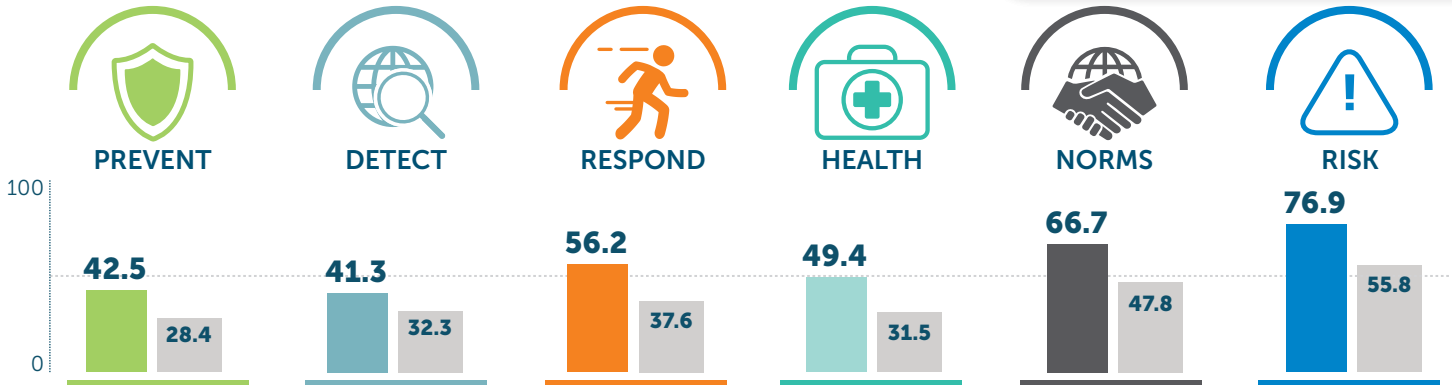
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16**	**12.5**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	20.9	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**10.4**	**10.4**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**23.6**	**19.9**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	40.2	35	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**8.6**	**8.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	2	2	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.9	52.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37.5**	**37.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	12.5	12.5	56.1
JEE and PVS	50	50	18.7
Financing	45.8	45.8	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**38.8**	**39.3**	**55.8**
Political and security risk	42	39.5	58.1
Socio-economic resilience	22.1	22.4	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	70.6	71.4	54.7
Public health vulnerabilities	34.2	37.9	55.3

Estonia

55.5 Index Score **30**/195



Global average of all 195 countries

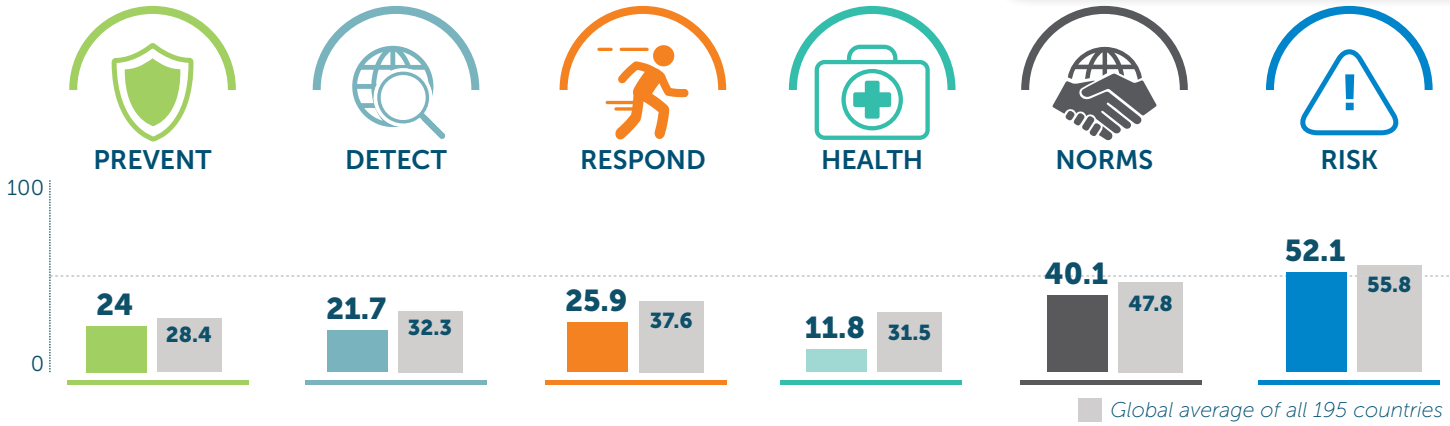
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**42.5**	**42.5**	**28.4**
Antimicrobial resistance (AMR)	41.7	41.7	45.3
Zoonotic disease	40.4	40.4	19.8
Biosecurity	48	48	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**41.3**	**41.3**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	60	60	34.7
Case-based investigation	12.5	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**62.9**	**56.2**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	81.8	85	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**46.4**	**49.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	40.7	56.8	30
Supply chain for health system and healthcare workers	55.6	61.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.3	53.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**66.1**	**66.7**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**74.2**	**76.9**	**55.8**
Political and security risk	72.4	82	58.1
Socio-economic resilience	96	96.6	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	61.6	64.1	54.7
Public health vulnerabilities	66.2	66.8	55.3

eSwatini

29.3 Index Score **140**/195



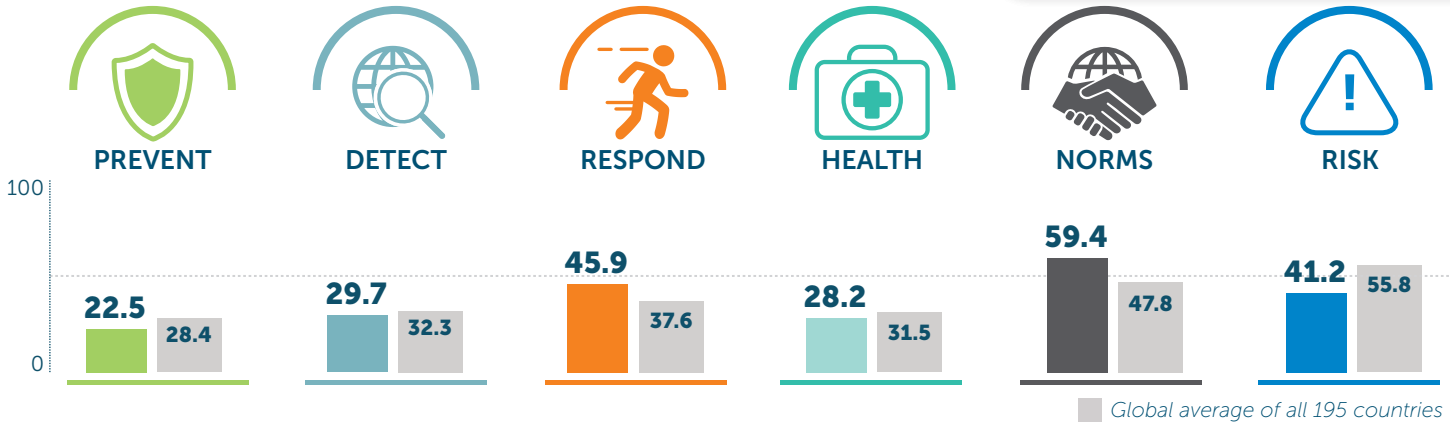
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**23.8**	**24**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	14.6	15.6	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**21.1**	**21.7**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	26.7	30	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**30.1**	**25.9**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	60.4	56.3	65.7
Trade and travel restrictions	75	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**9.4**	**11.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	6.4	23.1	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.4	59.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**48.4**	**40.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	15.6	15.6	56.1
JEE and PVS	75	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**51.3**	**52.1**	**55.8**
Political and security risk	53.8	54.9	58.1
Socio-economic resilience	35.8	35.5	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	68.9	71.7	54.7
Public health vulnerabilities	48	48.2	55.3

Ethiopia

37.8 Index Score **87**/195



Global average of all 195 countries

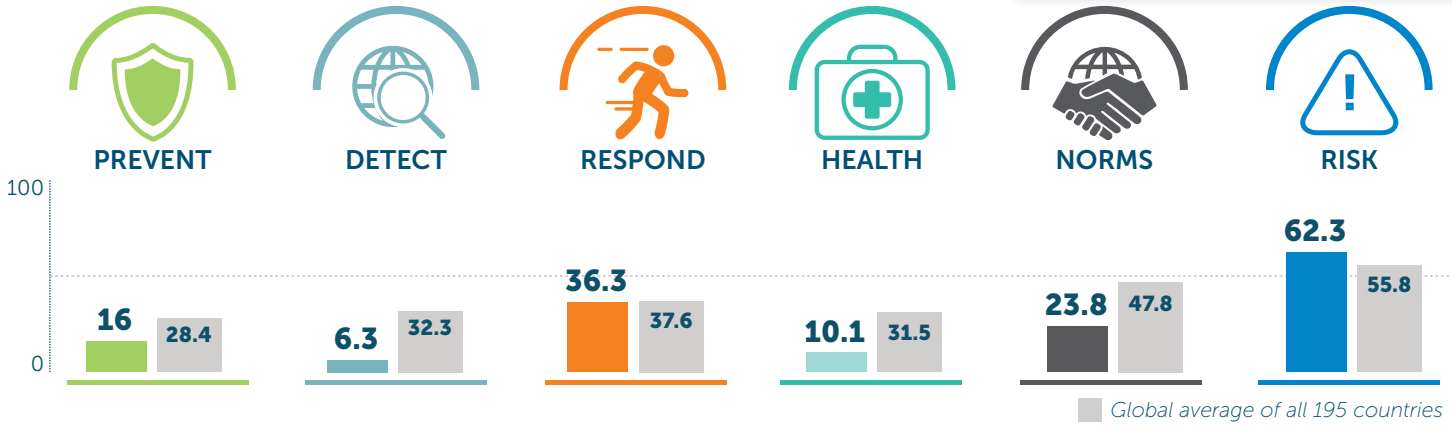
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22.5**	**22.5**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	11.1	11.1	19.8
Biosecurity	24	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**23.5**	**29.7**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	3.3	3.3	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**42**	**45.9**	**37.6**
Emergency preparedness and response planning	16.7	16.7	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	100	100	57.9
Access to communications infrastructure	44.3	33.9	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**28.2**	**28.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	17.6	17.6	30
Supply chain for health system and healthcare workers	27.8	27.8	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.1	52.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**64.9**	**59.4**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	81.3	81.3	56.1
JEE and PVS	50	25	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**43.2**	**41.2**	**55.8**
Political and security risk	29.4	16.3	58.1
Socio-economic resilience	40.9	40.8	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	59.2	61.8	54.7
Public health vulnerabilities	44.9	45.4	55.3

Fiji

25.8 Index Score **169**/195



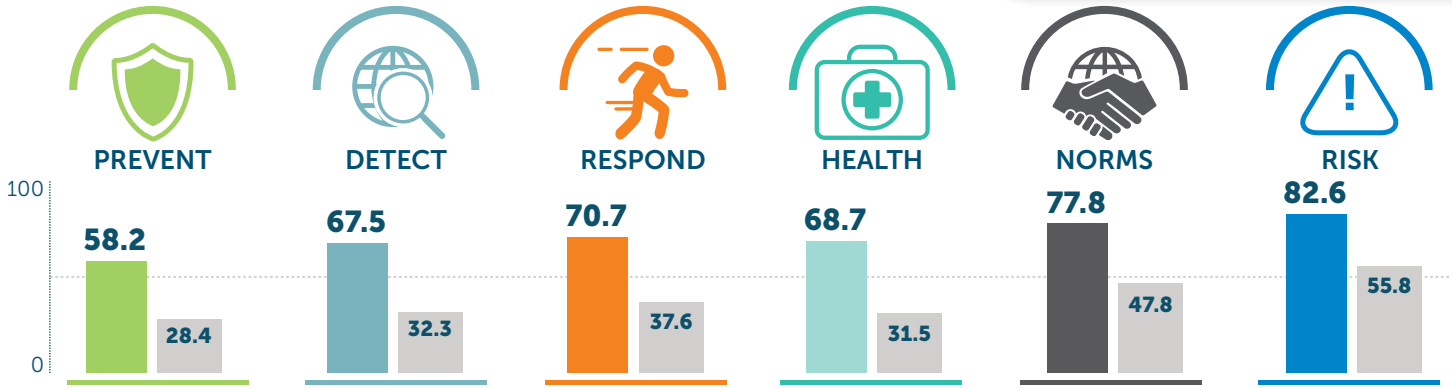
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16**	**16**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	12.9	12.9	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**6.3**	**6.3**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**33.9**	**36.3**	**37.6**
Emergency preparedness and response planning	8.3	25	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	70.8	70.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**10.1**	**10.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	7.1	6.7	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	63.6	63.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**26.9**	**23.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	34.4	56.1
JEE and PVS	0	0	18.7
Financing	16.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**58.9**	**62.3**	**55.8**
Political and security risk	78.3	76	58.1
Socio-economic resilience	62.1	61.9	60.9
Infrastructure adequacy	50	66.7	50.2
Environmental risks	54.1	56.4	54.7
Public health vulnerabilities	50.2	50.2	55.3

Finland

70.9 Index Score **3**/195



Global average of all 195 countries

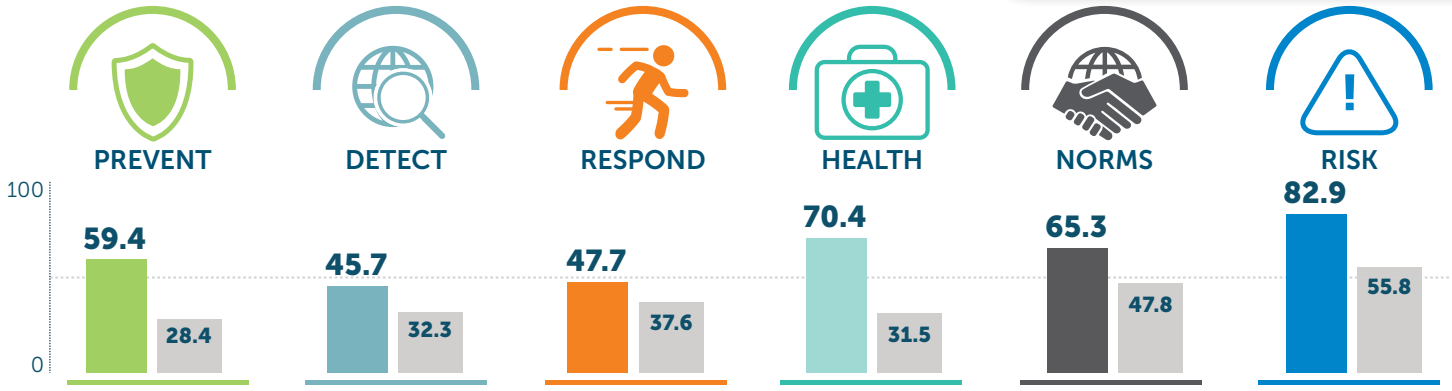
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**61.6**	**58.2**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	75.4	55.5	19.8
Biosecurity	44	44	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**65.4**	**67.5**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	87.5	87.5	34.6
Surveillance data accessibility and transparency	80	80	34.7
Case-based investigation	50	50	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**81.5**	**70.7**	**37.6**
Emergency preparedness and response planning	91.7	91.7	30.4
Exercising response plans	75	75	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	87	86.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**64.1**	**68.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	41.6	57.3	30
Supply chain for health system and healthcare workers	22.2	38.9	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	59.9	59.9	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**77.8**	**77.8**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	25	25	18.7
Financing	75	75	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**81.4**	**82.6**	**55.8**
Political and security risk	79.1	82.7	58.1
Socio-economic resilience	98.7	98.8	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	61.3	64.2	54.7
Public health vulnerabilities	76.2	75.8	55.3

France

61.9 Index Score **14**/195



Global average of all 195 countries

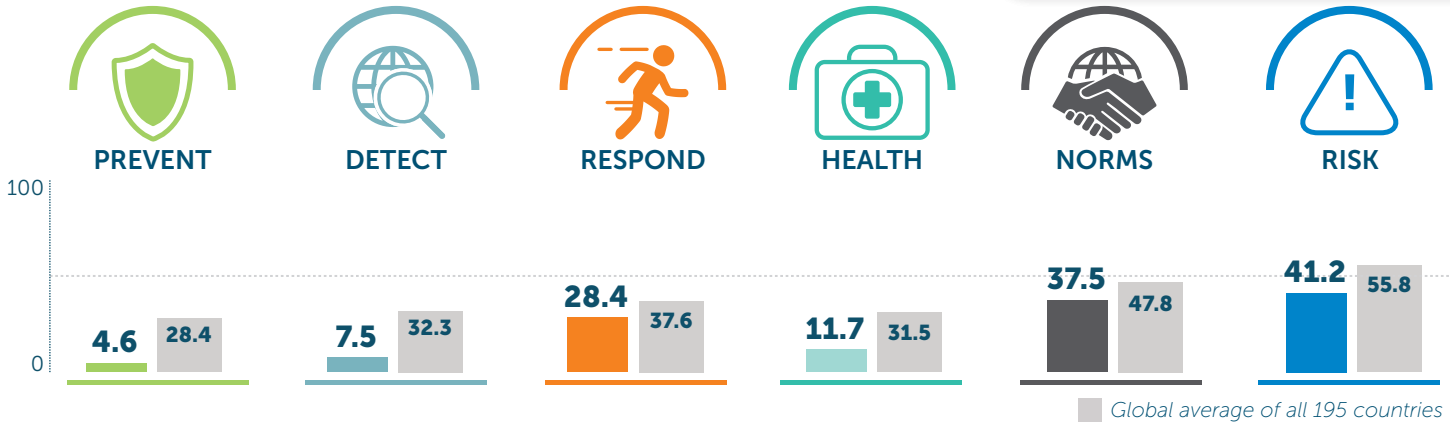
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**62.7**	**59.4**	**28.4**
Antimicrobial resistance (AMR)	100	100	45.3
Zoonotic disease	49.4	29.3	19.8
Biosecurity	52	52	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**45.1**	**45.7**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	83.3	86.7	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**56.2**	**47.7**	**37.6**
Emergency preparedness and response planning	29.2	29.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	54.2	66.7	57.9
Access to communications infrastructure	76.5	79.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**68.1**	**70.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	40.4	56.3	30
Supply chain for health system and healthcare workers	83.3	83.3	28.5
Medical countermeasures and personnel deployment	100	100	10.3
Healthcare access	53	53	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**61.1**	**65.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**82.6**	**82.9**	**55.8**
Political and security risk	82.6	81.3	58.1
Socio-economic resilience	87.7	88.3	60.9
Infrastructure adequacy	100	100	50.2
Environmental risks	66	68.3	54.7
Public health vulnerabilities	76.8	76.4	55.3

Gabon

21.8 Index Score **182**/195



Global average of all 195 countries

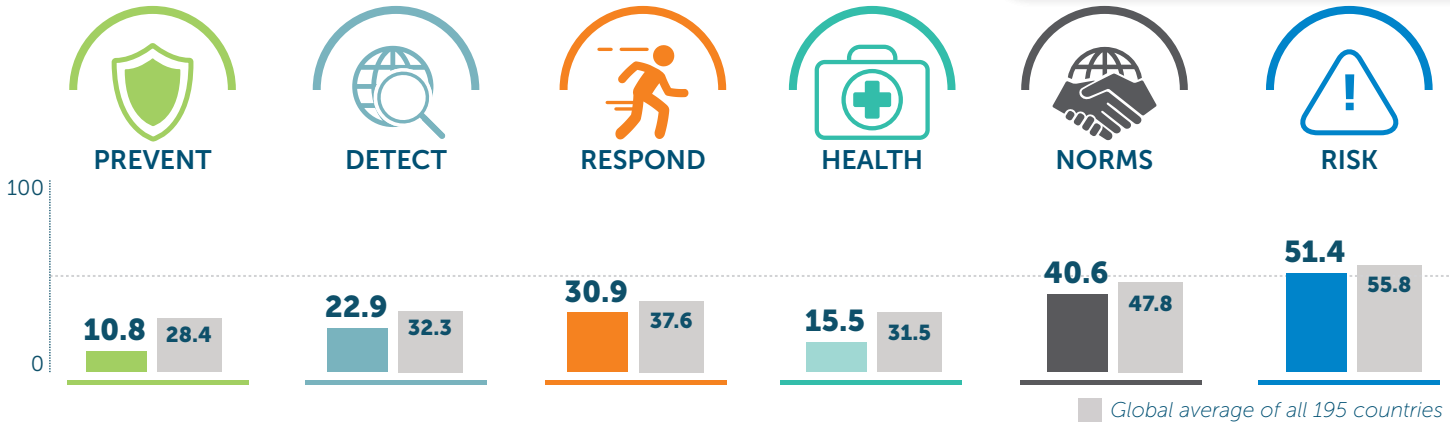
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**3.2**	**4.6**	**28.4**
Antimicrobial resistance (AMR)	8.3	16.7	45.3
Zoonotic disease	6.7	6.7	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	0	63.3
DETECTION AND REPORTING	**3.3**	**7.5**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	25	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**27.9**	**28.4**	**37.6**
Emergency preparedness and response planning	0	20.8	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	50	57.9
Access to communications infrastructure	70.1	77.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**9.3**	**11.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	11.2	11.2	30
Supply chain for health system and healthcare workers	0	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.6	53.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**35.4**	**37.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	37.5	25	56.1
JEE and PVS	0	25	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**40.5**	**41.2**	**55.8**
Political and security risk	60.7	61.8	58.1
Socio-economic resilience	49.1	49	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	41.9	44.3	54.7
Public health vulnerabilities	34.2	34	55.3

Gambia

28.7 Index Score **147**/195



Global average of all 195 countries

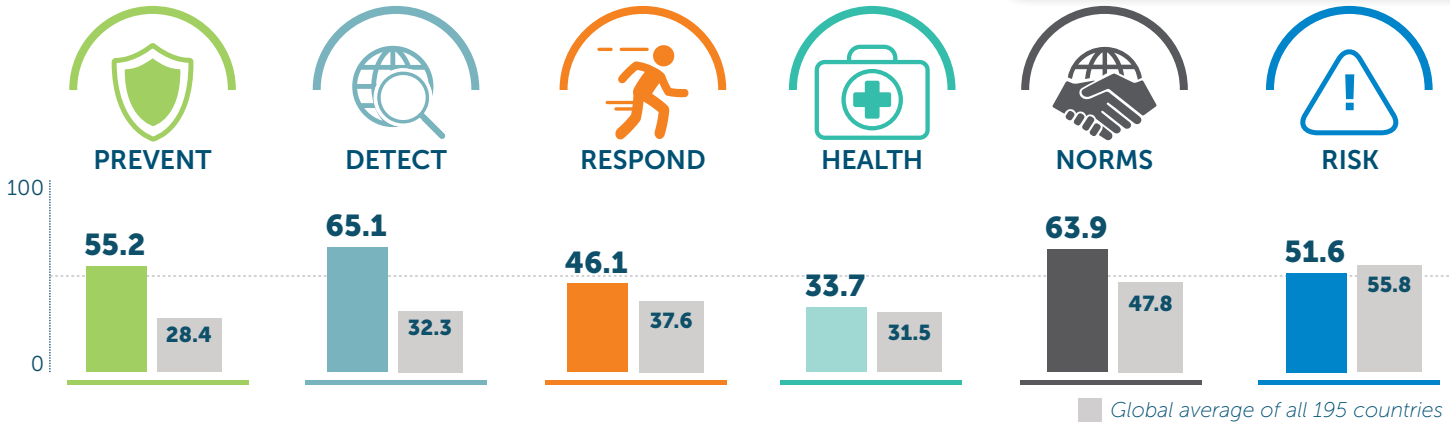
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**10.8**	**10.8**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	6.6	6.3	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**20.8**	**22.9**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**37.3**	**30.9**	**37.6**
Emergency preparedness and response planning	12.5	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	64.9	53.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**17.9**	**15.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19.3	2.6	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	55.8	55.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**40.1**	**40.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	15.6	18.8	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**50.2**	**51.4**	**55.8**
Political and security risk	59.1	62.7	58.1
Socio-economic resilience	44.3	44.3	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	59.1	61.6	54.7
Public health vulnerabilities	55	55.1	55.3

Georgia

52.6 Index Score **40**/195



Global average of all 195 countries

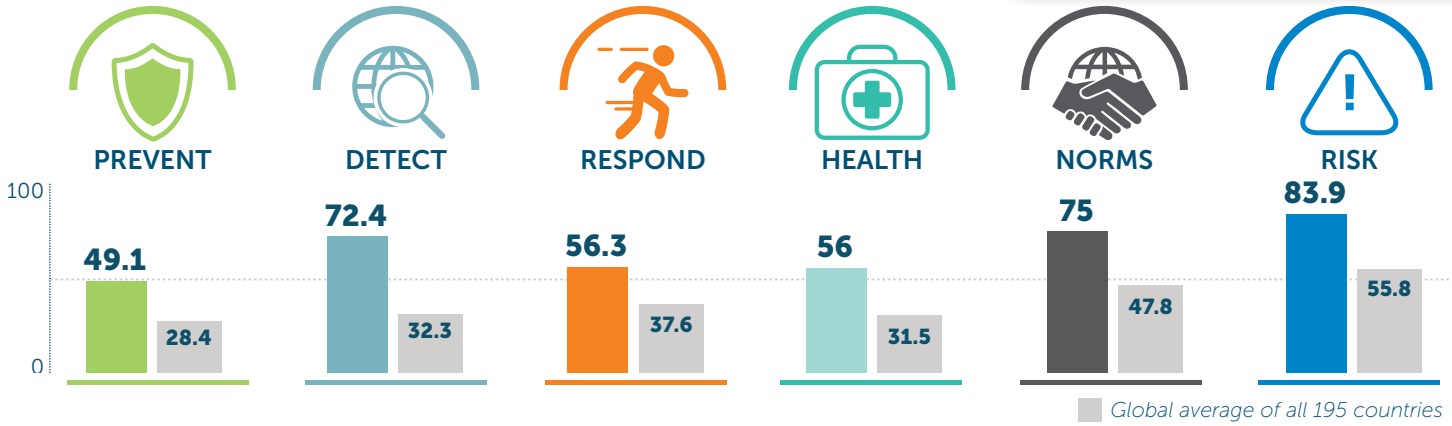
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**51.1**	**55.2**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	37.8	37.1	19.8
Biosecurity	44	44	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**51.5**	**65.1**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	0	50	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	46.7	53.3	34.7
Case-based investigation	37.5	62.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**43.8**	**46.1**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	54.2	66.7	57.9
Access to communications infrastructure	69.3	77.1	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**23.3**	**33.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	37.7	38	30
Supply chain for health system and healthcare workers	11.1	33.3	28.5
Medical countermeasures and personnel deployment	0	50	10.3
Healthcare access	64.5	64.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**67.5**	**63.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	96.9	100	56.1
JEE and PVS	25	25	18.7
Financing	66.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**52**	**51.6**	**55.8**
Political and security risk	41	36.9	58.1
Socio-economic resilience	64.3	64.3	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	46.7	48.9	54.7
Public health vulnerabilities	58.1	58	55.3

Germany

65.5 Index Score **8**/195



Global average of all 195 countries

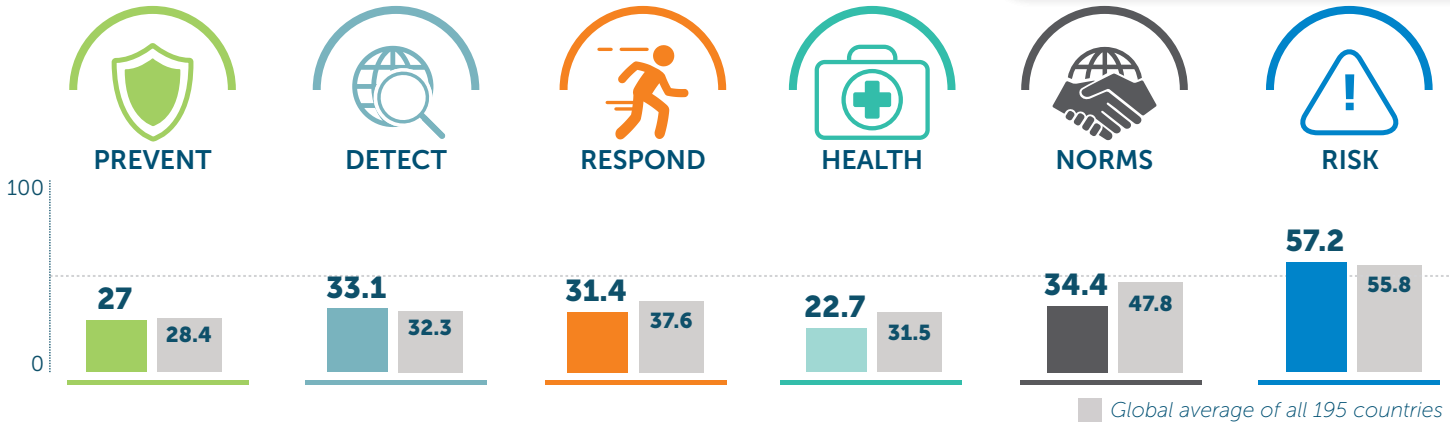
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**49.1**	**49.1**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	56.6	56.7	19.8
Biosecurity	54.7	54.7	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**70.3**	**72.4**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	75	75	34.6
Surveillance data accessibility and transparency	96.7	96.7	34.7
Case-based investigation	62.5	75	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**68**	**56.3**	**37.6**
Emergency preparedness and response planning	50	66.7	30.4
Exercising response plans	25	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	84.1	85.7	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**53.7**	**56**	**31.5**
Health capacity in clinics, hospitals, and community care centers	62.6	78.9	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	52	51.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**70.8**	**75**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	25	50	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**82.5**	**83.9**	**55.8**
Political and security risk	82.8	87.5	58.1
Socio-economic resilience	96.2	95.9	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	63.8	66.5	54.7
Public health vulnerabilities	86.2	86.5	55.3

Ghana

34.3 Index Score **104**/195



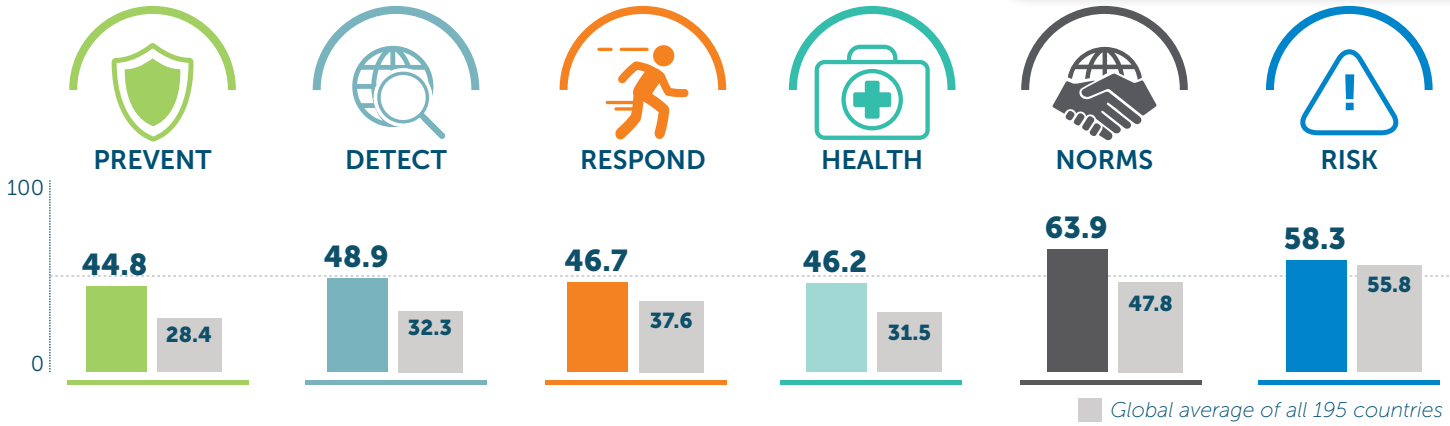
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**27**	**27**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	12	11.9	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**22.6**	**33.1**	**32.3**
Laboratory systems strength and quality	25	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	62.5	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**34.2**	**31.4**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	55.9	61.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**15.6**	**22.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	4.6	21.3	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	23.9	57.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33.9**	**34.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	31.3	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**56.4**	**57.2**	**55.8**
Political and security risk	72.6	71.5	58.1
Socio-economic resilience	53.8	53.8	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	60.5	64.8	54.7
Public health vulnerabilities	53.6	54.3	55.3

Greece

51.5 Index Score **42**/195



Global average of all 195 countries

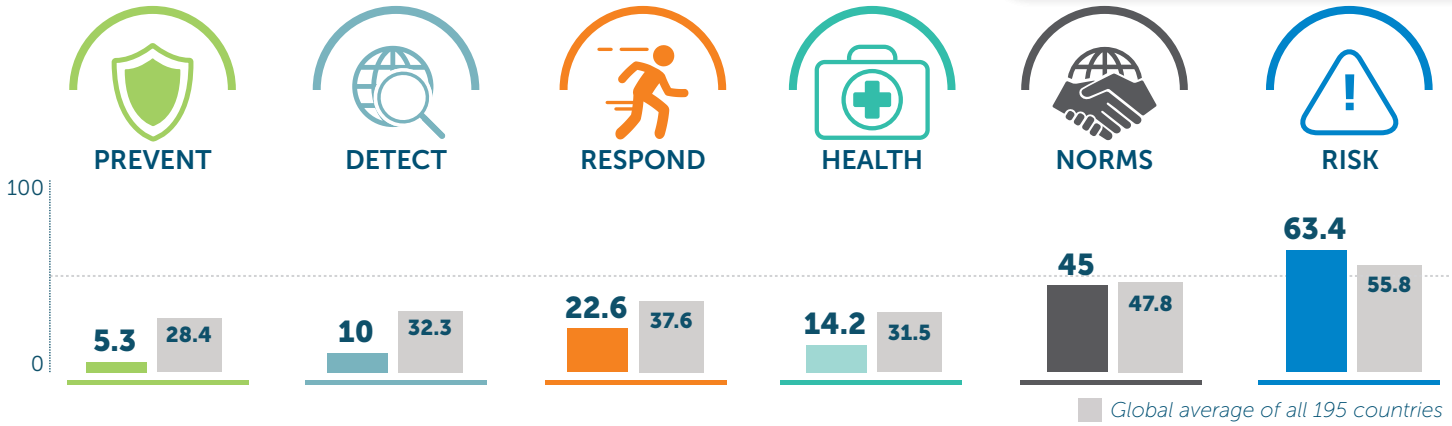
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**52.3**	**44.8**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	11.4	16.7	19.8
Biosecurity	44	44	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	25	63.3
DETECTION AND REPORTING	**48.9**	**48.9**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	93.3	93.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**51.7**	**46.7**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	74.6	72.7	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**42.2**	**46.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	35.6	52.1	30
Supply chain for health system and healthcare workers	33.3	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.7	51.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**53.6**	**63.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	8.3	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**55**	**58.3**	**55.8**
Political and security risk	68.9	67.7	58.1
Socio-economic resilience	66.5	83.1	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	31.7	33.3	54.7
Public health vulnerabilities	57.8	57.6	55.3

Grenada

26.7 Index Score **157**/195



Global average of all 195 countries

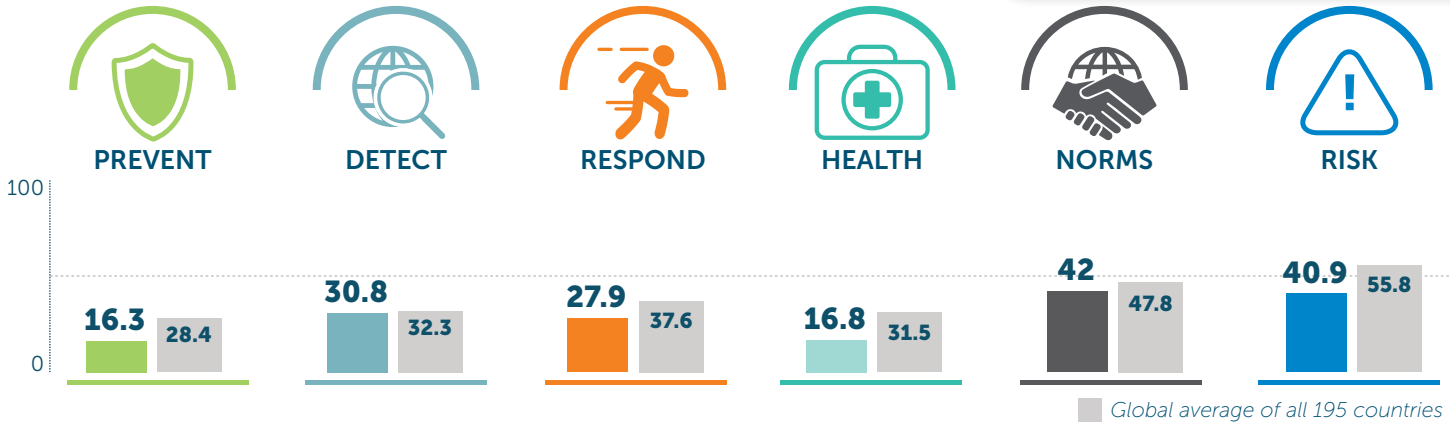
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**1.1**	**5.3**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	6.7	6.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	25	63.3
DETECTION AND REPORTING	**5.8**	**10**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**27.7**	**22.6**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	68.7	70.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11.8**	**14.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	29	45.5	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.9	53.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**45**	**45**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	28.1	28.1	56.1
JEE and PVS	0	0	18.7
Financing	25	25	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**62**	**63.4**	**55.8**
Political and security risk	79.8	83.4	58.1
Socio-economic resilience	64	64.3	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	46.1	48.9	54.7
Public health vulnerabilities	53.7	53.7	55.3

Guatemala

29.1 Index Score **142**/195



Global average of all 195 countries

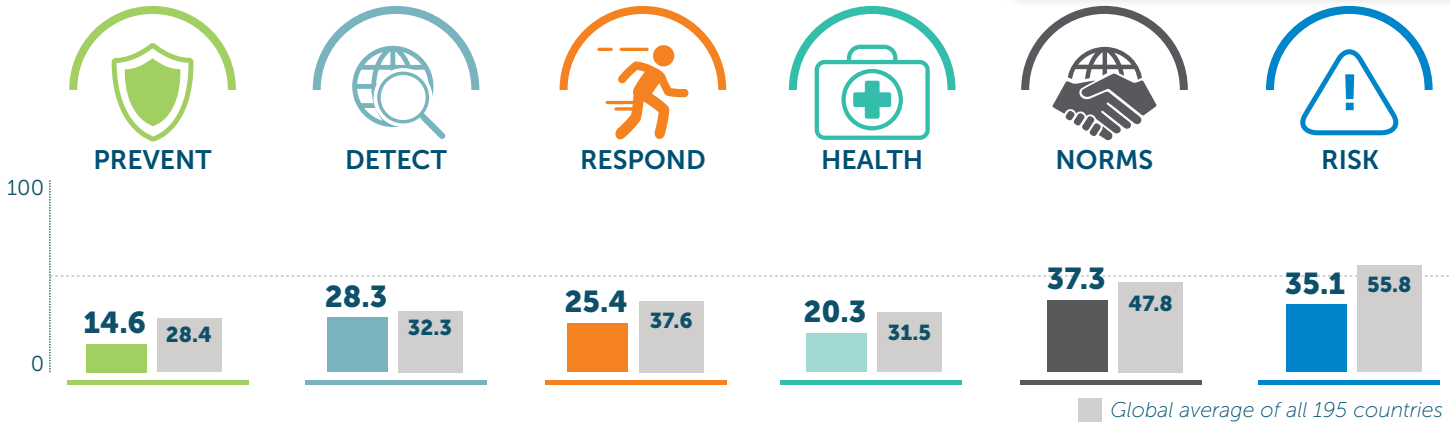
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16.2**	**16.3**	**28.4**
Antimicrobial resistance (AMR)	8.3	33.3	45.3
Zoonotic disease	14.2	14.2	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	50	63.3
DETECTION AND REPORTING	**30.8**	**30.8**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**33.8**	**27.9**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	66	57.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.9**	**16.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.3	1.1	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	58.4	58.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**39.9**	**42**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	31.3	43.8	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**48.4**	**40.9**	**55.8**
Political and security risk	40	31.6	58.1
Socio-economic resilience	41.8	41.8	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	67.7	38.3	54.7
Public health vulnerabilities	50.8	50.9	55.3

Guinea

26.8 Index Score **156**/195



Global average of all 195 countries

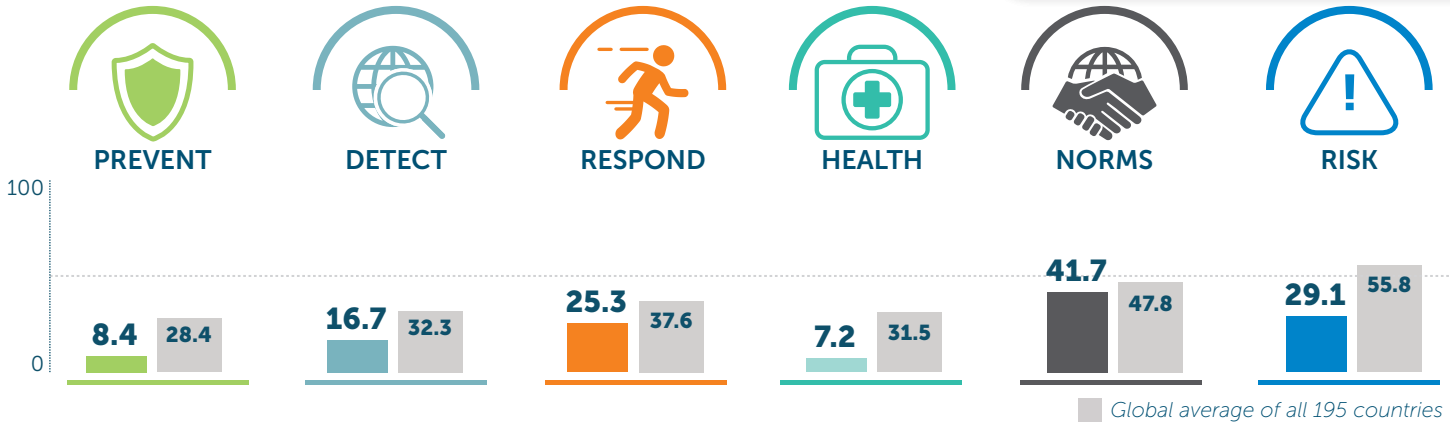
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**18**	**14.6**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	20.6	0	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**28.3**	**28.3**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**33.7**	**25.4**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	25	57.9
Access to communications infrastructure	48.2	40.6	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**18**	**20.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	0.4	17.1	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	50.7	49.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**36.8**	**37.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	12.5	15.6	56.1
JEE and PVS	50	50	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**36**	**35.1**	**55.8**
Political and security risk	57.4	50.2	58.1
Socio-economic resilience	23.7	24	60.9
Infrastructure adequacy	0	0	50.2
Environmental risks	68.4	71	54.7
Public health vulnerabilities	30.3	30.5	55.3

Guinea-Bissau

21.4 Index Score **183**/195



Global average of all 195 countries

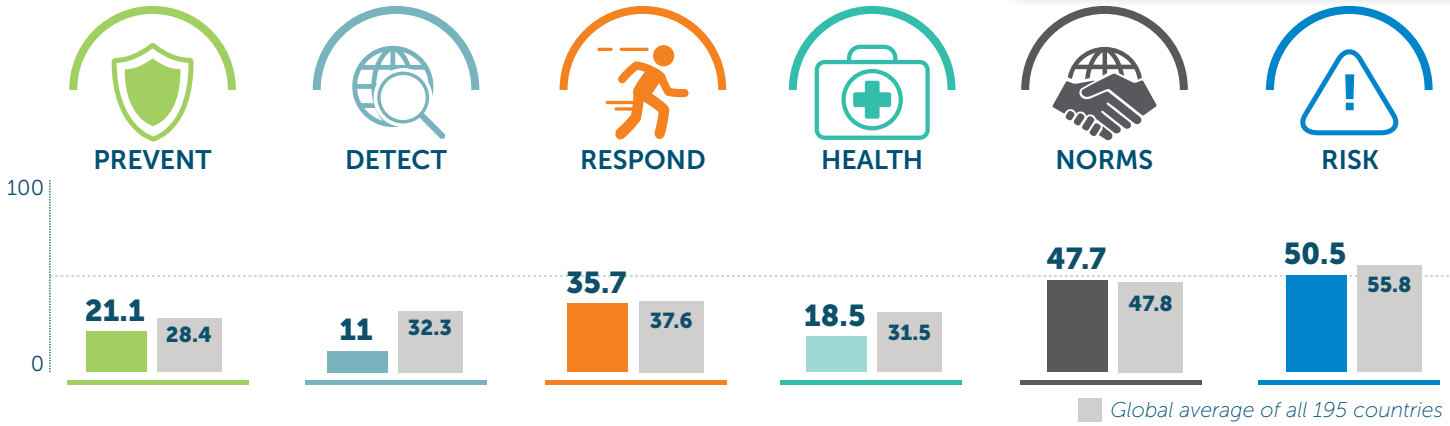
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**8.4**	**8.4**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	0.5	0.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**12.5**	**16.7**	**32.3**
Laboratory systems strength and quality	0	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**24.8**	**25.3**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	50	57.9
Access to communications infrastructure	48.3	44	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**7.2**	**7.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.8	1.8	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	48.4	48.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**34.7**	**41.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	25	56.1
JEE and PVS	25	50	18.7
Financing	41.7	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**28.3**	**29.1**	**55.8**
Political and security risk	24.1	25.4	58.1
Socio-economic resilience	34.7	34.9	60.9
Infrastructure adequacy	8.3	8.3	50.2
Environmental risks	37.7	40.3	54.7
Public health vulnerabilities	36.5	36.8	55.3

Guyana

30.8 Index Score **128**/195



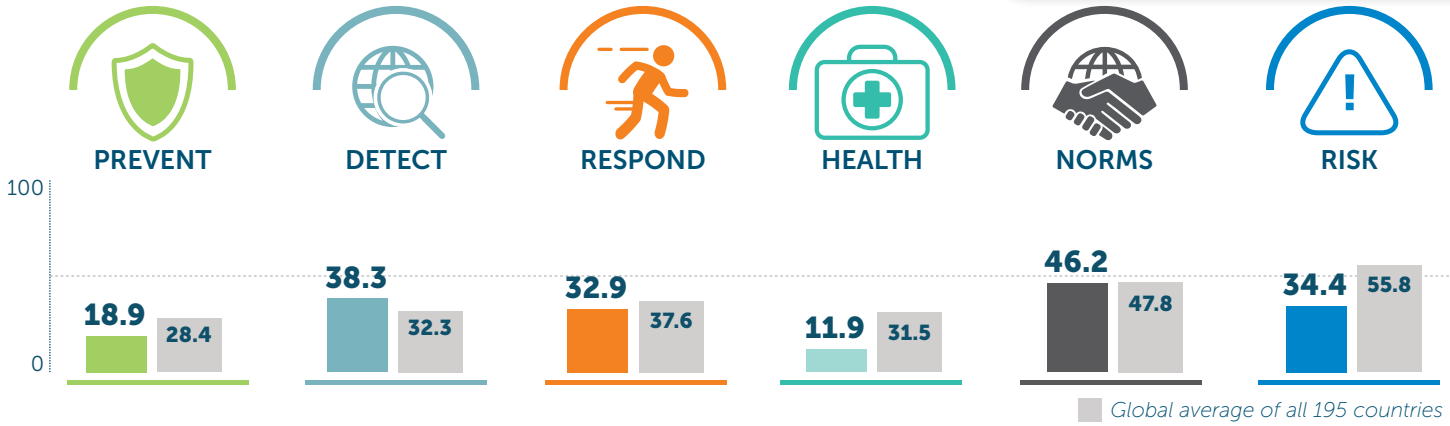
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**21.1**	**21.1**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	1.6	1.6	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**11**	**11**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	3.3	3.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**35.5**	**35.7**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	60.8	62.6	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.1**	**18.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	4.2	21	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	58.8	58.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**45.8**	**47.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	25	28.1	56.1
JEE and PVS	0	0	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**50.3**	**50.5**	**55.8**
Political and security risk	62.5	60.2	58.1
Socio-economic resilience	54.2	54.4	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	49	51.7	54.7
Public health vulnerabilities	52.5	52.7	55.3

Haiti

30.4 Index Score **130**/195



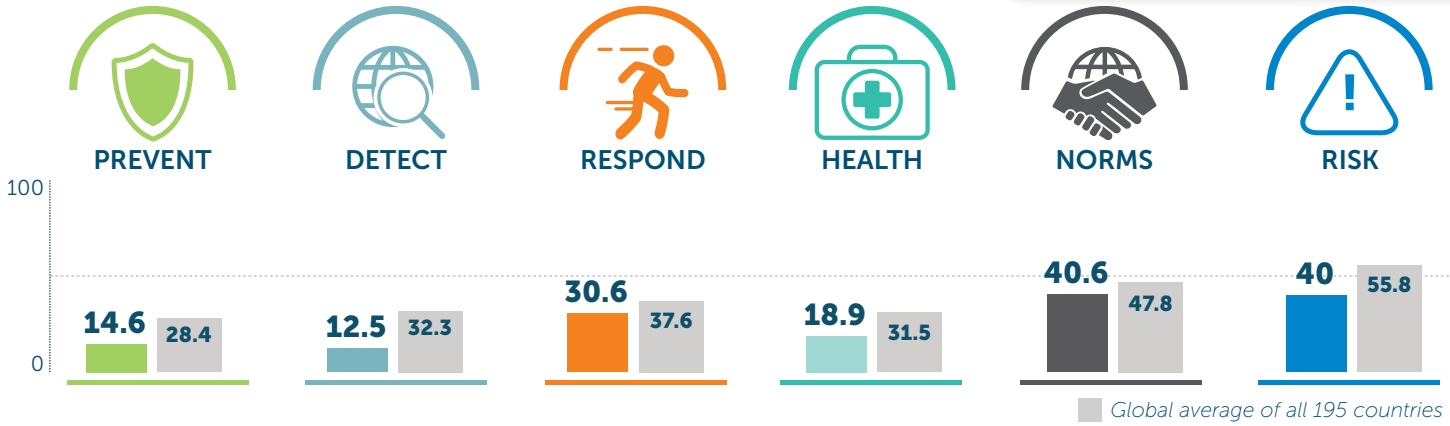
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22.2**	**18.9**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	33.4	13.4	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**38.3**	**38.3**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**30.7**	**32.9**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	83.3	57.9
Access to communications infrastructure	40.1	42.9	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11.9**	**11.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.7	1.7	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.5	56.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**44.8**	**46.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	18.8	18.8	56.1
JEE and PVS	0	0	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**32.4**	**34.4**	**55.8**
Political and security risk	51.3	51.2	58.1
Socio-economic resilience	35.7	35.3	60.9
Infrastructure adequacy	0	8.3	50.2
Environmental risks	37.8	39.5	54.7
Public health vulnerabilities	37.2	37.6	55.3

Honduras

26.2 Index Score **163**/195



Global average of all 195 countries

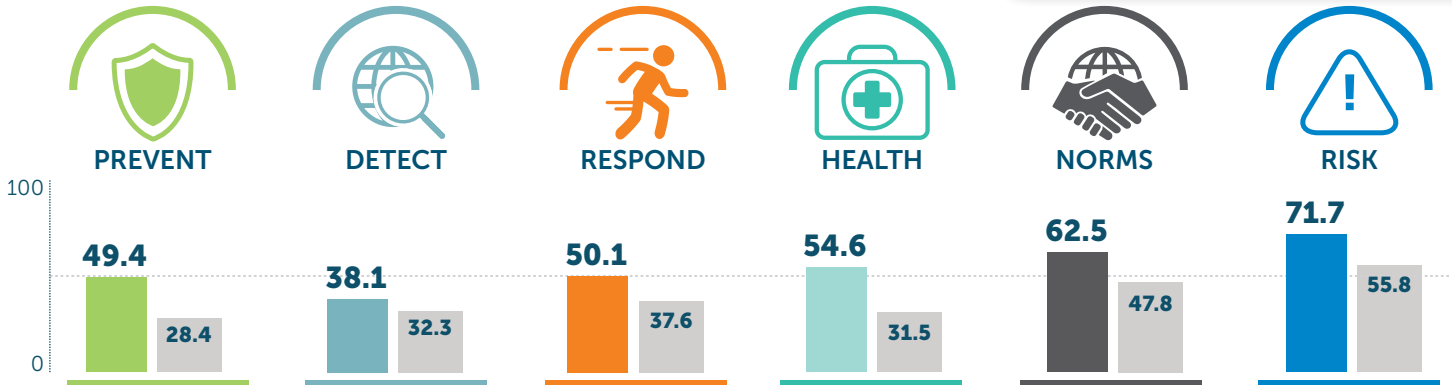
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**14.7**	**14.6**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	4.8	4.2	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**12.5**	**12.5**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**34.3**	**30.6**	**37.6**
Emergency preparedness and response planning	12.5	29.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	70.8	57.9
Access to communications infrastructure	56.7	55.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.5**	**18.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.9	18.5	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	55.4	55.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**39.4**	**40.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	43.8	56.1
JEE and PVS	0	0	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**40.2**	**40**	**55.8**
Political and security risk	39.4	35.7	58.1
Socio-economic resilience	50	49.6	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	34.6	37	54.7
Public health vulnerabilities	52.2	52.7	55.3

Hungary

54.4 Index Score **34**/195



Global average of all 195 countries

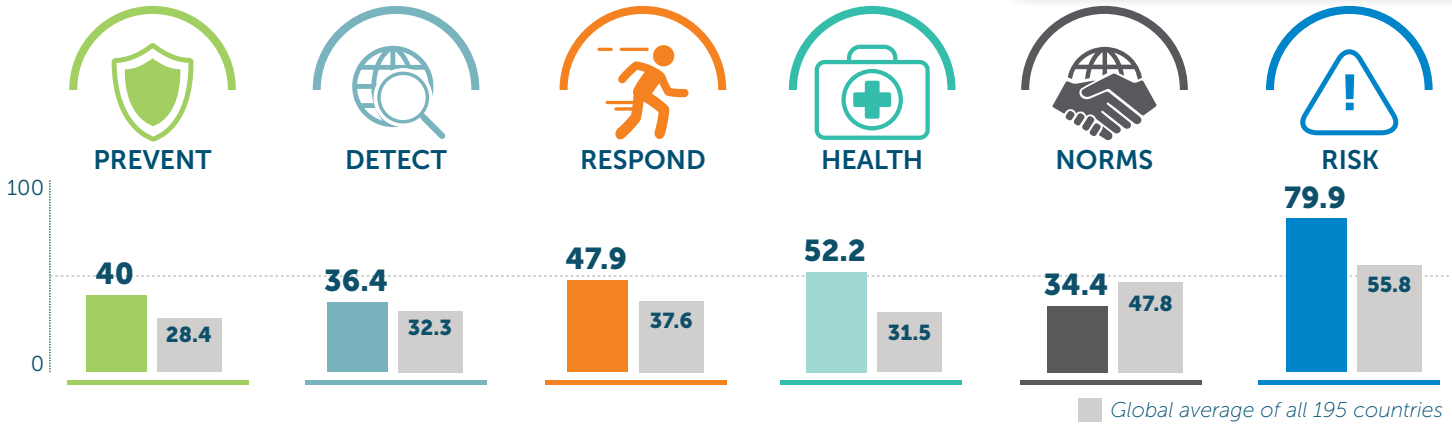
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**52.7**	**49.4**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	40.6	20.8	19.8
Biosecurity	58.7	58.7	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**38.1**	**38.1**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	53.3	53.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**56.3**	**50.1**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	73.2	79.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**57**	**54.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	54.1	37.5	30
Supply chain for health system and healthcare workers	66.7	66.7	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	52.9	53	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**57.8**	**62.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	33.3	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**68.2**	**71.7**	**55.8**
Political and security risk	75.9	74.7	58.1
Socio-economic resilience	76.3	84.6	60.9
Infrastructure adequacy	75	83.3	50.2
Environmental risks	50	52	54.7
Public health vulnerabilities	64	64	55.3

Iceland

48.5 Index Score **50**/195



Global average of all 195 countries

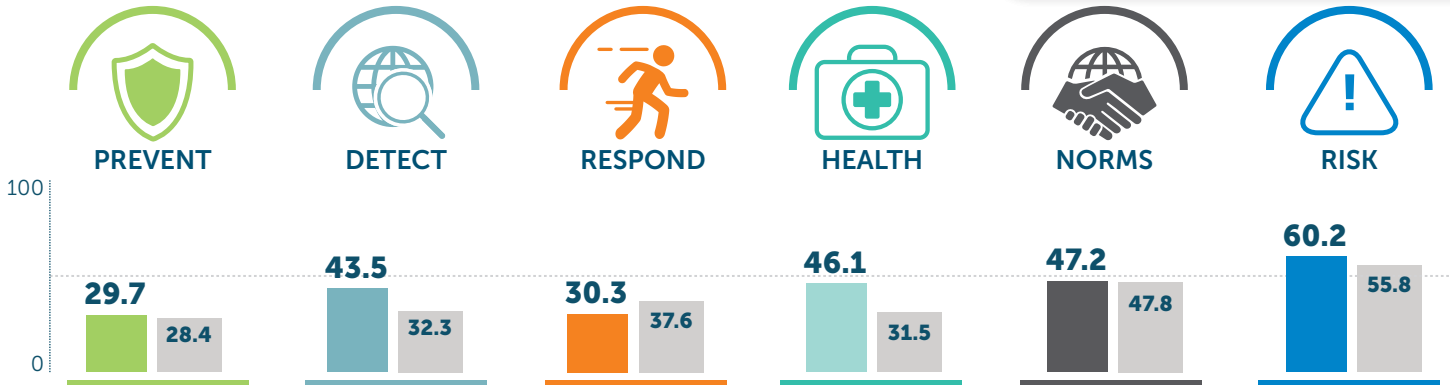
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**33.2**	**40**	**28.4**
Antimicrobial resistance (AMR)	58.3	75	45.3
Zoonotic disease	40.9	41.1	19.8
Biosecurity	0	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**32.2**	**36.4**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	43.3	43.3	34.7
Case-based investigation	50	62.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**44.8**	**47.9**	**37.6**
Emergency preparedness and response planning	8.3	41.7	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	88.5	89.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**47.5**	**52.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	41.9	58.1	30
Supply chain for health system and healthcare workers	38.9	55.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.8	51.7	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**46.9**	**34.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	81.3	81.3	56.1
JEE and PVS	25	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**80.7**	**79.9**	**55.8**
Political and security risk	92.7	92.7	58.1
Socio-economic resilience	90.7	90.8	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	57.6	52	54.7
Public health vulnerabilities	79.1	80.8	55.3

India

42.8 Index Score **66**/195



Global average of all 195 countries

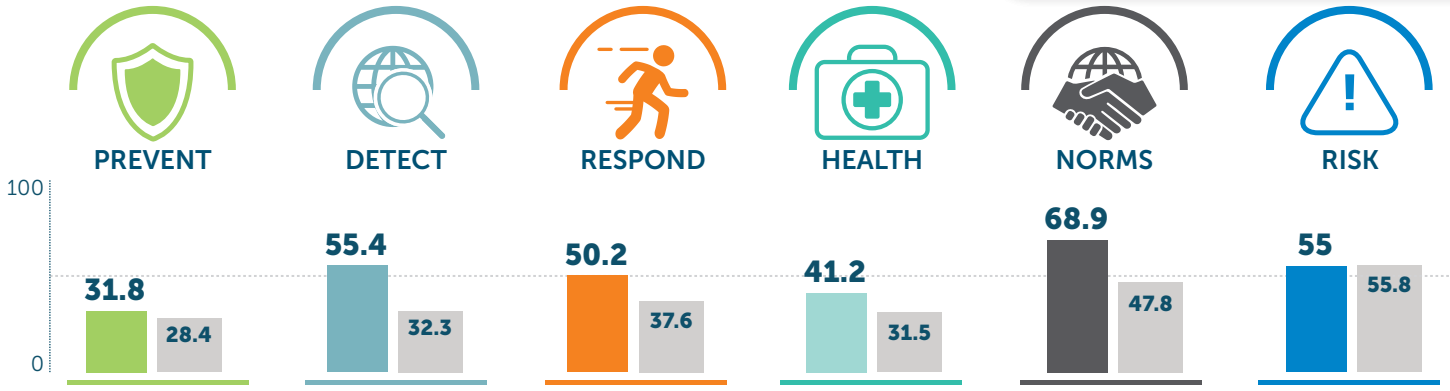
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**29.7**	**29.7**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	29.5	29.3	19.8
Biosecurity	24	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**37.2**	**43.5**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	75	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**42.1**	**30.3**	**37.6**
Emergency preparedness and response planning	41.7	41.7	30.4
Exercising response plans	12.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	58.3	70.8	57.9
Access to communications infrastructure	48.6	41.2	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**46.1**	**46.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	37.1	36.9	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	19.2	19.2	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.2**	**47.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	100	100	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**59.1**	**60.2**	**55.8**
Political and security risk	65.5	58.3	58.1
Socio-economic resilience	71.5	71.9	60.9
Infrastructure adequacy	33.3	50	50.2
Environmental risks	65.3	59.6	54.7
Public health vulnerabilities	59.9	61	55.3

Indonesia

50.4 Index Score **45**/195



Global average of all 195 countries

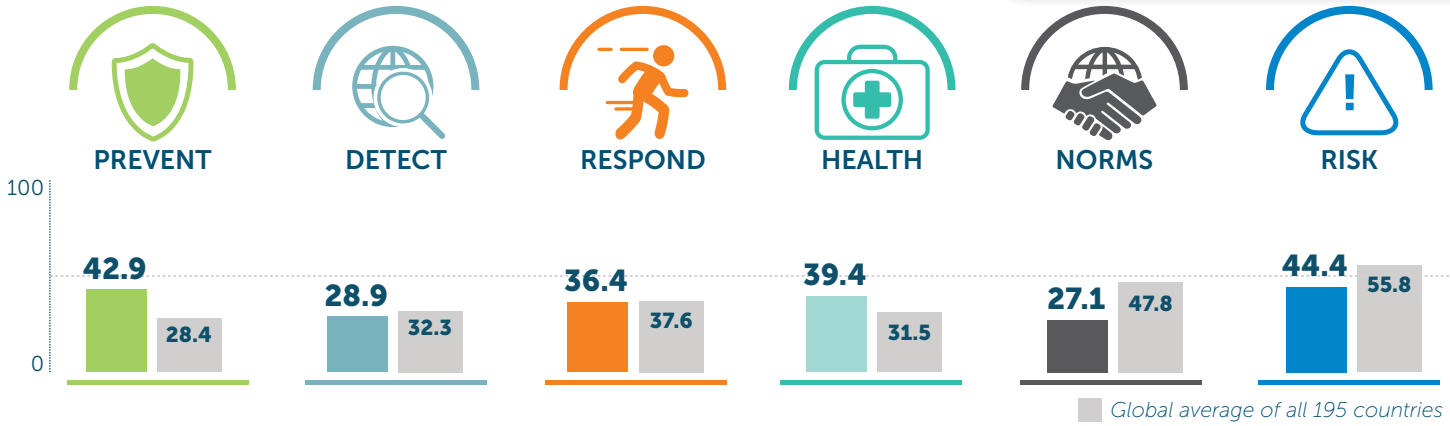
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**35.2**	**31.8**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	62	42	19.8
Biosecurity	24	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**45.4**	**55.4**	**32.3**
Laboratory systems strength and quality	62.5	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	50	75	34.6
Surveillance data accessibility and transparency	10	20	34.7
Case-based investigation	50	62.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**60.4**	**50.2**	**37.6**
Emergency preparedness and response planning	50	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	41.7	57.9
Access to communications infrastructure	72.8	67.9	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**38.9**	**41.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	20.8	37.2	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	62.3	62.2	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**61.6**	**68.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	78.1	84.4	56.1
JEE and PVS	25	50	18.7
Financing	50	62.5	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**53.8**	**55**	**55.8**
Political and security risk	65.4	61.8	58.1
Socio-economic resilience	67	67.1	60.9
Infrastructure adequacy	41.7	50	50.2
Environmental risks	46.7	47.5	54.7
Public health vulnerabilities	47.9	48.6	55.3

Iran

36.5 Index Score **90**/195



Global average of all 195 countries

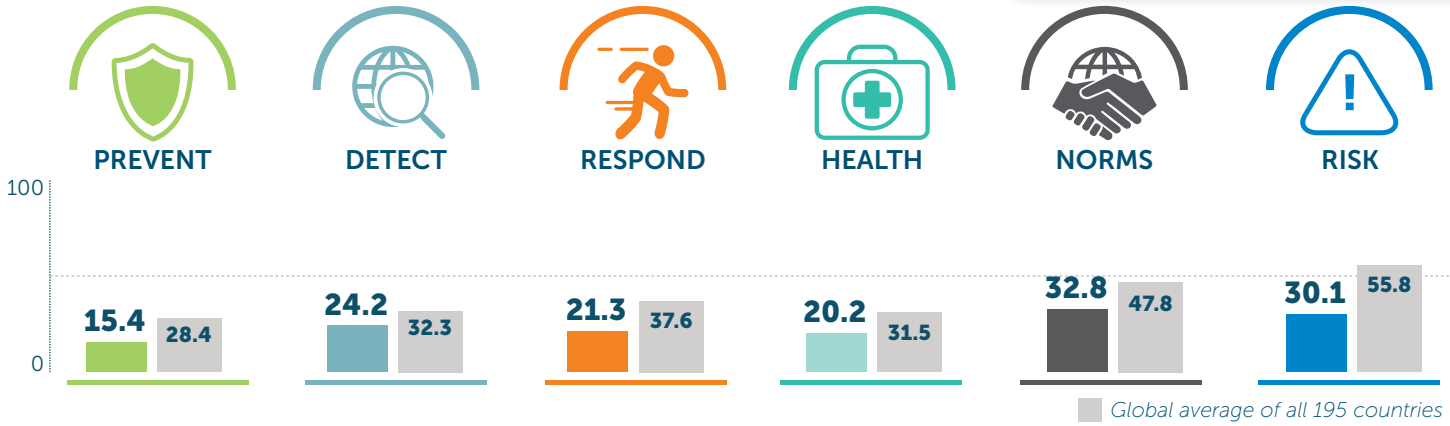
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**42.9**	**42.9**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	25	25	19.8
Biosecurity	24	24	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**24.7**	**28.9**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	37.5	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**51.2**	**36.4**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	0	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	41.7	57.9
Access to communications infrastructure	75.4	71.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**39.4**	**39.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	23.6	23.7	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60.3	60.4	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**27.1**	**27.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	37.5	37.5	56.1
JEE and PVS	0	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**51.9**	**44.4**	**55.8**
Political and security risk	37.6	32.3	58.1
Socio-economic resilience	67.6	50.3	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	48.8	34.3	54.7
Public health vulnerabilities	64	63.2	55.3

Iraq

24 Index Score **177**/195



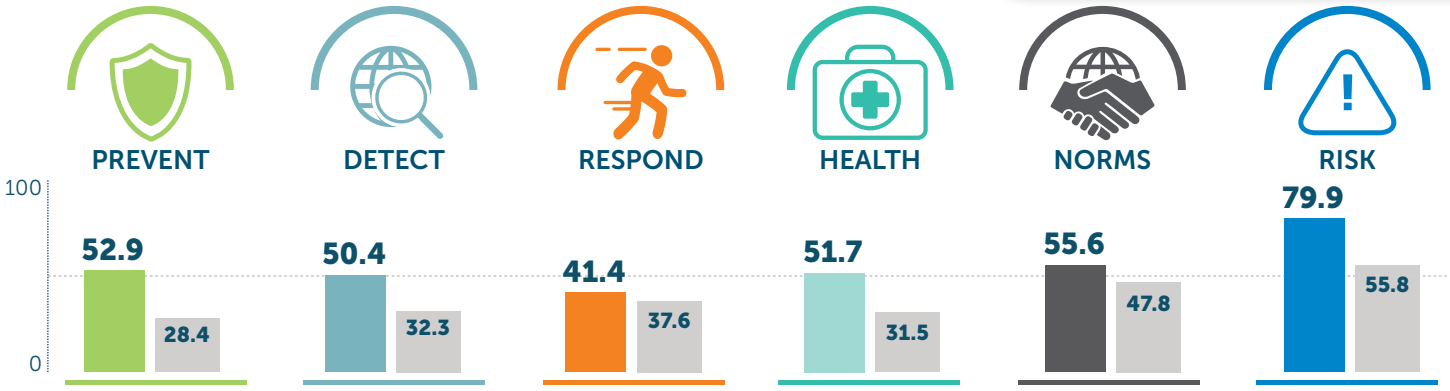
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.3**	**15.4**	**28.4**
Antimicrobial resistance (AMR)	8.3	16.7	45.3
Zoonotic disease	20.4	0.6	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**15.8**	**24.2**	**32.3**
Laboratory systems strength and quality	0	25	44.9
Laboratory supply chains	0	50	15.9
Real-time surveillance and reporting	50	25	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**26.7**	**21.3**	**37.6**
Emergency preparedness and response planning	0	4.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	61.7	49.1	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**15**	**20.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	4.6	37.8	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	58.5	61.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.5**	**32.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	43.8	46.9	56.1
JEE and PVS	0	25	18.7
Financing	16.7	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**35.4**	**30.1**	**55.8**
Political and security risk	14.3	9.1	58.1
Socio-economic resilience	60.8	43.4	60.9
Infrastructure adequacy	8.3	8.3	50.2
Environmental risks	41.4	35.8	54.7
Public health vulnerabilities	52.2	53.7	55.3

Ireland

55.3 Index Score **31**/195



Global average of all 195 countries

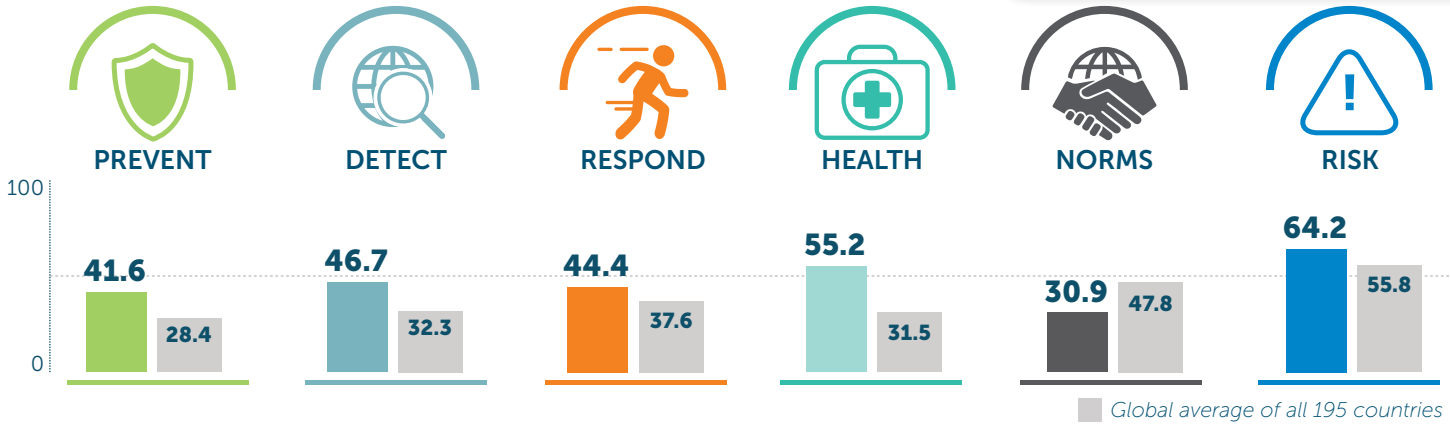
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**52.9**	**52.9**	**28.4**
Antimicrobial resistance (AMR)	100	100	45.3
Zoonotic disease	73.6	73.5	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**49.9**	**50.4**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	87.5	62.5	34.6
Surveillance data accessibility and transparency	86.7	90	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**43.9**	**41.4**	**37.6**
Emergency preparedness and response planning	25	41.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	82.4	81.7	65.7
Trade and travel restrictions	100	75	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**49.3**	**51.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	56.5	73.3	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.3	52.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55.6**	**55.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**78.9**	**79.9**	**55.8**
Political and security risk	76.3	78	58.1
Socio-economic resilience	87.5	87.8	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	71.4	73.9	54.7
Public health vulnerabilities	84.4	85	55.3

Israel

47.2 Index Score **53**/195



Global average of all 195 countries

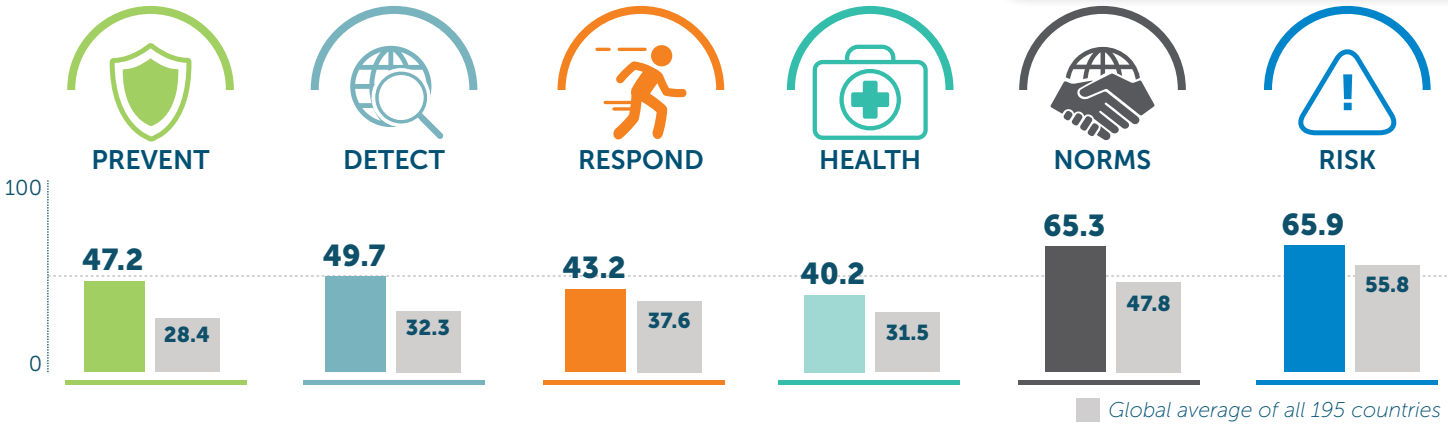
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**41.6**	**41.6**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	34.2	34.3	19.8
Biosecurity	32	32	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**43.3**	**46.7**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	60	80	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**52.6**	**44.4**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	84.9	85.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**52.8**	**55.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	34.1	50.6	30
Supply chain for health system and healthcare workers	83.3	83.3	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	52.4	52.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.4**	**30.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	68.8	68.8	56.1
JEE and PVS	25	0	18.7
Financing	0	0	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**70.4**	**64.2**	**55.8**
Political and security risk	61.3	60.7	58.1
Socio-economic resilience	82.4	82.3	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	56.8	26.1	54.7
Public health vulnerabilities	76.4	76.8	55.3

Italy

51.9 Index Score **41**/195



Global average of all 195 countries

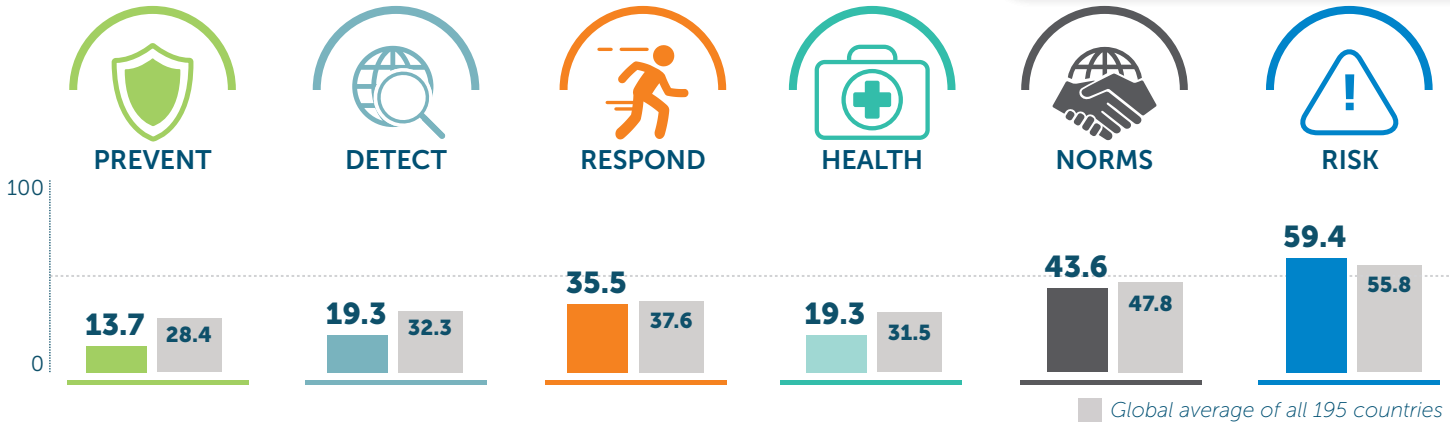
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**47.2**	**47.2**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	30.6	30.7	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**49.7**	**49.7**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	50	34.6
Surveillance data accessibility and transparency	73.3	73.3	34.7
Case-based investigation	25	50	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**49.1**	**43.2**	**37.6**
Emergency preparedness and response planning	12.5	29.2	30.4
Exercising response plans	12.5	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	100	100	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	68.5	73	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**40.3**	**40.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	33.2	32.9	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.5	54.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**59.7**	**65.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	8.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**65.3**	**65.9**	**55.8**
Political and security risk	64.3	66	58.1
Socio-economic resilience	68.9	69.2	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	62	63.6	54.7
Public health vulnerabilities	72.8	72.4	55.3

Jamaica

31.8 Index Score **120**/195



Global average of all 195 countries

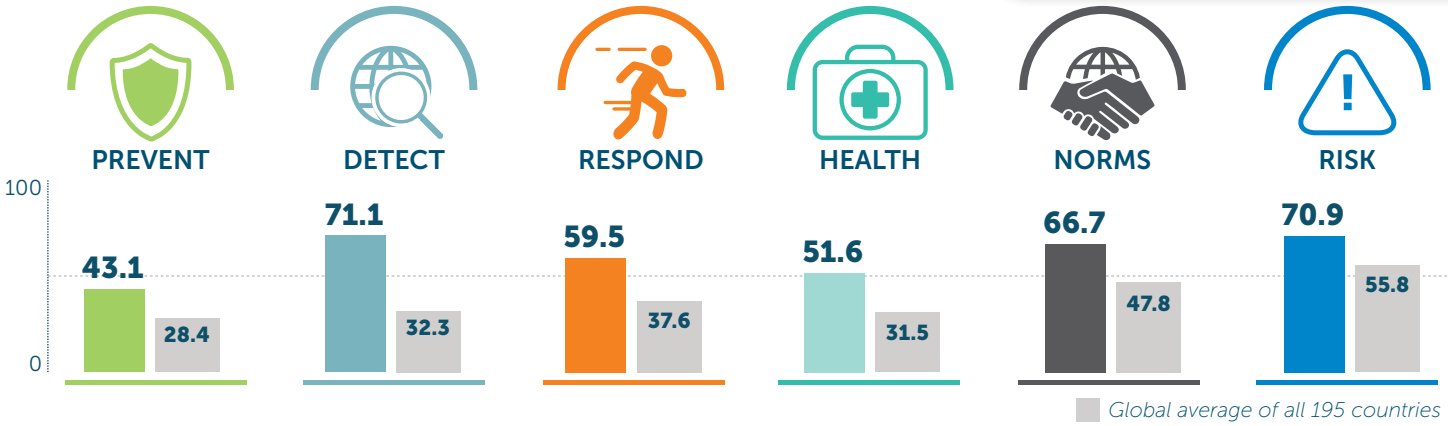
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.8**	**13.7**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	7	7.1	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**18.8**	**19.3**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	0	3.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**31.2**	**35.5**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	68.6	73.3	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14.5**	**19.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.1	38.5	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	55	55	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.6**	**43.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	28.1	28.1	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**59.6**	**59.4**	**55.8**
Political and security risk	74.9	71.3	58.1
Socio-economic resilience	65.6	65.7	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	53.9	56.5	54.7
Public health vulnerabilities	53.7	53.8	55.3

Japan

60.5 Index Score **18**/195



Global average of all 195 countries

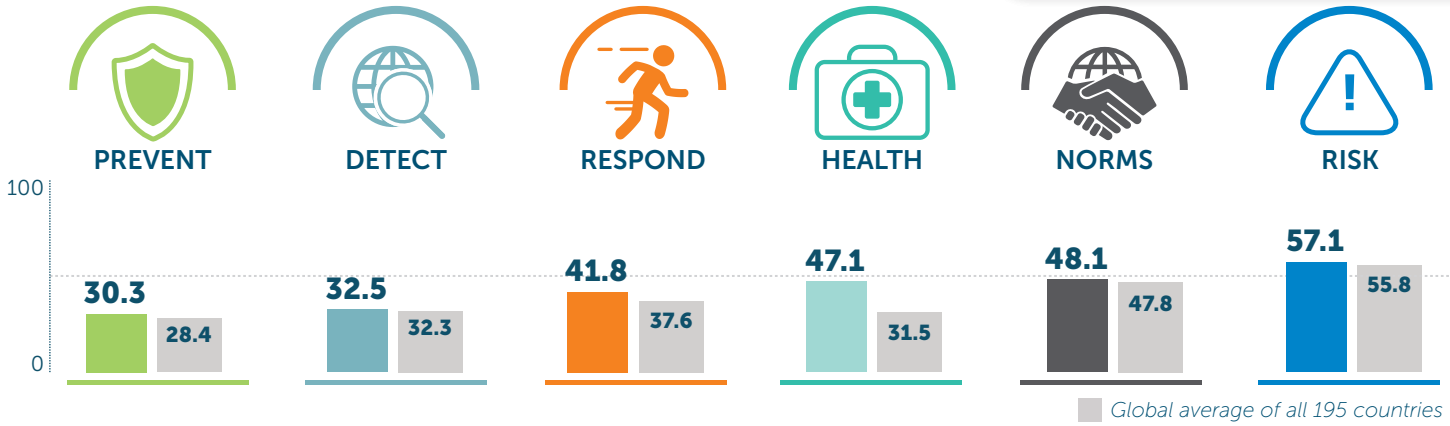
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**47.2**	**43.1**	**28.4**
Antimicrobial resistance (AMR)	91.7	91.7	45.3
Zoonotic disease	29.7	29.7	19.8
Biosecurity	12	12	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**56.1**	**71.1**	**32.3**
Laboratory systems strength and quality	25	37.5	44.9
Laboratory supply chains	50	100	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	86.7	76.7	34.7
Case-based investigation	25	62.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**63.1**	**59.5**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	75.3	74.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**49.3**	**51.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	47.6	63.8	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.8	52.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**66.7**	**66.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	100	100	56.1
JEE and PVS	50	50	18.7
Financing	50	50	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**70.3**	**70.9**	**55.8**
Political and security risk	79.2	80.4	58.1
Socio-economic resilience	76.6	76.6	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	41.7	44.2	54.7
Public health vulnerabilities	79	78.3	55.3

Jordan

42.8 Index Score **66**/195



Global average of all 195 countries

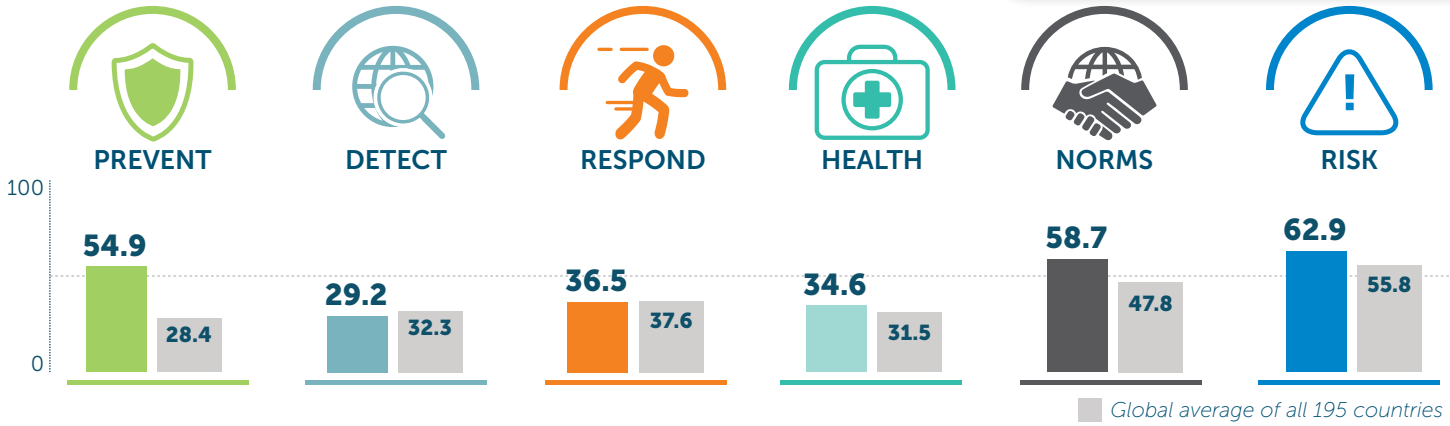
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**30.3**	**30.3**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	11.1	11.1	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**27.2**	**32.5**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	13.3	20	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**45.2**	**41.8**	**37.6**
Emergency preparedness and response planning	33.3	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	75	87.5	57.9
Access to communications infrastructure	75	71.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**40**	**47.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	25.1	41.9	30
Supply chain for health system and healthcare workers	0	33.3	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	54.6	54.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**48.1**	**48.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	96.9	96.9	56.1
JEE and PVS	25	25	18.7
Financing	0	0	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**56.5**	**57.1**	**55.8**
Political and security risk	46.1	47.3	58.1
Socio-economic resilience	65.6	65.3	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	50.3	52.8	54.7
Public health vulnerabilities	62.1	62	55.3

Kazakhstan

46.1 Index Score **55**/195



Global average of all 195 countries

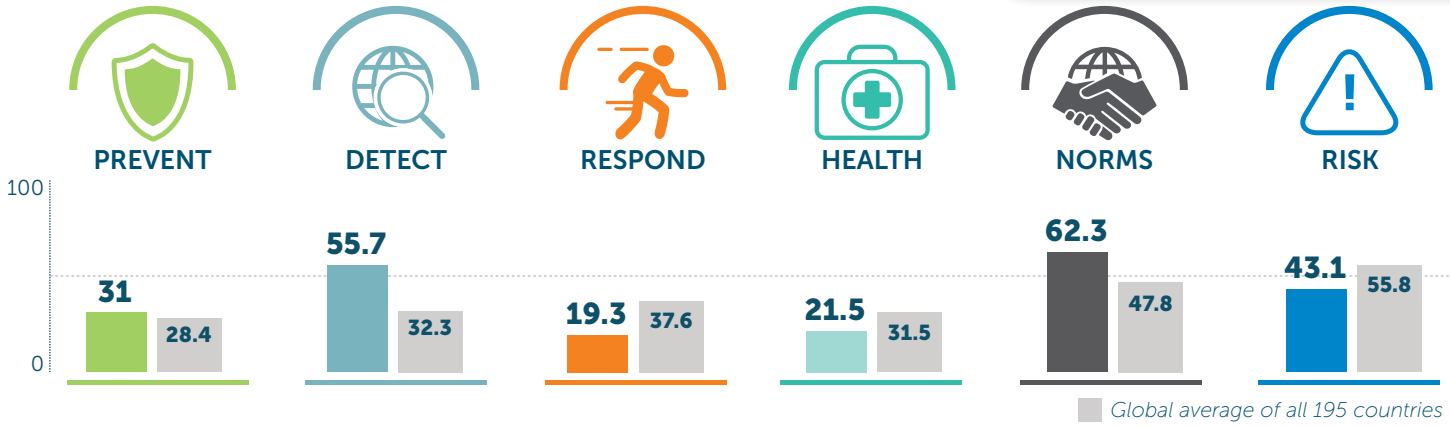
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**55**	**54.9**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	55.8	55.2	19.8
Biosecurity	24	24	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**22.4**	**29.2**	**32.3**
Laboratory systems strength and quality	0	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	46.7	50	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**39.7**	**36.5**	**37.6**
Emergency preparedness and response planning	16.7	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	66.7	57.9
Access to communications infrastructure	86.2	80.7	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**32.3**	**34.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	38.5	54.4	30
Supply chain for health system and healthcare workers	22.2	22.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	65.1	65.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**58.7**	**58.7**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	93.8	93.8	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**60.5**	**62.9**	**55.8**
Political and security risk	51.8	53.2	58.1
Socio-economic resilience	65.7	73.9	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	63.2	66	54.7
Public health vulnerabilities	54.9	54.9	55.3

Kenya

38.8 Index Score **84**/195



Global average of all 195 countries

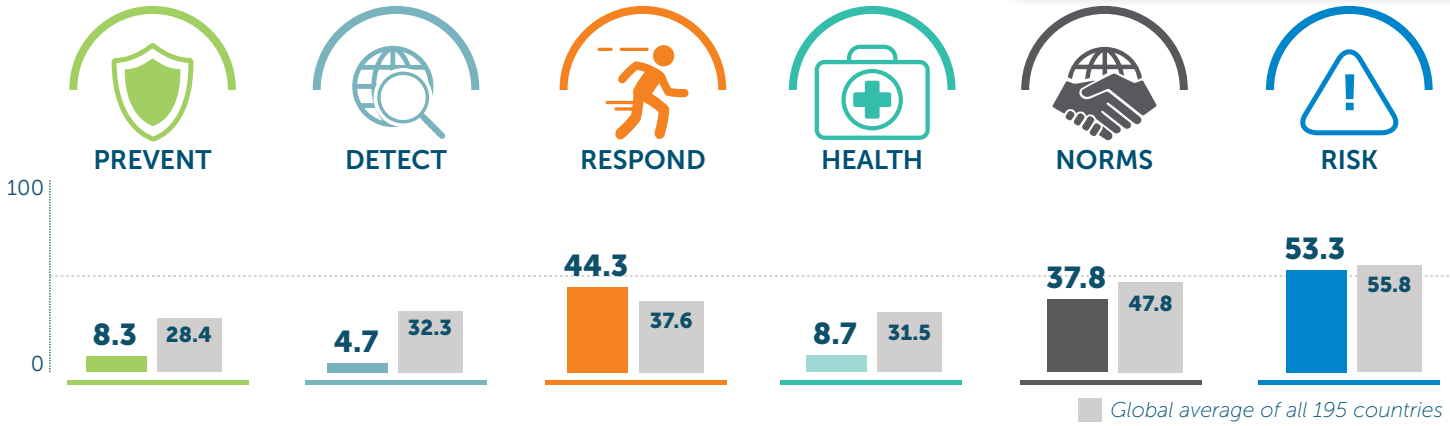
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**34.4**	**31**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	39.6	19.5	19.8
Biosecurity	0	0	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**51.5**	**55.7**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	75	34.6
Surveillance data accessibility and transparency	46.7	46.7	34.7
Case-based investigation	12.5	37.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**38.4**	**19.3**	**37.6**
Emergency preparedness and response planning	8.3	8.3	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	25	57.9
Access to communications infrastructure	52	43.3	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**23.9**	**21.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19.4	2.8	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.2	56.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**66.5**	**62.3**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	90.6	90.6	56.1
JEE and PVS	50	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**43.8**	**43.1**	**55.8**
Political and security risk	49.4	50.6	58.1
Socio-economic resilience	48.9	49	60.9
Infrastructure adequacy	8.3	8.3	50.2
Environmental risks	74.1	68.7	54.7
Public health vulnerabilities	38.5	38.7	55.3

Kiribati

26.2 Index Score **163**/195



Global average of all 195 countries

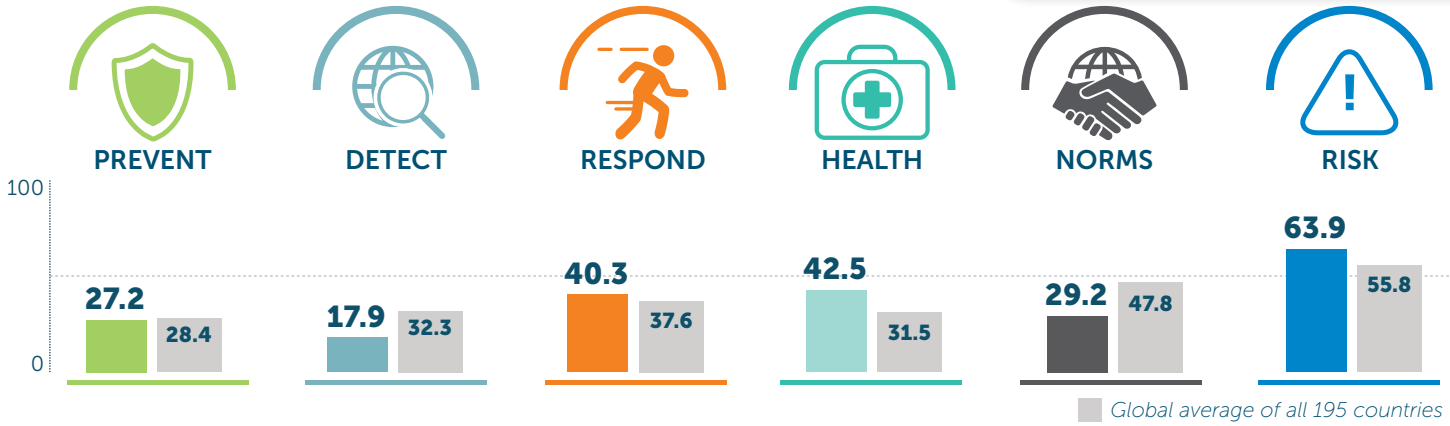
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**4.2**	**8.3**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	25	63.3
DETECTION AND REPORTING	**0.6**	**4.7**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	3.3	3.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**34.2**	**44.3**	**37.6**
Emergency preparedness and response planning	4.2	37.5	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	51.9	52	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**8.7**	**8.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.7	5.6	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	55.3	55.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37.3**	**37.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	15.6	18.8	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44.4**	**53.3**	**55.8**
Political and security risk	77.6	77.6	58.1
Socio-economic resilience	55.6	63.4	60.9
Infrastructure adequacy	16.7	50	50.2
Environmental risks	39.6	41.8	54.7
Public health vulnerabilities	32.8	33.7	55.3

Kuwait

36.8 Index Score **88**/195



Global average of all 195 countries

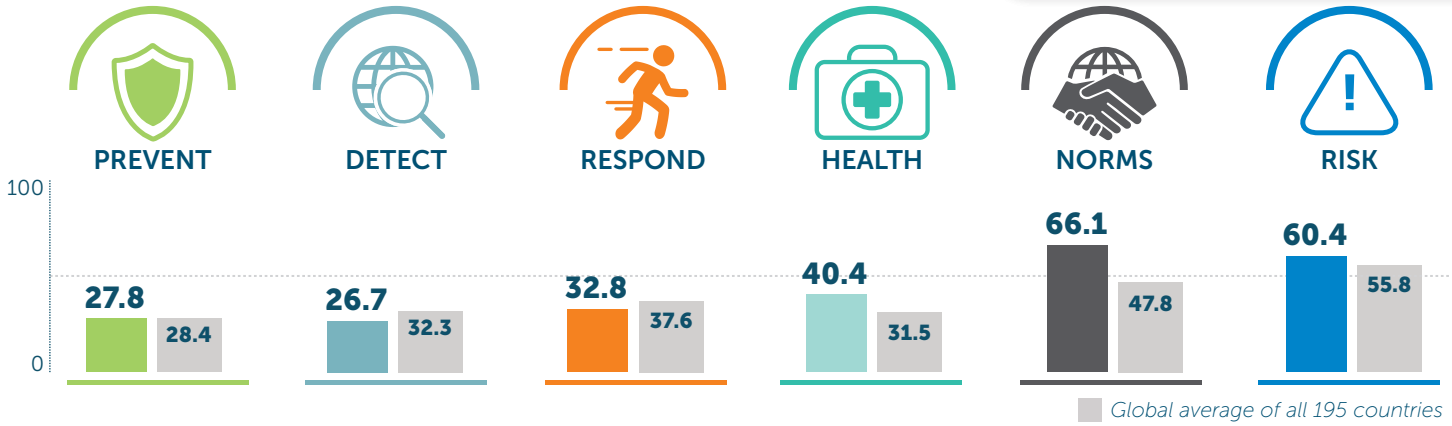
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**34.7**	**27.2**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	20.9	1	19.8
Biosecurity	4	4	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**17.9**	**17.9**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**52.4**	**40.3**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	95.7	94.3	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**42.5**	**42.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	30.3	30.3	30
Supply chain for health system and healthcare workers	55.6	55.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.7	61.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**30.6**	**29.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	25	56.1
JEE and PVS	25	25	18.7
Financing	16.7	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**62.8**	**63.9**	**55.8**
Political and security risk	62.1	62.6	58.1
Socio-economic resilience	59.1	59.6	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	55.1	57.8	54.7
Public health vulnerabilities	79.5	81.4	55.3

Kyrgyz Republic

42.4 Index Score **68**/195



Global average of all 195 countries

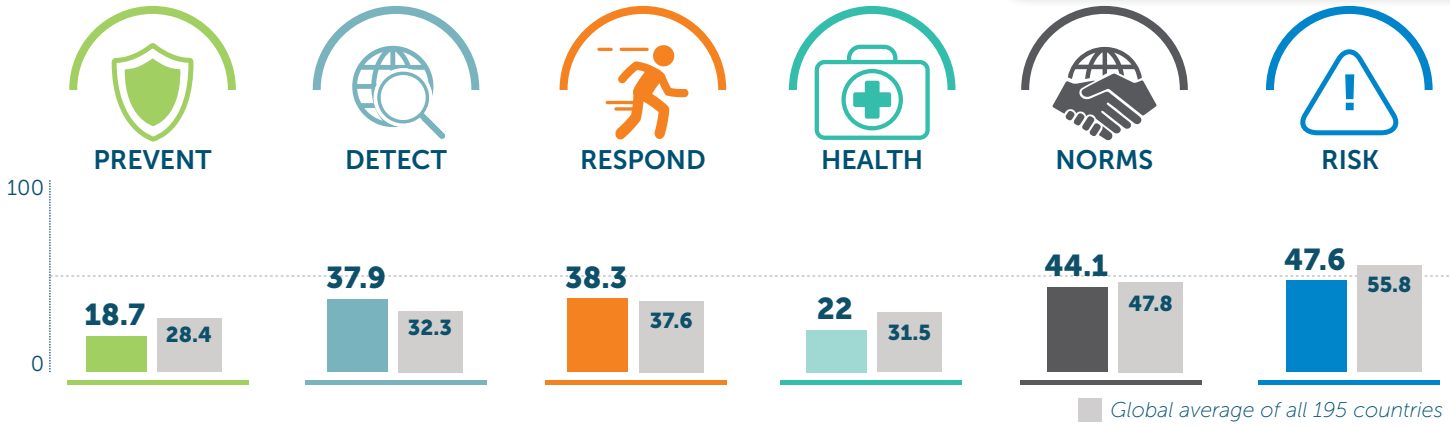
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**27.5**	**27.8**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	11.9	13.7	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**26.7**	**26.7**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**36.5**	**32.8**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	63.8	75.6	65.7
Trade and travel restrictions	75	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**40.5**	**40.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	14.6	14.5	30
Supply chain for health system and healthcare workers	83.3	83.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60.3	60.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**67**	**66.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	43.8	46.9	56.1
JEE and PVS	75	75	18.7
Financing	66.7	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**60.1**	**60.4**	**55.8**
Political and security risk	56.7	54.9	58.1
Socio-economic resilience	66.2	66.4	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	71.6	74.4	54.7
Public health vulnerabilities	64.1	64.3	55.3

Laos

34.8 Index Score **99**/195



Global average of all 195 countries

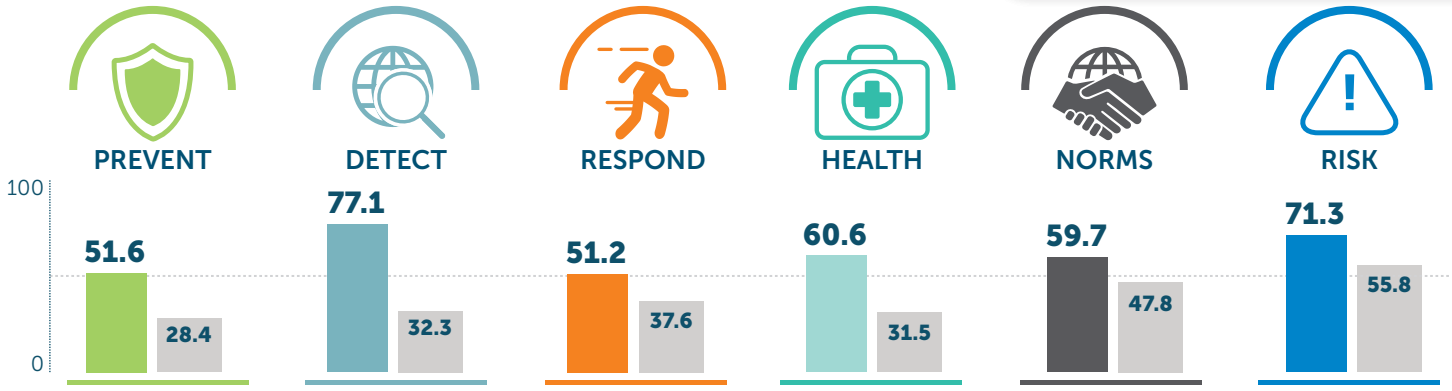
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**10.8**	**18.7**	**28.4**
Antimicrobial resistance (AMR)	8.3	50	45.3
Zoonotic disease	2.3	8	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**37.9**	**37.9**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**38.4**	**38.3**	**37.6**
Emergency preparedness and response planning	37.5	54.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	54.2	57.9
Access to communications infrastructure	56	51.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**21.6**	**22**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19.8	19.8	30
Supply chain for health system and healthcare workers	27.8	27.8	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.4	56.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**42.2**	**44.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	31.3	56.1
JEE and PVS	25	25	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**45.9**	**47.6**	**55.8**
Political and security risk	60.3	56.2	58.1
Socio-economic resilience	47.7	47.6	60.9
Infrastructure adequacy	33.3	41.7	50.2
Environmental risks	43.4	46.1	54.7
Public health vulnerabilities	44.9	46.5	55.3

Latvia

61.9 Index Score **14**/195



Global average of all 195 countries

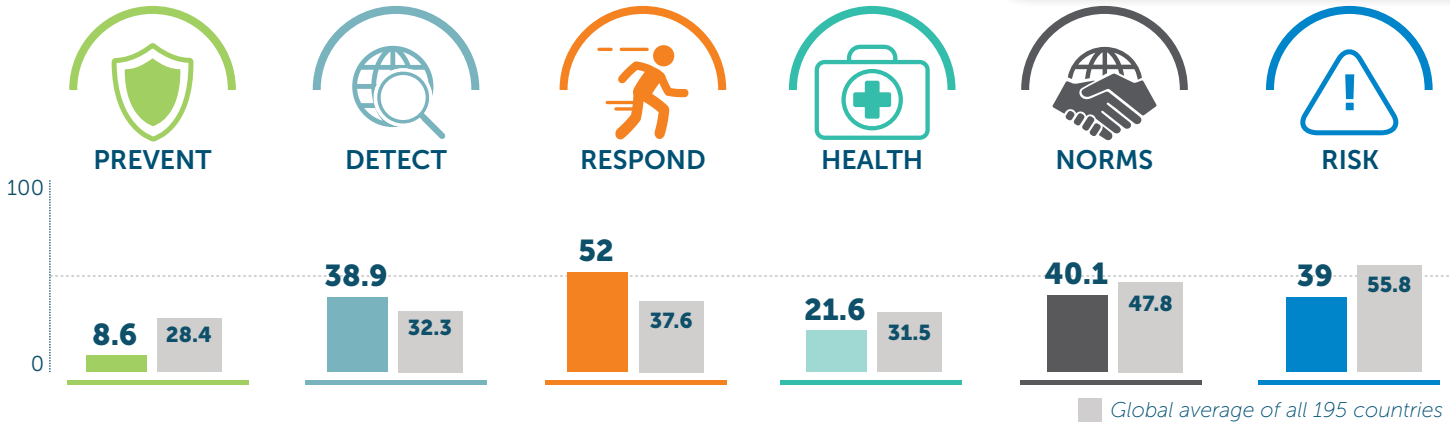
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**49.3**	**51.6**	**28.4**
Antimicrobial resistance (AMR)	75	83.3	45.3
Zoonotic disease	47.8	28	19.8
Biosecurity	48	48	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**72.9**	**77.1**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	75	75	34.6
Surveillance data accessibility and transparency	100	100	34.7
Case-based investigation	25	50	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**58.5**	**51.2**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	84.4	83.2	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**55.9**	**60.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	33.8	66.7	30
Supply chain for health system and healthcare workers	72.2	72.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60.6	60.6	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55**	**59.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	96.9	100	56.1
JEE and PVS	25	25	18.7
Financing	8.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**67.3**	**71.3**	**55.8**
Political and security risk	70.6	78.9	58.1
Socio-economic resilience	83.9	84.5	60.9
Infrastructure adequacy	66.7	75	50.2
Environmental risks	61.4	63.6	54.7
Public health vulnerabilities	54.2	54.7	55.3

Lebanon

33.4 Index Score **111**/195



Global average of all 195 countries

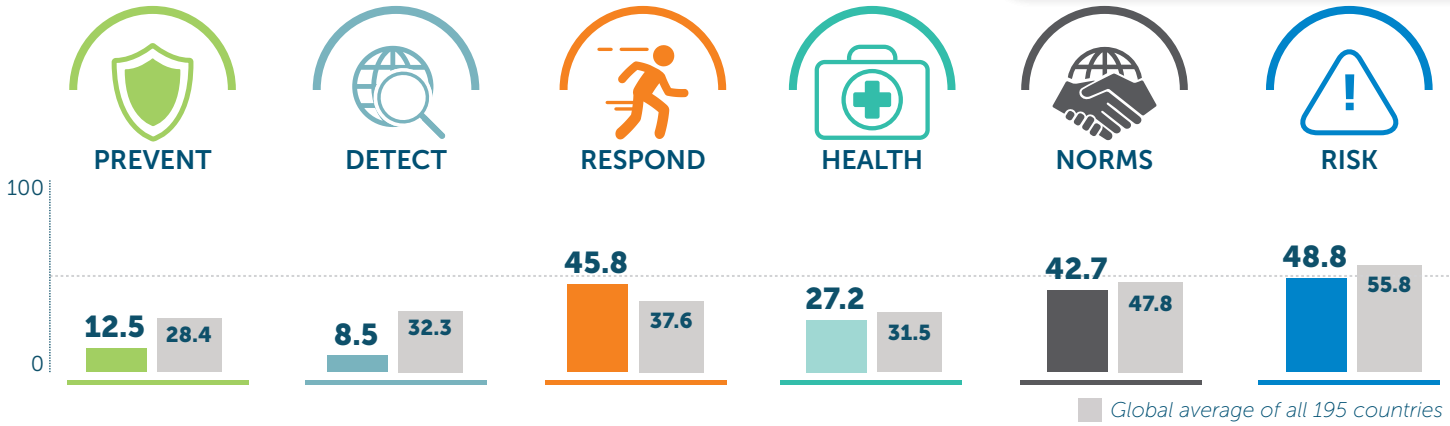
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17**	**8.6**	**28.4**
Antimicrobial resistance (AMR)	41.7	41.7	45.3
Zoonotic disease	10.4	10	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	0	63.3
DETECTION AND REPORTING	**41**	**38.9**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	62.5	37.5	34.6
Surveillance data accessibility and transparency	33.3	33.3	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**57**	**52**	**37.6**
Emergency preparedness and response planning	25	25	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	83.3	57.9
Access to communications infrastructure	74.1	72.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**19.2**	**21.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	25.5	42	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.6	53.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**39.6**	**40.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	37.5	40.6	56.1
JEE and PVS	25	25	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**46.9**	**39**	**55.8**
Political and security risk	14.3	13.4	58.1
Socio-economic resilience	67.4	59.5	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	60.1	29.6	54.7
Public health vulnerabilities	59.2	59.4	55.3

Lesotho

30.9 Index Score **127**/195



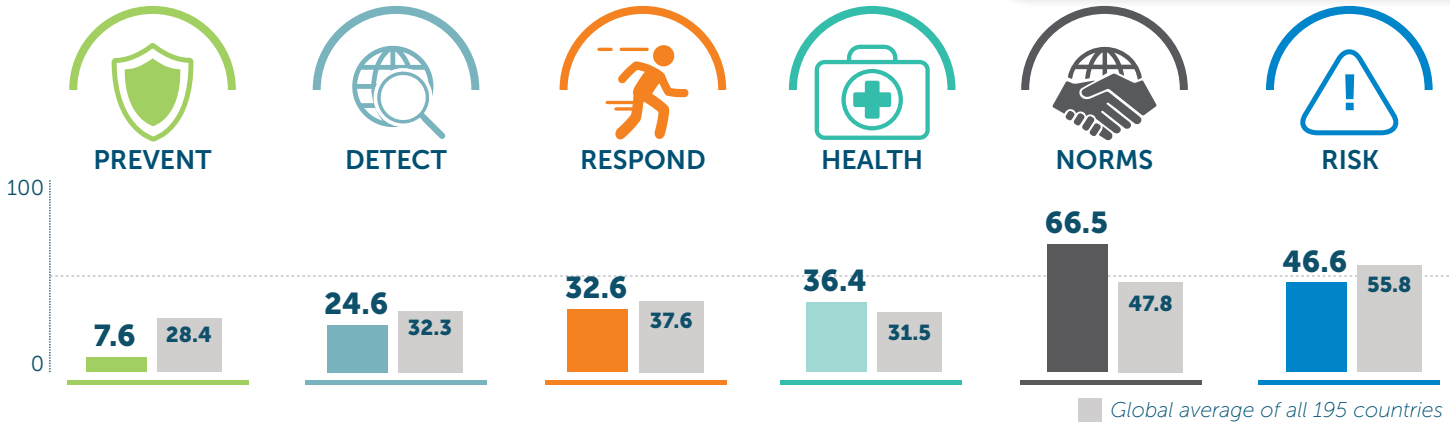
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**21.6**	**12.5**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	4.4	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	25	63.3
DETECTION AND REPORTING	**8.5**	**8.5**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**46.9**	**45.8**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	100	100	22.1
Risk communication	54.2	54.2	57.9
Access to communications infrastructure	70	70.6	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**27.2**	**27.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	20.9	20.9	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	58.2	58.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.6**	**42.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	31.3	56.1
JEE and PVS	25	25	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**48.1**	**48.8**	**55.8**
Political and security risk	56.6	57.3	58.1
Socio-economic resilience	49.3	49.2	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	57.7	60.2	54.7
Public health vulnerabilities	35.1	35.6	55.3

Liberia

35.7 Index Score **94**/195



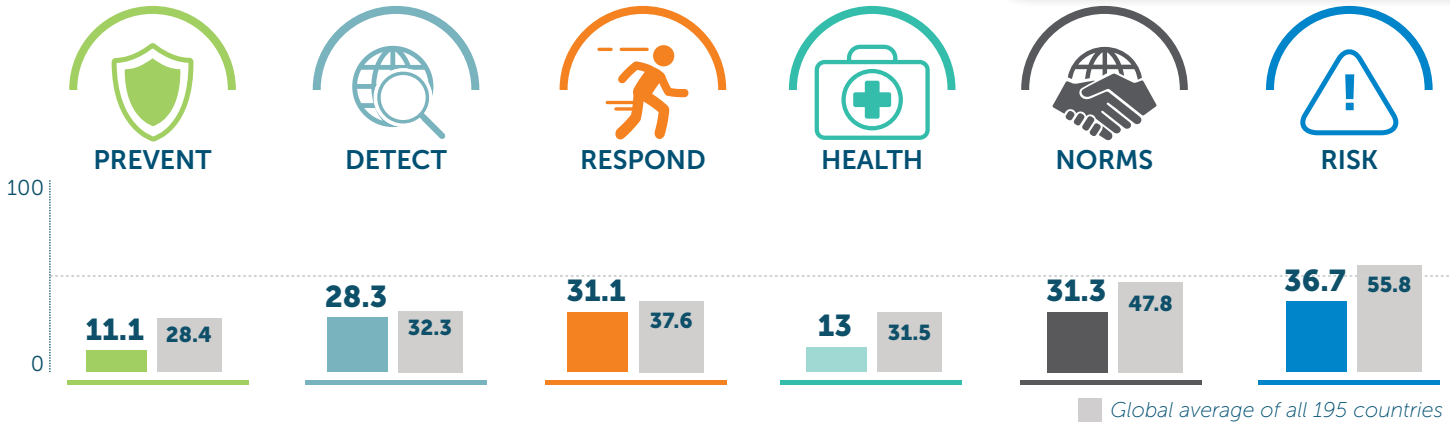
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**7.6**	**7.6**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	41.7	41.7	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	0	63.3
DETECTION AND REPORTING	**23.8**	**24.6**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	12.5	34.6
Surveillance data accessibility and transparency	30	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	100	46.5
RAPID RESPONSE	**34.7**	**32.6**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	46.9	32	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**29.2**	**36.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.3	17.9	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	17.2	50.6	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**67.4**	**66.5**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	75	78.1	56.1
JEE and PVS	50	50	18.7
Financing	62.5	54.2	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44.7**	**46.6**	**55.8**
Political and security risk	60.3	61.5	58.1
Socio-economic resilience	41.8	41.9	60.9
Infrastructure adequacy	8.3	8.3	50.2
Environmental risks	59.5	62	54.7
Public health vulnerabilities	53.4	59.6	55.3

Libya

25.3 Index Score **172**/195



Global average of all 195 countries

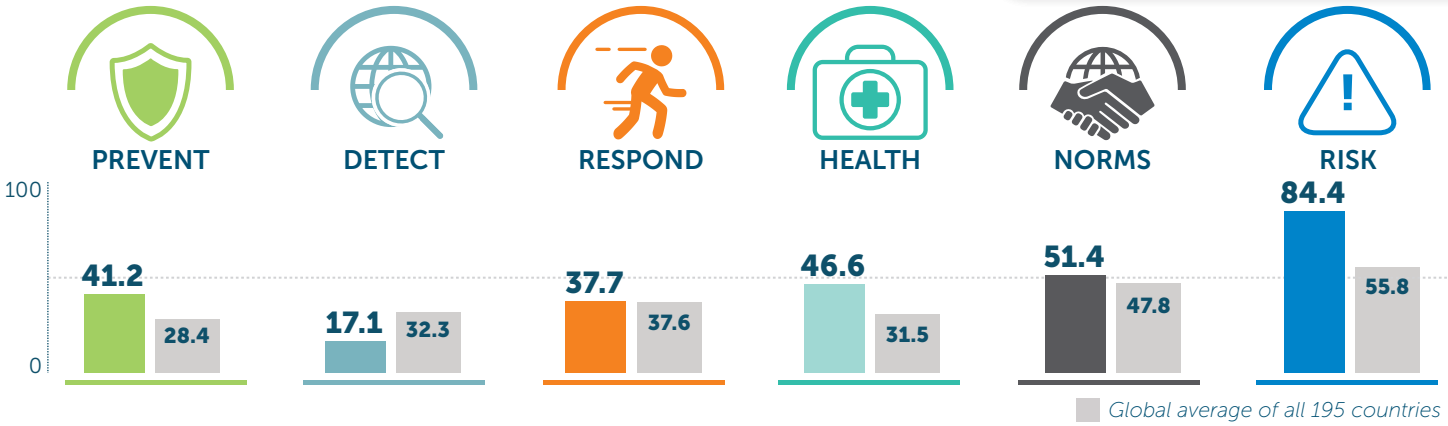
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**15.5**	**11.1**	**28.4**
Antimicrobial resistance (AMR)	16.7	16.7	45.3
Zoonotic disease	1.6	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	50	63.3
DETECTION AND REPORTING	**22.1**	**28.3**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**21.5**	**31.1**	**37.6**
Emergency preparedness and response planning	0	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	0	50	57.9
Access to communications infrastructure	50.5	55.4	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**13.1**	**13**	**31.5**
Health capacity in clinics, hospitals, and community care centers	13.9	13.2	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.8	52.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.2**	**31.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	37.5	56.1
JEE and PVS	25	25	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**38.5**	**36.7**	**55.8**
Political and security risk	3.7	9	58.1
Socio-economic resilience	46.8	46.7	60.9
Infrastructure adequacy	25	8.3	50.2
Environmental risks	62.8	65.3	54.7
Public health vulnerabilities	54	54.1	55.3

Liechtenstein

46.4 Index Score **54**/195



Global average of all 195 countries

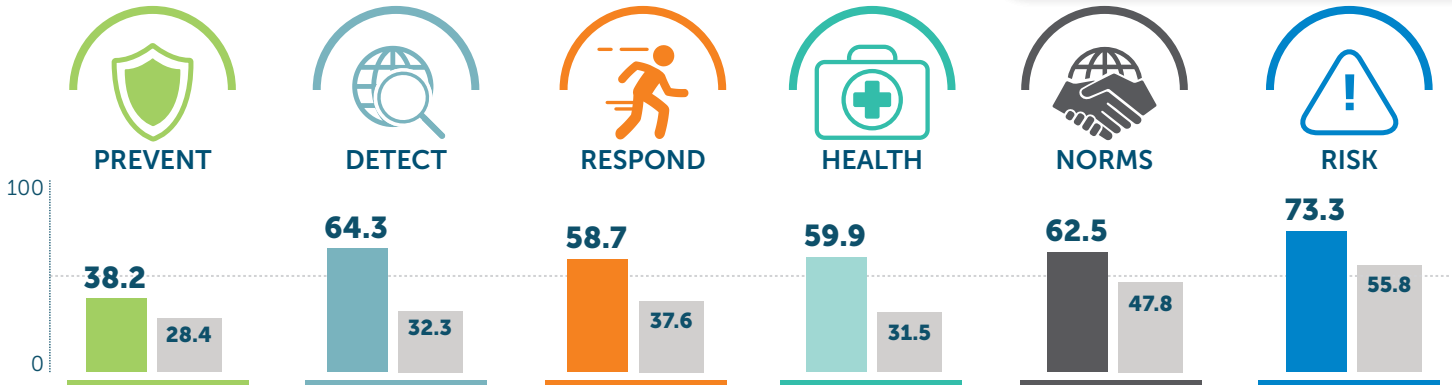
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**32.8**	**41.2**	**28.4**
Antimicrobial resistance (AMR)	50	100	45.3
Zoonotic disease	51.8	52.1	19.8
Biosecurity	20	20	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**17.1**	**17.1**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**42.9**	**37.7**	**37.6**
Emergency preparedness and response planning	91.7	91.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	83.4	84.4	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**44.3**	**46.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	38.6	38.6	30
Supply chain for health system and healthcare workers	11.1	27.8	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	60.2	60.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**50**	**51.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	50	50	56.1
JEE and PVS	25	25	18.7
Financing	8.3	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**83.1**	**84.4**	**55.8**
Political and security risk	89.3	92.9	58.1
Socio-economic resilience	72.6	72.1	60.9
Infrastructure adequacy	100	100	50.2
Environmental risks	87.8	90.7	54.7
Public health vulnerabilities	66	66.2	55.3

Lithuania

59.5 Index Score **21**/195



Global average of all 195 countries

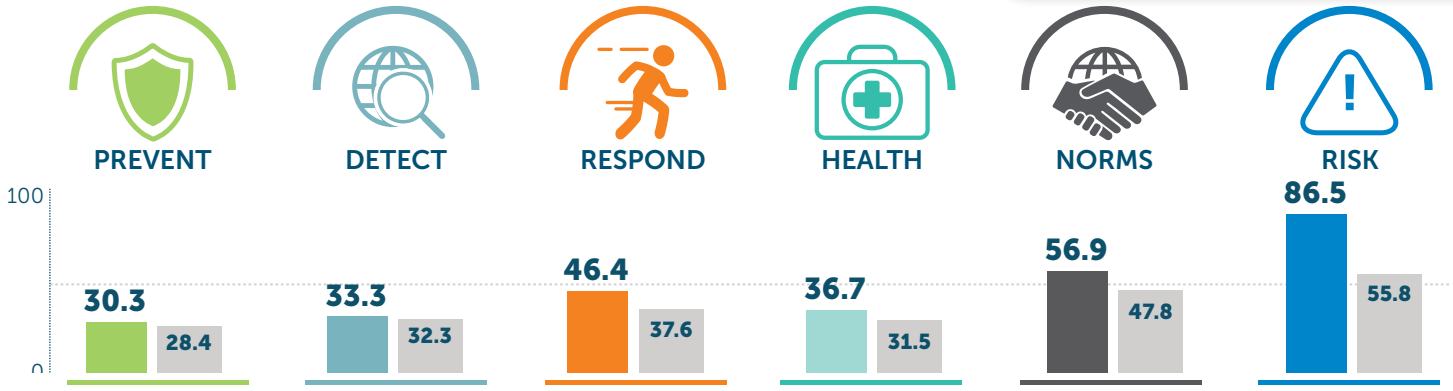
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**37**	**38.2**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	28.2	35.2	19.8
Biosecurity	44	44	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**62.2**	**64.3**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	73.3	73.3	34.7
Case-based investigation	25	25	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**49**	**58.7**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	100	22.1
Risk communication	66.7	83.3	57.9
Access to communications infrastructure	84.4	86	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**51.8**	**59.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	29.4	61.7	30
Supply chain for health system and healthcare workers	72.2	72.2	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	60.8	60.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**62.5**	**62.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**66.8**	**73.3**	**55.8**
Political and security risk	72.5	77.1	58.1
Socio-economic resilience	84.9	84.9	60.9
Infrastructure adequacy	58.3	83.3	50.2
Environmental risks	61.7	63.6	54.7
Public health vulnerabilities	56.7	57.4	55.3

Luxembourg

48.4 Index Score **51**/195



Global average of all 195 countries

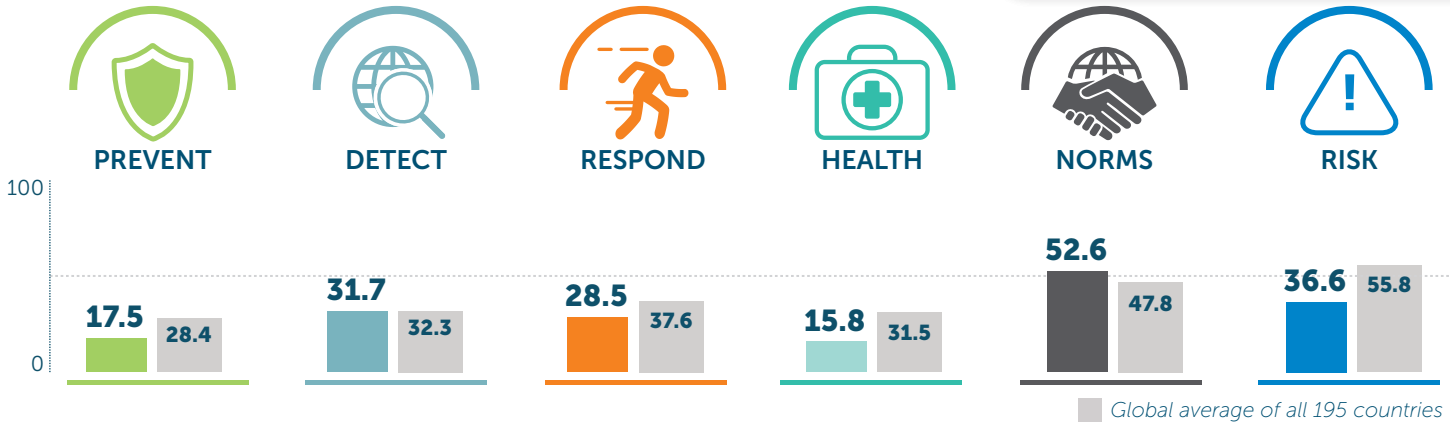
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**30.3**	**30.3**	**28.4**
Antimicrobial resistance (AMR)	91.7	91.7	45.3
Zoonotic disease	0	0	19.8
Biosecurity	40	40	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	25	25	63.3
DETECTION AND REPORTING	**33.3**	**33.3**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	50	50	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**51**	**46.4**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	86.1	87.5	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**36.8**	**36.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	38.4	37.7	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.6	52.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55.6**	**56.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	25	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**84.4**	**86.5**	**55.8**
Political and security risk	85.7	86.2	58.1
Socio-economic resilience	95	94.7	60.9
Infrastructure adequacy	91.7	100	50.2
Environmental risks	59.2	61.5	54.7
Public health vulnerabilities	90.5	90.1	55.3

Madagascar

30.4 Index Score **130**/195



Global average of all 195 countries

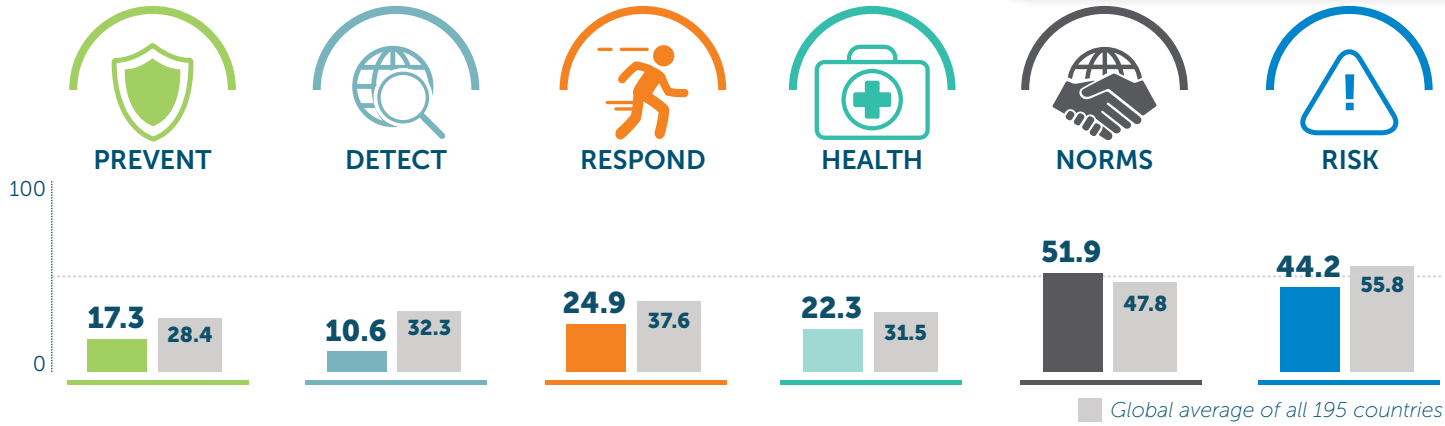
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.5**	**17.5**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	17.6	17.5	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**27.5**	**31.7**	**32.3**
Laboratory systems strength and quality	37.5	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**35.9**	**28.5**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	12.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	25	57.9
Access to communications infrastructure	51.2	45.6	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**15.8**	**15.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	0.5	0.5	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.2	54.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**52.6**	**52.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	40.6	40.6	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**36.1**	**36.6**	**55.8**
Political and security risk	59.4	58.2	58.1
Socio-economic resilience	33.3	33.6	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	45.1	47.7	54.7
Public health vulnerabilities	26.2	26.7	55.3

Malawi

28.5 Index Score **150**/195



Global average of all 195 countries

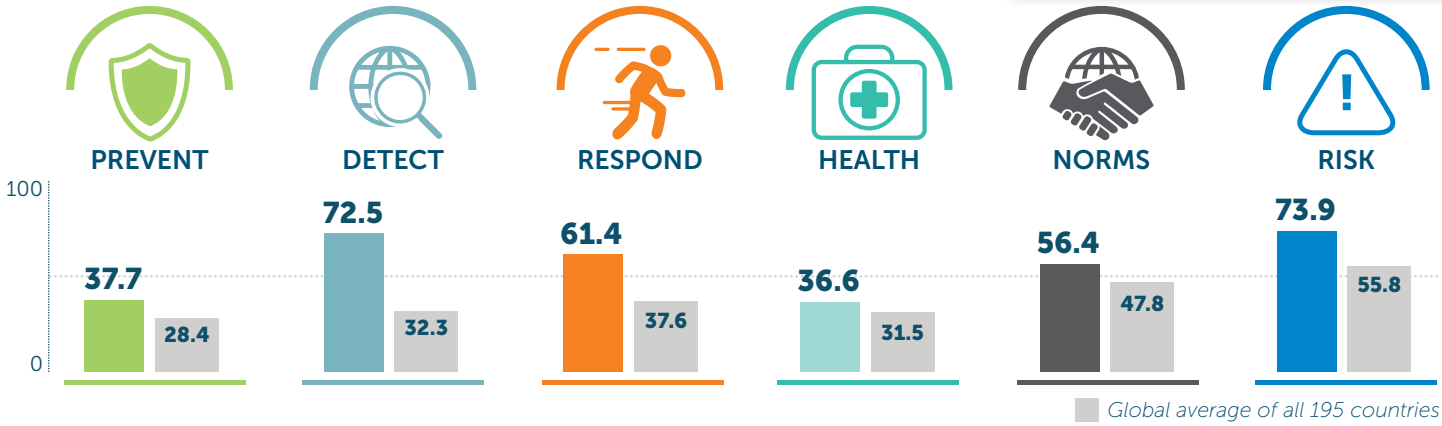
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.3**	**17.3**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	0.8	0.6	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**14.7**	**10.6**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**23.5**	**24.9**	**37.6**
Emergency preparedness and response planning	0	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	39.4	40.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**19.9**	**22.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	18.5	35.1	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.8	59.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.9**	**51.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	87.5	78.1	56.1
JEE and PVS	0	25	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**43.2**	**44.2**	**55.8**
Political and security risk	63.9	65.1	58.1
Socio-economic resilience	30.6	30.7	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	44.9	47.7	54.7
Public health vulnerabilities	51.7	52.3	55.3

Malaysia

56.4 Index Score **27**/195



Global average of all 195 countries

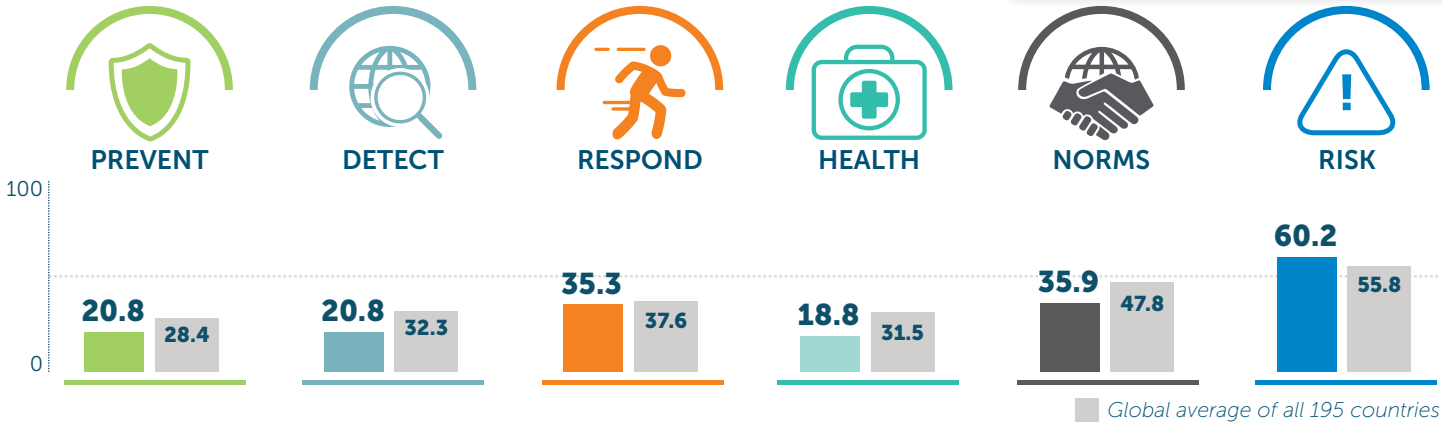
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**45.2**	**37.7**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	43.9	23.9	19.8
Biosecurity	44	44	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**57.5**	**72.5**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	50	100	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	70	60	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**65**	**61.4**	**37.6**
Emergency preparedness and response planning	41.7	41.7	30.4
Exercising response plans	0	50	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	80.2	79.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**39**	**36.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	24.7	8	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.6	53.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**50.3**	**56.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	93.8	96.9	56.1
JEE and PVS	0	25	18.7
Financing	41.7	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**73.3**	**73.9**	**55.8**
Political and security risk	73.6	73.7	58.1
Socio-economic resilience	83	83.2	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	64.9	67.5	54.7
Public health vulnerabilities	70.2	70.2	55.3

Maldives

32 Index Score **118**/195



Global average of all 195 countries

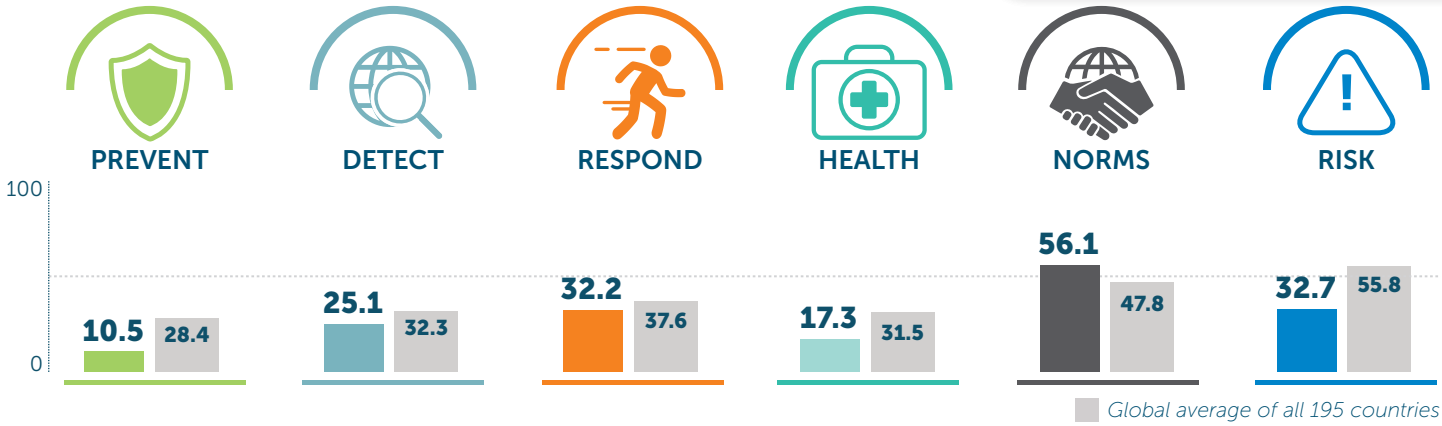
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**20.8**	**20.8**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**16.7**	**20.8**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**37.8**	**35.3**	**37.6**
Emergency preparedness and response planning	16.7	33.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	64.7	55.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.4**	**18.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19.4	36.1	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.1	59.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**34.7**	**35.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	40.6	56.1
JEE and PVS	25	25	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**58.4**	**60.2**	**55.8**
Political and security risk	53.2	60.6	58.1
Socio-economic resilience	65.7	65.2	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	61.5	64.1	54.7
Public health vulnerabilities	61.4	61.1	55.3

Mali

29 Index Score **144**/195



Global average of all 195 countries

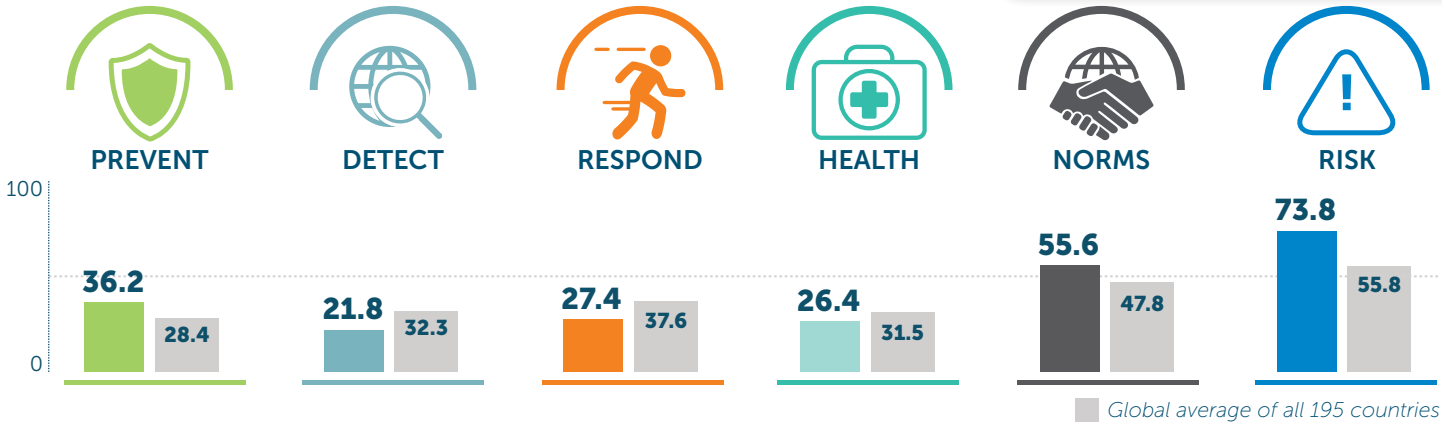
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13.9**	**10.5**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	21.1	0.8	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**24.6**	**25.1**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	10	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**33.1**	**32.2**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	44.2	46.6	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14.5**	**17.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	0.5	17.1	30
Supply chain for health system and healthcare workers	27.8	27.8	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	48.5	51.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**58.2**	**56.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	15.6	28.1	56.1
JEE and PVS	75	50	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**39.1**	**32.7**	**55.8**
Political and security risk	29.2	26.8	58.1
Socio-economic resilience	39.3	30.9	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	69	46.3	54.7
Public health vulnerabilities	41.5	42.6	55.3

Malta

40.2 Index Score **77**/195



Global average of all 195 countries

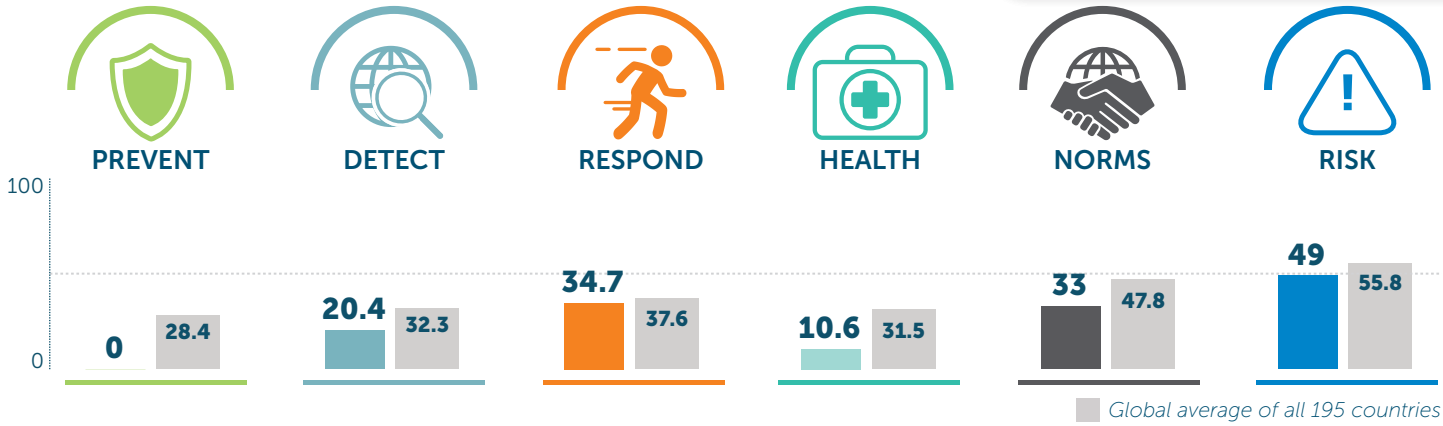
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**32**	**36.2**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	2.2	2.3	19.8
Biosecurity	40	40	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**19.7**	**21.8**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	43.3	43.3	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**31.5**	**27.4**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	82.9	87.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24.1**	**26.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19	35.5	30
Supply chain for health system and healthcare workers	50	50	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	49.6	49.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55**	**55.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**73.2**	**73.8**	**55.8**
Political and security risk	80.2	79.7	58.1
Socio-economic resilience	93.4	93.7	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	57.3	60.5	54.7
Public health vulnerabilities	76.9	76.9	55.3

Marshall Islands

24.6 Index Score **176**/195



Global average of all 195 countries

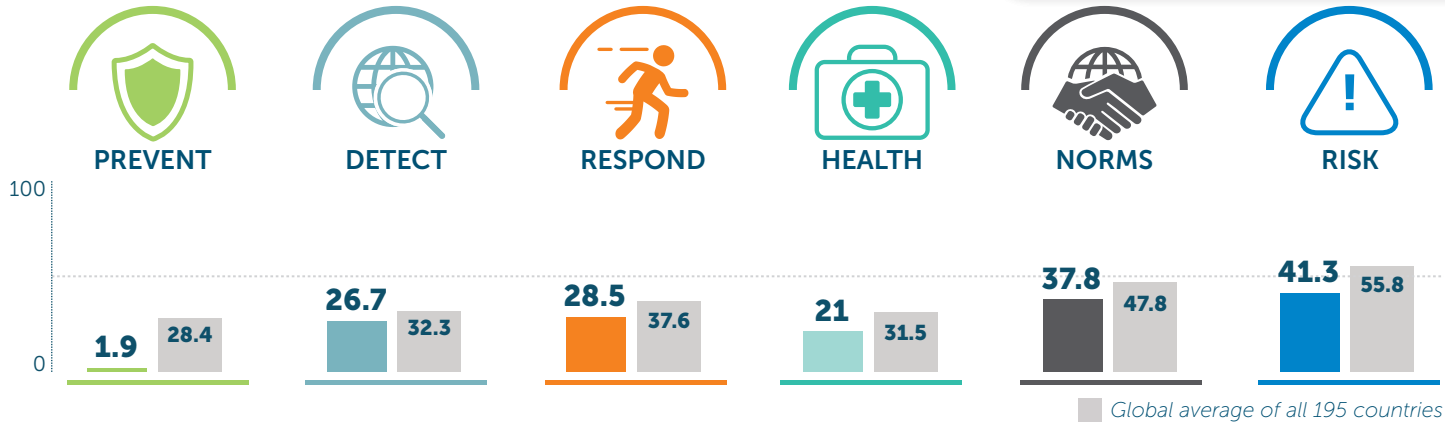
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**0**	**0**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	0	63.3
DETECTION AND REPORTING	**1.7**	**20.4**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	50	15.9
Real-time surveillance and reporting	0	37.5	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	25	46.5
RAPID RESPONSE	**29.5**	**34.7**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	66.7	57.9
Access to communications infrastructure	56.3	55.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**5.1**	**10.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	6.7	23.3	30
Supply chain for health system and healthcare workers	0	22.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	28.9	28.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**28.3**	**33**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	31.3	56.1
JEE and PVS	0	25	18.7
Financing	25	25	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**48.3**	**49**	**55.8**
Political and security risk	74.1	74.2	58.1
Socio-economic resilience	56.2	56.4	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	30.7	33.1	54.7
Public health vulnerabilities	47.3	47.8	55.3

Mauritania

26.2 Index Score **163**/195



Global average of all 195 countries

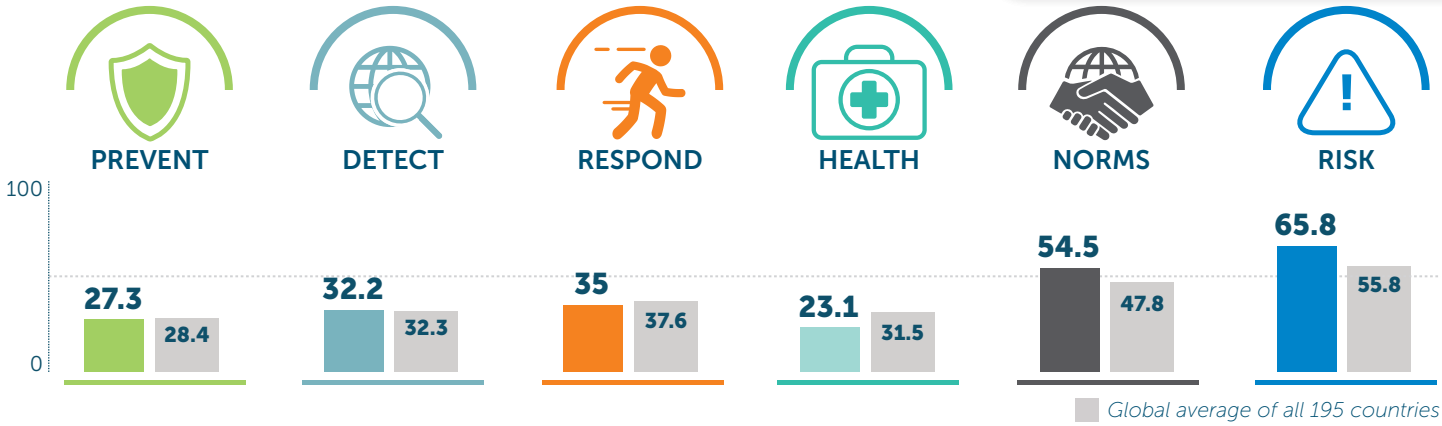
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**1.9**	**1.9**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	11.7	11.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	0	63.3
DETECTION AND REPORTING	**24.6**	**26.7**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**31**	**28.5**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	25	57.9
Access to communications infrastructure	54.7	61.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**21**	**21**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.4	1.4	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.4	51.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33.2**	**37.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	15.6	18.8	56.1
JEE and PVS	25	50	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**40.8**	**41.3**	**55.8**
Political and security risk	53.1	52.5	58.1
Socio-economic resilience	40	39.9	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	64.6	66.9	54.7
Public health vulnerabilities	29.4	30.7	55.3

Mauritius

39.7 Index Score **79**/195



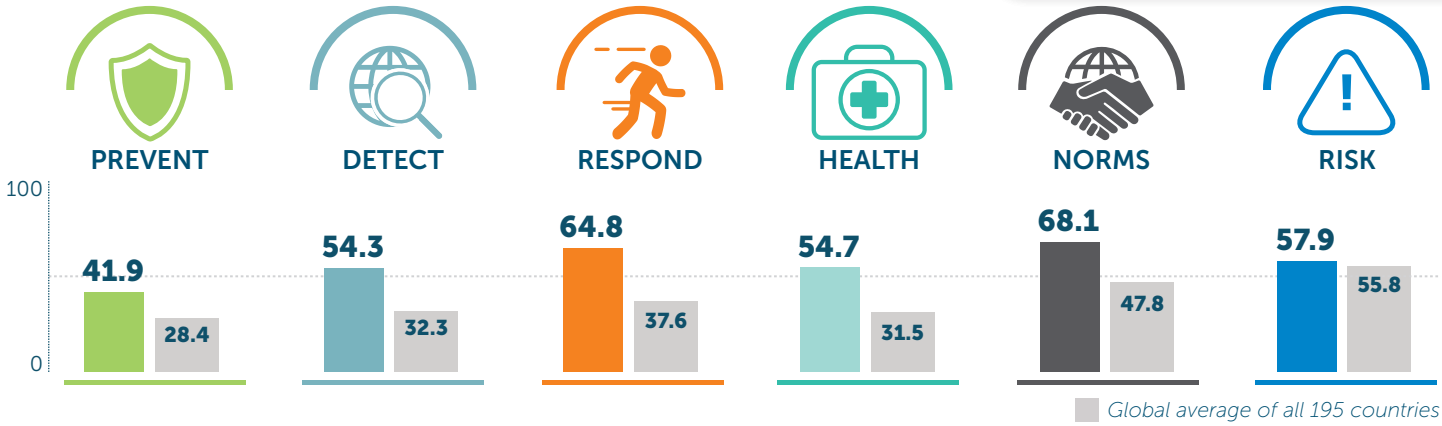
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**27.3**	**27.3**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	13.9	14	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**35.8**	**32.2**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	37.5	12.5	34.6
Surveillance data accessibility and transparency	40	43.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**29.9**	**35**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	83.3	57.9
Access to communications infrastructure	63.5	73.9	65.7
Trade and travel restrictions	75	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**20.7**	**23.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	28.5	45.2	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.8	52.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**51.2**	**54.5**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	40.6	43.8	56.1
JEE and PVS	0	25	18.7
Financing	16.7	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**65**	**65.8**	**55.8**
Political and security risk	80.3	80.3	58.1
Socio-economic resilience	70.5	70.6	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	59.5	63.5	54.7
Public health vulnerabilities	56.3	56.1	55.3

Mexico

57 Index Score **25**/195



Global average of all 195 countries

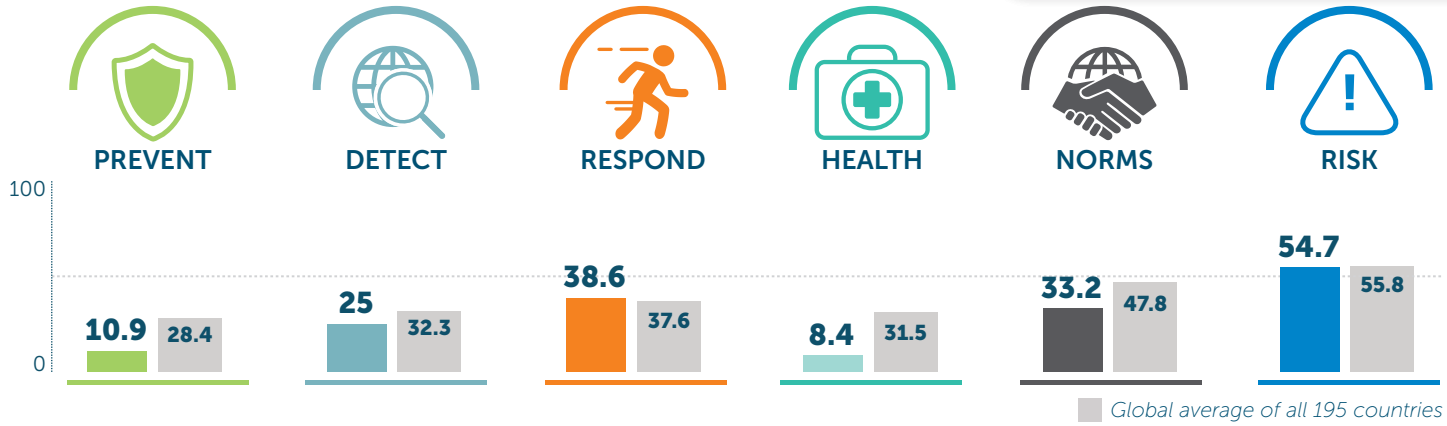
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**41.7**	**41.9**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	31.4	32.5	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**50.1**	**54.3**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	100	34.6
Surveillance data accessibility and transparency	63.3	63.3	34.7
Case-based investigation	50	50	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**61.5**	**64.8**	**37.6**
Emergency preparedness and response planning	33.3	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	100	75	57.9
Access to communications infrastructure	63.5	70.4	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**52.5**	**54.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	41.7	57.7	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.1	56.1	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**68.1**	**68.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	58.3	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**56.8**	**57.9**	**55.8**
Political and security risk	50.4	36.2	58.1
Socio-economic resilience	51.4	68.2	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	61.4	64.1	54.7
Public health vulnerabilities	62.6	62.6	55.3

Micronesia, Federated Sates of

28.5 Index Score **150**/195



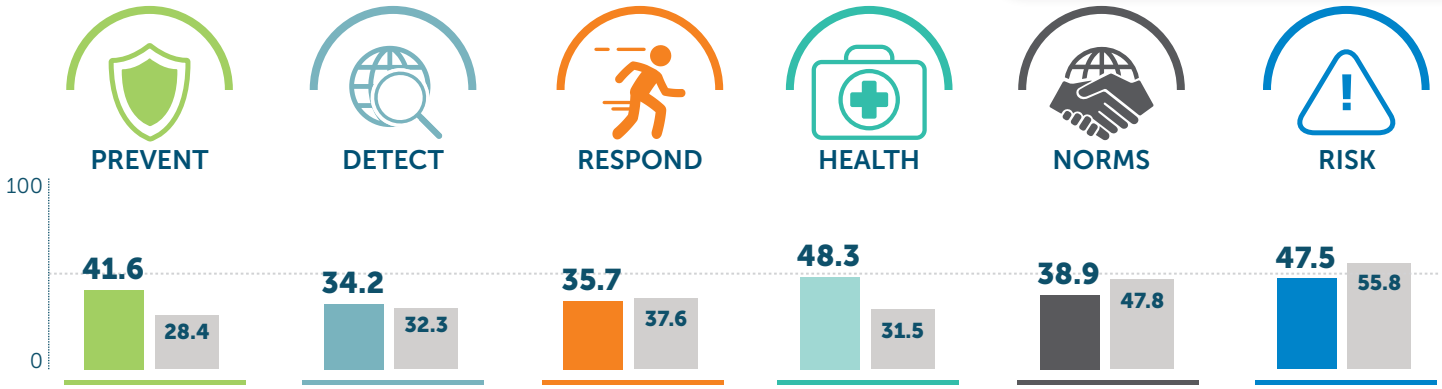
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**11**	**10.9**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	7.5	7.3	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**25**	**25**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**53**	**38.6**	**37.6**
Emergency preparedness and response planning	41.7	41.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	0	22.1
Risk communication	41.7	66.7	57.9
Access to communications infrastructure	54.6	53.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**8.4**	**8.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.7	5.7	30
Supply chain for health system and healthcare workers	22.2	22.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	30.5	30.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33.2**	**33.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	15.6	15.6	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**52.6**	**54.7**	**55.8**
Political and security risk	77.6	77.6	58.1
Socio-economic resilience	56.7	56.2	60.9
Infrastructure adequacy	33.3	41.7	50.2
Environmental risks	52.1	54.9	54.7
Public health vulnerabilities	43.4	43.1	55.3

Moldova

41 Index Score **71**/195



Global average of all 195 countries

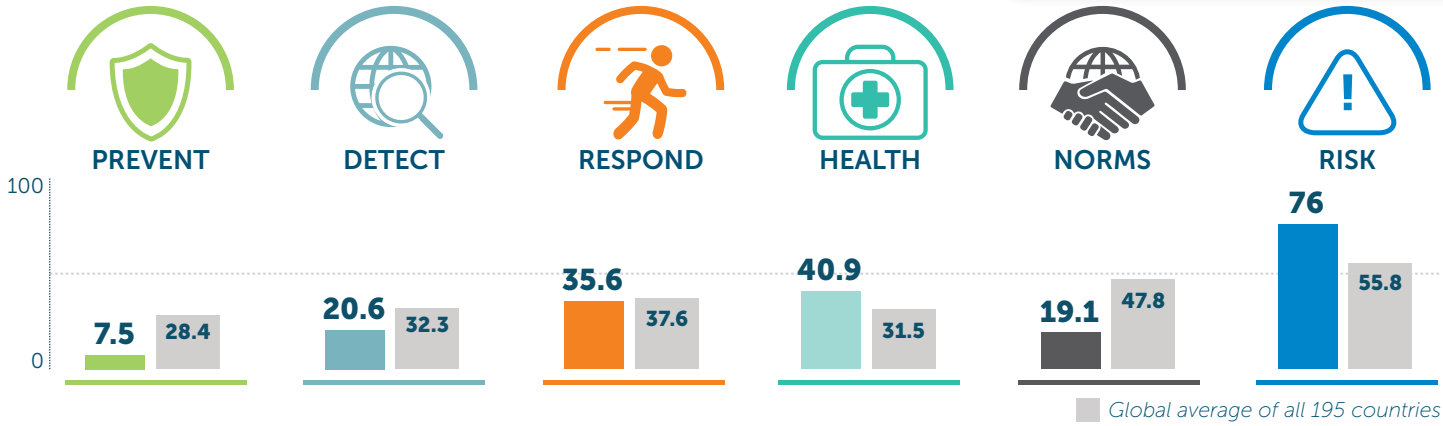
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**37.3**	**41.6**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	46.4	47.5	19.8
Biosecurity	44	44	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**34.2**	**34.2**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	50	50	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**40**	**35.7**	**37.6**
Emergency preparedness and response planning	20.8	37.5	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	75.6	79.1	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**46.8**	**48.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	34	33.8	30
Supply chain for health system and healthcare workers	33.3	44.4	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	60	60.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**38.9**	**38.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	50	50	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**47.5**	**47.5**	**55.8**
Political and security risk	37.6	35.2	58.1
Socio-economic resilience	70.5	70.4	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	61.7	64.2	54.7
Public health vulnerabilities	42.5	42.7	55.3

Monaco

33.3 Index Score **112**/195



Global average of all 195 countries

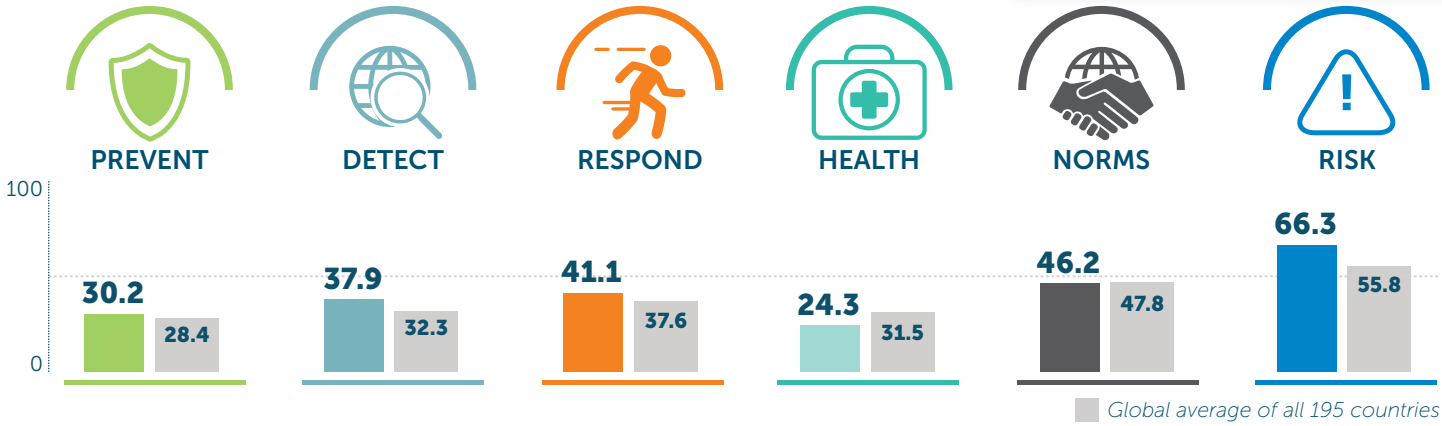
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**7.5**	**7.5**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	0	0	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	0	63.3
DETECTION AND REPORTING	**20.6**	**20.6**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**30.8**	**35.6**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	54.2	57.9
Access to communications infrastructure	78.4	78.7	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**40.9**	**40.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	48.2	48.2	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.4	54.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**26.9**	**19.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	31.3	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**76**	**76**	**55.8**
Political and security risk	92.2	92.2	58.1
Socio-economic resilience	72.5	70	60.9
Infrastructure adequacy	100	100	50.2
Environmental risks	55.1	57.8	54.7
Public health vulnerabilities	60.2	59.9	55.3

Mongolia

41 Index Score **71**/195



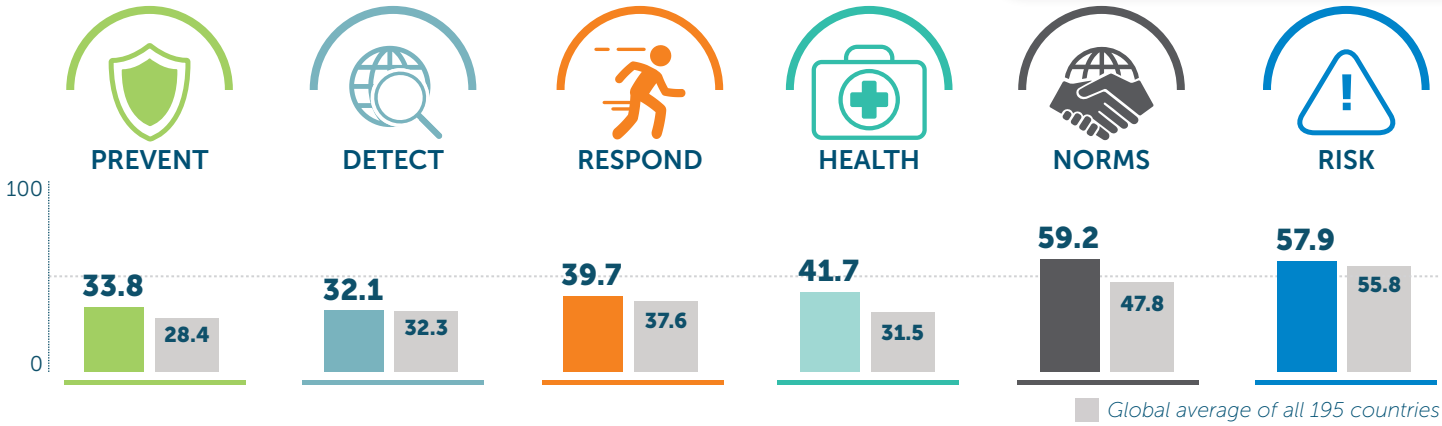
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**33.6**	**30.2**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	47.4	27.2	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**37.9**	**37.9**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**44.5**	**41.1**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	25	25	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	70.1	79.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24.1**	**24.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	17.2	18.4	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.9	63	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**42.2**	**46.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	78.1	93.8	56.1
JEE and PVS	25	25	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**63.2**	**66.3**	**55.8**
Political and security risk	74.4	79.1	58.1
Socio-economic resilience	74	73.5	60.9
Infrastructure adequacy	50	58.3	50.2
Environmental risks	67	69.8	54.7
Public health vulnerabilities	50.7	50.7	55.3

Montenegro

44.1 Index Score **62**/195



Global average of all 195 countries

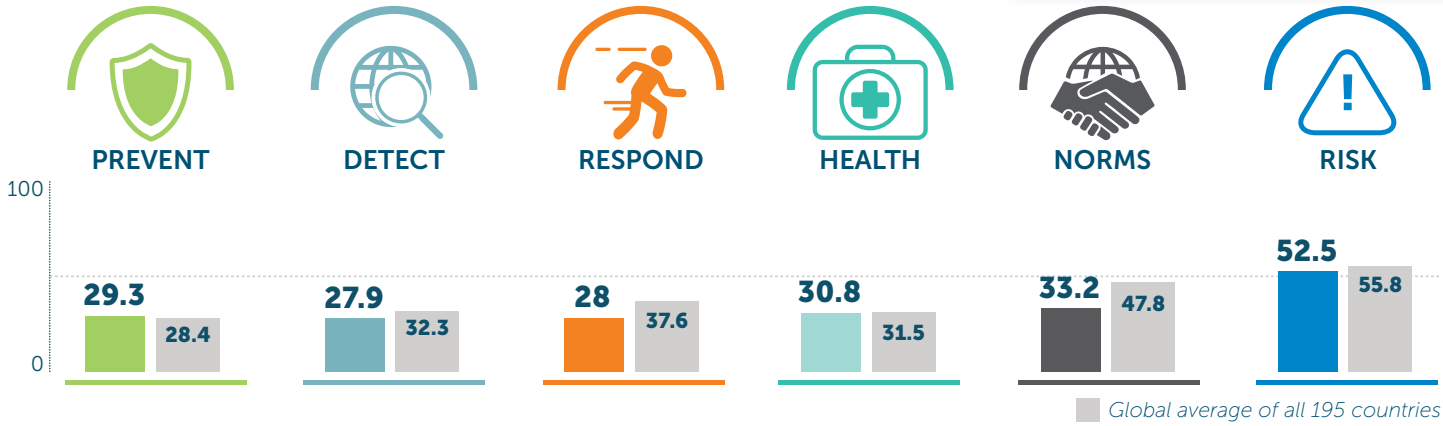
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**36.3**	**33.8**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	41.1	26.4	19.8
Biosecurity	26.7	26.7	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**17.5**	**32.1**	**32.3**
Laboratory systems strength and quality	0	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	62.5	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	25	25	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**42.3**	**39.7**	**37.6**
Emergency preparedness and response planning	41.7	41.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	83.7	90.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**37**	**41.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	14.5	31	30
Supply chain for health system and healthcare workers	33.3	50	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.4	61.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54**	**59.2**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	40.6	46.9	56.1
JEE and PVS	0	25	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57.6**	**57.9**	**55.8**
Political and security risk	61.1	57.2	58.1
Socio-economic resilience	72.2	72.4	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	54.5	59.5	54.7
Public health vulnerabilities	50.1	50.2	55.3

Morocco

33.6 Index Score **108**/195



Global average of all 195 countries

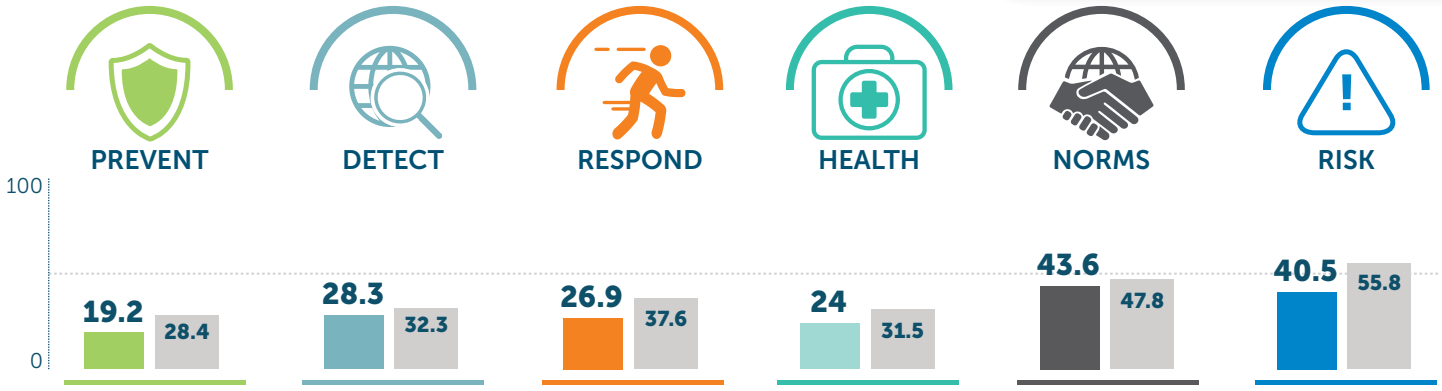
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**29.4**	**29.3**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	27.1	27.1	19.8
Biosecurity	24	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**27.9**	**27.9**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**36.1**	**28**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	64.9	66.9	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**30.9**	**30.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	3.7	3.6	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.8	56.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**32.6**	**33.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	37.5	40.6	56.1
JEE and PVS	25	25	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57**	**52.5**	**55.8**
Political and security risk	51.4	51.3	58.1
Socio-economic resilience	54.4	54.2	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	70	47.4	54.7
Public health vulnerabilities	51.1	51.5	55.3

Mozambique

30.4 Index Score **130**/195



Global average of all 195 countries

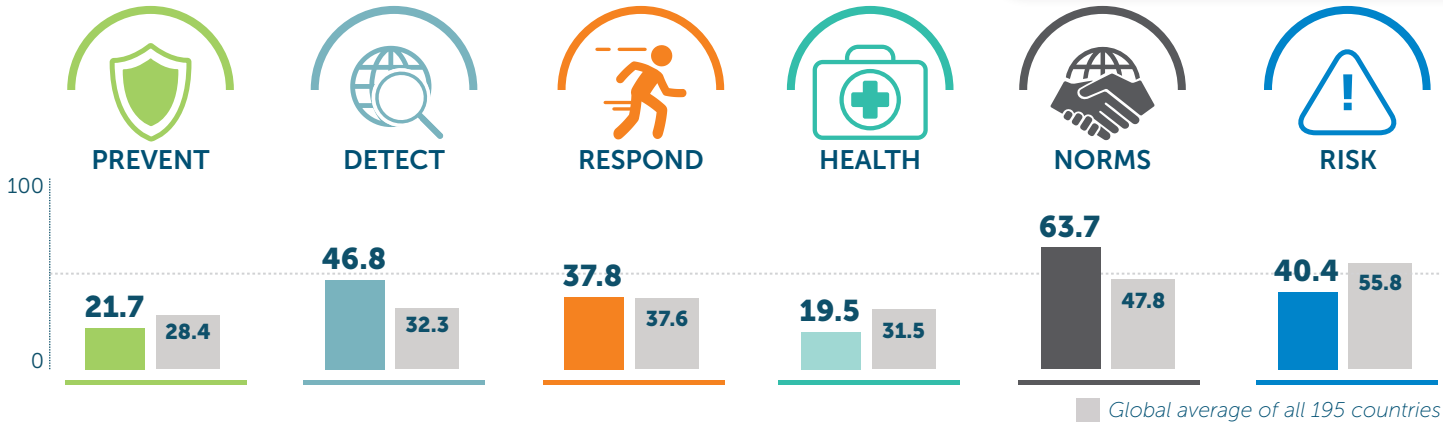
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**15.1**	**19.2**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	7.1	7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	75	63.3
DETECTION AND REPORTING	**24.2**	**28.3**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**30.2**	**26.9**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	66.7	57.9
Access to communications infrastructure	52.9	38.1	65.7
Trade and travel restrictions	75	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24**	**24**	**31.5**
Health capacity in clinics, hospitals, and community care centers	18	18	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	58.3	58.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**41**	**43.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	12.5	28.1	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**43.1**	**40.5**	**55.8**
Political and security risk	52.3	35.7	58.1
Socio-economic resilience	29.8	29.4	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	57.5	60.2	54.7
Public health vulnerabilities	34.3	35.7	55.3

Myanmar

38.3 Index Score **85**/195



Global average of all 195 countries

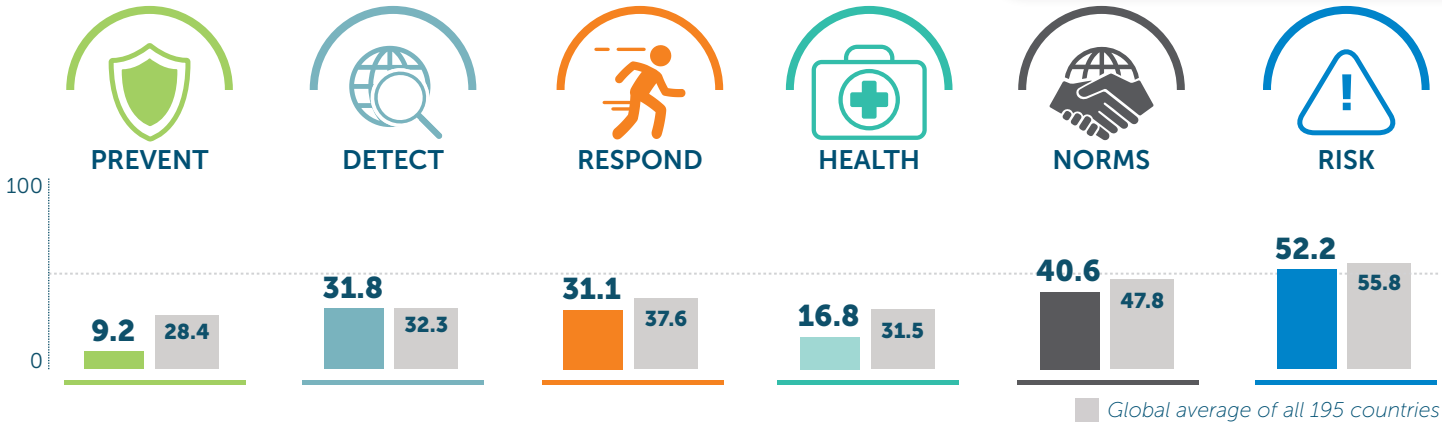
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**25**	**21.7**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	46.1	26.3	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**38.5**	**46.8**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	37.5	34.6
Surveillance data accessibility and transparency	43.3	43.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**42.5**	**37.8**	**37.6**
Emergency preparedness and response planning	54.2	70.8	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	54.2	54.2	57.9
Access to communications infrastructure	55.9	44	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14.7**	**19.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19.7	36.6	30
Supply chain for health system and healthcare workers	0	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	58	58	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**61.8**	**63.7**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	37.5	40.6	56.1
JEE and PVS	50	50	18.7
Financing	66.7	75	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44.4**	**40.4**	**55.8**
Political and security risk	27.6	12.8	58.1
Socio-economic resilience	65.8	65.7	60.9
Infrastructure adequacy	33.3	25	50.2
Environmental risks	39.2	42.3	54.7
Public health vulnerabilities	56.1	56.3	55.3

Namibia

30.3 Index Score **134**/195



Global average of all 195 countries

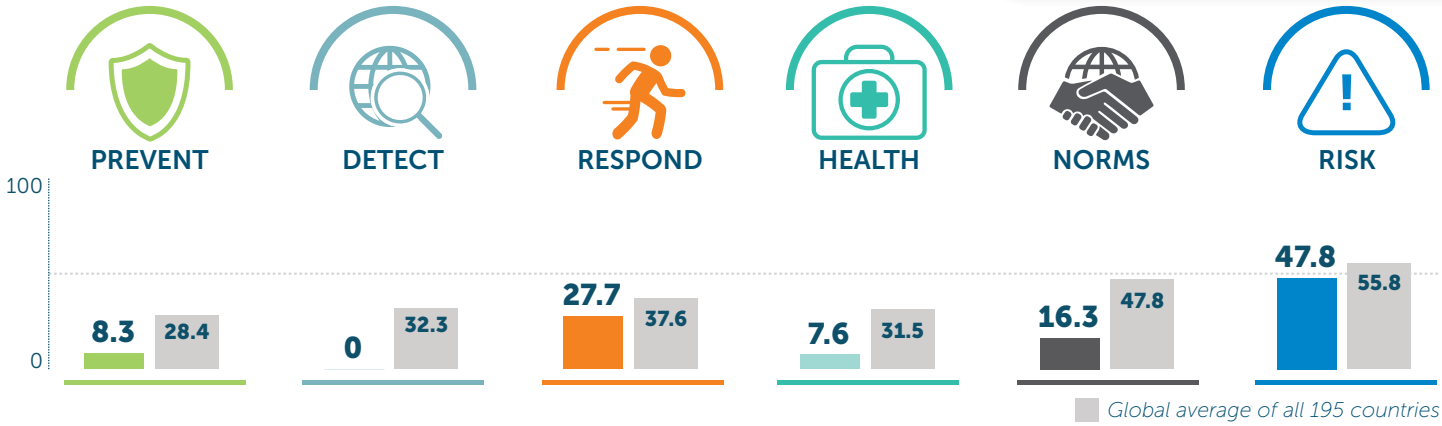
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**12.5**	**9.2**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	21.3	1.4	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**35.4**	**31.8**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	50	25	34.6
Surveillance data accessibility and transparency	0	3.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**27.4**	**31.1**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	50	57.9
Access to communications infrastructure	66.9	76	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14.4**	**16.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.5	22.2	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.8	53.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**41.5**	**40.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	15.6	18.8	56.1
JEE and PVS	25	25	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**53.9**	**52.2**	**55.8**
Political and security risk	73.9	71.4	58.1
Socio-economic resilience	45.7	46	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	47.9	41.6	54.7
Public health vulnerabilities	43.6	43.5	55.3

Nauru

18 Index Score **190**/195



Global average of all 195 countries

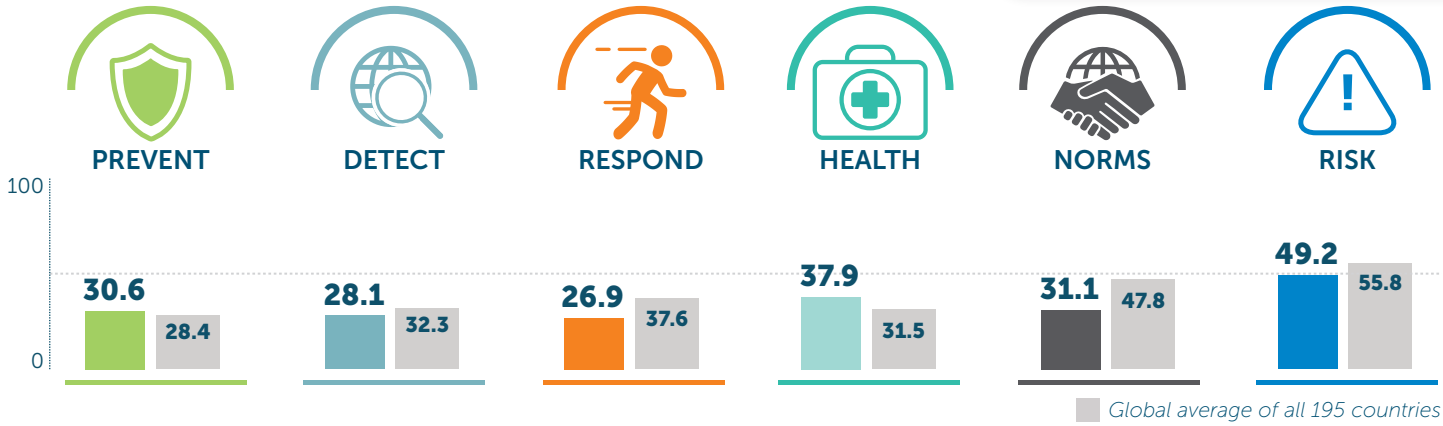
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**4.2**	**8.3**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	25	50	63.3
DETECTION AND REPORTING	**0**	**0**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**33.1**	**27.7**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	69.5	69.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**7.6**	**7.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	31.6	31.6	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	21.8	21.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**24.1**	**16.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	31.3	56.1
JEE and PVS	0	0	18.7
Financing	0	0	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**47.8**	**47.8**	**55.8**
Political and security risk	55.5	55.6	58.1
Socio-economic resilience	63.3	62.1	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	30.1	32.8	54.7
Public health vulnerabilities	48.3	47	55.3

Nepal

34 Index Score **107**/195



Global average of all 195 countries

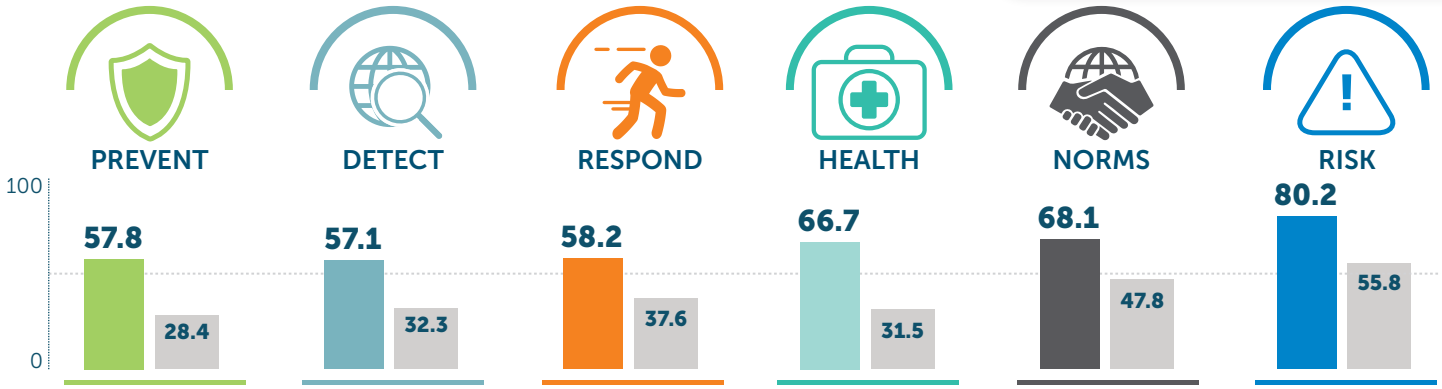
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**34**	**30.6**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	38.9	18.8	19.8
Biosecurity	40	40	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**23.9**	**28.1**	**32.3**
Laboratory systems strength and quality	25	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	75	34.6
Surveillance data accessibility and transparency	43.3	43.3	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**40.6**	**26.9**	**37.6**
Emergency preparedness and response planning	50	41.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	29.2	57.9
Access to communications infrastructure	59.3	59.5	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**35.5**	**37.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	4.2	20.9	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.1	61.1	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**30.6**	**31.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	28.1	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**48.9**	**49.2**	**55.8**
Political and security risk	59.6	57.5	58.1
Socio-economic resilience	45.7	45.7	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	61.9	64	54.7
Public health vulnerabilities	52.5	53.7	55.3

Netherlands

64.7 Index Score **11**/195



Global average of all 195 countries

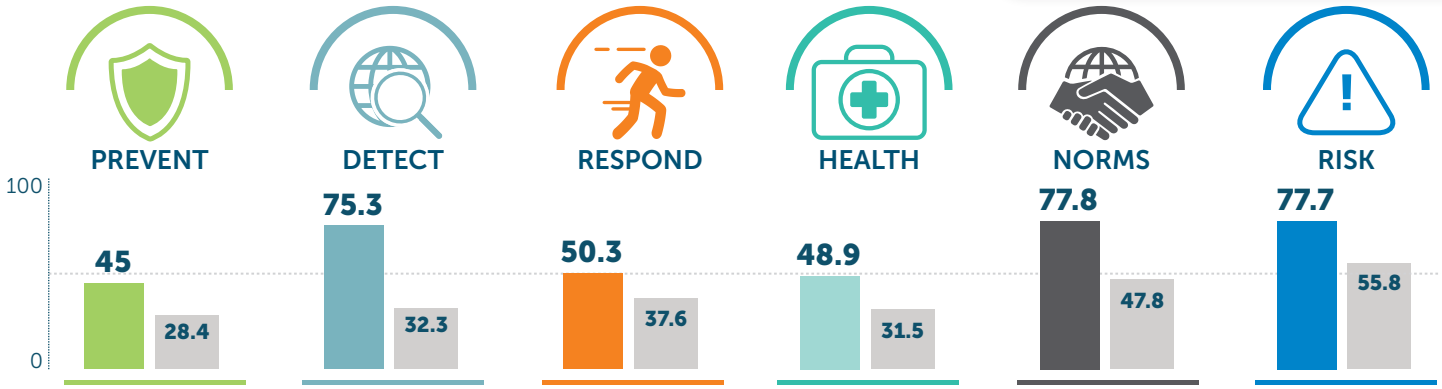
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**60**	**57.8**	**28.4**
Antimicrobial resistance (AMR)	91.7	91.7	45.3
Zoonotic disease	45.4	32	19.8
Biosecurity	48	48	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**61.3**	**57.1**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	62.5	37.5	34.6
Surveillance data accessibility and transparency	80	80	34.7
Case-based investigation	37.5	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**70.7**	**58.2**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	37.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	82.4	82.7	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**67**	**66.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	38.6	36.7	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	86	86	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**67.5**	**68.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**79.6**	**80.2**	**55.8**
Political and security risk	80.9	81.6	58.1
Socio-economic resilience	98.6	98.6	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	50.1	52.5	54.7
Public health vulnerabilities	76.7	76.5	55.3

New Zealand

62.5 Index Score **13**/195



Global average of all 195 countries

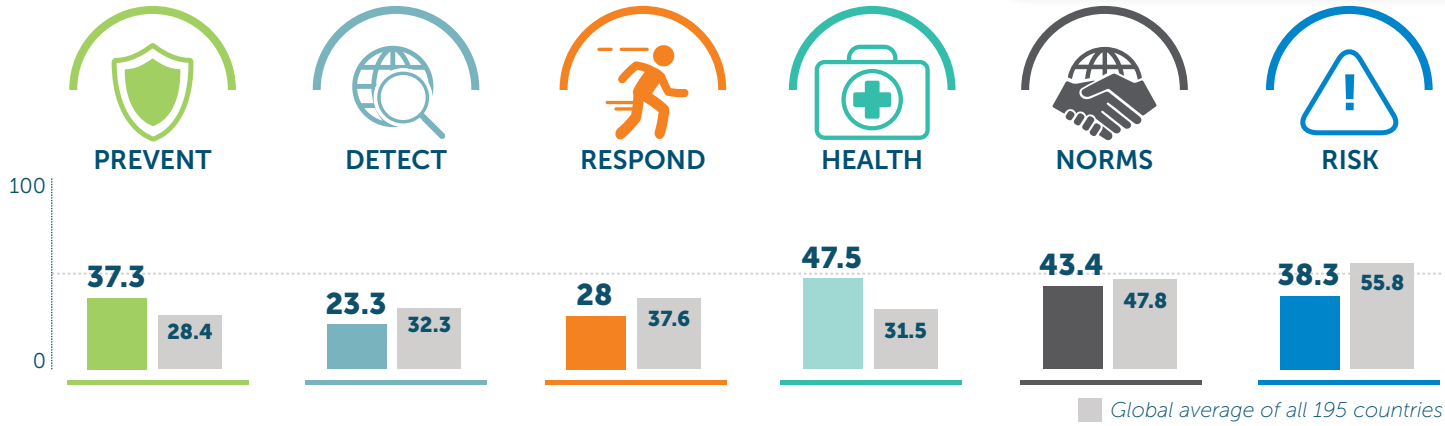
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**48.4**	**45**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	53.8	33.6	19.8
Biosecurity	28	28	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**47.6**	**75.3**	**32.3**
Laboratory systems strength and quality	50	87.5	44.9
Laboratory supply chains	50	100	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	23.3	26.7	34.7
Case-based investigation	75	75	16.9
Epidemiology workforce	25	100	46.5
RAPID RESPONSE	**55.3**	**50.3**	**37.6**
Emergency preparedness and response planning	83.3	75	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	87.4	85.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**46.6**	**48.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	37.3	53.7	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	52.7	52.7	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**59.7**	**77.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	25	18.7
Financing	41.7	75	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**76.9**	**77.7**	**55.8**
Political and security risk	92.3	93.5	58.1
Socio-economic resilience	93.1	93.1	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	35.2	38	54.7
Public health vulnerabilities	80.8	80.8	55.3

Nicaragua

36.3 Index Score **92**/195



Global average of all 195 countries

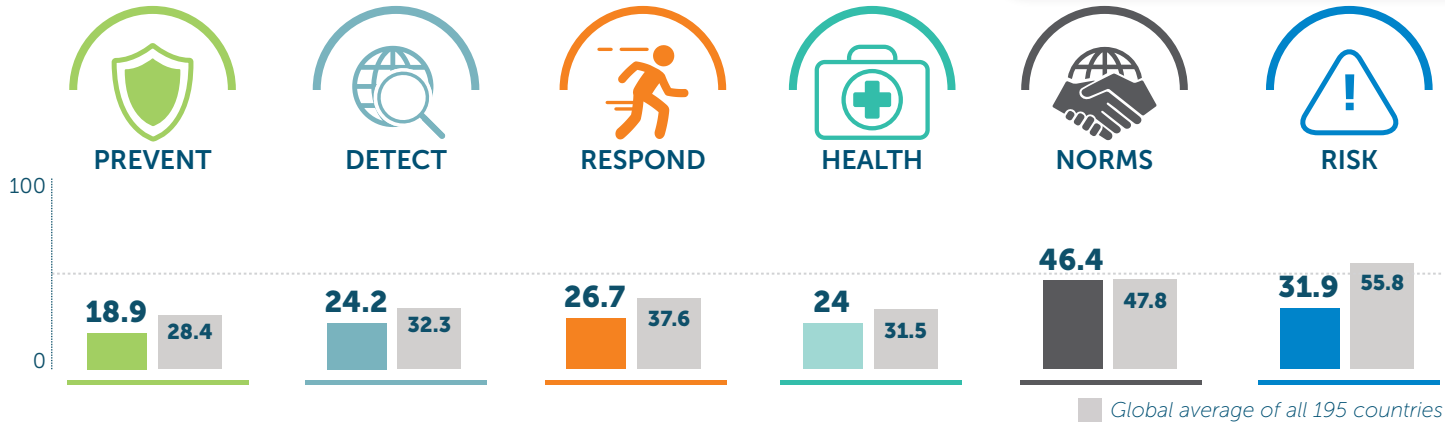
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**36.5**	**37.3**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	35.5	15.4	19.8
Biosecurity	0	0	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**30.8**	**23.3**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	60	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	0	46.5
RAPID RESPONSE	**43.8**	**28**	**37.6**
Emergency preparedness and response planning	20.8	20.8	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	87.5	62.5	57.9
Access to communications infrastructure	65.1	54.1	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**47.5**	**47.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	37.4	37.5	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	61.7	61.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**42**	**43.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	43.8	43.8	56.1
JEE and PVS	0	0	18.7
Financing	41.7	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**39.4**	**38.3**	**55.8**
Political and security risk	38.3	37.7	58.1
Socio-economic resilience	35.6	35.6	60.9
Infrastructure adequacy	41.7	33.3	50.2
Environmental risks	32	35.5	54.7
Public health vulnerabilities	49.4	49.5	55.3

Niger

28.7 Index Score **147**/195



Global average of all 195 countries

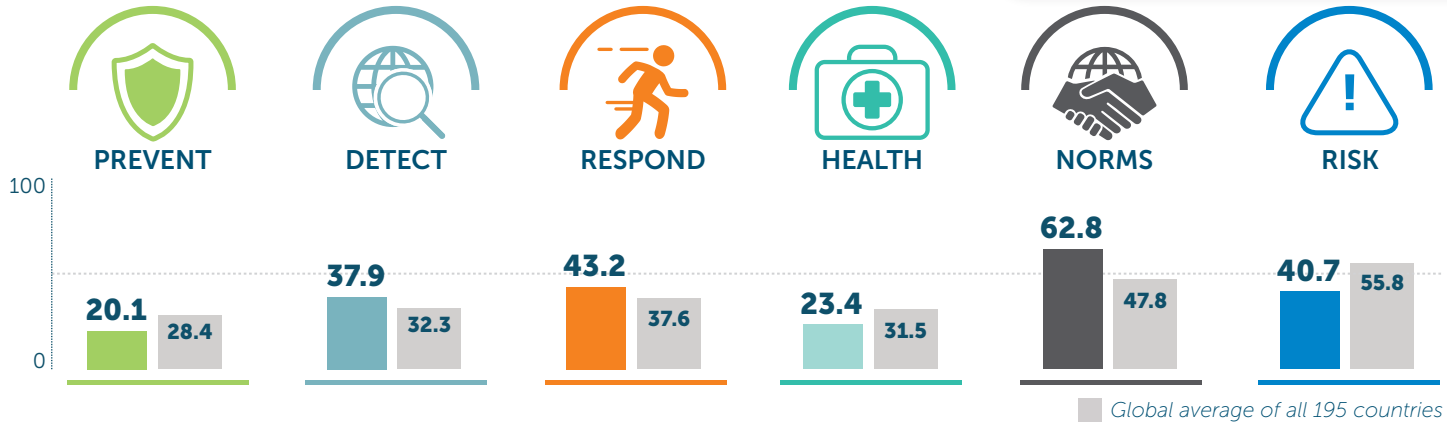
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22.3**	**18.9**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	25.4	5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**28.3**	**24.2**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	25	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**25**	**26.7**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	54.2	57.9
Access to communications infrastructure	33.4	37.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24**	**24**	**31.5**
Health capacity in clinics, hospitals, and community care centers	17.1	17.2	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.3	56.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**41.7**	**46.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	25	28.1	56.1
JEE and PVS	25	50	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**37.1**	**31.9**	**55.8**
Political and security risk	25.2	20.9	58.1
Socio-economic resilience	39.6	39.7	60.9
Infrastructure adequacy	8.3	8.3	50.2
Environmental risks	78.5	56.4	54.7
Public health vulnerabilities	33.9	34.4	55.3

Nigeria

38 Index Score **86**/195



Global average of all 195 countries

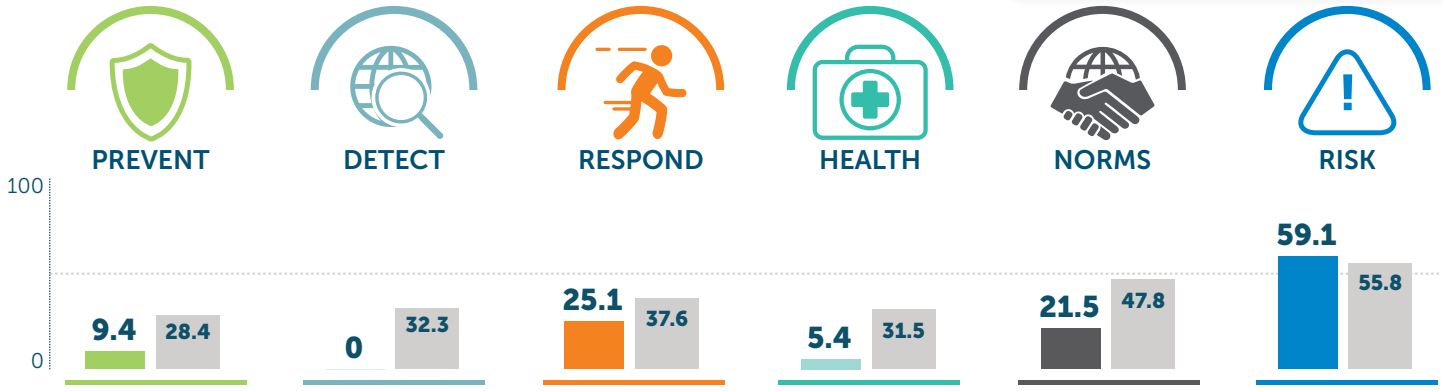
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**23.5**	**20.1**	**28.4**
Antimicrobial resistance (AMR)	41.7	41.7	45.3
Zoonotic disease	25.2	5	19.8
Biosecurity	24	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**35.8**	**37.9**	**32.3**
Laboratory systems strength and quality	25	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**41.8**	**43.2**	**37.6**
Emergency preparedness and response planning	29.2	45.8	30.4
Exercising response plans	25	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	83.3	57.9
Access to communications infrastructure	54.8	52.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**23.4**	**23.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	18.8	18.8	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.4	53.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54.7**	**62.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	78.1	93.8	56.1
JEE and PVS	50	75	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**42.6**	**40.7**	**55.8**
Political and security risk	43.1	29.9	58.1
Socio-economic resilience	43.8	44	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	62.5	64.8	54.7
Public health vulnerabilities	47.1	47.9	55.3

Niue

20.1 Index Score **187**/195



Global average of all 195 countries

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.4**	**9.4**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	6.7	6.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**0**	**0**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**28.7**	**25.1**	**37.6**
Emergency preparedness and response planning	8.3	8.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	25	57.9
Access to communications infrastructure	67.9	67.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**5.4**	**5.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	15.5	15.5	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	22	22	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.9**	**21.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	12.5	12.5	56.1
JEE and PVS	0	0	18.7
Financing	0	0	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**56.5**	**59.1**	**55.8**
Political and security risk	78.3	82	58.1
Socio-economic resilience	67.4	66.3	60.9
Infrastructure adequacy	41.7	50	50.2
Environmental risks	42.5	44.8	54.7
Public health vulnerabilities	52.6	52.5	55.3

North Korea

16.1 Index Score **193**/195

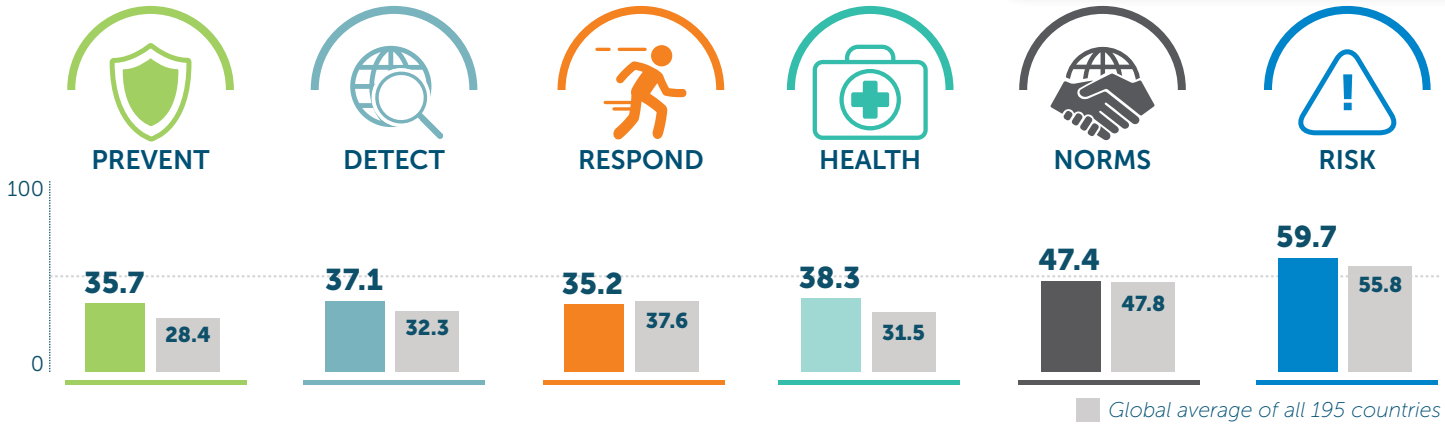
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16.7**	**16.7**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**4.2**	**0**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**17.9**	**3.6**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	25	57.9
Access to communications infrastructure	0	0	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**7**	**7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	26.8	26.8	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	22.2	22.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**27.1**	**32.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	12.5	12.5	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	33.3	66.7	68.4
RISK ENVIRONMENT	**40.8**	**36.6**	**55.8**
Political and security risk	34.1	35.4	58.1
Socio-economic resilience	18.2	18.2	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	57.9	35.6	54.7
Public health vulnerabilities	52.1	52.2	55.3

North Macedonia

42.2 Index Score **69**/195



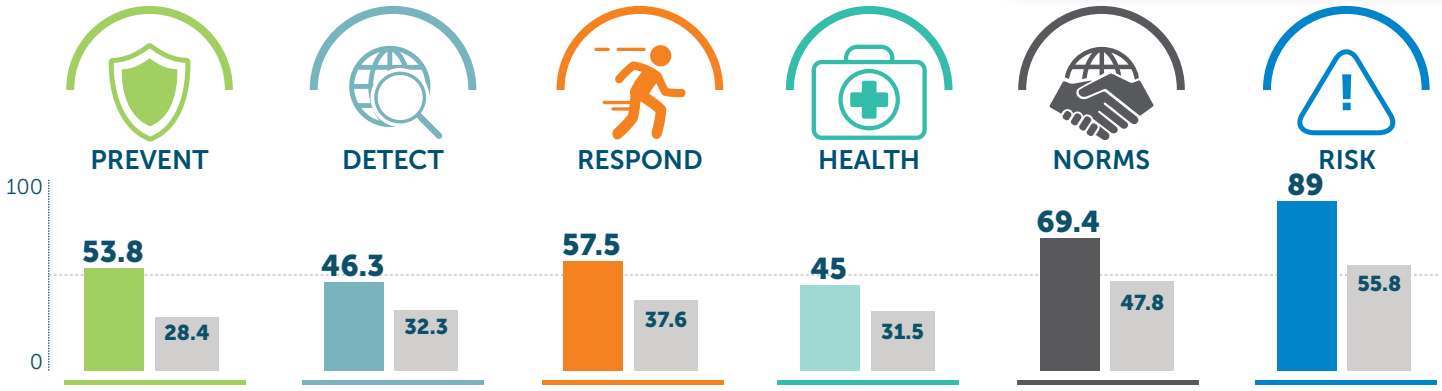
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**39.9**	**35.7**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	24.4	24.5	19.8
Biosecurity	40	40	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**30.8**	**37.1**	**32.3**
Laboratory systems strength and quality	50	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	37.5	34.6
Surveillance data accessibility and transparency	60	60	34.7
Case-based investigation	25	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**40.2**	**35.2**	**37.6**
Emergency preparedness and response planning	33.3	33.3	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	54.2	57.9
Access to communications infrastructure	72.8	75.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**28.8**	**38.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	30.7	30.5	30
Supply chain for health system and healthcare workers	33.3	50	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.3	62.5	55.2
Communications with healthcare workers during a public health emergency	0	50	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.2**	**47.4**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	34.4	34.4	56.1
JEE and PVS	0	25	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57.6**	**59.7**	**55.8**
Political and security risk	55.3	59.4	58.1
Socio-economic resilience	85.1	81.3	60.9
Infrastructure adequacy	41.7	50	50.2
Environmental risks	58.4	60.4	54.7
Public health vulnerabilities	47.5	47.3	55.3

Norway

60.2 Index Score **19**/195



Global average of all 195 countries

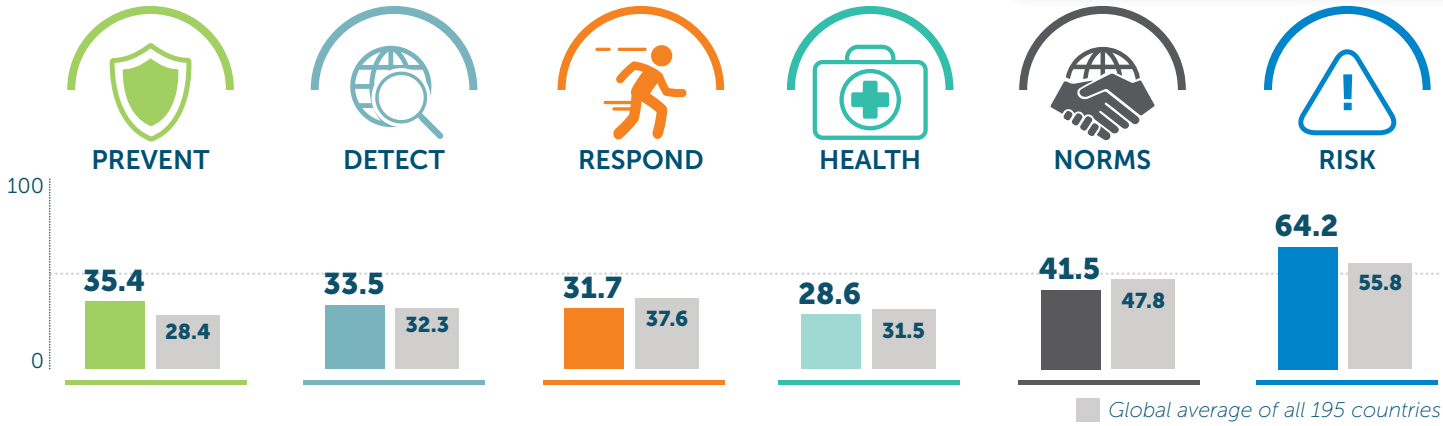
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**49.6**	**53.8**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	45.2	45.4	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**52.5**	**46.3**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	75	25	34.6
Surveillance data accessibility and transparency	90	90	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**68.1**	**57.5**	**37.6**
Emergency preparedness and response planning	66.7	66.7	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	85.2	86	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**45.1**	**45**	**31.5**
Health capacity in clinics, hospitals, and community care centers	58.8	58.3	30
Supply chain for health system and healthcare workers	55.6	55.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.3	51.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**64.8**	**69.4**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	25	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**88.2**	**89**	**55.8**
Political and security risk	95.1	96.3	58.1
Socio-economic resilience	98.5	98.5	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	62.2	64.8	54.7
Public health vulnerabilities	93.5	93.6	55.3

Oman

39.1 Index Score **81**/195



Global average of all 195 countries

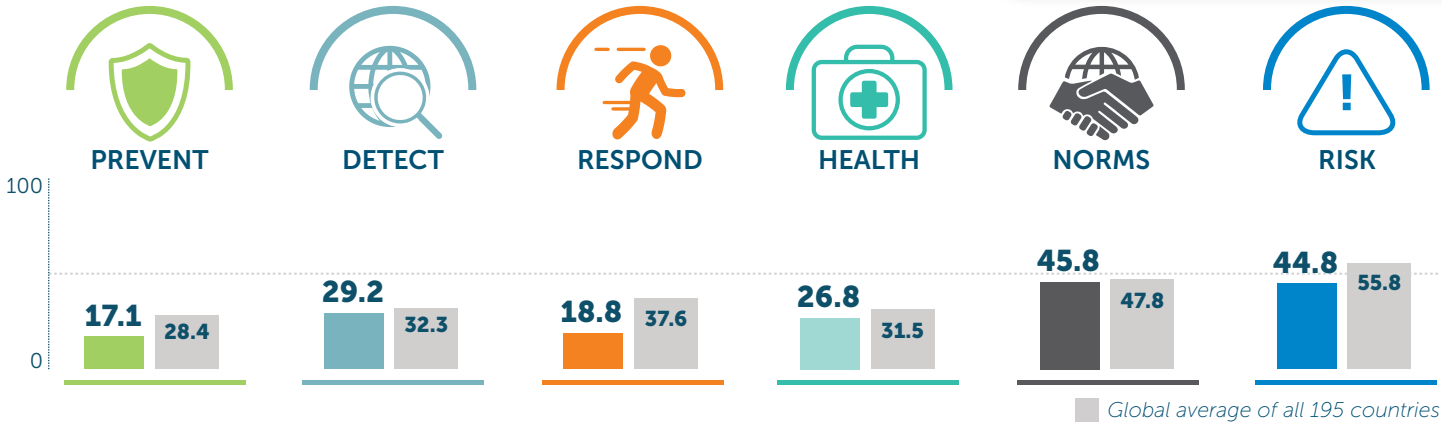
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**35.4**	**35.4**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	17.4	17.5	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**33.5**	**33.5**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**45.9**	**31.7**	**37.6**
Emergency preparedness and response planning	25	25	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	79.6	80.1	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**26.2**	**28.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	25.9	42.4	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	63.2	63.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**39.6**	**41.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	87.5	90.6	56.1
JEE and PVS	25	25	18.7
Financing	8.3	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**64.7**	**64.2**	**55.8**
Political and security risk	60.9	57.4	58.1
Socio-economic resilience	73.3	72.4	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	53	55.1	54.7
Public health vulnerabilities	61.5	60.9	55.3

Pakistan

30.4 Index Score **130**/195



Global average of all 195 countries

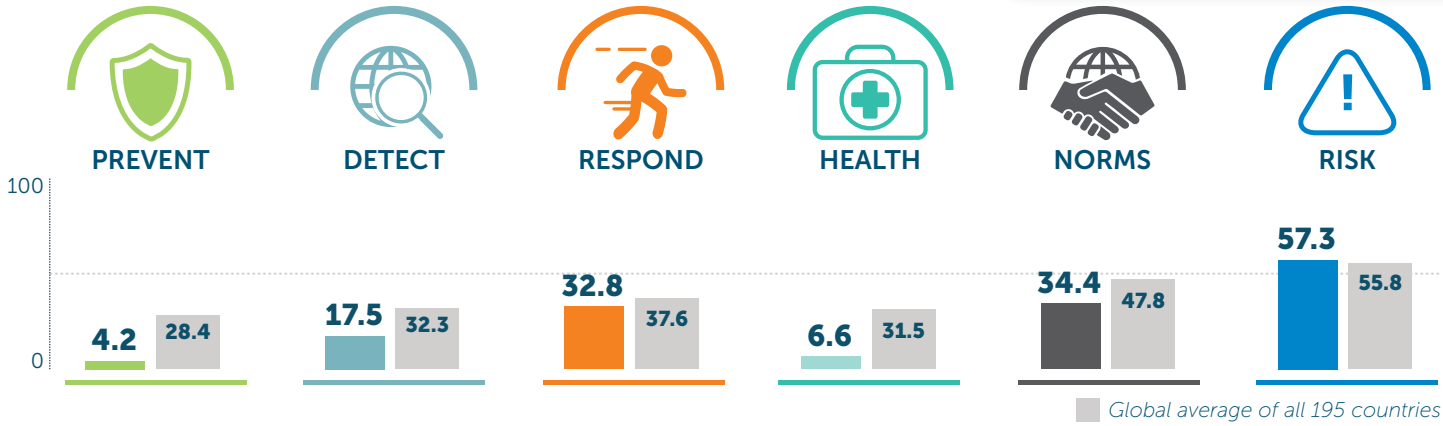
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17**	**17.1**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	7.2	7.7	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**25**	**29.2**	**32.3**
Laboratory systems strength and quality	62.5	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**28.7**	**18.8**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	12.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	12.5	57.9
Access to communications infrastructure	13.7	14.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24.1**	**26.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	3	19.7	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52	54.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.4**	**45.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	84.4	100	56.1
JEE and PVS	50	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**45.7**	**44.8**	**55.8**
Political and security risk	28.9	37.7	58.1
Socio-economic resilience	51.6	51.5	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	61.7	47.8	54.7
Public health vulnerabilities	53.1	53.9	55.3

Palau

25.5 Index Score **170**/195



Global average of all 195 countries

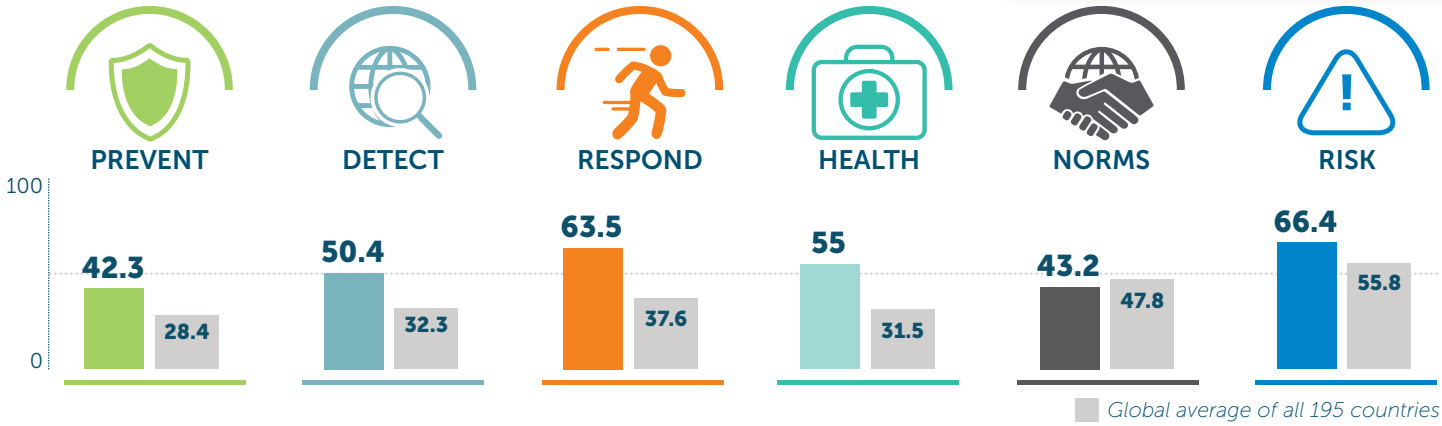
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**0.8**	**4.2**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	4.5	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	25	63.3
DETECTION AND REPORTING	**1.7**	**17.5**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	10	30	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	25	46.5
RAPID RESPONSE	**31.6**	**32.8**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	67.1	67	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**5.9**	**6.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	14.5	14.5	30
Supply chain for health system and healthcare workers	0	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	26.5	26.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**25.5**	**34.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	31.3	56.1
JEE and PVS	0	25	18.7
Financing	8.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**54.3**	**57.3**	**55.8**
Political and security risk	74.8	71.2	58.1
Socio-economic resilience	73.9	74.1	60.9
Infrastructure adequacy	33.3	41.7	50.2
Environmental risks	33.4	44	54.7
Public health vulnerabilities	55.9	55.6	55.3

Panama

53.5 Index Score **37**/195



Global average of all 195 countries

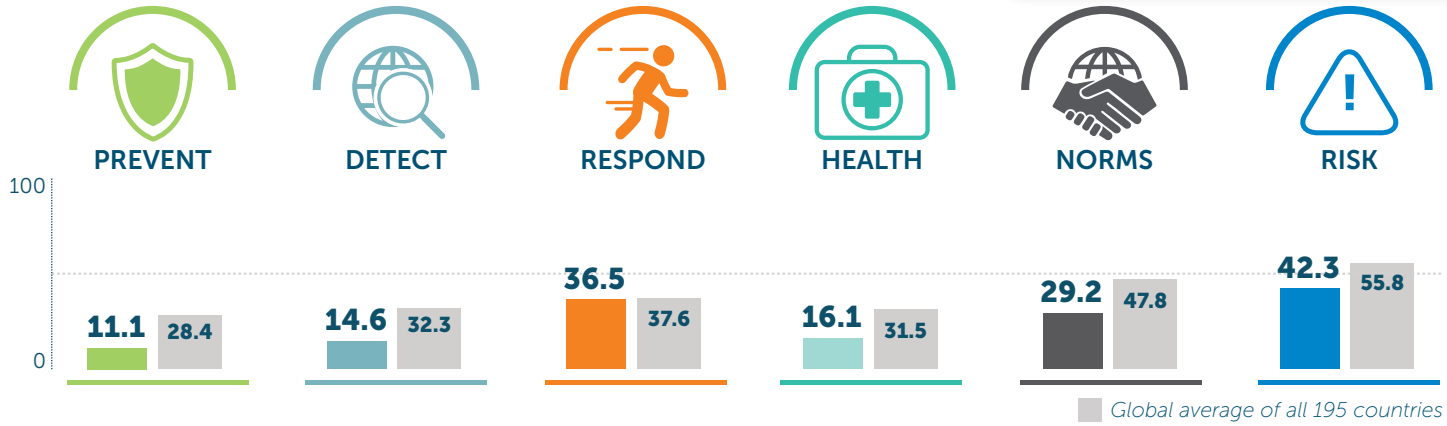
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**36.8**	**42.3**	**28.4**
Antimicrobial resistance (AMR)	58.3	66.7	45.3
Zoonotic disease	13.2	13.2	19.8
Biosecurity	24	24	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**51.7**	**50.4**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	60	40	34.7
Case-based investigation	50	50	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**61.8**	**63.5**	**37.6**
Emergency preparedness and response planning	54.2	70.8	30.4
Exercising response plans	75	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	25	83.3	57.9
Access to communications infrastructure	78.7	81.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**48**	**55**	**31.5**
Health capacity in clinics, hospitals, and community care centers	41.6	41.5	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	61	60.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**42.2**	**43.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	34.4	56.1
JEE and PVS	0	0	18.7
Financing	58.3	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**61.8**	**66.4**	**55.8**
Political and security risk	62.1	65.7	58.1
Socio-economic resilience	56	64.3	60.9
Infrastructure adequacy	75	83.3	50.2
Environmental risks	56.5	59	54.7
Public health vulnerabilities	59.3	59.8	55.3

Papua New Guinea

25 Index Score **174**/195



Global average of all 195 countries

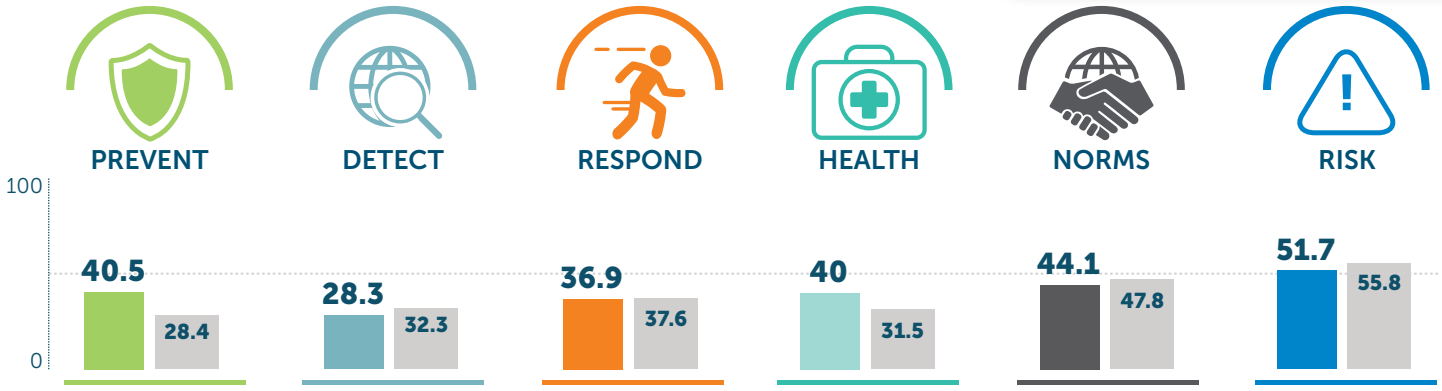
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**8.4**	**11.1**	**28.4**
Antimicrobial resistance (AMR)	0	16.7	45.3
Zoonotic disease	0.1	0.1	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**18.8**	**14.6**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	12.5	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**34.2**	**36.5**	**37.6**
Emergency preparedness and response planning	16.7	33.3	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	87.5	57.9
Access to communications infrastructure	52	51.3	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16**	**16.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	20.8	20.8	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	49.7	50.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**38.9**	**29.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	25	25	56.1
JEE and PVS	0	0	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**41.8**	**42.3**	**55.8**
Political and security risk	54	53.4	58.1
Socio-economic resilience	48.1	48.1	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	62.3	65	54.7
Public health vulnerabilities	28.2	28.2	55.3

Paraguay

40.3 Index Score **75**/195



Global average of all 195 countries

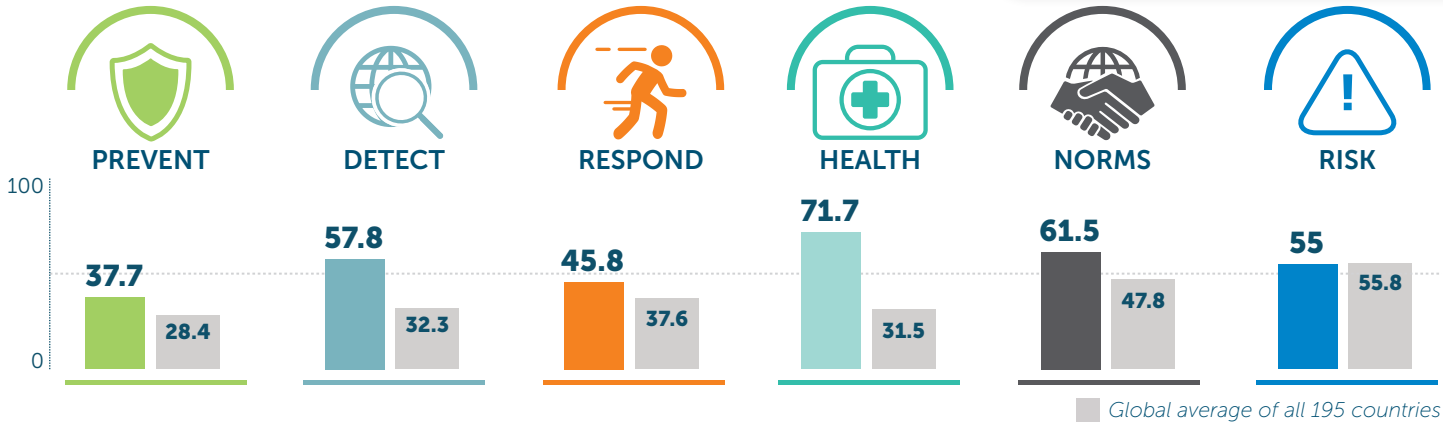
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**39.2**	**40.5**	**28.4**
Antimicrobial resistance (AMR)	58.3	66.7	45.3
Zoonotic disease	31.8	31	19.8
Biosecurity	20	20	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**30.4**	**28.3**	**32.3**
Laboratory systems strength and quality	25	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	37.5	34.6
Surveillance data accessibility and transparency	70	70	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**36.7**	**36.9**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	100	100	57.9
Access to communications infrastructure	73.8	74.8	65.7
Trade and travel restrictions	50	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**40.1**	**40**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.4	4.9	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.6	61.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**38**	**44.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	31.3	56.1
JEE and PVS	0	25	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**54.4**	**51.7**	**55.8**
Political and security risk	67.6	67.6	58.1
Socio-economic resilience	63	62.7	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	43.9	30.1	54.7
Public health vulnerabilities	56	56.6	55.3

Peru

54.9 Index Score **32**/195



Global average of all 195 countries

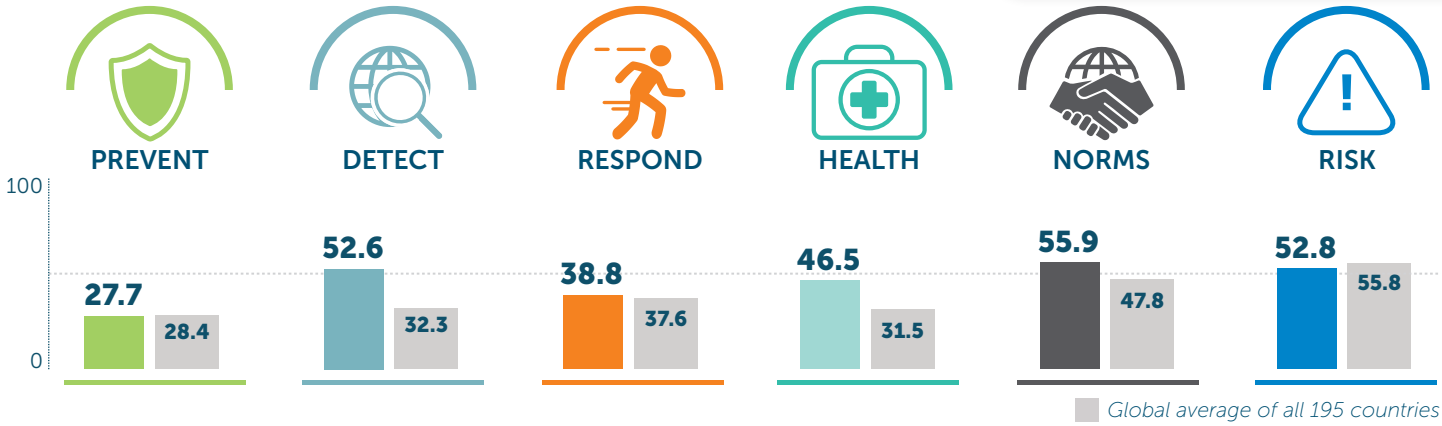
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**37.7**	**37.7**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	43.6	43.6	19.8
Biosecurity	24	24	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**48.9**	**57.8**	**32.3**
Laboratory systems strength and quality	62.5	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	75	100	34.6
Surveillance data accessibility and transparency	93.3	96.7	34.7
Case-based investigation	37.5	37.5	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**50.2**	**45.8**	**37.6**
Emergency preparedness and response planning	62.5	79.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	100	100	57.9
Access to communications infrastructure	55.2	57.8	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**65.7**	**71.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	23	39.7	30
Supply chain for health system and healthcare workers	50	50	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	62	62.1	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**65.1**	**61.5**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	90.6	93.8	56.1
JEE and PVS	25	0	18.7
Financing	58.3	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**55.3**	**55**	**55.8**
Political and security risk	69.4	57.1	58.1
Socio-economic resilience	58.4	58.1	60.9
Infrastructure adequacy	58.3	66.7	50.2
Environmental risks	36.2	38.8	54.7
Public health vulnerabilities	53.8	54.3	55.3

Philippines

45.7 Index Score **57**/195



Global average of all 195 countries

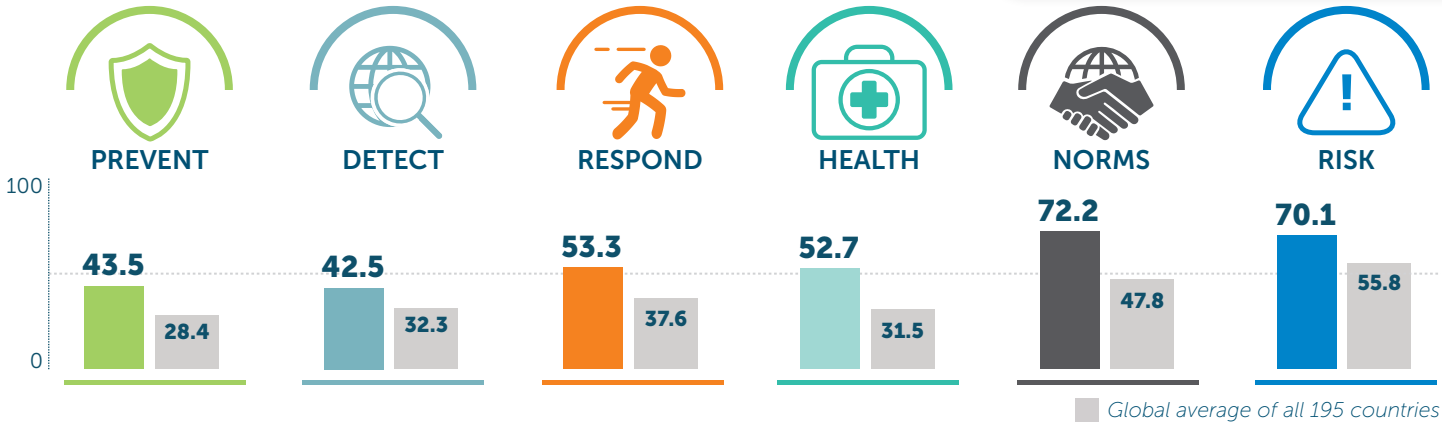
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**27.7**	**27.7**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	17.4	17.3	19.8
Biosecurity	24	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**34.3**	**52.6**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	87.5	34.6
Surveillance data accessibility and transparency	43.3	53.3	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**46.7**	**38.8**	**37.6**
Emergency preparedness and response planning	16.7	33.3	30.4
Exercising response plans	25	25	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	41.7	57.9
Access to communications infrastructure	76.8	79.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**46.3**	**46.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	23	22.9	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	56.9	58.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**53.5**	**55.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	87.5	93.8	56.1
JEE and PVS	0	25	18.7
Financing	66.7	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**52.5**	**52.8**	**55.8**
Political and security risk	38	43.9	58.1
Socio-economic resilience	77.4	77.4	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	50.5	46	54.7
Public health vulnerabilities	63.1	63.5	55.3

Poland

55.7 Index Score **29**/195



Global average of all 195 countries

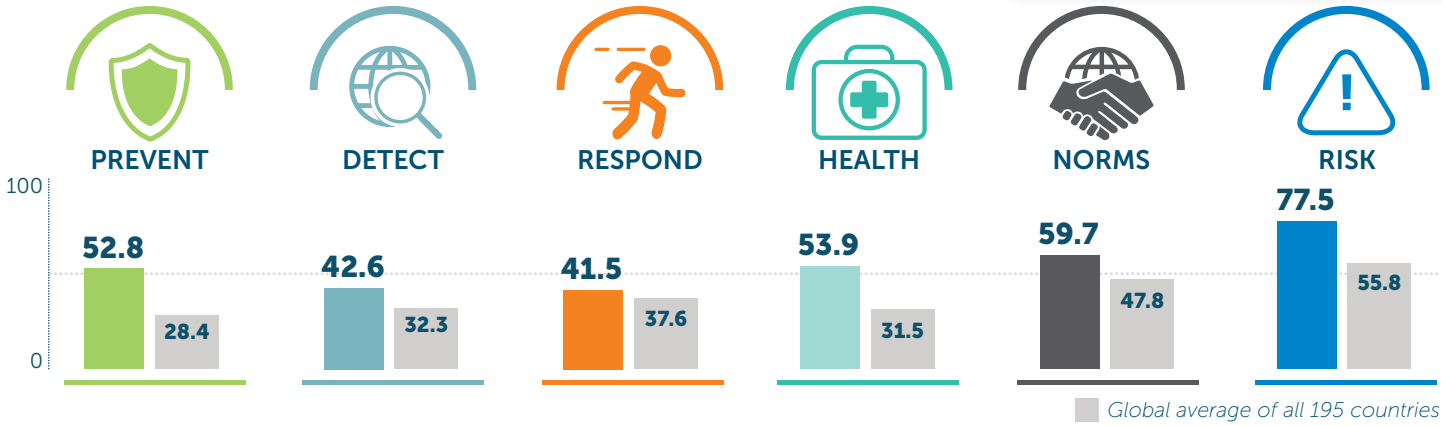
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**46.8**	**43.5**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	36.8	16.8	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**31**	**42.5**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	50	34.6
Surveillance data accessibility and transparency	73.3	80	34.7
Case-based investigation	12.5	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**59.9**	**53.3**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	58.3	57.9
Access to communications infrastructure	77.8	81.5	65.7
Trade and travel restrictions	75	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**55.1**	**52.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	51.5	34.8	30
Supply chain for health system and healthcare workers	72.2	72.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.9	61.8	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**63.4**	**72.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**69.8**	**70.1**	**55.8**
Political and security risk	74.5	73.3	58.1
Socio-economic resilience	70.6	70.8	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	71.7	74.3	54.7
Public health vulnerabilities	65.4	65.7	55.3

Portugal

54.7 Index Score **33**/195



Global average of all 195 countries

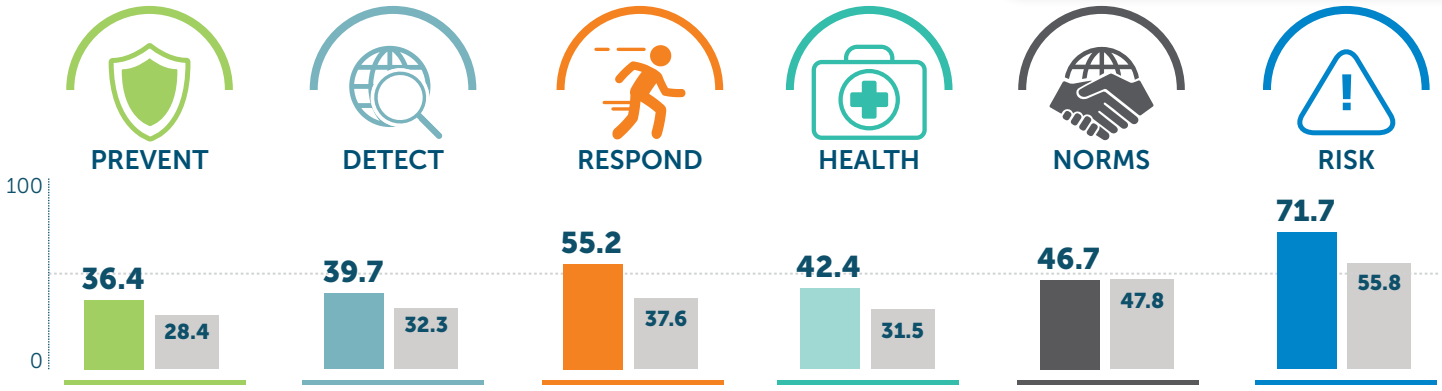
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**52.8**	**52.8**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	39.3	39.4	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**44.7**	**42.6**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	100	75	34.6
Surveillance data accessibility and transparency	43.3	43.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**63.7**	**41.5**	**37.6**
Emergency preparedness and response planning	16.7	33.3	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	0	22.1
Risk communication	100	100	57.9
Access to communications infrastructure	70.9	73.9	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**50.7**	**53.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	36.5	53.3	30
Supply chain for health system and healthcare workers	50	55.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	93.4	93.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**63.4**	**59.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	25	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**77.2**	**77.5**	**55.8**
Political and security risk	78.5	77.8	58.1
Socio-economic resilience	85.8	94.3	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	61.1	55.3	54.7
Public health vulnerabilities	68.8	68.6	55.3

Qatar

48.7 Index Score **49**/195



Global average of all 195 countries

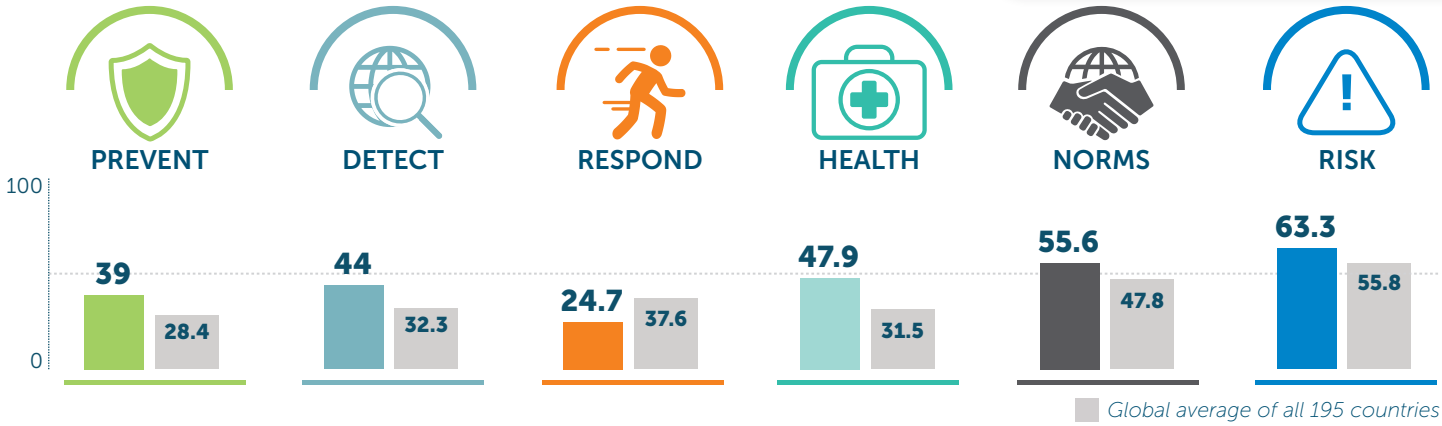
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**32.1**	**36.4**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	31.1	31.5	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	33.3	33.3	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**33.5**	**39.7**	**32.3**
Laboratory systems strength and quality	37.5	50	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	75	75	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**54.2**	**55.2**	**37.6**
Emergency preparedness and response planning	12.5	29.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	50	66.7	57.9
Access to communications infrastructure	83.6	81.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**40**	**42.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	45.5	62.3	30
Supply chain for health system and healthcare workers	22.2	22.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.4	62.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.8**	**46.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	37.5	46.9	56.1
JEE and PVS	25	25	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**67**	**71.7**	**55.8**
Political and security risk	65.2	73.6	58.1
Socio-economic resilience	69.6	69.6	60.9
Infrastructure adequacy	75	91.7	50.2
Environmental risks	55.4	58.1	54.7
Public health vulnerabilities	69.9	65.5	55.3

Romania

45.7 Index Score **57**/195



Global average of all 195 countries

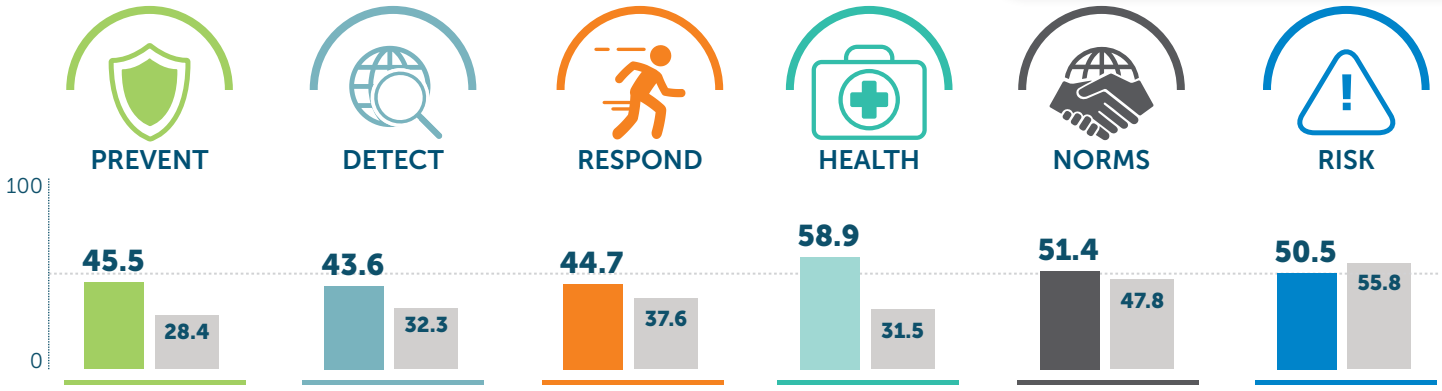
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**42.4**	**39**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	51.9	31.9	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**33.6**	**44**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	76.7	76.7	34.7
Case-based investigation	0	50	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**32.7**	**24.7**	**37.6**
Emergency preparedness and response planning	8.3	25	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	70.3	72.7	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**45.4**	**47.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19.5	36.9	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.1	62	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55**	**55.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**63.7**	**63.3**	**55.8**
Political and security risk	73.9	76.7	58.1
Socio-economic resilience	69.6	61.1	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	60	62.4	54.7
Public health vulnerabilities	48.4	49.6	55.3

Russia

49.1 Index Score **47**/195



Global average of all 195 countries

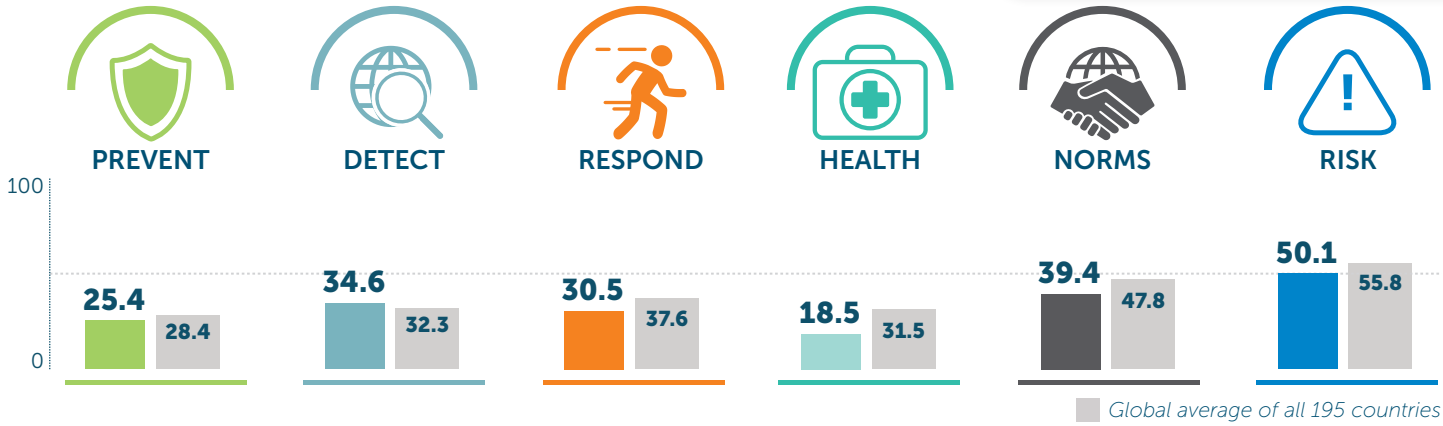
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**42.1**	**45.5**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	15.3	35.8	19.8
Biosecurity	37.3	37.3	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**35.3**	**43.6**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	50	34.6
Surveillance data accessibility and transparency	36.7	36.7	34.7
Case-based investigation	75	87.5	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**54.7**	**44.7**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	100	100	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	83.1	87.7	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**49.6**	**58.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	58.1	73.5	30
Supply chain for health system and healthcare workers	50	50	28.5
Medical countermeasures and personnel deployment	0	50	10.3
Healthcare access	64.1	64	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**51.4**	**51.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	50	50	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**49.6**	**50.5**	**55.8**
Political and security risk	29.3	22.2	58.1
Socio-economic resilience	64.7	73	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	48.5	51	54.7
Public health vulnerabilities	47.4	48	55.3

Rwanda

33.1 Index Score **113**/195



Global average of all 195 countries

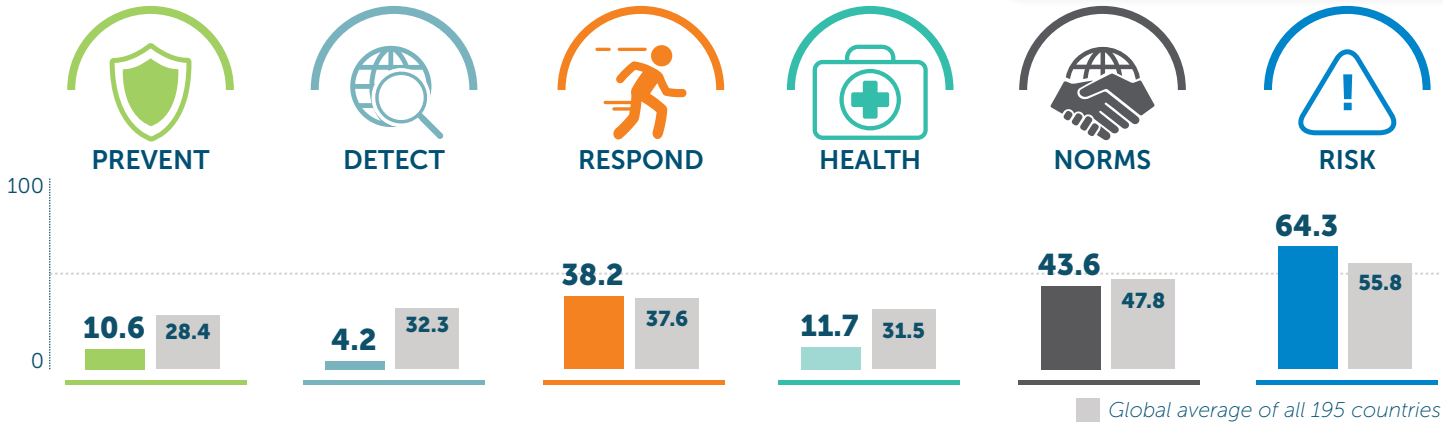
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**29.7**	**25.4**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	15.6	14.8	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**24.6**	**34.6**	**32.3**
Laboratory systems strength and quality	25	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	10	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**28.5**	**30.5**	**37.6**
Emergency preparedness and response planning	20.8	37.5	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	54.2	57.9
Access to communications infrastructure	53.6	46.8	65.7
Trade and travel restrictions	75	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**20.9**	**18.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	19.7	3	30
Supply chain for health system and healthcare workers	22.2	22.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.4	54.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33.9**	**39.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	28.1	56.1
JEE and PVS	25	50	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**49.2**	**50.1**	**55.8**
Political and security risk	53.9	55	58.1
Socio-economic resilience	41.5	40.9	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	69.9	73.3	54.7
Public health vulnerabilities	55.5	56.2	55.3

Samoa

28.8 Index Score **145**/195



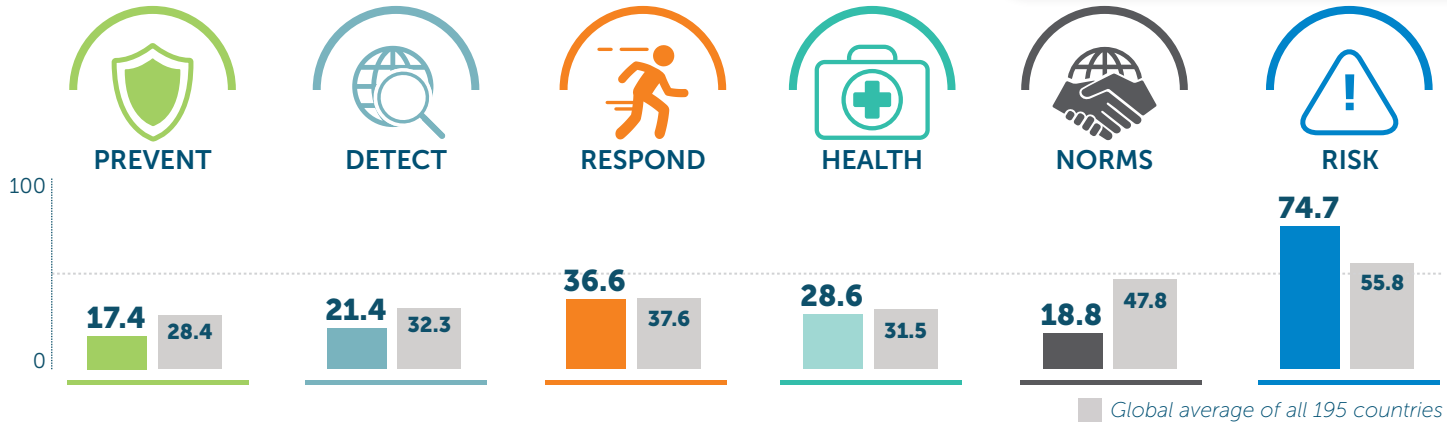
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**10.6**	**10.6**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	5.5	5.4	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**0**	**4.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	25	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**40.1**	**38.2**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	59.7	59.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11.7**	**11.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	3.8	3.8	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.2	53.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**51.9**	**43.6**	**47.8**
IHR reporting compliance and disaster risk reduction	100	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	28.1	56.1
JEE and PVS	0	0	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**64.1**	**64.3**	**55.8**
Political and security risk	79	76.7	58.1
Socio-economic resilience	73.9	73.9	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	57.9	61	54.7
Public health vulnerabilities	51.5	51.4	55.3

San Marino

32.9 Index Score **114**/195



Global average of all 195 countries

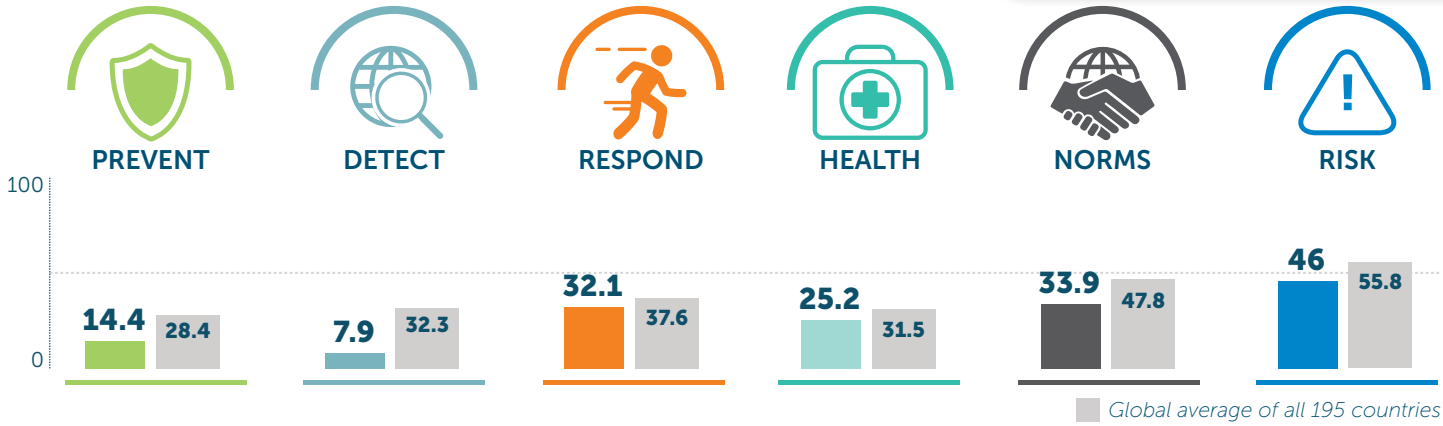
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.4**	**17.4**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	9.5	9.6	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**17.2**	**21.4**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	53.3	53.3	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**28.8**	**36.6**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	72.7	73.2	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**28.6**	**28.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	23.3	23.3	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.9	51.9	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**26.6**	**18.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	34.4	37.5	56.1
JEE and PVS	0	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**74.5**	**74.7**	**55.8**
Political and security risk	95.8	95.8	58.1
Socio-economic resilience	64.1	61.6	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	56.2	58.8	54.7
Public health vulnerabilities	64.9	65.9	55.3

São Tomé and Príncipe

26.6 Index Score **158**/195



Global average of all 195 countries

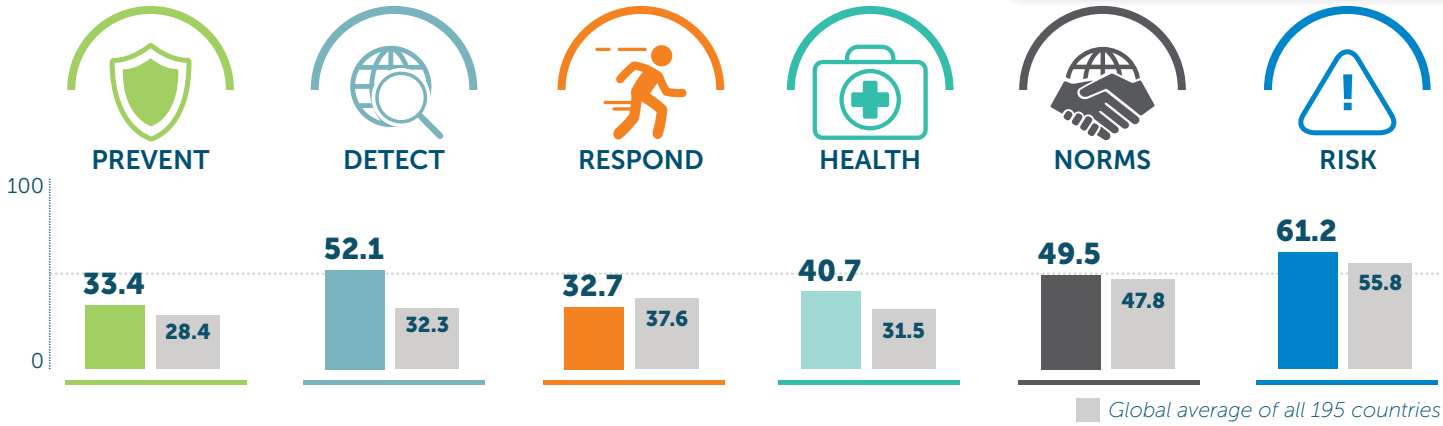
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**0**	**14.4**	**28.4**
Antimicrobial resistance (AMR)	0	8.3	45.3
Zoonotic disease	0	2.8	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	75	63.3
DETECTION AND REPORTING	**5.8**	**7.9**	**32.3**
Laboratory systems strength and quality	0	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**29.4**	**32.1**	**37.6**
Emergency preparedness and response planning	0	20.8	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	66.7	57.9
Access to communications infrastructure	55.5	49.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**10.9**	**25.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	21.7	21.7	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.5	54.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	100	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**34.7**	**33.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	28.1	56.1
JEE and PVS	0	25	18.7
Financing	66.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44.7**	**46**	**55.8**
Political and security risk	56.2	62.7	58.1
Socio-economic resilience	55	54.7	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	41.4	41.2	54.7
Public health vulnerabilities	46.1	46.5	55.3

Saudi Arabia

44.9 Index Score **61**/195



Global average of all 195 countries

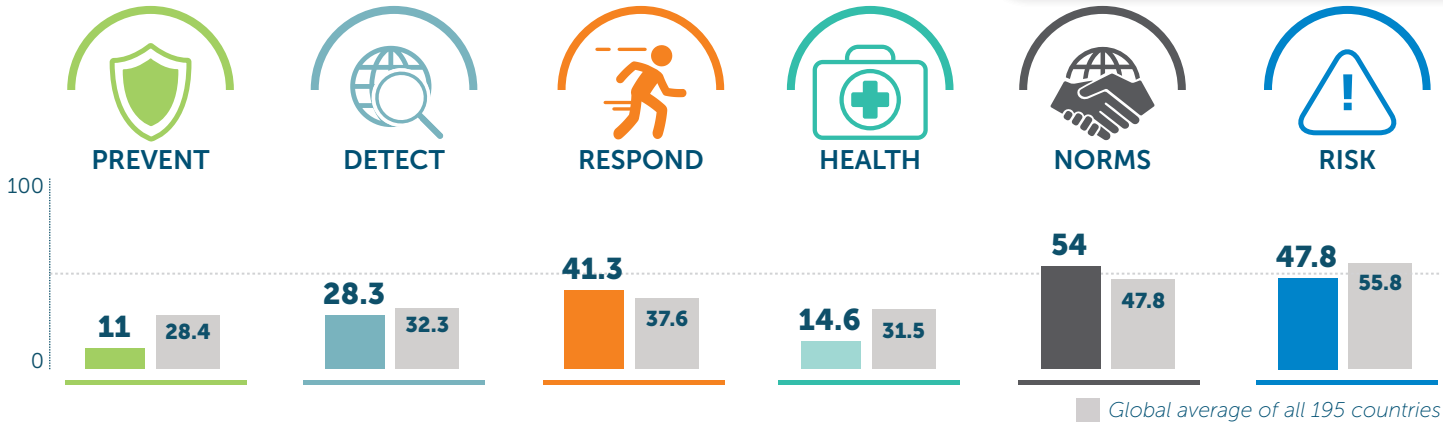
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**33.4**	**33.4**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	42.2	42.2	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**50**	**52.1**	**32.3**
Laboratory systems strength and quality	37.5	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	87.5	87.5	34.6
Surveillance data accessibility and transparency	50	50	34.7
Case-based investigation	50	50	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**39.4**	**32.7**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	54.2	54.2	57.9
Access to communications infrastructure	83.8	87.1	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**38.4**	**40.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	29.5	45.6	30
Supply chain for health system and healthcare workers	27.8	27.8	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.3	61.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**49.3**	**49.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	87.5	96.9	56.1
JEE and PVS	25	25	18.7
Financing	16.7	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**59.7**	**61.2**	**55.8**
Political and security risk	58	54.5	58.1
Socio-economic resilience	50.5	59	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	44.7	47.2	54.7
Public health vulnerabilities	70.6	70.2	55.3

Senegal

32.8 Index Score **115**/195



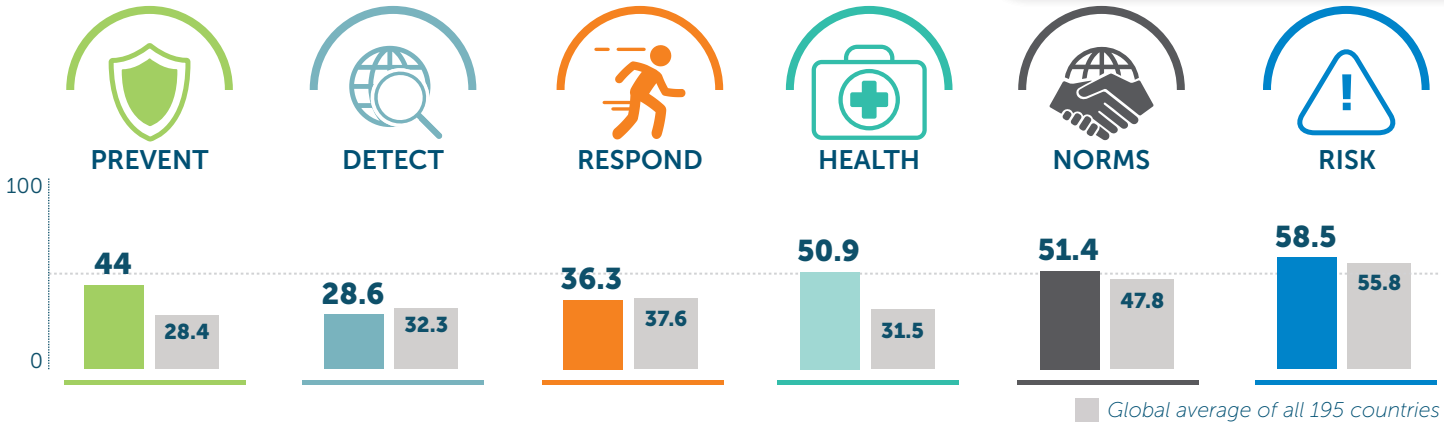
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**14.3**	**11**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	27.5	7.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**28.3**	**28.3**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**49.5**	**41.3**	**37.6**
Emergency preparedness and response planning	25	25	30.4
Exercising response plans	37.5	37.5	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	67.4	59.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14.3**	**14.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	0.6	0.6	30
Supply chain for health system and healthcare workers	22.2	22.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.2	54.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**56.8**	**54**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	90.6	90.6	56.1
JEE and PVS	100	75	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**51.9**	**47.8**	**55.8**
Political and security risk	63.8	65	58.1
Socio-economic resilience	45.4	45.2	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	71.4	48.9	54.7
Public health vulnerabilities	45.8	46.5	55.3

Serbia

45 Index Score **59**/195



Global average of all 195 countries

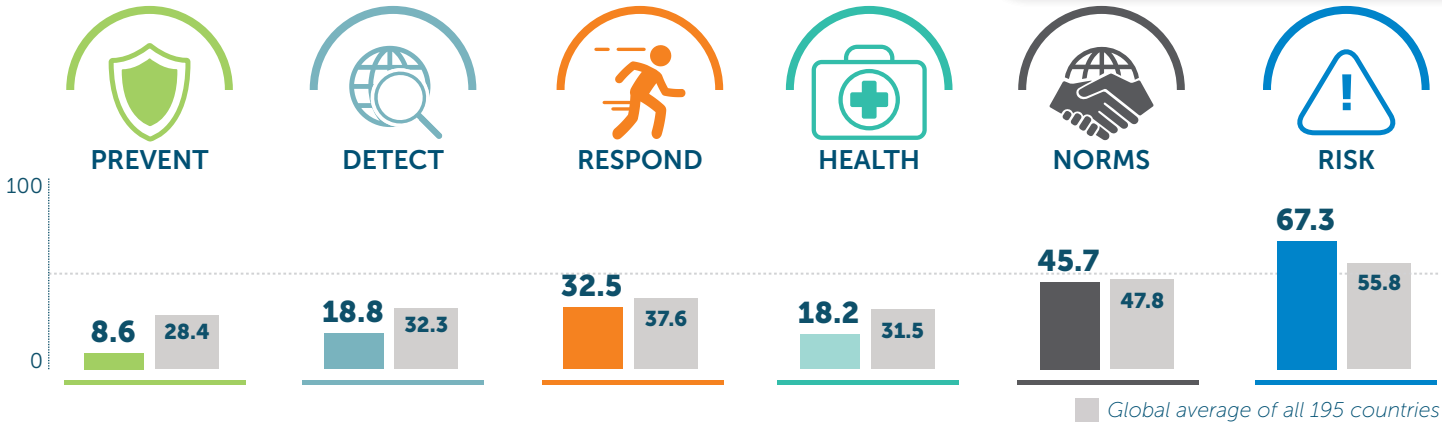
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**44**	**44**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	28.2	28.3	19.8
Biosecurity	44	44	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**28.6**	**28.6**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	46.7	46.7	34.7
Case-based investigation	25	25	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**41.2**	**36.3**	**37.6**
Emergency preparedness and response planning	16.7	33.3	30.4
Exercising response plans	37.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	58.3	45.8	57.9
Access to communications infrastructure	67.3	66.5	65.7
Trade and travel restrictions	75	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**46.2**	**50.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	17.9	34.5	30
Supply chain for health system and healthcare workers	44.4	61.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.1	61	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**50.9**	**51.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	46.9	50	56.1
JEE and PVS	25	25	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**58.9**	**58.5**	**55.8**
Political and security risk	45.7	42.1	58.1
Socio-economic resilience	74.8	75.2	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	49.3	50.9	54.7
Public health vulnerabilities	57.9	57.9	55.3

Seychelles

31.8 Index Score **120**/195



Global average of all 195 countries

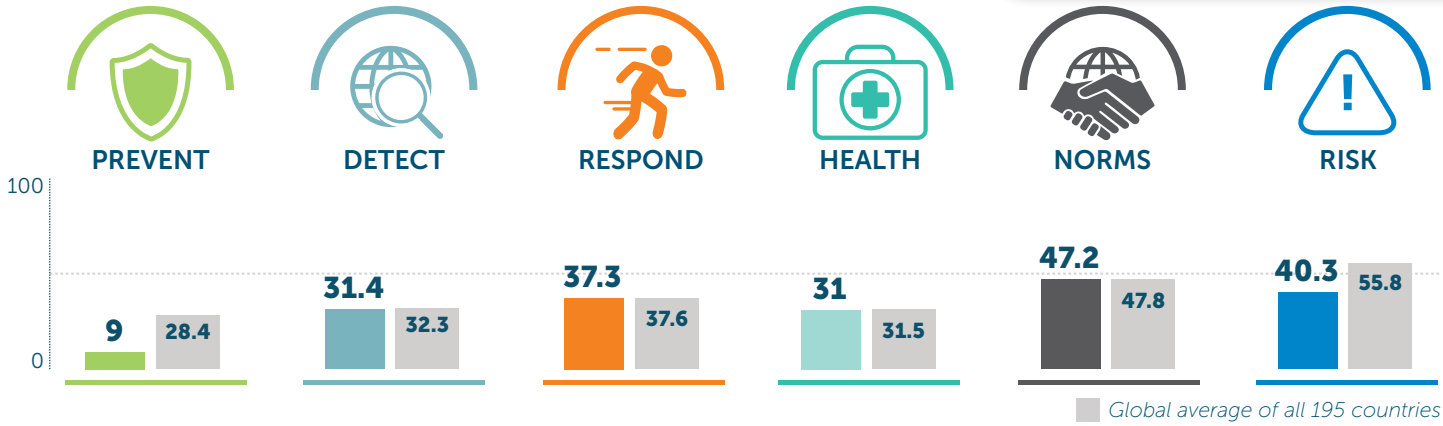
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**8.3**	**8.6**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	0	1.4	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**22.9**	**18.8**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**37.4**	**32.5**	**37.6**
Emergency preparedness and response planning	33.3	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	54.2	54.2	57.9
Access to communications infrastructure	74.3	73.3	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**15.8**	**18.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	15.1	31.7	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.3	59.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**45.1**	**45.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	37.5	40.6	56.1
JEE and PVS	25	25	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**69.8**	**67.3**	**55.8**
Political and security risk	75.8	77	58.1
Socio-economic resilience	67.3	75.9	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	63.4	41	54.7
Public health vulnerabilities	59.2	59.2	55.3

Sierra Leone

32.7 Index Score **116**/195



Global average of all 195 countries

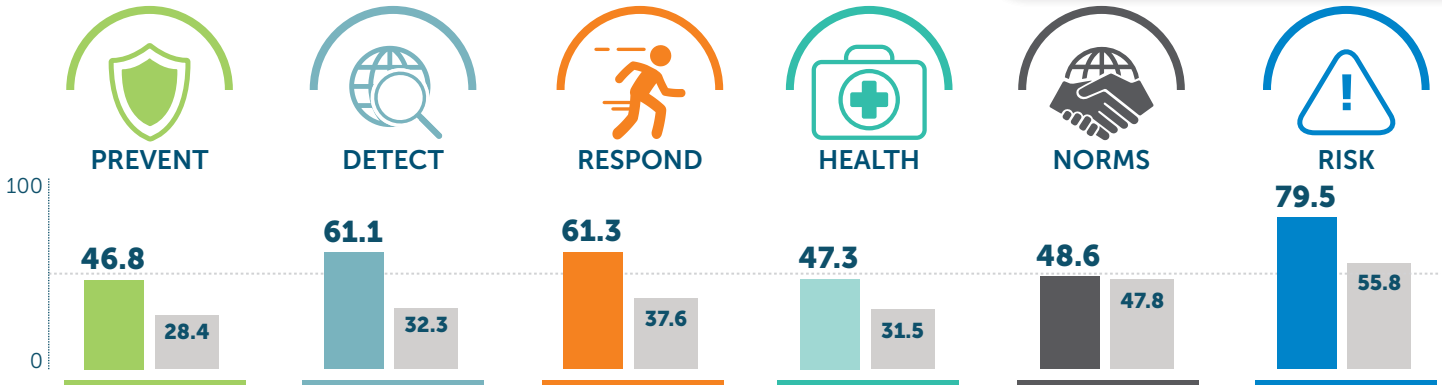
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.4**	**9**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	0.3	0	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	0	63.3
DETECTION AND REPORTING	**31.4**	**31.4**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	13.3	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**39.1**	**37.3**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	53.2	48.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**30.6**	**31**	**31.5**
Health capacity in clinics, hospitals, and community care centers	17.2	17.2	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	55.7	58.4	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**48.6**	**47.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	25	25	56.1
JEE and PVS	50	50	18.7
Financing	50	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**37.7**	**40.3**	**55.8**
Political and security risk	56.7	58.5	58.1
Socio-economic resilience	34.4	34.4	60.9
Infrastructure adequacy	16.7	25	50.2
Environmental risks	47.1	49.7	54.7
Public health vulnerabilities	33.5	34.1	55.3

Singapore

57.4 Index Score **24**/195



Global average of all 195 countries

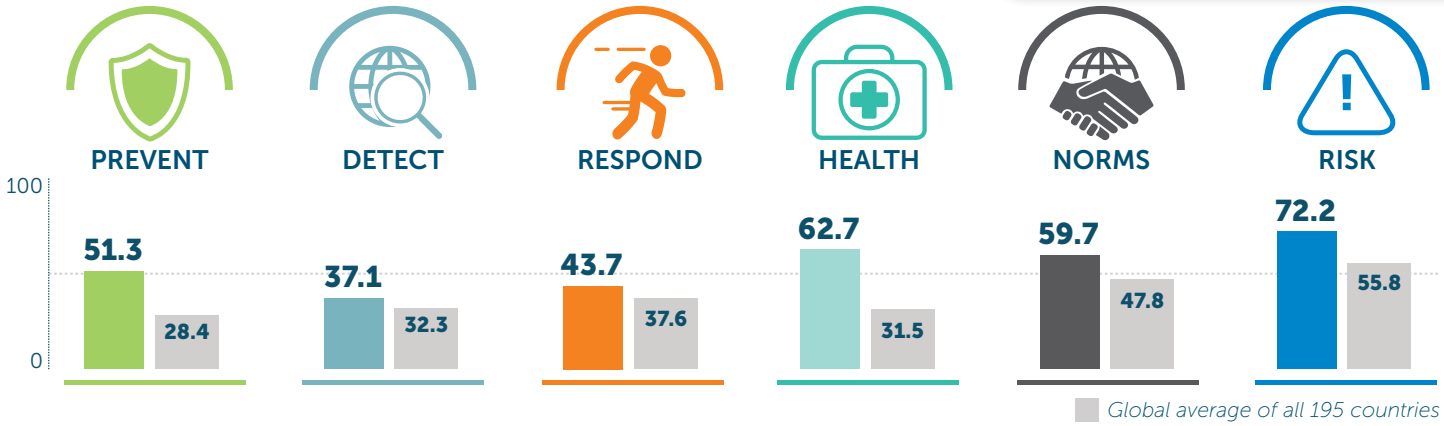
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**50.2**	**46.8**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	39.6	19.7	19.8
Biosecurity	28	28	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**49**	**61.1**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	62.5	87.5	34.6
Surveillance data accessibility and transparency	56.7	66.7	34.7
Case-based investigation	12.5	50	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**64.6**	**61.3**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	85.8	87.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**44.9**	**47.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	45.8	62.5	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	49.3	49.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**46.7**	**48.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	96.9	100	56.1
JEE and PVS	25	25	18.7
Financing	41.7	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**79.6**	**79.5**	**55.8**
Political and security risk	89.8	86.9	58.1
Socio-economic resilience	77.6	77.6	60.9
Infrastructure adequacy	100	100	50.2
Environmental risks	50.8	52.7	54.7
Public health vulnerabilities	79.9	80.4	55.3

Slovakia

54.4 Index Score **34**/195



Global average of all 195 countries

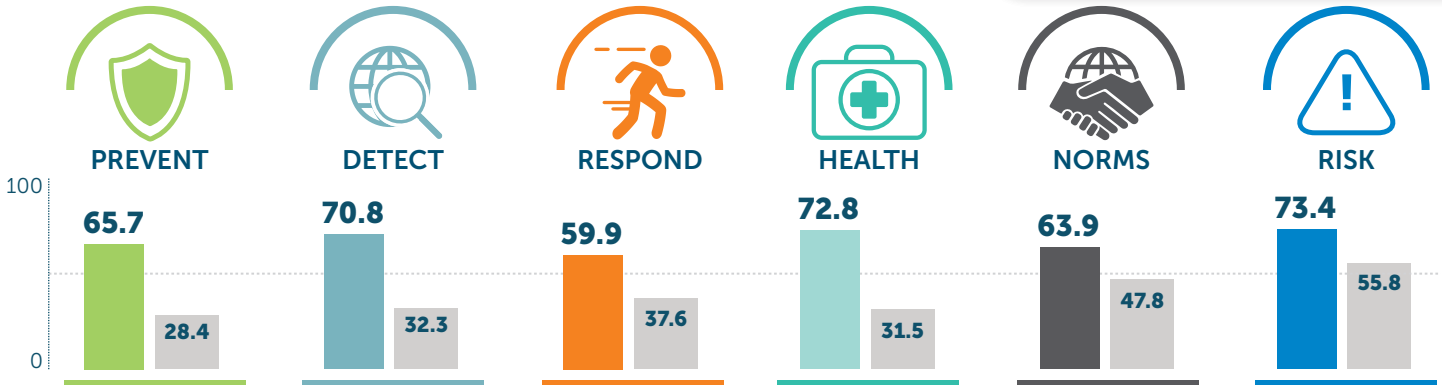
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**51.9**	**51.3**	**28.4**
Antimicrobial resistance (AMR)	58.3	75	45.3
Zoonotic disease	44.2	24.3	19.8
Biosecurity	58.7	58.7	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**33.9**	**37.1**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	25	34.6
Surveillance data accessibility and transparency	53.3	60	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	50	46.5
RAPID RESPONSE	**36.9**	**43.7**	**37.6**
Emergency preparedness and response planning	8.3	66.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	70.8	57.9
Access to communications infrastructure	79	84.9	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**59.5**	**62.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	35.3	51.9	30
Supply chain for health system and healthcare workers	66.7	72.2	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	64.6	64.6	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**58.3**	**59.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**71.7**	**72.2**	**55.8**
Political and security risk	71.1	71.6	58.1
Socio-economic resilience	80.2	79.9	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	64.9	67.7	54.7
Public health vulnerabilities	67.3	66.6	55.3

Slovenia

67.8 Index Score **6**/195



Global average of all 195 countries

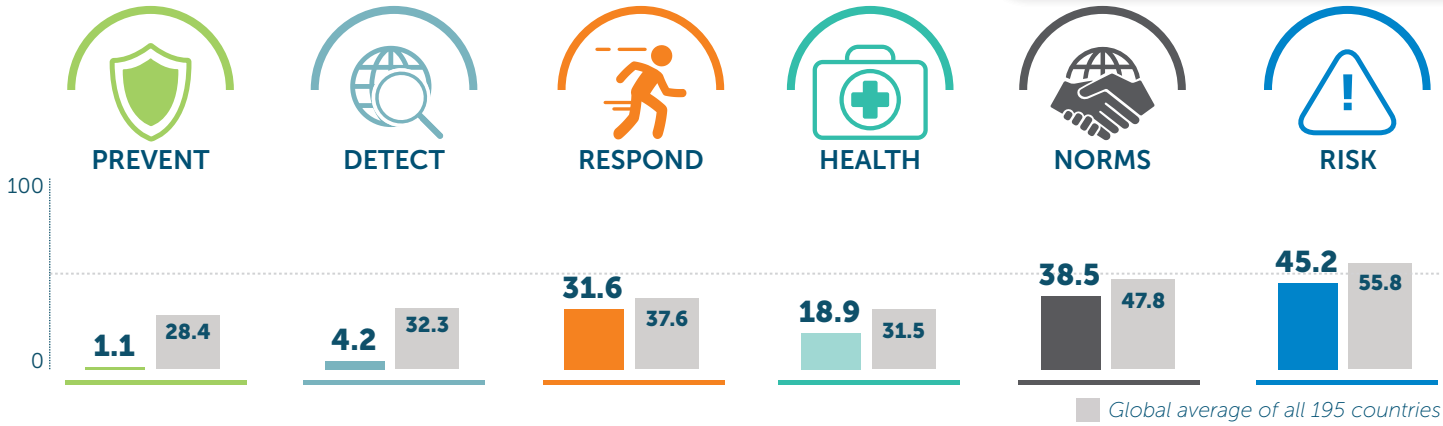
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**66.2**	**65.7**	**28.4**
Antimicrobial resistance (AMR)	66.7	83.3	45.3
Zoonotic disease	57.5	37.6	19.8
Biosecurity	48	48	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	50	50	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**66.7**	**70.8**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	100	15.9
Real-time surveillance and reporting	37.5	12.5	34.6
Surveillance data accessibility and transparency	100	100	34.7
Case-based investigation	25	25	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**64.2**	**59.9**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	100	57.9
Access to communications infrastructure	74.3	77.7	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**65.7**	**72.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	53.1	52.9	30
Supply chain for health system and healthcare workers	66.7	66.7	28.5
Medical countermeasures and personnel deployment	50	100	10.3
Healthcare access	65	64.9	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**76.4**	**63.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	25	25	18.7
Financing	66.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**72.7**	**73.4**	**55.8**
Political and security risk	76.7	78.4	58.1
Socio-economic resilience	74.6	74.3	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	64.6	66.7	54.7
Public health vulnerabilities	64.3	64.4	55.3

Solomon Islands

23.3 Index Score **180**/195



Global average of all 195 countries

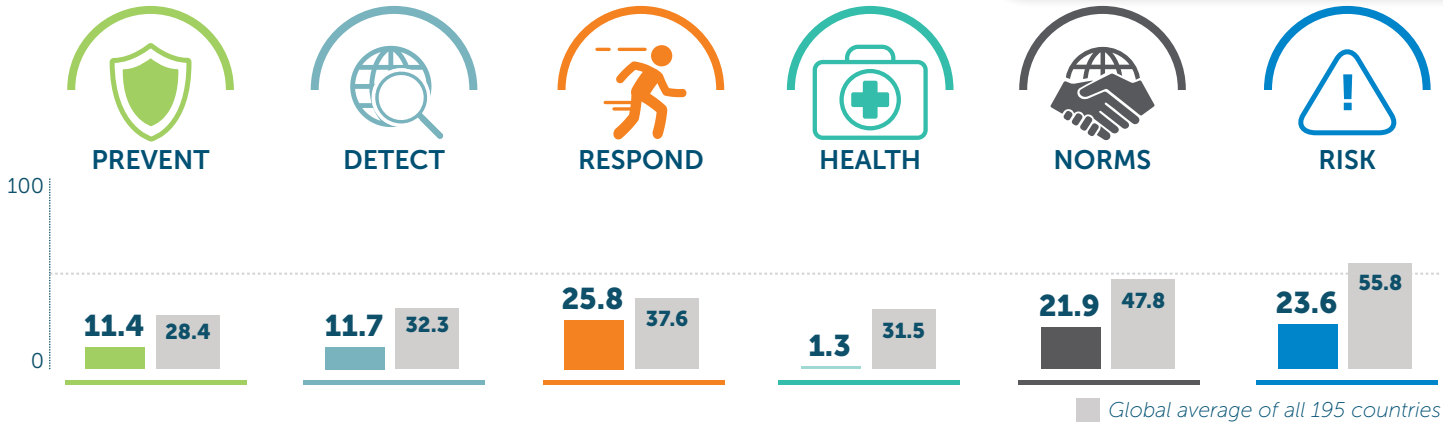
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**1.1**	**1.1**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	6.7	6.7	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	0	63.3
DETECTION AND REPORTING	**4.2**	**4.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**25.8**	**31.6**	**37.6**
Emergency preparedness and response planning	0	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	55.5	54.7	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**16.5**	**18.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	20.3	37	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.8	53.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37.3**	**38.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	15.6	31.3	56.1
JEE and PVS	0	0	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**45.7**	**45.2**	**55.8**
Political and security risk	73	68.2	58.1
Socio-economic resilience	60	51.9	60.9
Infrastructure adequacy	8.3	16.7	50.2
Environmental risks	50.5	53.1	54.7
Public health vulnerabilities	36.6	36.3	55.3

Somalia

16 Index Score **195**/195



Global average of all 195 countries

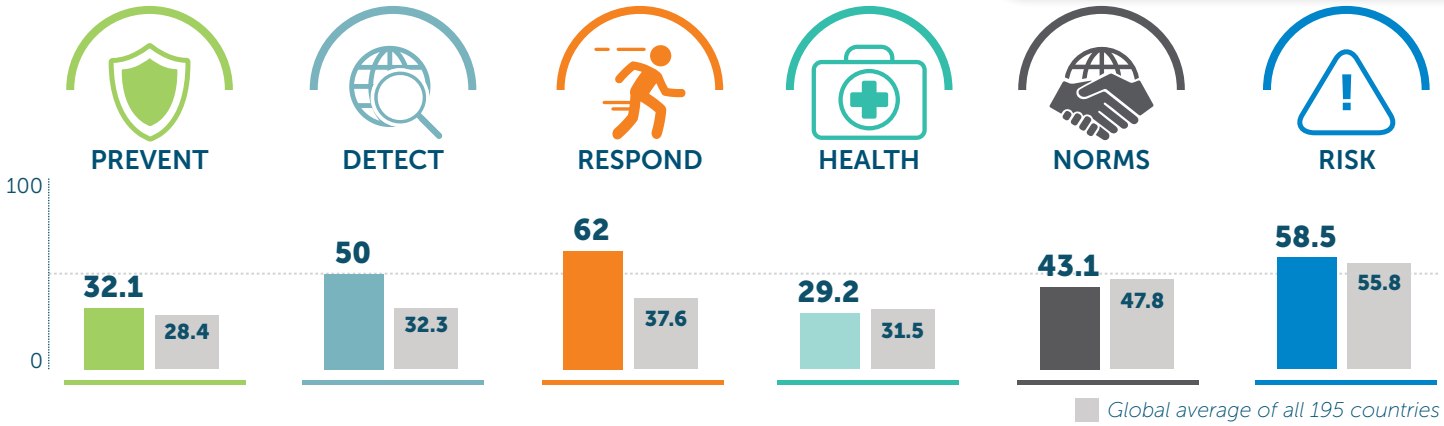
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**11.4**	**11.4**	**28.4**
Antimicrobial resistance (AMR)	16.7	16.7	45.3
Zoonotic disease	1.6	2	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**15.8**	**11.7**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**28.9**	**25.8**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	48	47.1	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**1.3**	**1.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1	1	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	8.3	8.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**26**	**21.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	6.3	6.3	56.1
JEE and PVS	25	25	18.7
Financing	8.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**24.2**	**23.6**	**55.8**
Political and security risk	10.2	4.3	58.1
Socio-economic resilience	35.3	35	60.9
Infrastructure adequacy	0	0	50.2
Environmental risks	40.6	43	54.7
Public health vulnerabilities	34.8	35.7	55.3

South Africa

45.8 Index Score **56**/195



Global average of all 195 countries

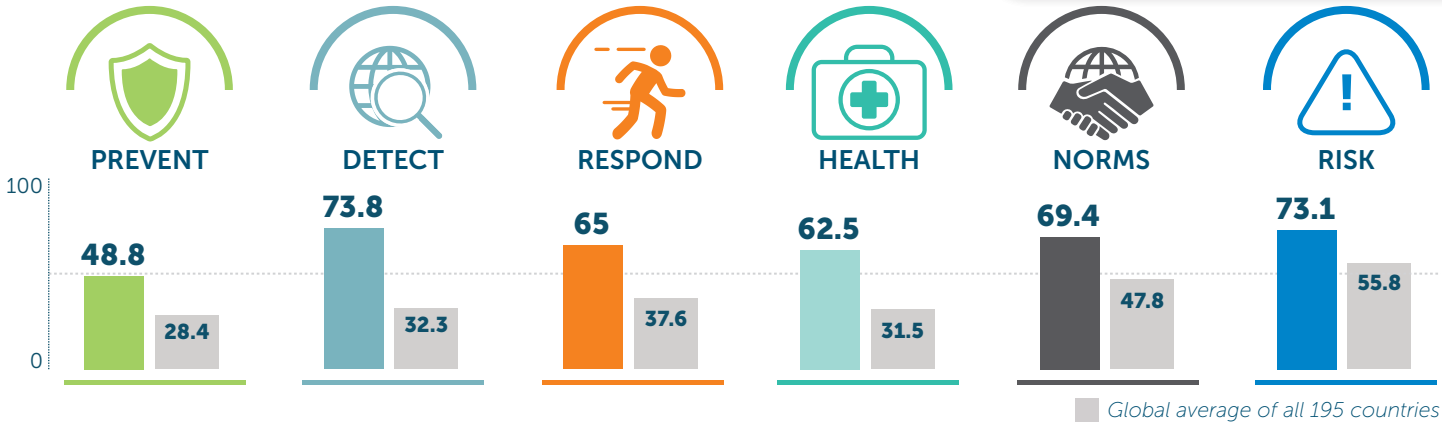
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**35.5**	**32.1**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	50.5	30.5	19.8
Biosecurity	4	4	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**52.1**	**50**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	87.5	62.5	34.6
Surveillance data accessibility and transparency	50	50	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**61.3**	**62**	**37.6**
Emergency preparedness and response planning	8.3	25	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	79.3	67.6	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**29.3**	**29.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	39.4	38.8	30
Supply chain for health system and healthcare workers	27.8	27.8	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	63.1	63.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**47.2**	**43.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	50	50	56.1
JEE and PVS	50	25	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**59.4**	**58.5**	**55.8**
Political and security risk	72.3	73.5	58.1
Socio-economic resilience	58.5	57.7	60.9
Infrastructure adequacy	58.3	50	50.2
Environmental risks	59.2	61.6	54.7
Public health vulnerabilities	49	49.6	55.3

South Korea

65.4 Index Score **9**/195



Global average of all 195 countries

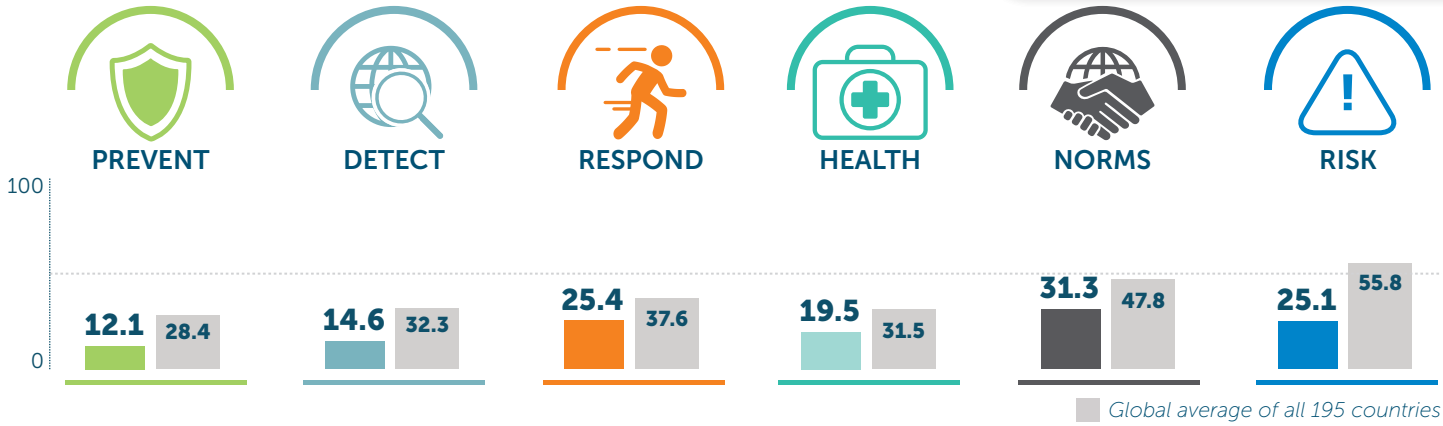
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**53.2**	**48.8**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	51.8	55	19.8
Biosecurity	42.7	62.7	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	50	63.3
DETECTION AND REPORTING	**67.5**	**73.8**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	87.5	87.5	34.6
Surveillance data accessibility and transparency	80	80	34.7
Case-based investigation	25	62.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**74.9**	**65**	**37.6**
Emergency preparedness and response planning	83.3	91.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	100	66.7	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	82.8	88	65.7
Trade and travel restrictions	75	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**58.8**	**62.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	74.5	75.6	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	17.9	17.5	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**66.7**	**69.4**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	100	100	56.1
JEE and PVS	25	25	18.7
Financing	58.3	75	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**74.1**	**73.1**	**55.8**
Political and security risk	66.6	66.4	58.1
Socio-economic resilience	83.9	92.3	60.9
Infrastructure adequacy	83.3	83.3	50.2
Environmental risks	59.4	45.7	54.7
Public health vulnerabilities	77.3	78	55.3

South Sudan

21.3 Index Score **185**/195



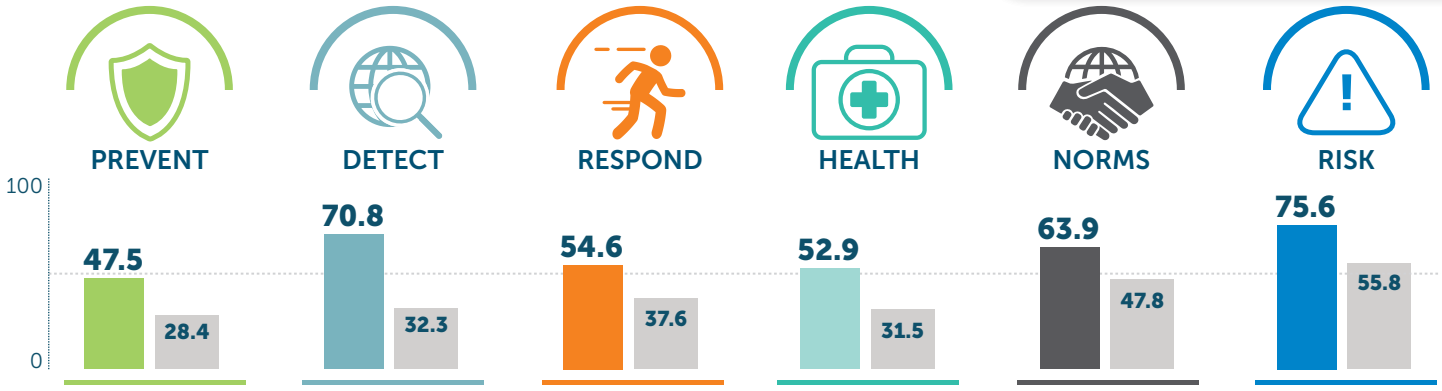
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**15.4**	**12.1**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	22.4	2.6	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**16.7**	**14.6**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	87.5	62.5	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**21.3**	**25.4**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	44.9	44.2	65.7
Trade and travel restrictions	50	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**17.1**	**19.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.8	18.4	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.6	56.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**31.3**	**31.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	12.5	12.5	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**27.8**	**25.1**	**55.8**
Political and security risk	9.8	9.8	58.1
Socio-economic resilience	33.5	33.8	60.9
Infrastructure adequacy	0	0	50.2
Environmental risks	69.2	55.3	54.7
Public health vulnerabilities	26.5	26.6	55.3

Spain

60.9 Index Score **17**/195



Global average of all 195 countries

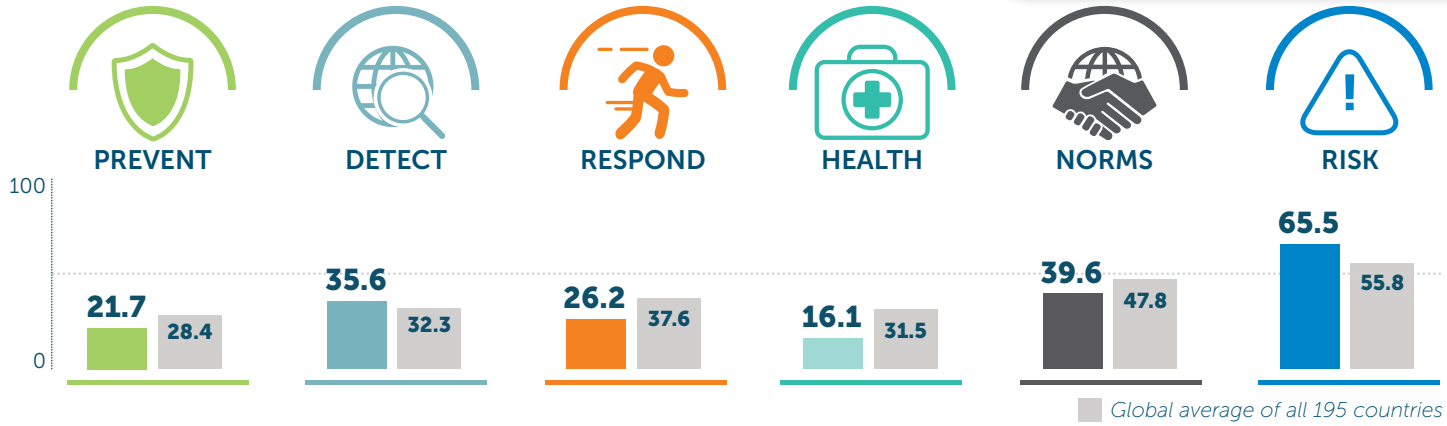
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**47.7**	**47.5**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	29.8	28.4	19.8
Biosecurity	48	48	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**64.6**	**70.8**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	100	100	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**61.8**	**54.6**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	78.7	78.3	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**49.7**	**52.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	32.5	49.2	30
Supply chain for health system and healthcare workers	55.6	61.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	60	60	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**63.4**	**63.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	96.9	100	56.1
JEE and PVS	0	0	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**75.3**	**75.6**	**55.8**
Political and security risk	73.6	73.7	58.1
Socio-economic resilience	74.9	75	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	64.9	66.3	54.7
Public health vulnerabilities	71.6	71.5	55.3

Sri Lanka

34.1 Index Score **105**/195



Global average of all 195 countries

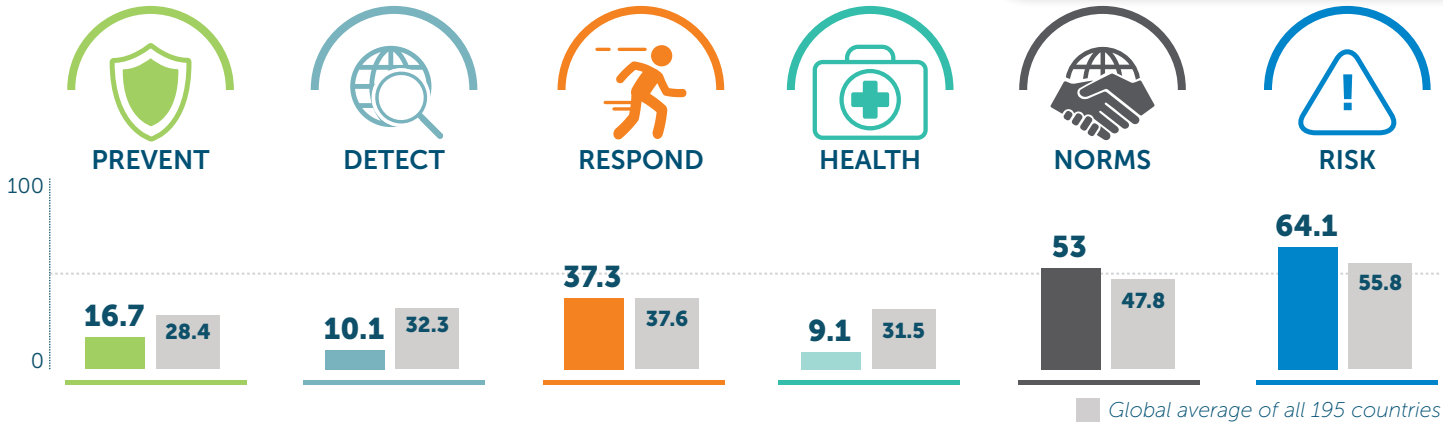
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**21.5**	**21.7**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	0	1.1	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**32.9**	**35.6**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	62.5	62.5	34.6
Surveillance data accessibility and transparency	10	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**33.2**	**26.2**	**37.6**
Emergency preparedness and response planning	8.3	25	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	53.4	62.3	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**13.6**	**16.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	8	25.3	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	20.9	21.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**38.9**	**39.6**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	37.5	56.1
JEE and PVS	50	50	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**58.1**	**65.5**	**55.8**
Political and security risk	52.3	61.3	58.1
Socio-economic resilience	51.3	59	60.9
Infrastructure adequacy	50	66.7	50.2
Environmental risks	70.3	73.4	54.7
Public health vulnerabilities	66.7	67	55.3

St. Kitts and Nevis

31.7 Index Score **122**/195



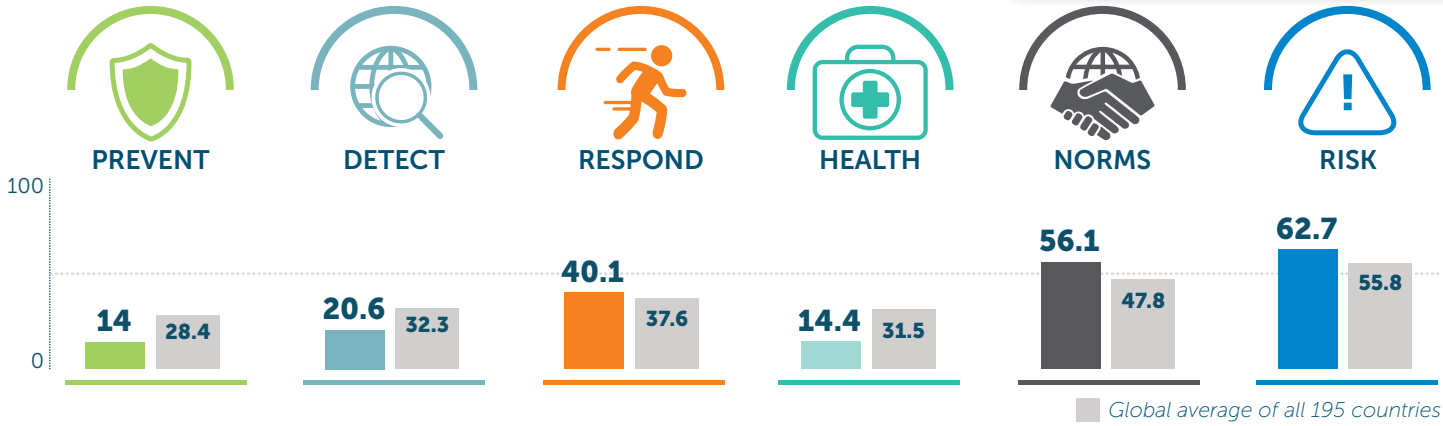
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16.7**	**16.7**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**8.1**	**10.1**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**36.4**	**37.3**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	50	57.9
Access to communications infrastructure	80	82.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**9.1**	**9.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	11.4	11.4	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.3	52.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**51.9**	**53**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	28.1	34.4	56.1
JEE and PVS	0	0	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**62.8**	**64.1**	**55.8**
Political and security risk	76.4	79.9	58.1
Socio-economic resilience	65.2	65.5	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	48.1	51.1	54.7
Public health vulnerabilities	57.4	57.4	55.3

St. Lucia

34.7 Index Score **100**/195



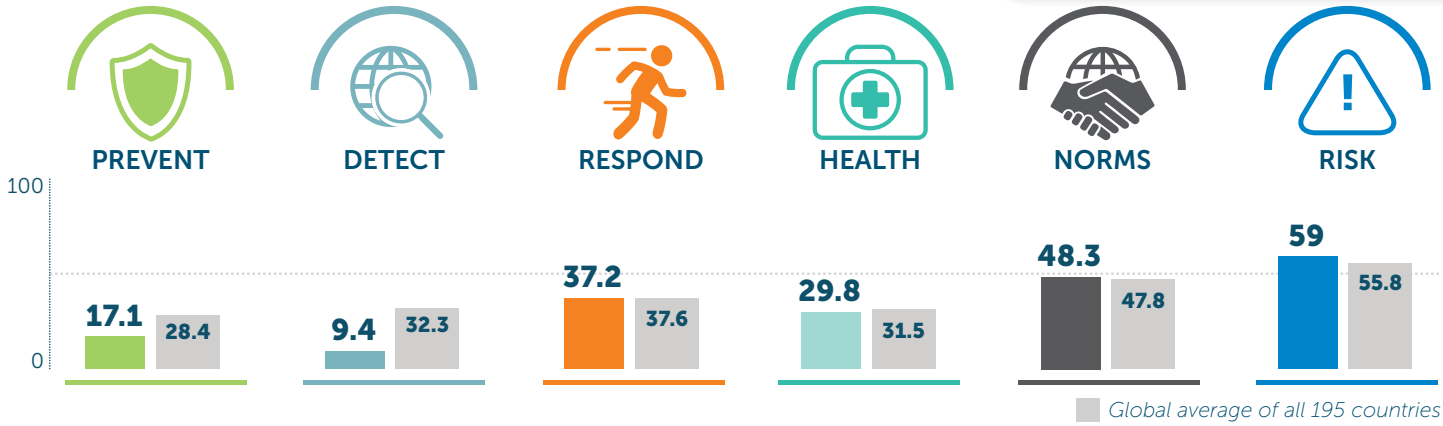
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13.9**	**14**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	0	0.9	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**24.7**	**20.6**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**39.2**	**40.1**	**37.6**
Emergency preparedness and response planning	37.5	54.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	70.8	83.3	57.9
Access to communications infrastructure	66.1	68.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**12**	**14.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.3	21.9	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	53.7	54	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**55.6**	**56.1**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	25	28.1	56.1
JEE and PVS	0	0	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**59.7**	**62.7**	**55.8**
Political and security risk	75.1	78.7	58.1
Socio-economic resilience	57.6	57.5	60.9
Infrastructure adequacy	58.3	66.7	50.2
Environmental risks	52.5	55.5	54.7
Public health vulnerabilities	55.1	55	55.3

St. Vincent and The Grenadines

33.5 Index Score **110**/195



Global average of all 195 countries

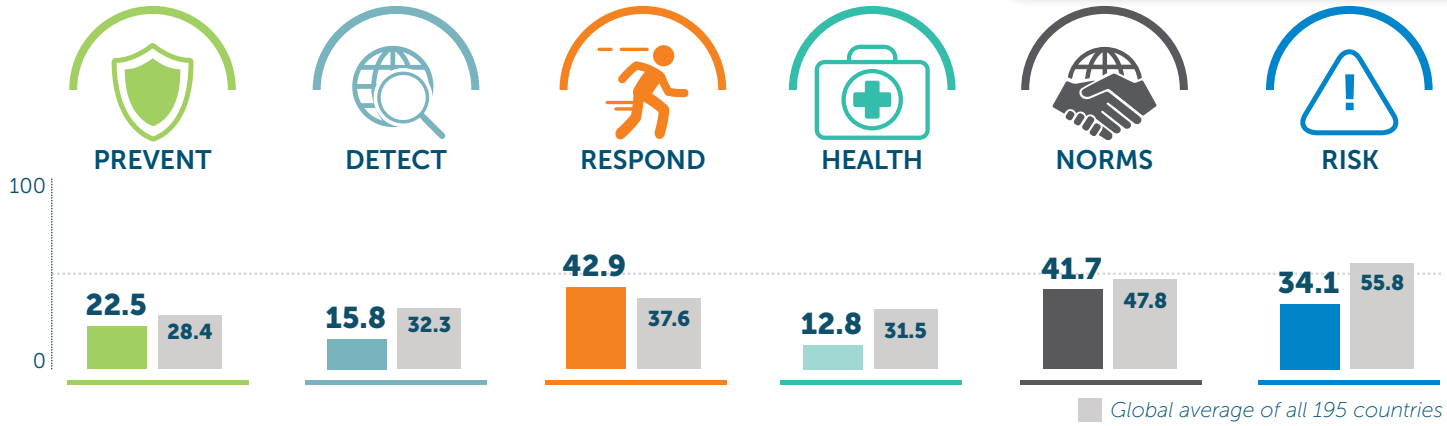
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**17.1**	**17.1**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	2.5	2.4	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**5.3**	**9.4**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	6.7	6.7	34.7
Case-based investigation	0	25	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**37.1**	**37.2**	**37.6**
Emergency preparedness and response planning	16.7	16.7	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	59.9	60.2	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24.7**	**29.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	10.1	45.5	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.6	54.7	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54.2**	**48.3**	**47.8**
IHR reporting compliance and disaster risk reduction	100	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	25	31.3	56.1
JEE and PVS	0	0	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57.7**	**59**	**55.8**
Political and security risk	72.8	76.4	58.1
Socio-economic resilience	55.3	55.6	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	40.1	42.7	54.7
Public health vulnerabilities	53.5	53.7	55.3

Sudan

28.3 Index Score **152**/195



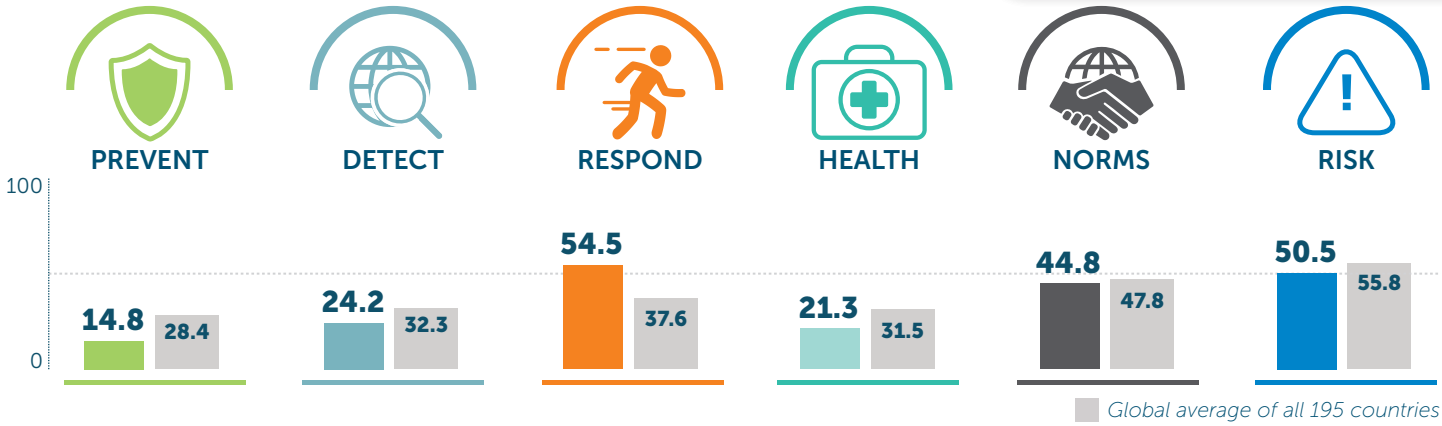
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22.6**	**22.5**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	2.3	1.9	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**15.8**	**15.8**	**32.3**
Laboratory systems strength and quality	25	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**50.6**	**42.9**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	54	50	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**12.8**	**12.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.9	1.8	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.8	62.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**41.7**	**41.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	25	25	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**36.8**	**34.1**	**55.8**
Political and security risk	25.7	9	58.1
Socio-economic resilience	43.8	43.9	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	55.1	57.8	54.7
Public health vulnerabilities	34.3	34.6	55.3

Suriname

35 Index Score **97**/195



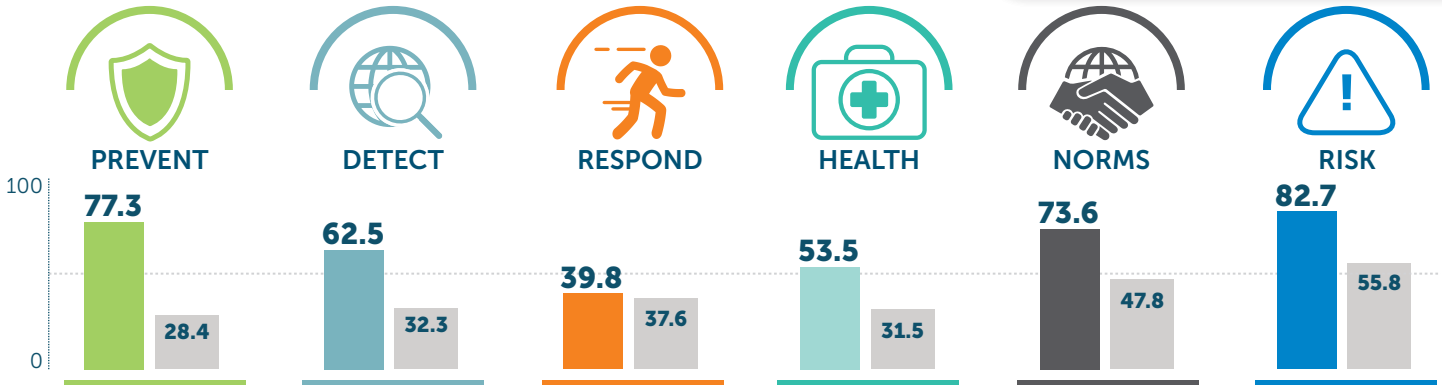
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13.4**	**14.8**	**28.4**
Antimicrobial resistance (AMR)	25	33.3	45.3
Zoonotic disease	5.5	5.6	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**20**	**24.2**	**32.3**
Laboratory systems strength and quality	50	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	20	20	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**51.8**	**54.5**	**37.6**
Emergency preparedness and response planning	41.7	41.7	30.4
Exercising response plans	0	50	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	100	57.9
Access to communications infrastructure	71	73.2	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**18.9**	**21.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	24.9	41.5	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	57.7	57.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**44.3**	**44.8**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	40.6	43.8	56.1
JEE and PVS	0	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**50.6**	**50.5**	**55.8**
Political and security risk	69.2	66.1	58.1
Socio-economic resilience	62.8	62.3	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	33.8	36.4	54.7
Public health vulnerabilities	53.9	54.5	55.3

Sweden

64.9 Index Score **10**/195



Global average of all 195 countries

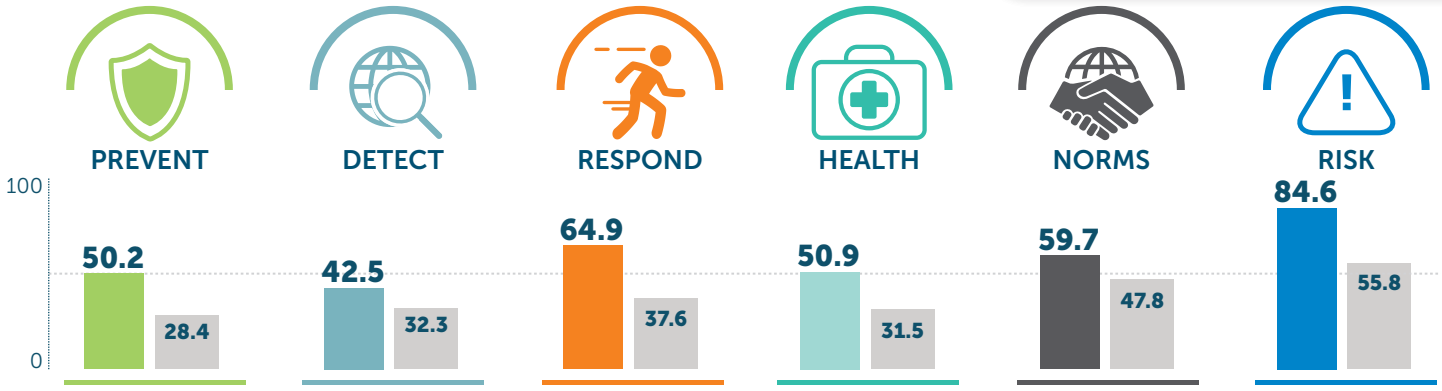
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**80.6**	**77.3**	**28.4**
Antimicrobial resistance (AMR)	100	100	45.3
Zoonotic disease	71.8	51.9	19.8
Biosecurity	78.7	78.7	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	33.3	33.3	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**64.6**	**62.5**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	87.5	62.5	34.6
Surveillance data accessibility and transparency	100	100	34.7
Case-based investigation	25	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**46.1**	**39.8**	**37.6**
Emergency preparedness and response planning	25	41.7	30.4
Exercising response plans	37.5	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	66.7	57.9
Access to communications infrastructure	85.5	86.6	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**53.6**	**53.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	37.3	36.8	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	51.5	51.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**69.4**	**73.6**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	0	0	18.7
Financing	50	75	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**83.8**	**82.7**	**55.8**
Political and security risk	87.4	87.4	58.1
Socio-economic resilience	97.7	97.7	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	60.4	54.6	54.7
Public health vulnerabilities	81.7	81.8	55.3

Switzerland

58.8 Index Score **23**/195



Global average of all 195 countries

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**50.2**	**50.2**	**28.4**
Antimicrobial resistance (AMR)	100	100	45.3
Zoonotic disease	52.2	52.2	19.8
Biosecurity	24	24	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**38.3**	**42.5**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	12.5	37.5	34.6
Surveillance data accessibility and transparency	80	80	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**71.3**	**64.9**	**37.6**
Emergency preparedness and response planning	100	100	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	82.5	87.3	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**50.9**	**50.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	45.2	45.2	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	50	50	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**68.1**	**59.7**	**47.8**
IHR reporting compliance and disaster risk reduction	100	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	25	25	18.7
Financing	16.7	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**83.9**	**84.6**	**55.8**
Political and security risk	85.6	86.8	58.1
Socio-economic resilience	96.5	96.5	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	66.8	69.6	54.7
Public health vulnerabilities	78.8	78.6	55.3

Syria

16.7 Index Score **192**/195

Global average of all 195 countries

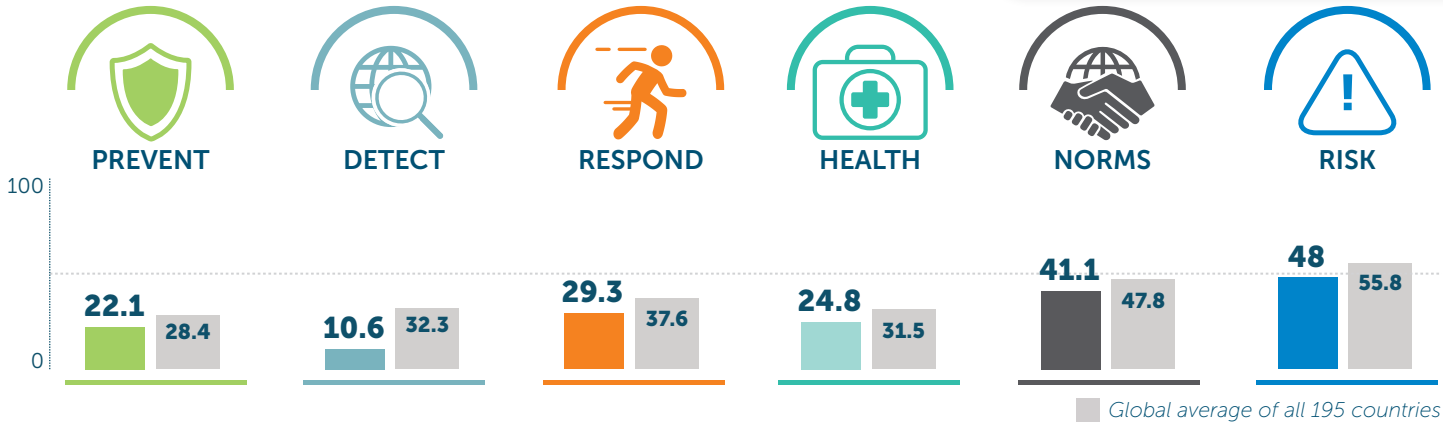
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.7**	**12.9**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	8	27.2	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**8.3**	**4.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**24.6**	**18**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	54.2	54.2	57.9
Access to communications infrastructure	18.2	21.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**13.4**	**13.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.4	5.3	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	52.3	52.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**24**	**24.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	18.8	21.9	56.1
JEE and PVS	0	0	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**32**	**27.4**	**55.8**
Political and security risk	0.3	0.3	58.1
Socio-economic resilience	34.1	34.1	60.9
Infrastructure adequacy	8.3	8.3	50.2
Environmental risks	65	42.3	54.7
Public health vulnerabilities	52.2	52.3	55.3

Tajikistan

29.3 Index Score **140**/195



Global average of all 195 countries

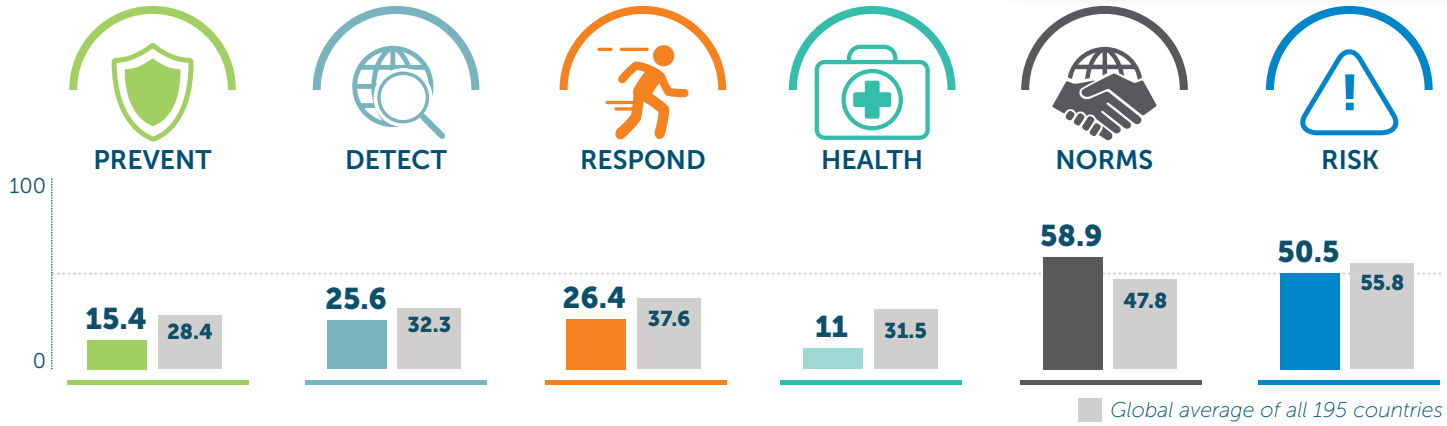
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**30.8**	**22.1**	**28.4**
Antimicrobial resistance (AMR)	41.7	41.7	45.3
Zoonotic disease	19.2	16.7	19.8
Biosecurity	24	24	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	50	63.3
DETECTION AND REPORTING	**5.8**	**10.6**	**32.3**
Laboratory systems strength and quality	0	25	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	10	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**34.5**	**29.3**	**37.6**
Emergency preparedness and response planning	33.3	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	49.9	34.3	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24.9**	**24.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	13.7	13.6	30
Supply chain for health system and healthcare workers	44.4	44.4	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	65.8	65.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**39.4**	**41.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	0	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	46.9	56.1
JEE and PVS	0	50	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**43.5**	**48**	**55.8**
Political and security risk	37.9	41.5	58.1
Socio-economic resilience	52.1	67.5	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	49.8	52.6	54.7
Public health vulnerabilities	60.9	62	55.3

Tanzania

31.3 Index Score **124**/195



Global average of all 195 countries

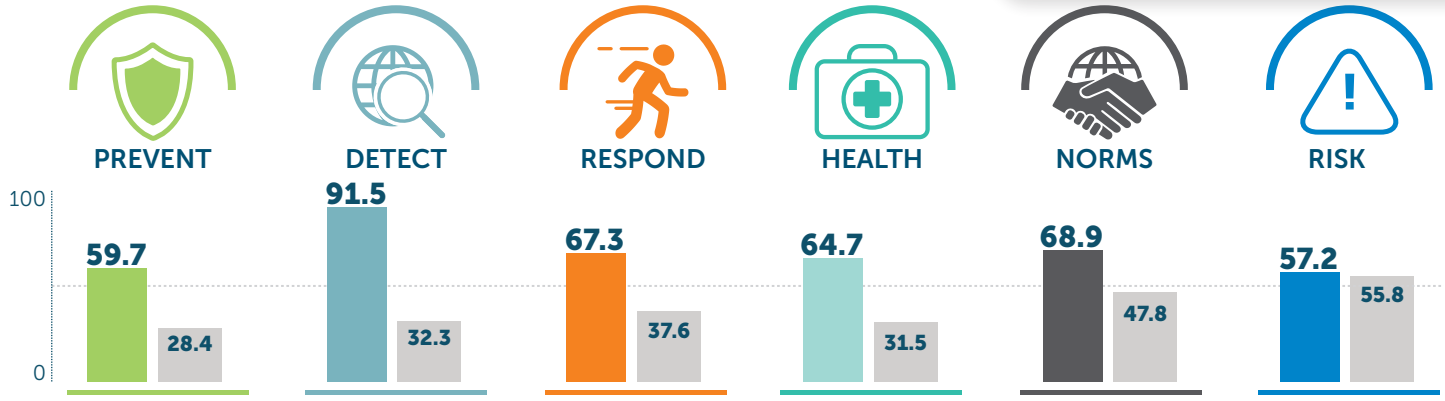
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**18.8**	**15.4**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	37.6	17.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**29.7**	**25.6**	**32.3**
Laboratory systems strength and quality	50	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	3.3	3.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**29.9**	**26.4**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	25	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	16.7	57.9
Access to communications infrastructure	42.8	42.9	65.7
Trade and travel restrictions	100	100	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11**	**11**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.2	1.2	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51	51	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**53.1**	**58.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	68.8	78.1	56.1
JEE and PVS	50	75	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**50.8**	**50.5**	**55.8**
Political and security risk	59.6	55	58.1
Socio-economic resilience	47.8	47.7	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	63.9	65.9	54.7
Public health vulnerabilities	49.4	50.7	55.3

Thailand

68.2 Index Score **5**/195



Global average of all 195 countries

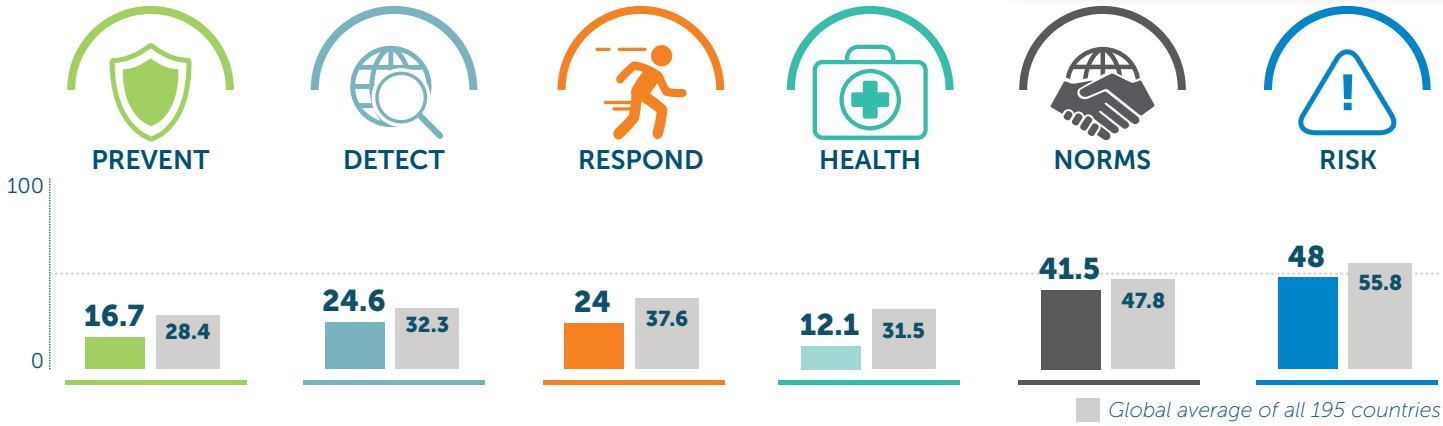
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**63.9**	**59.7**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	64.1	64.1	19.8
Biosecurity	69.3	69.3	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	33.3	33.3	2.6
Immunization	100	75	63.3
DETECTION AND REPORTING	**83.2**	**91.5**	**32.3**
Laboratory systems strength and quality	87.5	87.5	44.9
Laboratory supply chains	100	100	15.9
Real-time surveillance and reporting	75	100	34.6
Surveillance data accessibility and transparency	86.7	86.7	34.7
Case-based investigation	50	75	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**78.6**	**67.3**	**37.6**
Emergency preparedness and response planning	100	100	30.4
Exercising response plans	25	25	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	100	100	22.1
Risk communication	100	100	57.9
Access to communications infrastructure	83.5	79.7	65.7
Trade and travel restrictions	75	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**62.3**	**64.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	39.6	56.2	30
Supply chain for health system and healthcare workers	50	50	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	96.8	96.8	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**66.5**	**68.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	90.6	96.9	56.1
JEE and PVS	25	25	18.7
Financing	66.7	75	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**58.9**	**57.2**	**55.8**
Political and security risk	35.1	41.6	58.1
Socio-economic resilience	62.8	63.1	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	75.9	60.4	54.7
Public health vulnerabilities	70.6	70.7	55.3

Timor-Leste

27.8 Index Score **154**/195



Global average of all 195 countries

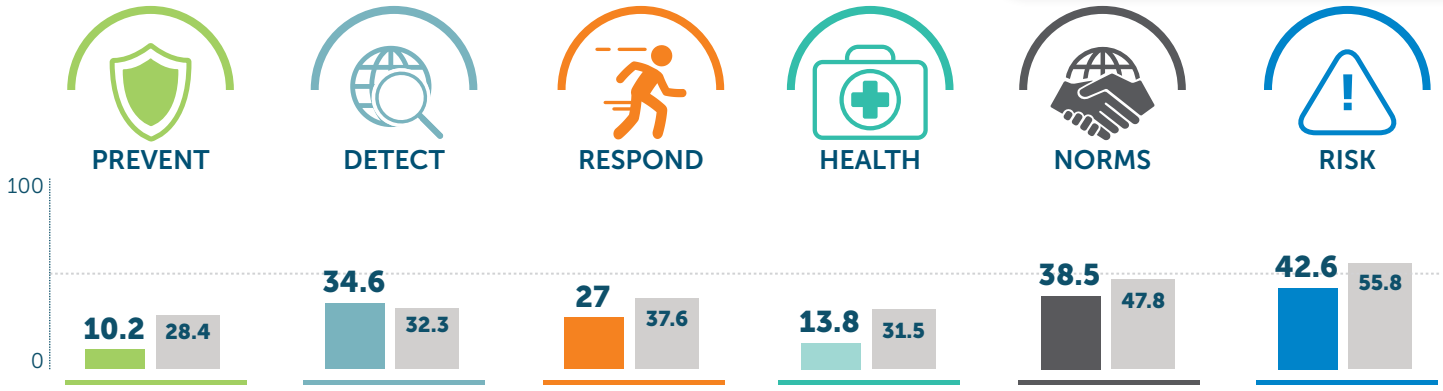
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.8**	**16.7**	**28.4**
Antimicrobial resistance (AMR)	50	75	45.3
Zoonotic disease	8.8	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	0	25	63.3
DETECTION AND REPORTING	**18.3**	**24.6**	**32.3**
Laboratory systems strength and quality	25	50	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	12.5	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**29.1**	**24**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	12.5	57.9
Access to communications infrastructure	66.1	63.8	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**9.7**	**12.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	9.8	9.8	30
Supply chain for health system and healthcare workers	0	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	58.4	58.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**31.1**	**41.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	28.1	56.1
JEE and PVS	0	50	18.7
Financing	41.7	54.2	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**47.4**	**48**	**55.8**
Political and security risk	59.9	60	58.1
Socio-economic resilience	62.2	61.6	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	54.9	57.6	54.7
Public health vulnerabilities	43.3	44.4	55.3

Togo

27.8 Index Score **154**/195



Global average of all 195 countries

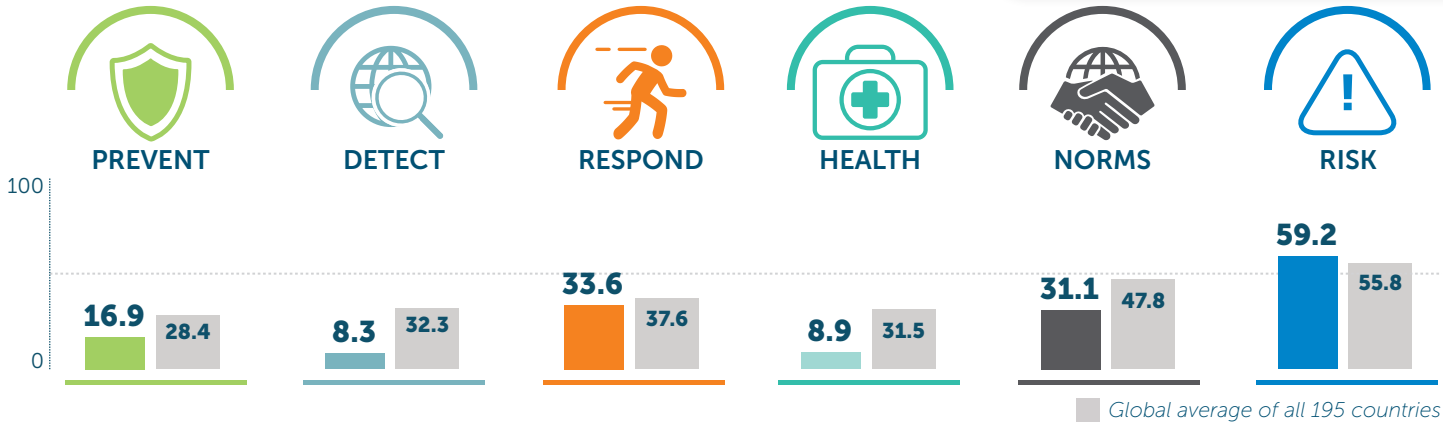
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13.6**	**10.2**	**28.4**
Antimicrobial resistance (AMR)	8.3	8.3	45.3
Zoonotic disease	23.3	3	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**27.1**	**34.6**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	25	34.6
Surveillance data accessibility and transparency	0	20	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**30.3**	**27**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	49.8	38.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**11.5**	**13.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.1	17.8	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	48.5	48.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**33.3**	**38.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	31.3	56.1
JEE and PVS	25	50	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**40.9**	**42.6**	**55.8**
Political and security risk	44.8	49.9	58.1
Socio-economic resilience	34.2	34.2	60.9
Infrastructure adequacy	25	25	50.2
Environmental risks	76.5	79	54.7
Public health vulnerabilities	24.1	24.6	55.3

Tonga

26.4 Index Score **160**/195



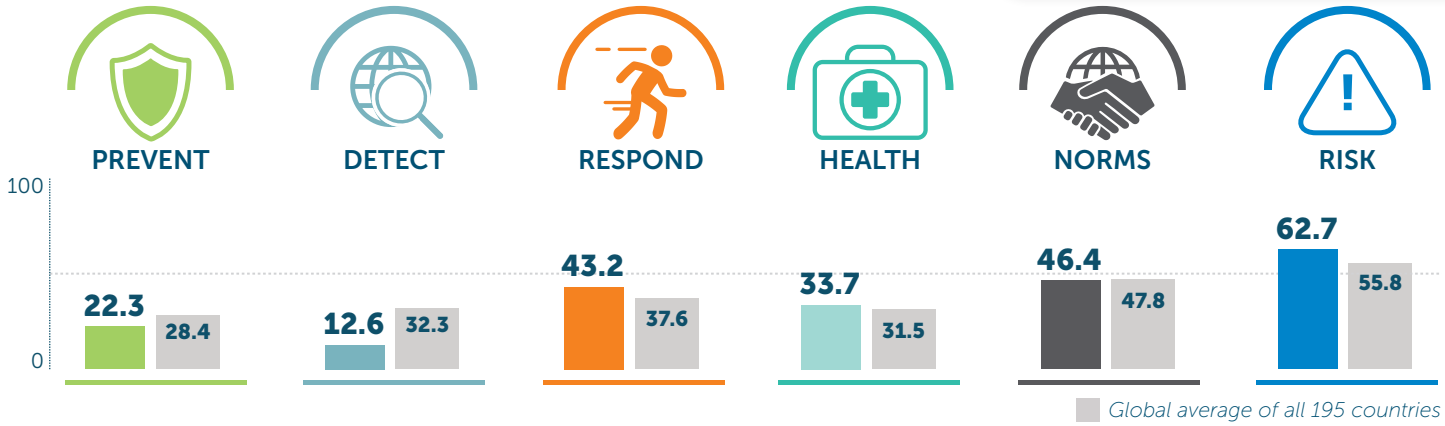
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16.9**	**16.9**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	1.7	1.6	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**4.2**	**8.3**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	25	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**32.2**	**33.6**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	67	60.4	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**6.5**	**8.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	7.5	24.1	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	21.5	21.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.7**	**31.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	28.1	56.1
JEE and PVS	0	0	18.7
Financing	33.3	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57.5**	**59.2**	**55.8**
Political and security risk	65.7	63.5	58.1
Socio-economic resilience	61.2	61.2	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	51	62.4	54.7
Public health vulnerabilities	50.9	50.9	55.3

Trinidad and Tobago

36.8 Index Score **88**/195



Global average of all 195 countries

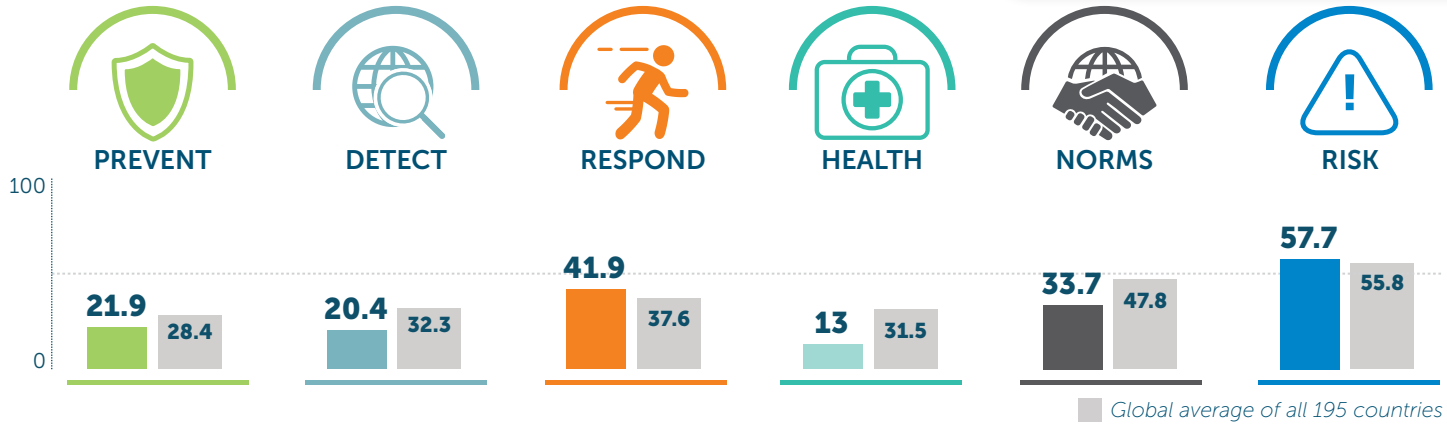
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22.3**	**22.3**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	8.6	8.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**12.1**	**12.6**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	12.5	12.5	34.6
Surveillance data accessibility and transparency	10	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**44.2**	**43.2**	**37.6**
Emergency preparedness and response planning	8.3	25	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	83.3	83.3	57.9
Access to communications infrastructure	84.6	86	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**29.7**	**33.7**	**31.5**
Health capacity in clinics, hospitals, and community care centers	31.8	48.5	30
Supply chain for health system and healthcare workers	0	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51.3	51.5	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54.7**	**46.4**	**47.8**
IHR reporting compliance and disaster risk reduction	100	50	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	28.1	28.1	56.1
JEE and PVS	0	0	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**63.5**	**62.7**	**55.8**
Political and security risk	72.6	66.6	58.1
Socio-economic resilience	72.3	72.3	60.9
Infrastructure adequacy	58.3	58.3	50.2
Environmental risks	54.6	57.5	54.7
Public health vulnerabilities	59.5	58.8	55.3

Tunisia

31.5 Index Score **123**/195



Global average of all 195 countries

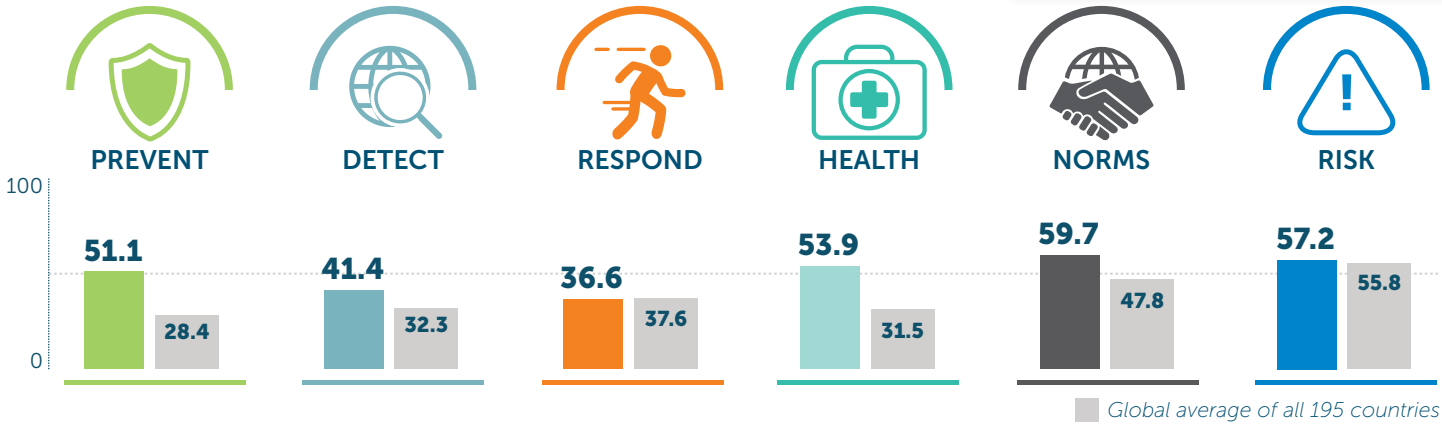
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**25.3**	**21.9**	**28.4**
Antimicrobial resistance (AMR)	41.7	41.7	45.3
Zoonotic disease	31.1	11	19.8
Biosecurity	4	4	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**20.4**	**20.4**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	10	10	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**48.9**	**41.9**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	100	100	22.1
Risk communication	37.5	37.5	57.9
Access to communications infrastructure	71.3	72.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**13.1**	**13**	**31.5**
Health capacity in clinics, hospitals, and community care centers	7.3	7.1	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	59.1	59.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**29.2**	**33.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	25	43.8	56.1
JEE and PVS	25	25	18.7
Financing	8.3	16.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**56**	**57.7**	**55.8**
Political and security risk	37.4	51.7	58.1
Socio-economic resilience	62.5	54.1	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	58.9	61.5	54.7
Public health vulnerabilities	54.5	54.7	55.3

Turkey

50 Index Score **46**/195



Global average of all 195 countries

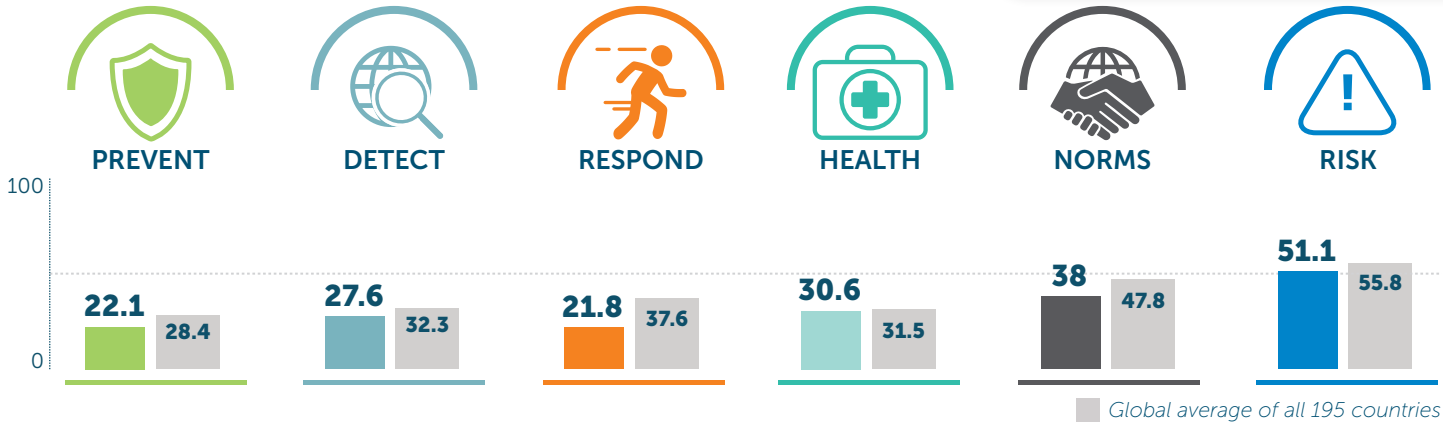
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**50.3**	**51.1**	**28.4**
Antimicrobial resistance (AMR)	58.3	58.3	45.3
Zoonotic disease	44.7	49.5	19.8
Biosecurity	24	24	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**35.1**	**41.4**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	23.3	23.3	34.7
Case-based investigation	25	50	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**46.4**	**36.6**	**37.6**
Emergency preparedness and response planning	58.3	58.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	66.4	73.1	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**49.1**	**53.9**	**31.5**
Health capacity in clinics, hospitals, and community care centers	9	42.5	30
Supply chain for health system and healthcare workers	50	50	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	59.9	59.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**59.7**	**59.7**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	100	100	56.1
JEE and PVS	25	25	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**57.8**	**57.2**	**55.8**
Political and security risk	43.5	38.2	58.1
Socio-economic resilience	64.6	64.8	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	50.4	53	54.7
Public health vulnerabilities	63.8	63.5	55.3

Turkmenistan

31.9 Index Score **119**/195



Global average of all 195 countries

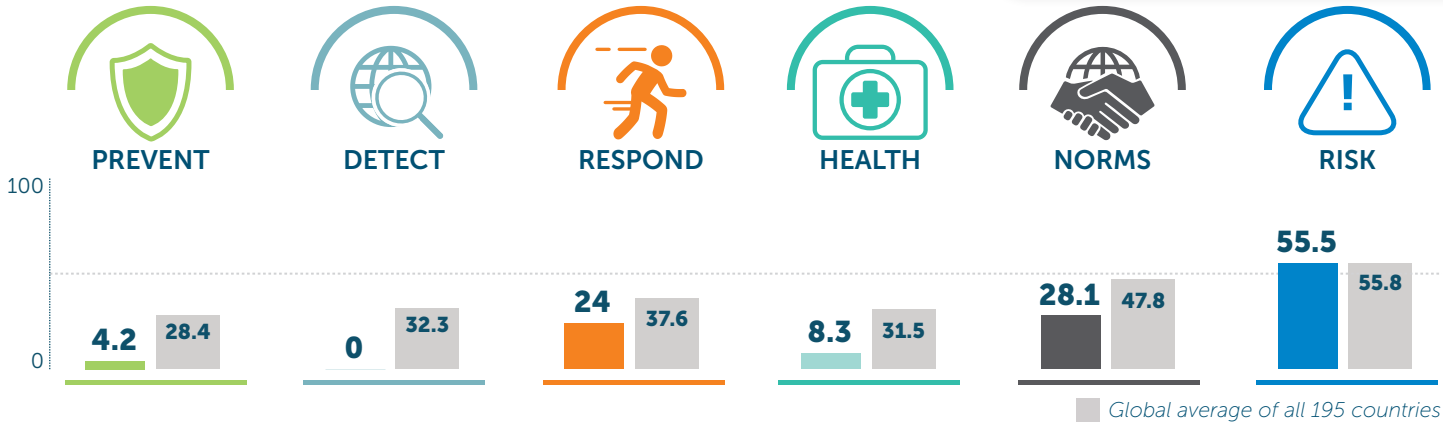
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22**	**22.1**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	6.8	7.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**27.1**	**27.6**	**32.3**
Laboratory systems strength and quality	37.5	37.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	3.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**32.7**	**21.8**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	0	57.9
Access to communications infrastructure	70.7	68.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**31.2**	**30.6**	**31.5**
Health capacity in clinics, hospitals, and community care centers	16.9	12.8	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.6	62.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**38**	**38**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	28.1	56.1
JEE and PVS	25	25	18.7
Financing	8.3	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**48.8**	**51.1**	**55.8**
Political and security risk	44.5	52.8	58.1
Socio-economic resilience	51.2	51.5	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	48.7	51.2	54.7
Public health vulnerabilities	66.4	66.5	55.3

Tuvalu

20 Index Score **188**/195



Global average of all 195 countries

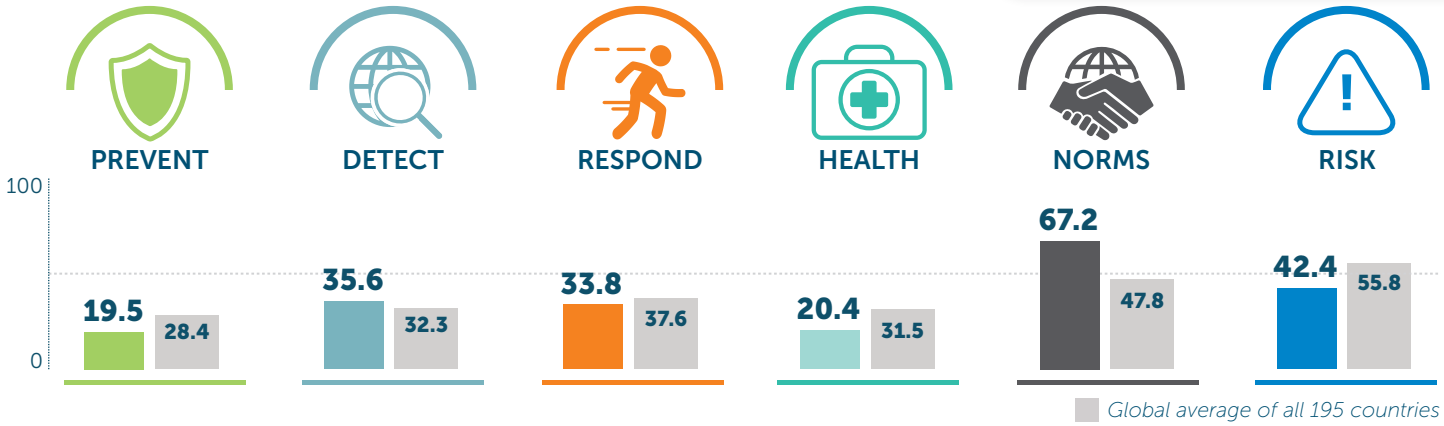
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**4.2**	**4.2**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	0	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	25	25	63.3
DETECTION AND REPORTING	**0**	**0**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**27.1**	**24**	**37.6**
Emergency preparedness and response planning	0	4.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	25	57.9
Access to communications infrastructure	64.5	64	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**8.3**	**8.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	12	12	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	21.4	21.4	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**27.1**	**28.1**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	12.5	18.8	56.1
JEE and PVS	0	0	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**54.5**	**55.5**	**55.8**
Political and security risk	78.3	82	58.1
Socio-economic resilience	59.6	58.5	60.9
Infrastructure adequacy	50	50	50.2
Environmental risks	36.4	38.6	54.7
Public health vulnerabilities	48.1	48.3	55.3

Uganda

36.5 Index Score **90**/195



Global average of all 195 countries

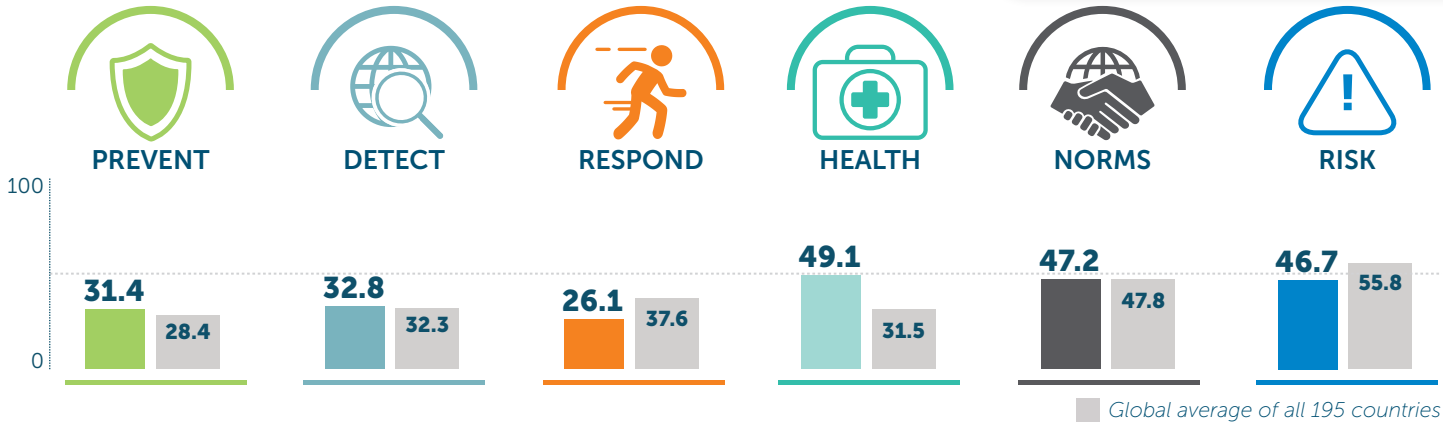
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**22.9**	**19.5**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	37.4	16.8	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**35**	**35.6**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	10	13.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**45.1**	**33.8**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	52.9	49.1	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**20.4**	**20.4**	**31.5**
Health capacity in clinics, hospitals, and community care centers	1.8	1.8	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	57.7	57.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**67.2**	**67.2**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	78.1	78.1	56.1
JEE and PVS	50	50	18.7
Financing	58.3	58.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**43.4**	**42.4**	**55.8**
Political and security risk	30.3	30.3	58.1
Socio-economic resilience	39	38.8	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	80.3	74.5	54.7
Public health vulnerabilities	34.3	35	55.3

Ukraine

38.9 Index Score **83**/195



Global average of all 195 countries

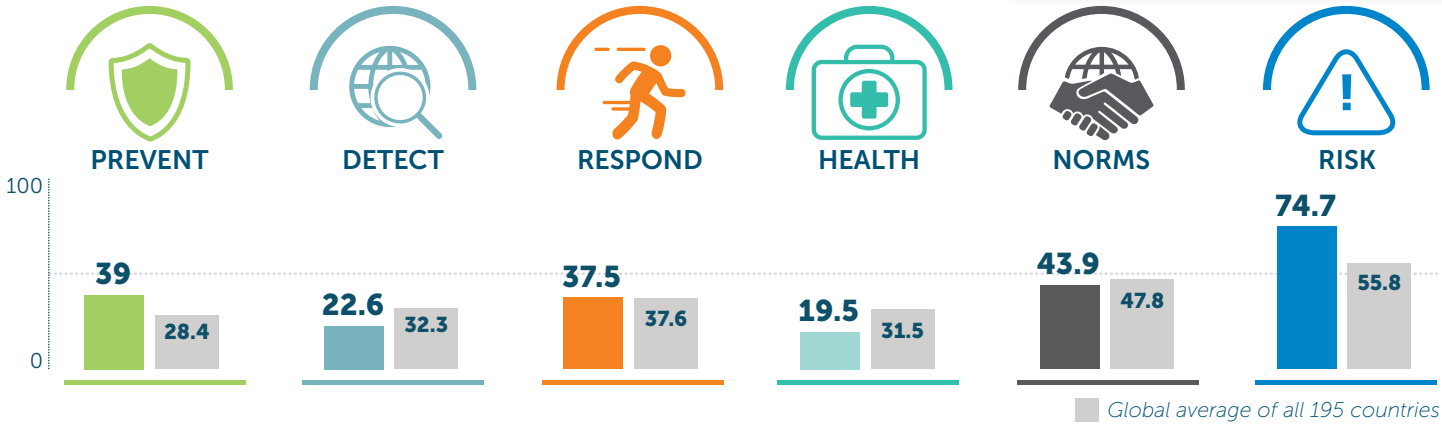
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**32.8**	**31.4**	**28.4**
Antimicrobial resistance (AMR)	0	8.3	45.3
Zoonotic disease	39.5	18.8	19.8
Biosecurity	32	36	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**23.3**	**32.8**	**32.3**
Laboratory systems strength and quality	50	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	40	46.7	34.7
Case-based investigation	0	12.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**37.7**	**26.1**	**37.6**
Emergency preparedness and response planning	37.5	37.5	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	76.3	69.9	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**32.7**	**49.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	22	37	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	98.6	98.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	100	40.5
Capacity to test and approve new medical countermeasures	75	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**50.9**	**47.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	96.9	100	56.1
JEE and PVS	25	0	18.7
Financing	66.7	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44**	**46.7**	**55.8**
Political and security risk	13.1	24.3	58.1
Socio-economic resilience	69	69	60.9
Infrastructure adequacy	41.7	41.7	50.2
Environmental risks	50.6	53.3	54.7
Public health vulnerabilities	45.4	45.4	55.3

United Arab Emirates

39.6 Index Score **80**/195



Global average of all 195 countries

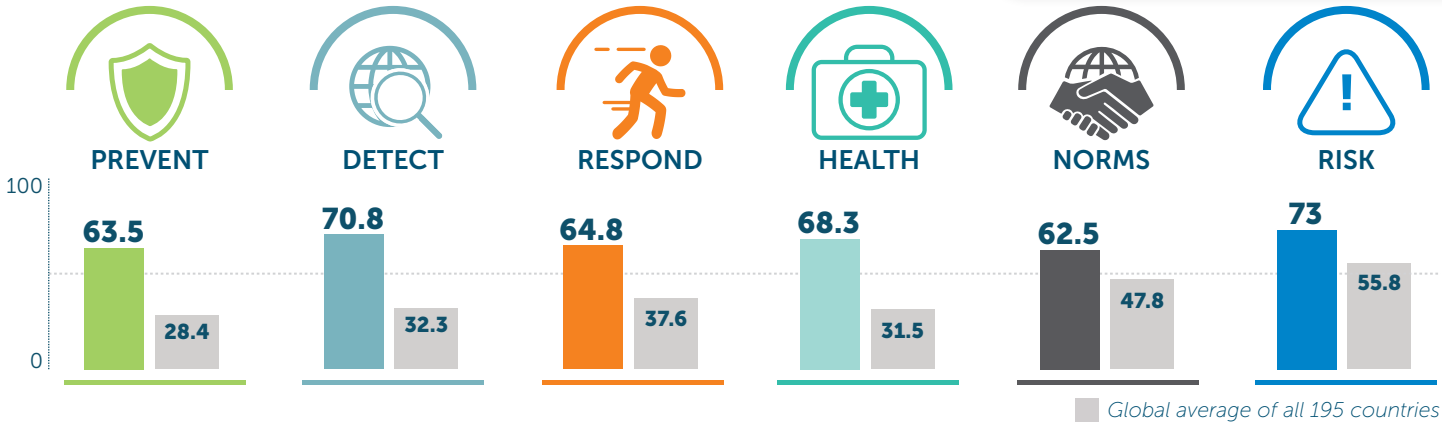
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**39**	**39**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	25.6	25.6	19.8
Biosecurity	0	0	18.7
Biosafety	25	25	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**25.1**	**22.6**	**32.3**
Laboratory systems strength and quality	50	25	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	37.5	37.5	34.6
Surveillance data accessibility and transparency	13.3	23.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**42.1**	**37.5**	**37.6**
Emergency preparedness and response planning	8.3	25	30.4
Exercising response plans	0	0	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	54.2	54.2	57.9
Access to communications infrastructure	98.7	99.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**17.1**	**19.5**	**31.5**
Health capacity in clinics, hospitals, and community care centers	27.7	44.6	30
Supply chain for health system and healthcare workers	5.6	5.6	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61.6	61.7	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.4**	**43.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	93.8	96.9	56.1
JEE and PVS	25	25	18.7
Financing	25	25	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**73.9**	**74.7**	**55.8**
Political and security risk	71.8	71.9	58.1
Socio-economic resilience	70	72.4	60.9
Infrastructure adequacy	91.7	100	50.2
Environmental risks	60.4	54.6	54.7
Public health vulnerabilities	75.7	74.8	55.3

United Kingdom

67.2 Index Score **7**/195



Global average of all 195 countries

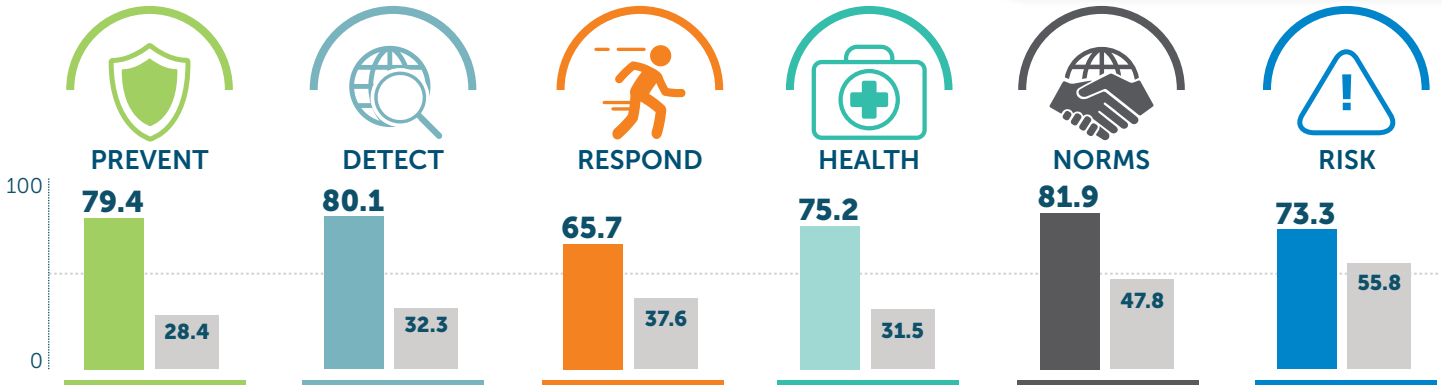
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**63.3**	**63.5**	**28.4**
Antimicrobial resistance (AMR)	100	100	45.3
Zoonotic disease	52.2	53.2	19.8
Biosecurity	69.3	69.3	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	33.3	33.3	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**62.5**	**70.8**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	100	100	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**68.1**	**64.8**	**37.6**
Emergency preparedness and response planning	50	50	30.4
Exercising response plans	0	25	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	100	100	22.1
Risk communication	75	100	57.9
Access to communications infrastructure	85.2	87	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**66**	**68.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	48.9	65.1	30
Supply chain for health system and healthcare workers	61.1	61.1	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	52.3	52.2	55.2
Communications with healthcare workers during a public health emergency	50	50	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**75**	**62.5**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	50	0	50
International commitments	100	100	56.1
JEE and PVS	25	0	18.7
Financing	75	75	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**75**	**73**	**55.8**
Political and security risk	76.8	81.5	58.1
Socio-economic resilience	85.6	85.5	60.9
Infrastructure adequacy	66.7	66.7	50.2
Environmental risks	62.7	48.5	54.7
Public health vulnerabilities	83.2	82.7	55.3

United States of America

75.9 Index Score **1**/195



Global average of all 195 countries

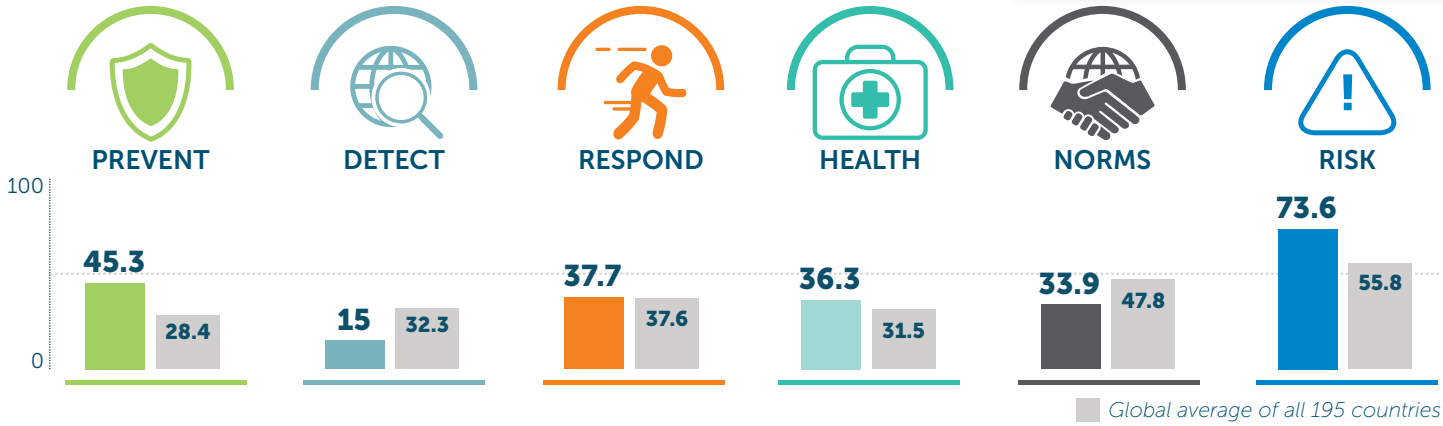
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**78.6**	**79.4**	**28.4**
Antimicrobial resistance (AMR)	83.3	83.3	45.3
Zoonotic disease	73.7	53.7	19.8
Biosecurity	89.3	89.3	18.7
Biosafety	100	100	20.9
Dual-use research and culture of responsible science	50	50	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**75.3**	**80.1**	**32.3**
Laboratory systems strength and quality	75	75	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	100	100	34.6
Surveillance data accessibility and transparency	76.7	93.3	34.7
Case-based investigation	50	62.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**72.8**	**65.7**	**37.6**
Emergency preparedness and response planning	83.3	83.3	30.4
Exercising response plans	0	25	21.1
Emergency response operation	66.7	66.7	27
Linking public health and security authorities	100	100	22.1
Risk communication	100	75	57.9
Access to communications infrastructure	84.4	84.8	65.7
Trade and travel restrictions	75	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**75.2**	**75.2**	**31.5**
Health capacity in clinics, hospitals, and community care centers	70.6	70.5	30
Supply chain for health system and healthcare workers	72.2	72.2	28.5
Medical countermeasures and personnel deployment	50	50	10.3
Healthcare access	33.5	33.5	55.2
Communications with healthcare workers during a public health emergency	100	100	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	100	100	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**81.9**	**81.9**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	100	100	56.1
JEE and PVS	50	50	18.7
Financing	41.7	41.7	35.2
Commitment to sharing of genetic and biological data and specimens	100	100	68.4
RISK ENVIRONMENT	**73.7**	**73.3**	**55.8**
Political and security risk	73.2	69.1	58.1
Socio-economic resilience	73	73.1	60.9
Infrastructure adequacy	91.7	91.7	50.2
Environmental risks	54.4	56.6	54.7
Public health vulnerabilities	76.3	75.9	55.3

Uruguay

40.3 Index Score **75**/195



Global average of all 195 countries

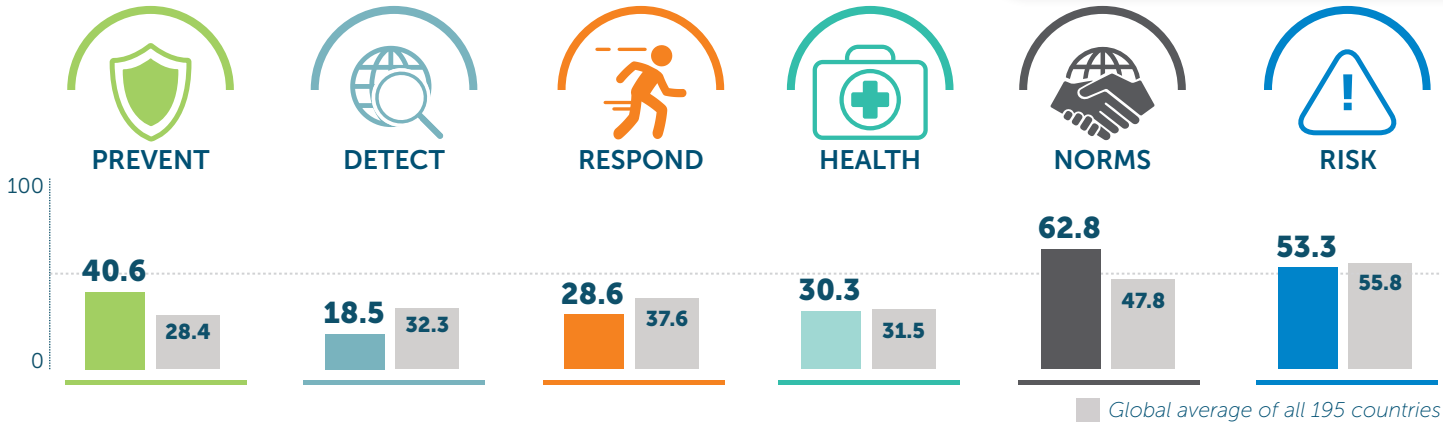
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**41.1**	**45.3**	**28.4**
Antimicrobial resistance (AMR)	75	75	45.3
Zoonotic disease	76.5	76.9	19.8
Biosecurity	20	20	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	100	63.3
DETECTION AND REPORTING	**15**	**15**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	40	40	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**29**	**37.7**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	83.3	57.9
Access to communications infrastructure	82	84.8	65.7
Trade and travel restrictions	50	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**36.4**	**36.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	14.9	14.4	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.7	56.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	100	100	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**39.4**	**33.9**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	28.1	56.1
JEE and PVS	25	0	18.7
Financing	16.7	8.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**73.8**	**73.6**	**55.8**
Political and security risk	80.3	76.8	58.1
Socio-economic resilience	86.5	86.3	60.9
Infrastructure adequacy	75	75	50.2
Environmental risks	60.9	63.2	54.7
Public health vulnerabilities	66.4	66.5	55.3

Uzbekistan

39 Index Score **82**/195



Global average of all 195 countries

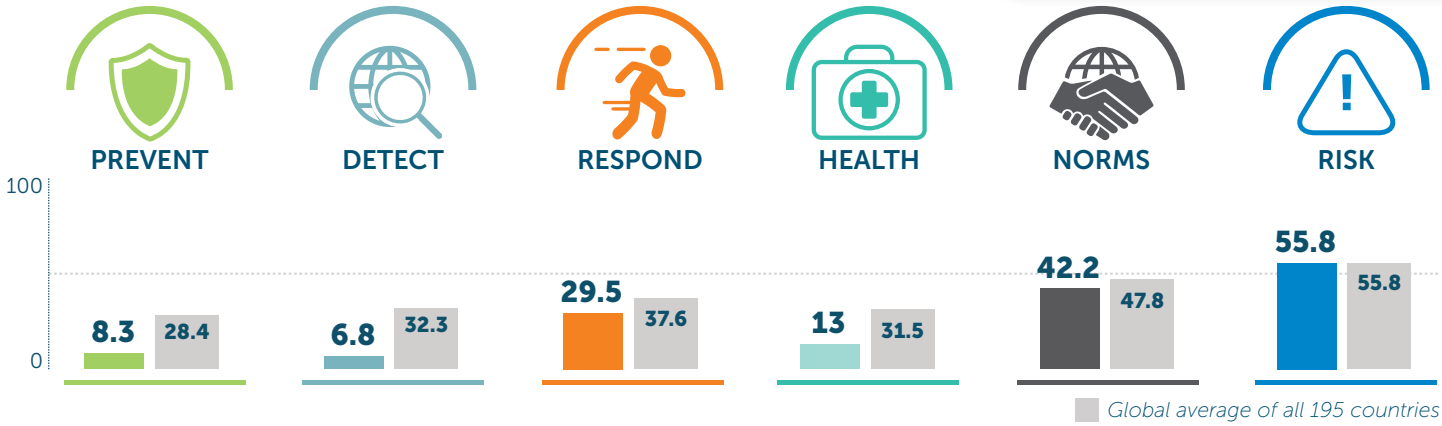
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**36.2**	**40.6**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	10.7	30.4	19.8
Biosecurity	40	46.7	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	100	100	63.3
DETECTION AND REPORTING	**20**	**18.5**	**32.3**
Laboratory systems strength and quality	25	37.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	25	34.6
Surveillance data accessibility and transparency	20	23.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**35.7**	**28.6**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	66.7	66.7	57.9
Access to communications infrastructure	49.9	58.4	65.7
Trade and travel restrictions	75	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24.4**	**30.3**	**31.5**
Health capacity in clinics, hospitals, and community care centers	18.7	35.4	30
Supply chain for health system and healthcare workers	38.9	38.9	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.9	62.8	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	75	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**57.3**	**62.8**	**47.8**
IHR reporting compliance and disaster risk reduction	100	100	58.5
Cross-border agreements on public and health emergency response	100	100	50
International commitments	43.8	43.8	56.1
JEE and PVS	0	0	18.7
Financing	33.3	66.7	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**52.7**	**53.3**	**55.8**
Political and security risk	48.3	49	58.1
Socio-economic resilience	63.5	62.9	60.9
Infrastructure adequacy	16.7	16.7	50.2
Environmental risks	66.8	69.6	54.7
Public health vulnerabilities	68.2	68.3	55.3

Vanuatu

25.9 Index Score **168**/195



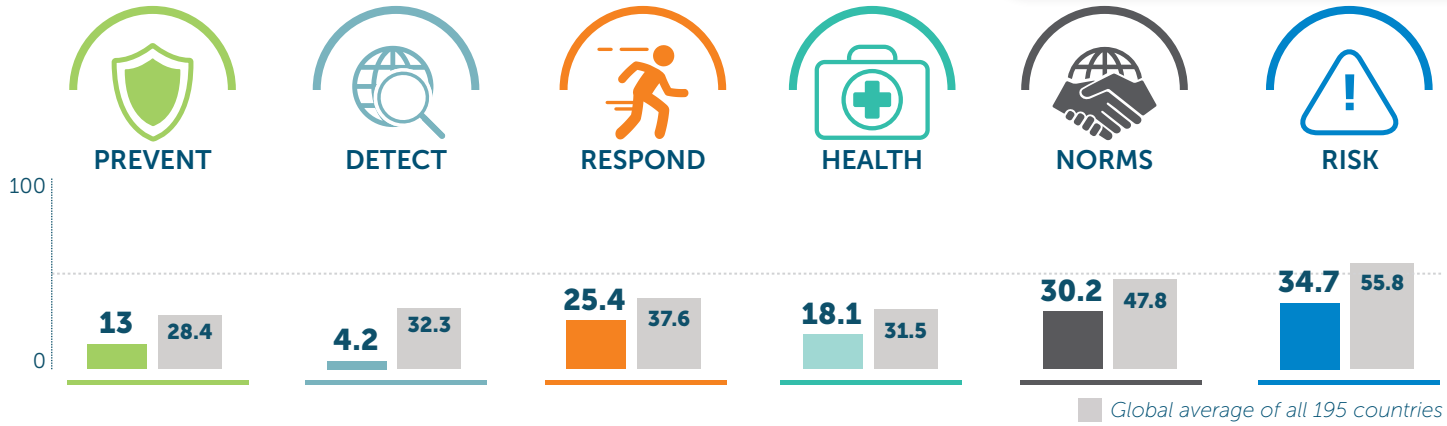
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**16.8**	**8.3**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	0.7	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	0	63.3
DETECTION AND REPORTING	**4.2**	**6.8**	**32.3**
Laboratory systems strength and quality	0	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	0	34.6
Surveillance data accessibility and transparency	0	3.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**31.2**	**29.5**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	25	37.5	57.9
Access to communications infrastructure	59.8	60.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**10.6**	**13**	**31.5**
Health capacity in clinics, hospitals, and community care centers	3.4	20	30
Supply chain for health system and healthcare workers	16.7	16.7	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	54.2	54.2	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	0	0	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**43.6**	**42.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	28.1	56.1
JEE and PVS	25	25	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**55.8**	**55.8**	**55.8**
Political and security risk	82.7	80.3	58.1
Socio-economic resilience	62.6	62	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	58.6	61.5	54.7
Public health vulnerabilities	42	41.7	55.3

Venezuela

20.9 Index Score **186**/195



Global average of all 195 countries

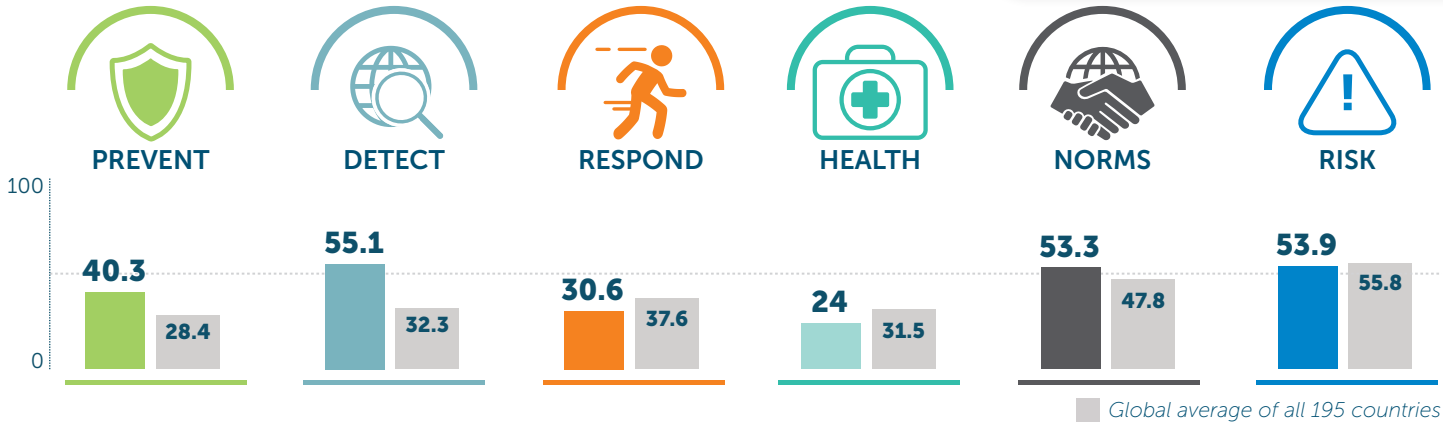
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**13**	**13**	**28.4**
Antimicrobial resistance (AMR)	25	25	45.3
Zoonotic disease	2.8	2.9	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**0**	**4.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	0	25	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	0	0	46.5
RAPID RESPONSE	**29.4**	**25.4**	**37.6**
Emergency preparedness and response planning	0	16.7	30.4
Exercising response plans	0	25	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	12.5	57.9
Access to communications infrastructure	68.1	73.9	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**18**	**18.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	5.4	5.5	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.6	63	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**31.6**	**30.2**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	31.3	31.3	56.1
JEE and PVS	0	0	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**36.6**	**34.7**	**55.8**
Political and security risk	28.3	25.3	58.1
Socio-economic resilience	41.1	41	60.9
Infrastructure adequacy	16.7	8.3	50.2
Environmental risks	47.7	50.7	54.7
Public health vulnerabilities	49.4	48.3	55.3

Vietnam

42.9 Index Score **65**/195



	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**43.7**	**40.3**	**28.4**
Antimicrobial resistance (AMR)	66.7	66.7	45.3
Zoonotic disease	46.2	26.1	19.8
Biosecurity	24	24	18.7
Biosafety	50	50	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	75	75	63.3
DETECTION AND REPORTING	**42.1**	**55.1**	**32.3**
Laboratory systems strength and quality	75	87.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	37.5	62.5	34.6
Surveillance data accessibility and transparency	40	43.3	34.7
Case-based investigation	0	37.5	16.9
Epidemiology workforce	100	100	46.5
RAPID RESPONSE	**35.3**	**30.6**	**37.6**
Emergency preparedness and response planning	8.3	29.2	30.4
Exercising response plans	0	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	41.7	54.2	57.9
Access to communications infrastructure	63.5	72.6	65.7
Trade and travel restrictions	100	0	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**24**	**24**	**31.5**
Health capacity in clinics, hospitals, and community care centers	22.5	22.5	30
Supply chain for health system and healthcare workers	33.3	33.3	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	62.4	62.3	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**54.7**	**53.3**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	78.1	78.1	56.1
JEE and PVS	50	25	18.7
Financing	33.3	50	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**53.6**	**53.9**	**55.8**
Political and security risk	63.1	63.1	58.1
Socio-economic resilience	54.2	54	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	65	66	54.7
Public health vulnerabilities	52.5	53.3	55.3

Yemen

16.1 Index Score **193**/195

Global average of all 195 countries

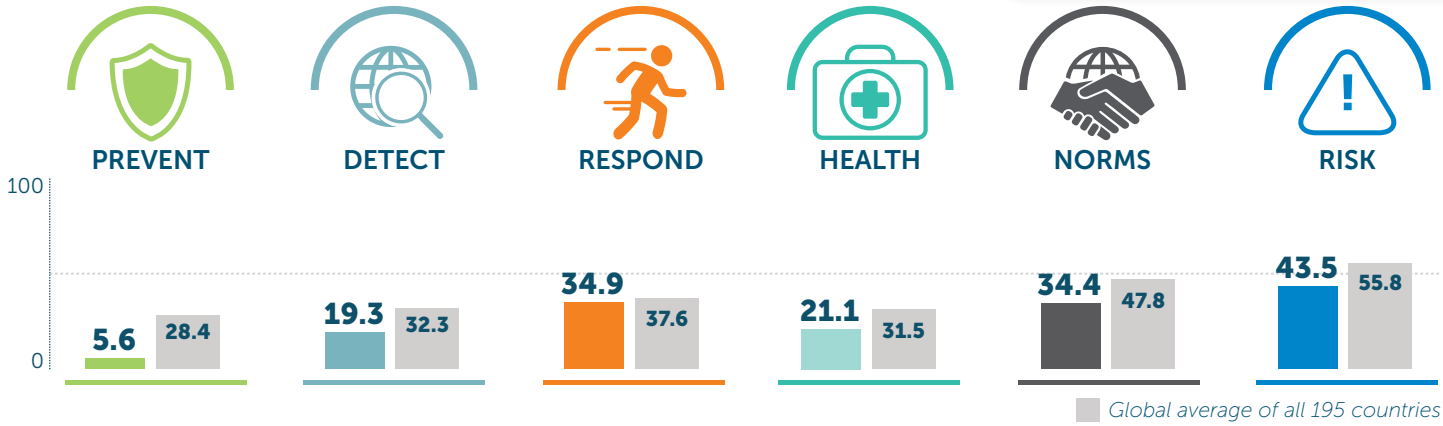
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**9.2**	**0.8**	**28.4**
Antimicrobial resistance (AMR)	0	0	45.3
Zoonotic disease	5.3	5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	0	63.3
DETECTION AND REPORTING	**8.3**	**4.2**	**32.3**
Laboratory systems strength and quality	0	0	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	25	0	34.6
Surveillance data accessibility and transparency	0	0	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	25	25	46.5
RAPID RESPONSE	**24.7**	**17.5**	**37.6**
Emergency preparedness and response planning	0	0	30.4
Exercising response plans	0	0	21.1
Emergency response operation	0	0	27
Linking public health and security authorities	0	0	22.1
Risk communication	50	50	57.9
Access to communications infrastructure	23.1	22.3	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**12**	**12**	**31.5**
Health capacity in clinics, hospitals, and community care centers	2.3	2.3	30
Supply chain for health system and healthcare workers	0	0	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	56.6	56.6	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**37.5**	**37.5**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	75	75	56.1
JEE and PVS	0	0	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**27.8**	**24.9**	**55.8**
Political and security risk	1.3	1.3	58.1
Socio-economic resilience	33.5	33.5	60.9
Infrastructure adequacy	0	0	50.2
Environmental risks	62.8	48.6	54.7
Public health vulnerabilities	41.2	40.9	55.3

Zambia

26.5 Index Score **159**/195



Global average of all 195 countries

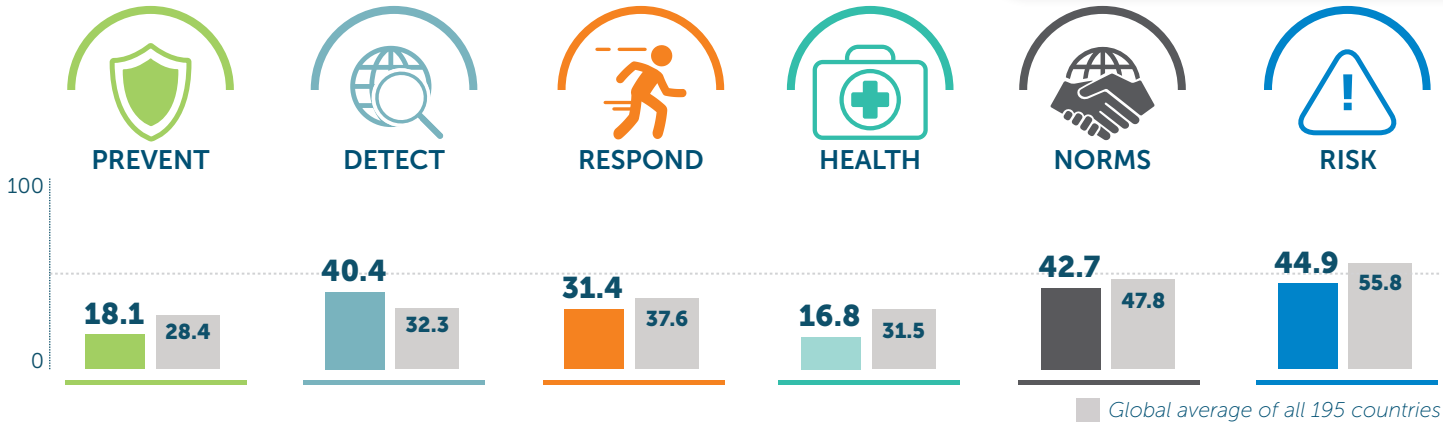
	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**14**	**5.6**	**28.4**
Antimicrobial resistance (AMR)	33.3	33.3	45.3
Zoonotic disease	0.9	0	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	0	63.3
DETECTION AND REPORTING	**18.8**	**19.3**	**32.3**
Laboratory systems strength and quality	12.5	12.5	44.9
Laboratory supply chains	0	0	15.9
Real-time surveillance and reporting	50	50	34.6
Surveillance data accessibility and transparency	0	3.3	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	50	50	46.5
RAPID RESPONSE	**33**	**34.9**	**37.6**
Emergency preparedness and response planning	4.2	20.8	30.4
Exercising response plans	0	37.5	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	54.2	57.9
Access to communications infrastructure	55.7	48.5	65.7
Trade and travel restrictions	100	50	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**20.8**	**21.1**	**31.5**
Health capacity in clinics, hospitals, and community care centers	22.4	22.4	30
Supply chain for health system and healthcare workers	22.2	22.2	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	51	53.1	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	50	50	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**35.2**	**34.4**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	0	0	50
International commitments	28.1	31.3	56.1
JEE and PVS	25	25	18.7
Financing	41.7	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**46.4**	**43.5**	**55.8**
Political and security risk	63.8	64.4	58.1
Socio-economic resilience	41	32.1	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	56.8	50.2	54.7
Public health vulnerabilities	36.9	37.4	55.3

Zimbabwe

32.4 Index Score **117**/195



	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
PREVENTION	**21.4**	**18.1**	**28.4**
Antimicrobial resistance (AMR)	50	50	45.3
Zoonotic disease	28.2	8.5	19.8
Biosecurity	0	0	18.7
Biosafety	0	0	20.9
Dual-use research and culture of responsible science	0	0	2.6
Immunization	50	50	63.3
DETECTION AND REPORTING	**40.4**	**40.4**	**32.3**
Laboratory systems strength and quality	62.5	62.5	44.9
Laboratory supply chains	50	50	15.9
Real-time surveillance and reporting	25	25	34.6
Surveillance data accessibility and transparency	30	30	34.7
Case-based investigation	0	0	16.9
Epidemiology workforce	75	75	46.5
RAPID RESPONSE	**36.9**	**31.4**	**37.6**
Emergency preparedness and response planning	4.2	4.2	30.4
Exercising response plans	25	25	21.1
Emergency response operation	33.3	33.3	27
Linking public health and security authorities	0	0	22.1
Risk communication	37.5	70.8	57.9
Access to communications infrastructure	58.3	61.7	65.7
Trade and travel restrictions	100	25	39

Scores are normalized (0–100, where 100 = most favorable)

	2019 SCORE	2021 SCORE	2021 GLOBAL AVERAGE
HEALTH SYSTEM	**14.4**	**16.8**	**31.5**
Health capacity in clinics, hospitals, and community care centers	3.9	20.5	30
Supply chain for health system and healthcare workers	11.1	11.1	28.5
Medical countermeasures and personnel deployment	0	0	10.3
Healthcare access	61	61	55.2
Communications with healthcare workers during a public health emergency	0	0	10.8
Infection control practices	0	0	40.5
Capacity to test and approve new medical countermeasures	25	25	45.1
COMPLIANCE WITH INTERNATIONAL NORMS	**42.2**	**42.7**	**47.8**
IHR reporting compliance and disaster risk reduction	50	50	58.5
Cross-border agreements on public and health emergency response	50	50	50
International commitments	28.1	31.3	56.1
JEE and PVS	25	25	18.7
Financing	33.3	33.3	35.2
Commitment to sharing of genetic and biological data and specimens	66.7	66.7	68.4
RISK ENVIRONMENT	**44.9**	**44.9**	**55.8**
Political and security risk	39.6	36.7	58.1
Socio-economic resilience	47.1	47.3	60.9
Infrastructure adequacy	33.3	33.3	50.2
Environmental risks	53.6	56.6	54.7
Public health vulnerabilities	51	50.7	55.3

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