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# When indicators fail: SPAR, the invisible measure of pandemic preparedness

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## Abstract

Recent literature on indicators as technology of global governance has shown the power of numbers in shaping knowledge and policy priorities. But not all indicators have powerful effects; some remain invisible. Are such indicators an obverse of powerful indicators? Are the same process of indirect exercise of power to indirectly achieve social and economic effects at work? This paper explores the case of Sustainable Development Goal (SDG) indicator 3.d.1 for the target to build national capacity for pandemic preparedness (target 3d) as a case study of invisible indicators. This indicator has had little traction, despite its relevance in the context of the Coronavirus disease 2019 (COVID-19) pandemic. The paper explores the reasons that explain this paradox through the framework of epistemic infrastructures. It argues that the indicator—the State Party Self-Assessment Report (SPAR) score—was an inconvenient tool for the powerful actors in the global health community as it turned out to be an extremely poor predictor of COVID-19 response performance. It would have exposed not only the failings of the powerful countries that lead the policy agenda for pandemic preparedness but also the legitimacy of their expertise and the paradigm of global health security as an approach to governing health risks. The analysis highlights the tight relationship between power and the use of indicators in global governance. While indicators are increasingly used by powerful actors to reframe policy narratives, the indicator of pandemic preparedness has been kept invisible to maintain their existing framing. It thus illustrates the resilience of power structures in epistemic infrastructures.

**Keywords:** SDG indicators; COVID-19; pandemic preparedness index; International Health Regulations

Recent literature on quantitative indicators as a technology of global governance has emphasized their increasing importance, playing a central role in setting consensus priorities, and having powerful effects on shaping policy narratives, justifying policy choices, and disrupting power structures (see for example [Davis et al., 2012](#); [Miller, 2001](#)). Indicators have become particularly important as a tool in setting global development agendas since the introduction of the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs). They are used as a communications tool to mobilize attention on a neglected global priority. They also shape concepts and priorities as a key part of a discourse, by framing narratives, and influencing policy priorities ([Fukuda-Parr 2017](#)). They are effective in presenting “otherwise highly contentious policy goals and political agendas by means of rhetorical appeals to the ostensibly neutral language of technocratic assessment” ([Broome & Quirk, 2015](#), p. 821). With coauthors, I have

argued that the MDG indicators were instrumental in shifting the paradigm of development; the narrative of meeting the goals reframed the purpose as ending global poverty and meeting basic needs and displacing the earlier notion of development as economic transformation (Fukuda-Parr & Yamin, 2015). (CDP Subgroup on VNRs, 2021).

Much of this literature has focused on indicators that had powerful discursive, knowledge, and policy effects. But indicators are not all the same; not all have powerful effects, and indicators that fail are under-researched. Indicators are powerful not only because they highlight important norms but also because they render invisible other norms, social phenomena, or populations. Like spotlights, indicators as tools of governance shine a light on priority objectives but cast a shadow on inconvenient social issues. The politics of indicators work to exclude issues and populations from policy attention. Studies of SDG indicators have shown the way targets and indicators were selected to exclude norms and populations in a variety of ways. Some indicators are contested as norms and kept out of governance frameworks, such as access to justice and economic inequality in the SDGs (Winkler & Williams, 2017), (Fukuda-Parr & McNeill, 2019). Some indicators are institutionalized but the data exclude particular populations or events such as Lesbian, Gay, Bisexual, Transgendered and Questioning (LGBTQ) populations from AIDS data (Davis, 2017). There are also norms that are excluded even if they are institutionalized as part of a governance framework but are not utilized. They are institutionalized but fail to get traction and do not have the powerful discursive effects that have characterized the power of MDGs and SDGs. While there have been studies of indicators that are excluded because the norms are contested, there are no studies of institutionalized norms that are unutilized. Are these invisible indicators obverse to powerful indicators? Are the same processes that led powerful indicators to influence knowledge and policy at work to suppress them, directly or indirectly?

This paper explores the State Parties Self-assessment Report (SPAR) score, the designated indicator (3.d.1) to monitor SDG target 3d to strengthen core national capacities for public health emergencies as a case study of invisible indicators, one that is institutionalized but does not get traction in policy and public debates. Even as the world has been struggling since January 2020 to contain the COVID-19 pandemic, SDG target 3d and the SPAR score have been strangely invisible in public debates. As of the time of writing (late 2021), they have been rarely mentioned in discussions about SDG progress, national response to COVID-19 or readiness in preventing future pandemics. Moreover, the trajectory of the pandemic has made clear that the SPAR score—like other indicators of pandemic preparedness—was not a reliable measure of national capacity for pandemic response. The countries that were assessed to be best prepared within this framework—such as the US, UK, and other high-income countries—have been amongst the worst affected, while those considered least well prepared did better to limit contagion, particularly before the advent of vaccines and treatment medication. Yet these real-world outcomes did not provoke a reexamination of either these indicators or the underlying assumptions about required capacities to protect health and society in a contemporary pandemic, and how national capacity should be measured.

The aim of this paper is to explore the contestation behind the invisibility of indicator 3d. Indicators may not be utilized because the issue in question is not of interest to policymakers, researchers, and the general public. It could be because it is a poor measure and not accepted by stakeholders, especially if there is an alternative indicator. As later sections will elaborate further, none of these situations apply in the case of indicator 3d; it is politically relevant, has good data coverage, and has been legitimated and institutionalized. But there is something else in play that must explain the lack of impact; either because those who constructed it do not have the power to promote its use, or because there are political incentives against its use for the powerful stakeholders.<sup>1</sup>

Studies of the construction and use of indicators in governance show that their social and economic effects are not random nor unintended e.g., (Davis et al., 2012, Merry 2016; Fukuda-Parr and McNeill 2019). By constructing a framework of measurement, selecting particular indicators, collecting particular data, promoting their use, and using them in communications, policy analysis, and decision-making, agents are aiming to achieve a particular effect. A key characteristic is that the use of power to achieve these effects is hidden in what is seemingly a technocratic controversy. Indicators thus allow actors to achieve particular social and economic effects by indirect means (Broome & Quirk, 2015). It shows that these effects are not random nor unintended. How is power exercised in the non-use of the SPAR indicator?

<sup>1</sup> Thanks to the anonymous reviewer for the list of reasons for indicators not being utilized.

I use the perspective of “epistemic infrastructure” (Merry 2019) which provides a useful framework for considering and linking the diverse elements that shape the role of indicators in global governance: the materialities of data collection and utilization, the interlinkages of institutions and processes, and the structures of power in decision-making about indicators and in framing policy discourses. As an analytical lens, this framework leads to an exploration of the complex interplay of bureaucratic structures, political agendas, epistemic communities, communities of practice that are involved in the production of indicators, data production and collection, their use and translation into public policy (Tichenor et al., 2022).

In analyzing the SPAR score as an epistemic infrastructure, this paper highlights the context of global health threats governance as terrain of competing ideas and actors operating in a complex mesh of bureaucracies, epistemic communities, and national and transnational activities. The field of global health is particularly divided over different strategies—vertical, disease-specific interventions as against horizontal, health system strengthening—and perspectives on understanding public health challenges—social or biomedical determinants of health. How a social challenge like pandemic preparedness is measured and utilized is a product of contestation over ideas amongst epistemic communities. Indicators are constructed on a particular understanding of the problem at hand, the theories about causation, and the evidence that is used. Institutionalized in UN processes, the design and use of the SPAR reflects the multiple stakeholders and their ideas about pandemic preparedness and public health, by the contradictory tendencies of equal voice of states on the one hand and the realities of asymmetric power amongst in finance, political influence, and expertise.

In this context, I argue that it is not surprising that indicator 3.d.1 did not get traction. Its failure as a benchmarking framework highlights the poor performance of the powerful countries that lead the field of global health as donors and expert authorities. It also surely challenges the assumption about the necessary capacity for pandemic preparedness, considered to have been present in high-income countries but lacking in low-income countries. Measurement tools are not neutral but embed a choice of how to define and instantiate a particular social issue. They embed theories, values, and ideologies (Merry, 2016; Poovey, 1998). Indicator 3.d also challenges some of the paradigmatic underpinning the mainstream dominant policy agenda in global health. At the same time, it is not an indicator that is controlled by the most powerful actors in this terrain that can be easily managed. Overall, it is a most inconvenient indicator that is disruptive; it challenges the superior technical knowledge, and thus the authority of the most influential actors in the field. It would best be kept invisible, out of the radar, and off the table of debates about pandemic preparedness.

The paper is structured as follows. The first section provides a background to the broader context of governing health threats as an international concern. The second section explores the SPAR score as an epistemic infrastructure—its materialities and interlinkages and the theories embedded in the measure. The third section discusses the invisibility of the indicator during the COVID-19 pandemic. The final section discusses lessons that can be drawn from this case of an indicator that fail to get traction, and more broadly about governance by numbers.

## **Global governance of health threats: brief history, political economy, geography, discourses**

Concern for the spread of infectious diseases has been the primary motive for global governance of health threats, dating back to the first International Sanitary Conference in Paris in 1851 which was motivated by the cholera epidemics of the times. Since then, the international community has continued to coordinate response and standardize approaches through successive conferences and agreements, including the International Sanitary Regulations adopted in 1951, and the IHR adopted in 1969 by the WHO Assembly (WHO, 2007). In the 21st century, this concern has become a major global policy priority, not only as a concern for public health but also for economy and society, and ultimately security as a threat outside national borders.

From the 1990s, WHO and other health authorities, politicians, and social commentators raised alarm about the growing threats of new deadly infectious diseases—to which there was no natural resistance nor vaccines and treatment—that would spread rapidly across the world as globalization intensified international travel. The US was particularly proactive. In 1991, the Institute of Medicine (IOM) convened a committee of 18 leading scientists to study “emerging microbial threats” that warned against prevailing complacency and recommended that the US “take the lead in promoting the

development and implementation of a comprehensive global infectious disease surveillance system” (Committee on Emerging Microbial Threats to Health, Institute of Medicine (IOM Committee), 1991, p.22). The outbreaks of Severe Acute Respiratory Syndrome (SARS) in 2003 in South East Asia, swine flu (H1N1) influenza in 2009 in the US and elsewhere, Middle East Respiratory Syndrome coronavirus (MERS) in 2012 in Saudi Arabia and South Korea, and Ebola in 2013 in West Africa were understood as wake-up calls for the inevitability of full-blown pandemic that would have catastrophic consequences. Investing in an infrastructure of pandemic preparedness, then, came to be seen as an urgent global priority in the early years of the 21st century that went beyond the field of health and was a matter for political leaders to address.

Discussions about growing health threats came to be framed as national security risks, giving rise to a discourse of global health security (Davies, 2008). As then Senators Obama and Lugar wrote in a New York Times editorial in 2006, “When we think of the major threats to our national security, the first to come to mind are nuclear proliferation, rogue states and global terrorism. But another kind of threat lurks beyond our shores, one from nature, not humans—an avian flu pandemic... in an age when you can board planes in *Bangkok or Hong Kong* and arrive in *Chicago, Indianapolis or New York* in hours, we must face the reality that these exotic killer diseases are not isolated health problems half a world away, but direct and immediate threats to security and prosperity here at home” (Obama & Lugar, 2005).

The paradigm of global health security reflects a Euro/US-centric vision and geography of health threats. The driving concern was the spread of diseases from the Global South, reaching the Global North (Davies, 2008; Fidler, 2005). While the 19th-century concerns were with diseases that were endemic in Europe, such as cholera, attention shifted in the 20th century to diseases that were prevalent in the Global South and that had already become under control in Europe and North America. The 1969 IHR covered the six most serious diseases: cholera, plague, yellow fever, smallpox, relapsing fever, and typhus. The major revision of the International Health Regulation (IHR) in 2005 was negotiated starting in 1995, catalyzed by the emergence of HIV/AIDS, and the resurgence of TB and other long-standing diseases in the South such as cholera in South America and the plague in India, as well as the emergence of new diseases such as Ebola in Africa. In this context, the lack of capacity and political will in the Global South was identified as a major gap in pandemic preparedness and a priority global policy concern. It is not surprising that when the SDGs were adopted in 2015, they included a target 3.d on pandemic preparedness, stated as “strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks (UN, 2015)” (italics mine).

The global health security agenda propelled a flurry of new initiatives to “fill in the gaps” in capacity, political will and financing, including revision of the IHR, bolstering a reporting, monitoring and evaluation system for IHR implementation, introduction of the Global Outbreak Alert and Response (GOARN) and the Global Preparedness Monitoring Board at the WHO. A number of initiatives were created outside of the WHO such as the Global Health Security Initiative, a partnership of Global North leadership: US, Canada, Mexico, UK, France, Germany, Italy, Japan, and the European Commission, and the development of an index—the Global Health Security Index at the Johns Hopkins University.

The paradigm of global health security has risen to dominate international discourse and frame policy-making. This discourse is compatible with a biomedical approach to understanding disease and technology-centric vertical interventions in global health. The 1991 IOM Report, for example, uses the language of “battle against infectious disease”, and vaccines and drugs as “weapons” (Committee on Emerging Microbial Threats to Health, Institute of Medicine (IOM Committee), 1991). The new discourse displaces from a human-centric paradigm and an understanding of multiple factors that affected people’s health outcomes including not only biomedical but also environmental and socioeconomic determinants. The human-centric approach framed international commitments of the 1970s, 1980s, and 1990s, aimed at all people having access to the highest standards of health care as a human right, as envisioned in the 1978 Alma Ata Declaration of Health for All (Birn et al., 2017). These approaches emphasized the importance of building national health systems, starting with primary health care that would consider health as a human right, and recognize the social determinants of health. In contrast, the unit of analysis in the health security paradigm is the country rather than individuals, and the strategy more in tune with the biomedical, vertical interventions, tending to neglect horizontal health system capacities. Considering health threats as national security threats brought in not only a new set

of ideas but also new actors from outside of the health field, notably politicians and national security professionals.

## SPAR score (indicator 3.d.1) as an epistemic infrastructure

### Materialities—IHR, SPAR, and JEE

Indicator 3.d.1 is the aggregated score of the SPAR report. The SPAR indicators measure a country's core capacity for public health emergencies and are a central element of the reporting and monitoring system in the implementation of the IHR (2005) (WHO 2005), specifically with reference to the commitments under this treaty for national capacity building specified in Annex 1. The process engages the government with international experts in a process of assessment, learning lessons, and designing strategies for addressing capacity gaps. The SPAR is a self-report submitted annually by governments. In addition to the SPAR, the monitoring framework includes several other elements: the Joint Independent External Evaluation (JEE), a voluntary assessment conducted by a group of independent experts every 5 years; the After Action Review (AAR) that reviews actions taken to respond to an outbreak or other event, and is aimed at identifying lessons and gaps in a country's public health emergency preparedness and response capacity; and the Simulation Exercises that are used to develop and assess preparedness and response plans, procedures and systems. The SPAR was introduced in 2010 while the other elements followed subsequently.

This indicator is embedded in the IHR, the legally binding international treaty governing health emergencies. While the SPAR score provides the data used in SDG reporting and monitoring, the wording of indicator 3.d.1 in the SDG framework SDG 3.d.1 refers to "International Health Regulations (IHR) capacity and health emergency preparedness" (UN, 2015). The SPAR score is the measurement tool, its data collection, reporting process, process for verification, and monitoring are defined by the IHR. The organizational and individual relationships, the political economy and geography within which the SPAR score operates, and the theories about international health risks that the score embeds are IHR.

The IHR is an international treaty that has almost universal global participation, with 196 state signatories. It provides "an overarching legal framework that defines countries' rights and obligations in handling public health events and emergencies that have the potential to cross borders (WHO meta data<sup>2</sup>). The purpose of the current IHR (2021) is to "prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade".

As a binding legal treaty, the IHR creates duties and obligations to comply with its core principles and commitments. These commitments are in three broad areas: (i) to detect and notify WHO of events that might constitute public health emergency of international concern; (ii) to build and maintain a defined set of core public health capacities; and (iii) to manage borders to protect international travel and transport. States are required to report annually on the second—and only second—of these obligations, the state of their core public health capacities which are defined in Annex 1 of the IHR and include two sections: Core Capacity Requirements for Surveillance and Response; and Core capacity requirements for designated airports, ports and ground crossings.

SPAR reporting is done by responding to a questionnaire or the IHR State Party Self-Assessment Annual Report (SPAR) through an electronic portal—e-SPAR. The SPAR framework includes 13 core capacities and 24 indicators to capture the requirements of Annex 1 of the IHR. These indicators are scored on a scale of 1–5 where 1 reflects no capacity, 2 limited capacity, 3 developed capacity, 4 demonstrated capacity, and 5 sustainable capacity. The scores for the 24 indicators are aggregated and transformed into an overall score on a 0–100 scale for each of the 13 capacities which are in turn aggregated into an overall national score. This score is reported by WHO to UN SDG monitor for indicator 3.d.1.

JEE has its own scoring system (WHO 2016) but overlaps with the SPAR framework, although there are some important differences, as will be discussed later in this paper. The JEE did not originate from the WHO but from the Global Health Security Initiative, a multilateral partnership of eight countries (Canada, France, Germany, Italy, Japan, Mexico, UK, and US), EU, and WHO. The implications of this will be discussed in later sections of the paper.

<sup>2</sup> [https://www.who.int/health-topics/international-health-regulations#tab=tab\\_1](https://www.who.int/health-topics/international-health-regulations#tab=tab_1).



## Implementation—actors and epistemic communities

Countries are engaging with the self-reporting and monitoring processes with respect to national capacity development, even if they do not submit annually. All 194 state parties have submitted their report at least once and annual submissions have ranged from 119 in 2015 to 191 in 2018. JEEs, which are voluntary, have been completed in 113 countries in the 5 years since the process was introduced in 2016. Moreover, 55 countries have followed up the self-assessment (SPAR) and external evaluation (JEE) with preparing National Action Plans (NAPs) that set up strategies and implementation plans for capacity building. Not surprisingly, most of the JEE efforts have taken place in developing countries: of the 52 countries in Africa region, 47 have completed JEEs, as have 18 out of 22 countries in the Eastern Mediterranean region, 8 out of 11 South East Asia. This contrasts with completion in 16 out of 64 countries in the European region, and 15 out of 43 in the Western Pacific region (WHO, 2021a).

In the context of UN treaties, most of which do not even have a systematic reporting and monitoring and evaluation processes, this level of engagement is relatively solid. Yet it is rather curious that in the debates about pandemic preparedness since the onset of the COVID-19 pandemic, compliance with the IHR has often been said to be inadequate. The WHO Committee on the review of the pandemic refers specifically to low SPAR scores (WHO, 2021b). This might be missing the point that organizational capacity is not built overnight. This assessment might be from a perspective of accountability and may be missing another important objective of the IHR monitoring system: to facilitate capacity building by countries. These concerns reflect a mindset that lacks sympathy with the realities of capacity challenges in the Global South.

Some officials at bilateral and multilateral agencies interviewed comment that the SPAR process appears to be generating meaningful learning amongst the public health professionals engaged with the challenge of building national capacity. As explained by WHO officials involved in IHR processes, the spirit of the monitoring and evaluation is to motivate national authorities to assess their capacities, analyze requirements, formulate coherent strategies, and make use of international assistance. The quantitative scoring in the SPAR facilitates assessment and strategy formulation. SPAR and JEE appear to be doing their work of facilitating capacity development. The fact that the scoring system uses self-scoring of qualitative capacities would render the system less rigorous yet more effective in contributing to self-learning and in developing a meaningful policy strategy for strengthening national capacity.

These processes engage networks of professionals and organizations, nationally and across borders. They are primarily public professionals, drawn from national ministries of health and institutes specializing in health emergencies, although the IHR framework is concerned with ensuring coordination with other ministries particularly in fields of security, food, and trade. In addition to public officials, this community engages with broader range of professionals, policy makers from foreign affairs, security, heads of government and academics engaged in debates about global health priorities and policies, particularly global health security. For example, the JEE was proposed and initially developed by Global Health Security initiatives and brought into the IHR process. Nonetheless, Ministry of health and WHO professionals form the core of this community.

WHO staff and other public experts from diverse countries are involved in JEE, NAP, and simulation exercises. The networks of scientists and other technical experts have developed over time, with important personal connections amongst them that transcend political boundaries. They constitute an internationally networked epistemic community of public health professionals who implement the IHR framework as a method of building preparedness against global health emergencies. At the same time, this network is tightly knit group, and a detailed network analysis of JEE process by Kentikelenis and Seabrooke raises concerns about the limited diversity within teams, and the use of a template for assessment that “can lead to groupthink and the legitimation of some conceptions of health emergency preparedness at the expense of others” (Kentikelenis & Seabrooke, 2021:6, p. 7). In contrast, the paper points out that self-reporting in the SPAR exercise may lead to underassessing capacity by low-income countries which might see it as an opportunity to build a case for financial aid.

## Measurement: actors and competing ideas

The IHR is a politically negotiated legal agreement that reflects global power hierarchies that shape inter-governmental negotiations, and incorporates ideas that dominate. The IHR prioritizes *surveillance* rather than response, and *international reporting* more than implementation of countermeasures. This is perhaps not surprising in that the IHR is a legal agreement among states. But at the same time,

it reflects the “global health security” mindset of public health emergencies, that turns to protecting national borders rather than people, and a notion of international cooperation based on mutual or self-interest rather than on global solidarity. It also frames health emergencies in the biomedical perspective, prioritizing technological means and neglecting primary care strategies.

Although the ultimate purpose of the IHR is to protect people from health threats, it is not focused on domestic public health capacity to manage epidemic outbreaks and other health threats, but rather on detection and international reporting of unusual events with potential for crossing borders. The IHR requires states to stop the spread of disease across their national borders and protect the health of people beyond, rather than within the boundaries. Annex I that spells out the core capacities required include commitments to: establish a National focal point who would be in communication with the WHO; develop and sustain core national capacities to detect, assess, notify, and respond to public health risks and acute events; notify public health emergencies within 24 hrs to the WHO; provide “public health rationale” for any health measures that might interfere with travel and international traffic; and report annually on the implementation of IHR.

The SPAR scoring framework embeds the paradigm of global health security and the priorities of surveillance and international reporting. It identifies 24 indicators for 13 IHR capacities which include: legislation and financing, IHR coordination and NFP functions, zoonotic events, food safety, surveillance, human resources, national health emergency framework, health service provision, points of entry, chemical events, and radiation emergencies. The indicators for these capacities focus mostly on administrative arrangements for detecting, assessment and analysis rather than on response to manage an epidemic for population health. Although this framework is aimed to measure state capacity to “detect, assess, notify and respond” to public health emergencies, most of the indicators relate to the first three of these capacities and little attention is given to capacity to respond to an epidemic outbreak to stem its spread to the population. The “response” required refers mostly to reporting.

The more detailed guidelines define benchmarks for SPAR assessment (WHO, 2019). Most of the indicators relate to broad administrative arrangements, particularly emphasizing laboratory infrastructure, point of entry protocols, and inter-sectoral coordination. What is notable is not so much the plethora of indicators for surveillance, reporting and technical capacity but the little attention given to the capacity necessary for national response to slow the transmission of the disease within the country, including the well-established public health and social measures to cut the transmission of the virus as well as for treatment of patients and development and access to vaccination. For example, the benchmarks for core capacity 12 for Emergency Response Operation does not refer to the classic public health and social measures that have proven essential in suppressing transmission such as testing and quarantine, contact tracing and cluster identification, social distancing, and hygiene. Effective implementation of such measures needs buy in from the whole of government and society, and the experience of the COVID-19 pandemic has highlighted the important role of state capacities in public communication, inter-sectoral coordination, and policy leadership, as well as societal strengths in public trust and social norms (see for example [Independent Panel for Pandemic Preparedness and Response \(Independent Panel\), 2021](#)). The SPAR benchmarks on inter-sectoral coordination illustrates the focus on administrative machinery and neglect the public; the framework focuses on between public health and agriculture to address food safety and zoonosis, or security to address biological, chemical and radiological incidents rather than with education, communications, media sectors to ensure effective public messaging to implement public health measures. One of the abiding lessons of the COVID-19 pandemic has been the central role of communications and trust in successful implementation of NPIs to stem the transmission of the disease, to implement vaccination campaigns, and to counter disinformation ([Independent Panel for Pandemic Preparedness and Response \(Independent Panel\), 2021](#)).

One illustration of where the neglect of public health and social measures arguably undermined effective response to the spreading virus concerns travel restrictions. These measures can be contrary to the objective of the IHR to manage pandemics while ensuring that measures do not reduce international trade and travel and cause economic and social disruptions. Nonetheless, more than half the countries imposed travel restrictions (exit and entry restrictions, screening at entry, quarantines at entry, etc. Recent studies that analyzed the effectiveness of different responses (travel restrictions, social distancing, medical supplies, public transport, enhancing detection, public education, etc.) found that border restrictions for travelers to be one of the most effective instruments (Haug et al., 2020). In countries with low community spread, with very limited capacity to treat the disease—such as in low



income countries—imposing tight controls on international travelers who might bring in the virus is one of the few available means possible.

## IHR, SPAR, and COVID-19 realities Invisibility in the SDG framework

One of the important functions of global goals is to draw attention to a neglected social challenge. But this target has not entered into public debates about the pandemic, not even in monitoring SDG progress. For example, target 3d and indicator 3.d.1 have never been mentioned in the annual progress reports published since 2016, including the 2021 report which focused on reviewing the impact of the pandemic (UN Statistics Division, 2021). With respect to national reporting, the impact of the pandemic on SDGs figured large in national reports—Voluntary National Reviews (VNRs) submitted to the High Level Political Forum in 2020 and 2021. Only 10 of the 45 reports were presented in 2020 (CDP Subgroup on VNRs, 2021) and 11 out of 41 were presented in 2021 (CDP Subgroup on VNRs, 2022).

The SPAR scores are mentioned in policy reviews of IHR implementation (WHO Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response, 2021), but in a perfunctory way to emphasize the low level of capacity achieved. It does not appear to have generated analyses. The inclusion of the indicator does not appear to have raised the profile of pandemic preparedness as a priority issue for sustainable development overall, nor reshaped discourses.

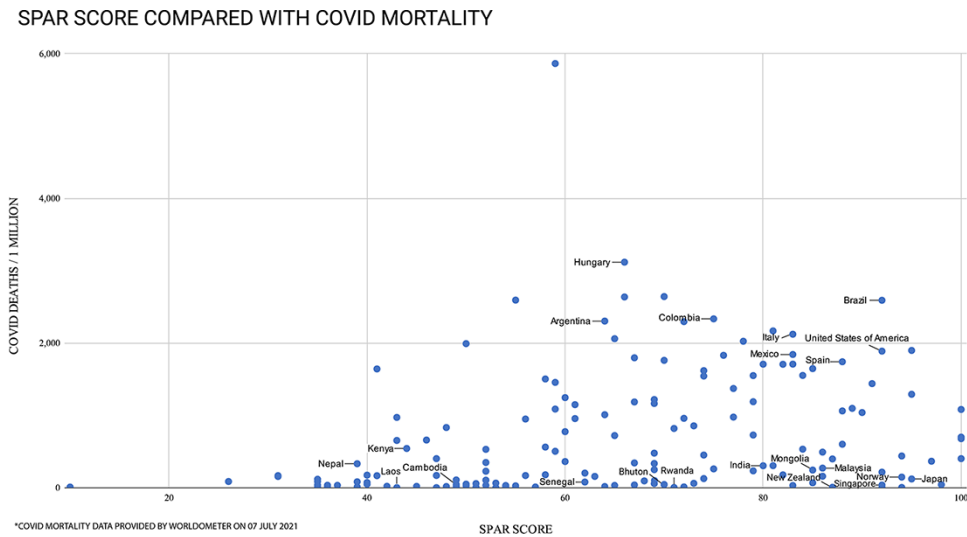
It is also interesting to note that the SPAR is less visible than other indicators of pandemic preparedness. The Independent Panel for Pandemic Preparedness and Response (Independent Panel) (2021) analyzed JEE scores and not the SPAR. And as elaborated in the next section, Global Health Security Index (GHSI) from Johns Hopkins University and its partners is better known amongst global health professionals and is being extensively used by policy bodies such as the World Bank and Gates Foundation (Kentikelenis & Seabrooke, 2021, p. 6).

## Faulty metrics

Ironically, for the first 12 months of the pandemic, before vaccines were released, it was not the developing countries of Asia and Africa but the high-income countries of North America and Western Europe that showed the least capacity to prevent the transmission of COVID-19 into the country and contain it once it went into community spread. For the first time in the post-war history of epidemics, there is a reversal of which countries are most heavily affected by a disease pandemic (Cash and Patel, 2020, p. 1687). Although COVID-19 emerged initially in China and the first outbreaks occurred in the neighboring countries, it was relatively well contained in Asia through 2020, including in the low-income countries of the region such as Laos, Cambodia, Bhutan, as well as middle-income countries such as Viet Nam and Thailand. Defying expectations, low-income countries, particularly countries of Sub-Saharan Africa experienced the lowest rates of cases and deaths.

SPAR scores were not a good benchmark framework for COVID-19 preparedness as measured by mortality rates. As shown in Figure 1, countries with SPAR scores above 80, considered to have fully developed and sustainable capacity, have some of the highest mortality rates, above 2000 per million. This include countries such as Sweden, US, UK, Mexico, and Brazil. By the same token, there are no countries with SPAR scores of below 40 that have mortality rates of above 2000 per million. The countries that have contained the transmission relatively well—with mortality rates below 1000 per million—included both high SPAR performing countries such as Norway, South Korea, El Salvador and New Zealand, as well as low SPAR score countries such as Nepal, Kenya, Maldives, and Sao Tome.

These results are not surprising considering the SPAR indicators were constructed to reflect IHR obligations and those emphasize surveillance and international reporting—capacities to assesses detect, assess and report health emergencies—as a priority rather than on implementing a public health countermeasures. The 13 core capacities include three public health capacities most relevant to a response to a pandemic threat: immunization, national health emergency framework, health service provision, and risk communication. But these are described in very generic terms, focusing particularly on procedures, facilities and supplies; emergency preparedness indicators include planning, management, and resource mobilization for emergency preparedness. For example, the benchmark guidance for communications includes organizational arrangements such as designating responsible units and individuals, effective coordination and effective communications. This top down administrative framework does not explicitly include indicators for capacity to respond to an epidemic outbreaks



**Figure 1.** SPAR scores and COVID-19 mortality rates, July 2021.

by implementing non-pharmaceutical interventions (NPIs) such as case identification, contact tracing and isolation, widespread testing, travel restrictions, and social distancing strategies such as closing businesses and schools, curfews, etc. These interventions require public health capacity for primary health care services, and a capacity to address the social determinants of health.

The pattern is similar for the JEE scores; with one exception (Kenya), all 9 countries with SPAR scores below 40 and low COVID-19 deaths also have JEE scores below 40. This is not surprising as the two frameworks are both constructed on the normative framework of the IHR and have almost identical indicators. Although Kentikelenis and Seabrooke caution that the self-reported data in SPAR is likely to result in under-assessment for developing countries, JEE and SPAR are strongly correlated with a regression coefficient of 0.75 (Kentikelenis & Seabrooke, 2021, p. 6).

SPAR and JEE are not the only scores of state capacity that missed the mark. Another measure is the Global Health Security Index (GHSI) that include six core capacities for prevention, detection, response, health systems, as well as compliance with IHR and risk environment. Like SPAR and JEE, GHSI reflects a state-centric conception of health security as threats from beyond state borders, and a policy perspective that prioritizes state surveillance and reporting, and investment in equipment and systems. Similarly, GHSI includes, but is weak on public health capacity of the sort that has been evidently essential for effective COVID-19 pandemic response as described above (Mahajan, 2021). Thus the results of GHSI align with those of the other two indices although with weaker correlation (Kentikelenis & Seabrooke, 2021, p. 6).

The results are even more clearly out of line with the realities of COVID-19, with US and UK ranked first and second, respectively (Dalglish, 2020; Mahajan, 2021; Wang et al., 2021). Yet this is the indicator that is generally better known and enters the mainstream discourse. While SPAR and JEE are instruments for the core professionals engaged in IHR, the GHSI is more widely used beyond the ambit of core public health actors such as NGOs, philanthropies, and non-health government departments. However, the GHSI is more squarely led by the proponents of global health security, and the corresponding epistemic community. While it drew on a wide array of international health experts in an advisory capacity, the core team is led by specialists in national security from the Nuclear Threat Initiative. The methodology of data gathering also differs, drawing on multiple secondary sources rather than local or international expert assessment.

Despite the differences in data collection approaches, and some differences in indicators, all three metrics focus on physical infrastructure and complex organization, the types of state capacity that resource poor countries are challenged to meet. GHSI is particularly aligned with income; of the 195 countries assessed, 13 score in the “most prepared” category for overall capacity, all high income countries of the Europe and North America, except middle-income Thailand and high-income South Korea. For the component in the index for rapid response to and mitigation of the spread of an epidemic,

the most prepared countries include UK, US, Switzerland, Netherlands, Thailand, Finland, Portugal, and Brazil; countries where contagion spread rapidly except for Thailand and Finland. With only a few exceptions, all countries of Africa fall into the least prepared category in the scores for overall preparedness and for rapid response. According to the SPAR scores, countries with “demonstrated” and “sustainable” capacity include some middle-income countries such as Brazil, India, and El Salvador along with high-income countries, while there are no low-income countries. Almost all countries in Sub-Saharan Africa and most income countries are in the GHSI’s least prepared category. All but four of x low-income countries score in SPAR categories with no capacity (1) or limited capacity (2).

The SPAR, JEE, and GHSI have the same genealogy, spearheaded by the dominant authorities in global health; states with economic and political power, experts recognized as leaders in the field of infectious diseases associated with prestigious organizations who have been leading global health security such as the US CDC and other leading national institutions. Although it drew on global expertise in the advisory panel of 21 experts, including 11 scientists from Nigeria, Japan, Pakistan, Liberia, Finland, India, Indonesia, Uganda, Peru, and China, GSI’s development was led by a US-based team at the Johns Hopkins University’s Bloomberg School of Public Health (JHU) with the Nuclear Threat Initiative Unit (NTI), and the Economist Intelligence Unit (EIU). It was funded by US philanthropies including the Gates Foundation and others.

Although the contradiction between these preparedness indices and COVID-19 outcomes is undisputable, and was clearly identified as an issue by the [Independent Panel for Pandemic Preparedness and Response \(Independent Panel\) \(2021\)](#), it has neither led to a widespread call to rethink the preparedness benchmarks nor served to challenge dominant assumptions about preparedness capacity needed to govern pandemics in the 21st century. The IHR is criticized not for its incoherence on matters such as travel restrictions, its adequate requirements for building domestic capacity, but for lack of compliance by states and their failure to invest in capacity ([WHO, 2021b](#)). This is well illustrated by the report of the [Independent Panel for Pandemic Preparedness and Response \(Independent Panel\) \(2021\)](#) that concludes “the failure of these metrics to be predictive demonstrates the need for a fundamental reassessment which better aligns preparedness measurement with operational capacities in real-world stress situations.” Yet the point is lost in the final conclusions and recommendations of the report that call for a new framework treaty because the IHR commitments are not being implemented, because the average global score is 64 out 100 not because the metrics and paradigm of health security need a reappraisal.

## Discussion and conclusions—epistemic infrastructure, power and ideas

This account of indicator 3.d.1 as an epistemic infrastructure highlights some puzzling aspects of indicators and global governance. While the literature on the technology of global governance has focused on the disruptive effects of indicators, this indicator has generated few discursive or policy consequences. It appears to be immune to challenge even from the experience of COVID-19; despite the undisputed failure of this indicator as an even approximate measure of health emergency preparedness against a predicted pandemic risk, the indicator did not set off a critical re-evaluation of the indicator, the substance of IHR and the assumptions about state capacity required to resist the risks of epidemic emergencies. It did not set off conversations about the structure of SPAR indicators: whether the 13 SPAR capacities are truly the minimum essential capacities needed, and what might be missing; whether the indicators effectively measure that capacity, and whether the scoring process is interpreting the indicators correctly. As of this writing, there are no published papers that could be identified raising these questions.

What is striking is the absence of a political demand for better measurement of preparedness. Such a demand might come from academic researchers or from civil society. But the measurement of pandemic preparedness is not a topic that has much constituency; the issue is critically important for informing policy choices and guiding investments to avert future crises. It is not a high-priority issue for civil society advocacy since it does not address a concrete obstacle for an interest group. Nor is it an obviously high-priority research topic for academics who prioritize topics with theoretical challenges. The challenge to the SPAR framework has to come from policymakers and politicians.

The indicator is imbued with vested interests, in terms of ideas and international standing, if not in terms of political or economic advantage. Authority and power in international politics comes not only

from military might and economic resources. Possession of “superior” knowledge and expertise, and prestige as a country are important sources of power in the global order. The ideational commitment to the global health security paradigm has proven resilient; the countries that spearheaded the Global Health Security initiatives whose world views see global health threats in the perspective of the Global North being threatened by diseases of the Global South, and take a biomedical approach to public health. Lack of capacity in those countries is seen as a core source of risk. The contradictory experience of COVID-19 when it was mostly the governments of the Europe and North America which were caught off guard and did not respond effectively, and in time did not shake this world view. The fact that the geography of COVID-19 contradicts SPAR assessments, and even more so, is an inconvenient truth. When the issue is raised, explanations turn outside the framework to exogenous factors, particularly trust and governance. Thus, the Independent Panel report takes an ambiguous position. It clearly faults governments for being unprepared as required by the IHR: “too many national governments lacked solid preparedness plans, core public health capacities and organized multisectoral coordination with clear commitment from the highest national leadership”. Yet to explain the discrepancy between SPAR scores and COVID-19 management performance, they focus not on the absence of plans and capacities but on the governance factors, pointing out how the US scored well in GHSI overall, but scored zero on public confidence in government.

To challenge the SPAR framework is bureaucratically and politically cumbersome and the results would be unpredictable since the framework must be adopted by the World Health Assembly. It is not a process that the powerful countries with a vested interest in global health leadership can control. In the meanwhile, the GHSI 2021 rankings is being reviewing the index framework, including “indicator weighting strategies”, and comparing how GHSI compared to real world outcomes of the pandemic (NTI, 2021). This is an easier process that is entirely managed by the project itself.

Internationally agreed measurement tools are inescapably political instruments. The SPAR framework is integral to the IHR, a legal agreement. Change in the measure would require political negotiations. Vested interests relating to the superiority of ideas, expertise and international standing are particularly germane in this case precisely because the dominant perspective “securitizes” health as a national defense challenge. A human centered conception of health security—as health security or the human right to health—would frame health risk preparedness in a different way, focused on wellbeing of individuals.

The case also illustrates the importance of epistemic communities in shaping measurement tools. The security thinking and bio-medical approaches in constructing the index are evident in the background of the core technical team that developed the index. The team includes staff of both JHU and NTI, the former being epidemiologists and other specialists in public health. The NTI members are from the defense field. It is led by two senior experts from NTI specializing in biohazards, nuclear, chemical and biological warfare, trained in biology, with professional experience in agencies dealing with defense such as US Departments of Defense and Homeland Security. These disciplines of bio-medical approach to public health. The team composition is notable for its lack of expertise in socio-economic determinants of health, and rights based approach to healthcare. Largely a US team, it also lacks diverse global perspectives. The SPAR framework was developed on a similar template of identified but at the WHO where the staff involved would have more diverse national backgrounds, more rooted in long standing public health traditions, and hold global world views. So it is notable that the SPAR scores are less aligned with per capita income levels than the GHSI scores.

Epistemic communities are important in these particular indicators because they are not based on empirical observations and measurement, but on subjective judgements on qualitative standards. They are based on questionnaires and benchmarks that are defined descriptively.

The case of the SPAR scores and measurement of global health risks in this pandemic highlights the tight relationship between power and the use of indicators in global governance. Indicator 3.d.1 in the SDG framework appears to have had little impact on shifting agendas, contrasting with the way that the MDG targets and indicators created narratives that reshaped agendas and reset priorities, highlighting some issues—such as maternal mortality as an issue in maternal health and reproductive rights, while casting a shadow on others such as family planning. The target for health emergency preparedness did not mobilize greater priority for it, nor redefine the concept. The powerful institutions used this target to reinforce—global health security—and define it in a particular way that was already established.

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None declared.

## References

- Birn, A.-E., Pillay, Y., & Holtz, T. (2017). *Textbook of global health*. Oxford University Press.
- Broome, A., & Quirk, J. (2015). Governing the world at a distance: The practice of global benchmarking. *Review of International Studies*, 41(5), 819–841. <https://doi.org/10.1017/S0260210515000340>.
- Cash, R., & Patel, V. (2020). Has COVID-19 subverted global health? *The Lancet*, 395(10238), 1687–1688. [https://doi.org/10.1016/S0140-6736\(20\)31089-8](https://doi.org/10.1016/S0140-6736(20)31089-8).
- CDP Subgroup on VNRs. (2021, July). *What did the 2020 Voluntary National Review (VNR) Reports Still Not Tell us?* UN CDP. <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/CDP-bp-2021-52.pdf>.
- CDP Subgroup on VNRs. (2022, July). *What did the 2020 Voluntary National Review (VNR) Reports Still Not Tell us?* CDP Background Papers. [https://www.un.org/development/desa/dpad/document\\_cdp/cdp-background-paper-series/](https://www.un.org/development/desa/dpad/document_cdp/cdp-background-paper-series/).
- Committee on Emerging Microbial Threats to Health, Institute of Medicine (IOM Committee). (1991). *Emerging Infections: Microbia Threats to Health in the United States*. National Academies Press.
- Dalglish, S. L. (2020). COVID-19 gives the lie to global health expertise. *The Lancet*, 395(10231), 1189. [https://doi.org/10.1016/S0140-6736\(20\)30739-X](https://doi.org/10.1016/S0140-6736(20)30739-X).
- Davies, S. E. (2008). Securitizing infectious diseases. *International Affairs*, 84(2), 295–313. <https://doi.org/10.1111/j.1468-2346.2008.00704.x>.
- Davis, K. E., Fisher, A., Kingsbury, B., & Merry, S. (2012). *Governance by indicators*. Oxford University Press.
- Davis, S. L. (2017). The uncounted: Politics of data and visibility in global health. *International Journal of Human Rights*, 21(8), 1144–1163.
- Fidler, D. (2005). From international sanitary convention to global health security: The new international health regulations. *Chinese Journal of International Law /Articles by Maurer Faculty*, 4(2), 325–392. <https://doi.org/10.1093/chinesejil/jmi029>.
- Fukuda-Parr, S. (2017). *Millennium development goals: Ideas, interests and influence*. Routledge.
- Fukuda-Parr, S., & McNeill, D. (2019). Knowledge and politics in setting and measuring the SDGs: Introduction to special issue. *Global Policy*, 10(S1), 5–15. <https://doi.org/10.1111/1758-5899.12604>.
- Fukuda-Parr, S., & Yamin, A. (2015). *The MDGs, capabilities and human rights: The power of numbers to shape agendas*. Routledge.
- Haug, N., Geyrhofer, L., Lodei, A., Dervic, E., Desvars-Larrive, A., Loreto, V., ... Kilmek, P. (2020). Ranking the effectiveness of worldwide COVID-19 government interventions. *Nature Human Behaviour*, 4(12), 1303–1312. <https://doi.org/10.1038/s41562-020-01009-0>.
- Independent Panel for Pandemic Preparedness and Response (Independent Panel). (2021, May 21). *COVID-19: Make it the Last Pandemic*. <https://theindependentpanel.org/mainreport/>.

- Kentikelenis, A., & Seabrooke, L. (2021). Organising knowledge to prevent global health crises: A comparative analysis of pandemic preparedness indicators. *BMJ Global Health*, 6(8), 1–12. <https://gh.bmj.com/content/6/8/e006864>.
- Mahajan, M. (2021). Casualties of preparedness: The Global Health Security Index and COVID-19. *International Journal of Law in Context*, 17(2), 204–214. <https://doi.org/10.1017/S1744552321000288>.
- Merry, S. E. (2016). *The seductions of quantification: Measuring human rights, gender violence and sex trafficking*. Chicago University Press.
- Merry, S. E. (2019). Sustainable development goals confronts the infrastructure of measurement. *Global Policy*, 10(S1), 146–148. <https://doi.org/10.1111/1758-5899.12606>.
- Miller, P. (2001). Governing by numbers: Why calculative practices matter. *Social Research*, 68(2), 379–396. <http://www.jstor.org/stable/40971463>.
- NTI. (2021, May 9). Global Health Security Index International Panel of Experts 2021 Meetings. NTI News. <https://www.nti.org/newsroom/news/global-health-security-index-international-panel-experts-2021-meetings/>.
- Obama, B., & Lugar, R. (2005, June 5). *Grounding a pandemic*. New York Times.
- Poovey, M. (1998). *A history of the modern fact*. University of Chicago Press.
- Tichenor, M., Merry, S. E., Grek, S., & Bandola-Gill, J. (2022). Global public policy in a quantified world: Sustainable Development Goals as epistemic infrastructures. *Policy and Society*. 41(4), 431–444. <https://doi.org/10.1093/polsoc/puac015>.
- UN. (2015, September 15). *Transforming Our World: The 2030 Agenda for Sustainable Development*. A/RES.66/288. UN General Assembly. [www.un.org/ga](http://www.un.org/ga).
- UN Statistics Division. (2021). *The Sustainable Development Goals Report 2021*. UN Statistics Division. <https://unstats.un.org/sdgs/report/2021/>.
- Wang, Z., Duan, Y., Jin, Y., & Zheng, Z.-J. (2021). Coronavirus disease 2019 (COVID-19) pandemic: How countries should build more resilient health systems for preparedness and response. *Global Health Journal*, 4(4), 139–145. <https://doi.org/10.1016/j.glohj.2020.12.001>.
- WHO. (2005). *International Health Regulations (2005) Third Edition (IHR (2005))*, WHO. <https://www.who.int/publications/i/item/9789241580496>.
- WHO. (2007). *Frequently Asked Questions About the International Health Regulations (2005)*. WHO International Health Regulations. <https://www.who.int/ihr/about/FAQ2009.pdf>.
- WHO. (2016). *Joint External Evaluation Tool*. WHO. [https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172\\_eng.pdf?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1).
- WHO. (2019, February). *WHO Benchmarks for International Health Regulations*. WHO. <https://apps.who.int/iris/bitstream/handle/10665/311158/9789241515429-eng.pdf?sequence=1>.
- WHO. (2021a, May 27). *Critical Preparedness, Readiness and Response Actions for COVID-19: Interim Guidance*. <https://file:///Users/fukudaps/Downloads/WHO-2019-nCoV-Community-Actions-2021.1-eng.pdf>.
- WHO. (2021b, August 18). *Joint External Evaluation (JEE)*. WHO. <https://extranet.who.int/sph/jee>.
- WHO Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response. (2021). *Strengthening preparedness for health emergencies: Implementation of the International Health Regulations (2005)*. WHO A74/9.Add.1.
- Winkler, I., & Williams, C. (2017). The sustainable development goals and human rights: A critical early review. *The International Journal of Human Rights*, 21(8), 1023–1028. <https://doi.org/10.1080/13642987.2017.1348695>.