

Global guidance on monitoring public health and social measures policies during health emergencies



Global guidance on monitoring public health and social measures policies during health emergencies

Global guidance on monitoring public health and social measures policies during health emergencies

ISBN 978-92-4-009444-4 (electronic version)

ISBN 978-92-4-009445-1 (print version)

© World Health Organization 2024

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (<http://www.wipo.int/amc/en/mediation/rules/>).

Suggested citation. Global guidance on monitoring public health and social measures policies during health emergencies. Geneva: World Health Organization; 2024. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <https://iris.who.int/>.

Sales, rights and licensing. To purchase WHO publications, see <https://www.who.int/publications/book-orders>. To submit requests for commercial use and queries on rights and licensing, see <https://www.who.int/copyright>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Design by Lushomo.

Contents

Acknowledgments	iv
Abbreviations	v
Executive Summary	vi
1. Introduction	1
1.1 Public health and social measures during health emergencies	1
1.2 Lessons learned from recent pandemics	2
1.3 Objectives	2
1.4 Target audience	3
1.5 The case for monitoring PHSM policies	3
2. Contexts for public health and social measures monitoring	5
2.1 Guiding principles	5
2.2 Part of the emergency preparedness and response cycle	6
3. Establishing a monitoring system	7
3.1 Step 1: establishing the monitoring system	7
3.2 Step 2: designing data collection methods	9
3.3 Step 3: categorizing and recording measures and implementation	12
3.4 Step 4: quality assurance	18
3.5 Step 5: data quantification and processing (optional)	19
3.6 Step 6: planning for data analysis and dissemination	19
4. Considerations for using monitoring data	22
4.1 Using data for decision-making and responses	22
4.2 Using data for research	22
4.3 Gaining additional insights by incorporating other data sources	23
4.4 Constraints on PHSM monitoring data	27
5. Conclusions	28
References	29
Annex 1. Methods used to develop this guidance	31
Annex 2. Minimum set of critical policy elements for a database	33
Annex 3. Policy categories and subcategories for public health and social measures, with examples	36

Acknowledgments

The World Health Organization (WHO) expresses its sincere gratitude to many stakeholders for the time taken to review and share their expertise and feedback on this document. The input and advice received from a wide range of partners and experts at the global, regional and national levels ensured that this guidance is actionable and relevant.

WHO would also like to thank colleagues who have contributed to the development of this guidance, including those who have reviewed it and provided input.

WHO also thanks the members of its Public Health and Social Measures (PHSM) Steering Group, who are focal points for PHSM in the six regional offices and at headquarters. Members of the Steering Group are denoted with an *.

WHO headquarters

Elena Altieri, Brett Archer, Amaia Artazcoz Glaria, April Baller, Valentina Baltag,* Sara Barragan Montes, Maria Borodina, Donald Joseph Brooks, Vanessa Cozza, Marie-Amélie Degail Chabrat,* Julia Fitzner, Luca Fontana, Shoaib Hassan, Mika Kawano, Monika Kosinska,* Olivier le Polain,* Sandra Machiri, Christopher Mikton,* Dubravka Selenic Minet, Johnny Nehme, Miriam Orcutt,* Maria Clara Padoveze Fonseca Barbosa, Edith Patouillard, Boris Pavlin, Dmitriy Pereyaslov, Zubin Shroff,* Sudhvir Singh,* Ninglan Wang,* Victoria Willet and Teresa Zakaria.

WHO regional offices

Regional Office for Africa: Abdoulaye Yam.*

Regional Office for the Americas: Ana de la Garza* and Andrea Patricia Villalobos Rodriguez.*

Regional Office for South-East Asia: Yuka Jinnai, Masaya Kato,* and Sandip Shinde.*

Regional Office for Europe: Jennifer Addo, Ana-Paula Coutinho Rehse, Christian Gapp, Katrine Habersaat, Michala Hegermann-Lindencrone, Olha Izhyk, Pernille Jorgensen, Aimee Latta, Sandra Lindmark, Leonardo Palumbo, Richard Pebody, Martha Scherzer, Peter Sousa, Stefan Voinea and Marc-Alain Widdowson.

Regional Office for the Eastern Mediterranean: Huda Anan* and Fatima Arifi.*

Regional Office for the Western Pacific: Nam Phuong Nguyen.*

WHO country office

Cambodia: Sarika Patel.*

WHO thanks the ministries of health and public health institutes from all six WHO regions as well as the representatives from academia, civil society organizations, and international and nongovernmental organizations for their contributions, in particular the representatives who participated in consultations at the WHO meeting convened under the title *Building coalitions for strengthening PHSM during health emergencies*, held during 14–15 June 2023, and the Second WHO global technical consultation on PHSM during health emergencies, held during 21–23 November 2023.

Thanks also go to stakeholders and partners who provided substantial input including: Soha Shawqi Albayat (Qatar Ministry of Public Health), Ben Edwards (The Australian National University), Chris Grundy (London School of Hygiene and Tropical Medicine), Thomas Hale (University of Oxford),

Janaina Barrozo Hirata (United Nations Educational, Scientific and Cultural Organization, UNESCO), Mo'tasem Mousa Ali Hsainat (Jordanian Ministry of Health), Sarah Karmin (United Nations Children's Fund, UNICEF) and Andrea Vaccaro (University of Oxford).

A special thank you is also due to representatives of the European Centre for Disease Prevention and Control who provided valuable insight and comments during all stages of the development of this guidance, including the concept note, outline and drafts: Thomas Hofmann, Emma Lof, Ettore Severi, and Jonathan Suk.

This tool was developed to support Member States, partners and academia, as well as WHO regional and country offices; it was finalized by the PHSM

Secretariat in the High Impact Events Unit in the Epidemic and Pandemic Preparedness and Prevention Department at WHO headquarters, in particular by Ryoko Takahashi, Ramona Ludolph, Krista Kruja and Ponnu Padiyara, under the leadership of Tim Nguyen, Sylvie Briand and Maria Van Kerkhove; and the Country Health Emergency Preparedness and International Health Regulations Department at the WHO Regional Office for Europe, in particular by Tanja Schmidt,* Dominic Cocciolone, Lisa Owen, Christoph Wippel and Jussi Sane, under the leadership of Ihor Perehinets* and Gundo Weiler.

Financial contributions: Funding for the development of this document was provided by the Norwegian Ministry of Health and Care Services.

Abbreviations

IHR (2005) International Health Regulations (2005)

PHSM public health and social measures

WHO World Health Organization



This symbol is used to signpost a pro tip for readers that might be especially helpful.



This symbol denotes a special case or unique situation.

Executive Summary

Context

Public health and social measures (PHSM) are nonpharmaceutical interventions implemented by individuals, communities, institutions and all levels of government to reduce the risk and scale of transmission of infectious diseases. PHSM are often the first interventions implemented at the onset of a health emergency, and in the absence of equitably distributed medical countermeasures, they may be the only measures available to control an outbreak. Monitoring the implementation of PHSM policies is crucial in supporting evidence-informed decision-making, and it will enable the systematic collection of comparable data to facilitate measurement of the effectiveness and impact of such measures. Experiences during COVID-19 revealed there is a lack of standardized monitoring guidance for PHSM, which led to different taxonomies, definitions and data collection methodologies being used to monitor PHSM policies.

Objective of this guidance

This global guidance aims to facilitate systematic and harmonized data collection about, and monitoring of, PHSM policies implemented by governments during health emergencies. The guidance is intended for policy-makers, health authorities, responders and researchers in multiple sectors and at various levels responsible for responding to public health emergencies and developing PHSM policies, and provides key actions for PHSM policy monitoring in both preparedness and response.

The guidance provides actionable steps for establishing and maintaining a robust PHSM monitoring system, a monitoring team and a database, a taxonomy of PHSM categories, and a process for consistent and transparent data collection. Having standardized

guidance for monitoring will allow countries to measure the effectiveness and the impact of PHSM.

By promoting a harmonized approach, this guidance facilitates research and evidence-informed decision-making on PHSM, and it contributes to the global effort to strengthen health emergency preparedness and response activities.

This document is a living resource and will be updated periodically to reflect the evolving landscape of PHSM and emerging good practices in the field.

1. Introduction

1.1 Public health and social measures during health emergencies

Public health and social measures (PHSM) refer to nonpharmaceutical interventions implemented by individuals, communities, institutions and all levels of government that aim at reducing the risk and scale of infectious disease transmission by decreasing relevant exposures, or making them safer, or both (1, 2). PHSM can also be applied in response to health emergencies other than infectious disease outbreaks, for example to limit exposure to chemical and radiation hazards or in the aftermath of disasters and conflicts that jeopardize public health.

PHSM range from active case-finding and contact identification measures (e.g. testing, screening, isolation and quarantine) to personal protection measures (e.g. practicing respiratory etiquette and safe food handling, and using bed nets), environmental measures (e.g. ventilation, and water and sanitation measures), social measures (e.g. modification of mass gatherings and opening hours for schools or businesses, physical distancing), and international travel and trade measures (e.g. entry or exit screening, travel bans).

PHSM are the first and often the only intervention available at the onset of an outbreak when effective medical countermeasures, such as vaccines and therapeutics, have not been developed or equitably distributed. In tandem with medical countermeasures, PHSM play a critical role throughout the different stages of health emergencies and form part of a robust countermeasure strategy.

The combination of PHSM used and the level of stringency of interventions are contingent on

multitudes of fixed and dynamic factors. These encompass modes of transmission, epidemiological situations and contextual factors, and their broader impacts on health, societies and economies.

Contextual factors – such as health system capacity, the availability of social security systems, public risk perception, cohesion and trust in authorities – influence the feasibility, acceptability and uptake of PHSM, which in turn affect their efficiency and effectiveness (3).

PHSM can have unintended negative consequences on the health and well-being of individuals, communities, societies and economies, for example by increasing loneliness, unemployment, food insecurity and the risk of domestic violence, and by slowing productivity. Vulnerable and marginalized communities, such as migrants, women and children in particular, may experience disproportionate impacts from PHSM in addition to the burden of the health emergency itself. Hence, PHSM need to be implemented with a focus on equity and consideration of their risks and benefits.

In 2021, WHO launched the multiyear Initiative to Measure the Effectiveness and Impact of PHSM During Health Emergencies to assess their social, health and economic effects due to the urgent need to understand their broader impacts and strengthen their successful and equitable implementation to counter emerging and re-emerging infectious hazards (4). The Initiative aims to strengthen the global evidence base on PHSM and to inform the development of action-oriented guidance, mechanisms and tools for decision-makers. Its four strategic key areas are: (i) global monitoring and reviewing of PHSM data and research, (ii) strengthening PHSM research methodology and capacity, (iii) increasing precision in PHSM decision-making, and (iv) systematically integrating PHSM into health emergency leadership and governance.

1.2 Lessons learned from recent pandemics

During the COVID-19 pandemic, several independent PHSM trackers emerged to monitor government responses and interventions (5), and these played crucial roles in capturing and analysing data related to PHSM and response policies. Their monitoring approaches, however, varied in terms of categories, taxonomies, monitoring time frame, geographical coverage and the methods used to analyse the stringency level of implementation. Due to limited coordination and the absence of a harmonized monitoring framework, challenges in comparing data and variations in the quality of data became evident (5).

During the COVID-19 pandemic, intra-action reviews and after action reviews revealed (6) that PHSM policies were not adequately or consistently monitored, resulting in gaps in evidence for informing decision-making about them. The absence of a centralized digital monitoring system during recent pandemics, including COVID-19 and mpox (monkeypox), meant that countries experienced a cumbersome process of individually reporting the measures implemented via surveys. This experience underscores the pressing need to develop a digital monitoring toolkit to facilitate efficient, real-time monitoring and reporting of measures during public health emergencies. Standardized guidance with a harmonized framework for data collection, metrics and principles can facilitate collaboration and knowledge-sharing among trackers, promote data completeness and quality, enable better comparisons and analysis of policies across regions and countries, and enhance the overall effectiveness and reliability of PHSM tracking efforts going forward (7).

1.3 Objectives

This document aims to provide guidance and resources for monitoring PHSM policies to facilitate systematic and harmonized data collection and to enable evidence-informed decision-making for PHSM across countries. This guidance focuses on policies at the

national and subnational levels of government that are recommended or enacted during health emergencies. Thus, PHSM policies enacted by the private sector are outside the scope of this document. This guidance was developed through a multistage consultative process that included technical experts and key stakeholders (Annex 1). This guidance will support PHSM monitoring efforts during health emergencies for Member States and other relevant stakeholders.

Specific objectives of this guidance are to:

1. provide a framework for monitoring and selecting key PHSM categories and associated indicators for measuring and reporting on PHSM policies and implementation approaches;
2. provide flexible and customizable tools that can be used to set up a tracking system applicable to various hazards at the national and subnational levels to assist users in systematically tracking, analysing and reporting data on PHSM policies;
3. accelerate the availability and use of timely and context-specific data about PHSM policies to allow for continual adjustment as necessary;
4. enable the analysis and interpretation of temporal correlations with other response measures, such as medical countermeasures, by highlighting potential points and resources to consider.

This guidance does not:

- contain recommendations about the implementation and effectiveness of individual or combination PHSM policies or guidance about how to evaluate the efficacy or impact of these measures;
- extend to monitoring medical countermeasures or supportive and enabling measures, such as risk communication, infodemic management and social protection policies;
- aim to provide an exhaustive list of all PHSM;
- provide detailed information about methods for analysing and reporting data on PHSM policy monitoring.

1.4 Target audience

This guidance is intended for stakeholders who play crucial roles in formulating and implementing PHSM during health emergencies, such as policy-makers, and staff at ministries of health and other relevant government ministries, public health institutes and in academia. By targeting this audience, the guidance aims to ensure that the key decision-makers and institutions responsible for responding to public health emergencies and developing policies and research have access to the necessary information and resources to effectively monitor and subsequently assess PHSM interventions.

1.5 The case for monitoring PHSM policies

At the Seventy-fourth World Health Assembly, Member States requested WHO “to develop a global framework to generate, monitor, compare and evaluate research and policies” about PHSM “to harness global knowledge and expertise and to translate evidence into effective health emergency preparedness and response policies” (8). Monitoring PHSM policies serves several critical purposes including supporting decision-making during health emergencies, informing research and helping Member States meet additional reporting obligations.

1.5.1 Supports decision-making

PHSM decision-making and government responses vary according to an interplay of unique contextual factors, including epidemiological, social, economic and health system parameters. Additionally, PHSM policies in one country can influence policies in other countries. Hence, it is imperative to establish a system for collecting, analysing and sharing robust policy data across communities and local and national authorities. This sharing will:

- **facilitate policy coordination** – Transparently monitoring and sharing data facilitates policy coordination across national and subnational

authorities in countries (e.g. across provinces and districts). This coordination is vital for creating a unified response to health emergencies;

- **foster transparency and trust** – Ensuring that data are publicly available reduces the spread of misinformation and conspiracy theories by providing the public with reliable information;
- **enable evaluation of a policy’s effectiveness and help to inform adjustments** – Ensuring the timely monitoring and collection of data are crucial for quickly evaluating the uptake, effectiveness and impact of policies. These steps help to assess what is working, which combination of measures is effective and what needs adjustment and fine-tuning during a health emergency;
- **inform equitable implementation of policies** – Tracking is essential to ensure the equitable implementation of policies, and this tracking can cover both PHSM policies and other social and protection measures;
- **help to monitor PHSM in relation to epidemiological situations** – Monitoring PHSM and the epidemiological situation together allows for measures to be tailored as the situation evolves;
- **help to mobilize financial resources and the workforce** – Data enable the mobilization and deployment of PHSM-related financial resources and workforce where they are most needed. This promotes the efficient use of resources to address health emergencies.

1.5.2 Informs research

Standardized monitoring supports systematic and robust comparisons, and evaluation of the effectiveness of PHSM; facilitates mathematical modelling for predicting outcomes; and allows for seamless integration with other data sets, such as those that assess behavioural patterns, epidemiological data and the impact of PHSM. These contributions are important for advancing research efforts during and after an emergency.

1.5.3 Ensures compliance with the International Health Regulations (2005) and implementation of recommendations from the review committee

Recommendations by the International Health Regulations (2005; IHR) review committee and World Health Assembly have aimed to address the challenges and needs highlighted by responses to recent health emergencies. By establishing a robust PHSM monitoring function, Member States can address recommendations for:

- **compliance with IHR (2005) provisions (9)** – This guidance emphasizes the systematic monitoring of response policies, which is integral to ensuring States Parties comply with the provisions outlined in article 43 of the IHR (2005) regarding reporting additional health measures to WHO. By establishing robust monitoring systems, countries can better track and evaluate their implementation of travel and trade measures during health emergencies as part of their PHSM monitoring;
- **peer review and collaboration (10)** – The consideration of a peer-review mechanism aligns with the focus of this guidance on collaboration and learning from good practices. By facilitating mutual support mechanisms and networks at regional and global levels, this guidance supports the idea of sharing data and knowledge to collectively improve preparedness and response efforts;

- **engaging with additional stakeholders (11)** – This guidance encourages collaboration with stakeholders at both the national and subnational levels, including with non-health sectors, professional organizations and academic institutions. The expertise, resources and support of these stakeholders can be utilized to enhance monitoring and implementation. Collaborating with national focal points can further strengthen support networks for monitoring and reporting requirements towards meeting IHR (2005) standards;
- **reviewing and strengthening tools (9)** – This guidance aligns with the need to review and strengthen tools and processes for assessing and sharing information during an outbreak. By providing a comprehensive framework for PHSM monitoring, the guidance contributes to the enhancement of monitoring tools and processes, taking into account lessons learned from the COVID-19 pandemic and other health emergencies.

1.5.4 Meets additional reporting obligations

Countries have reporting obligations beyond the IHR (2005), including regional commitments. This guidance aims to support countries in aligning PHSM data collection with regional reporting requirements. This alignment ensures data consistency and comparability, as well as effective global health surveillance and responses, by utilizing common definitions provided by WHO.

2. Contexts for public health and social measures monitoring

2.1 Guiding principles

PHSM monitoring is guided by the following principles.

- **Agile and forward-looking:** PHSM monitoring is adaptable to changing circumstances, enabling swift adjustments in response strategies, and ensuring future preparedness.
- **Interoperability:** Monitoring employs a structured framework that can be aligned with standardized data formats and protocols, allowing for comparisons across regions and time frames, as well as facilitating continual data exchange between different entities and areas of work.
- **Transparency:** Transparent mechanisms for data collection and reporting ensure that information is accessible and understandable to all stakeholders.
- **Open access and data-sharing:** PHSM monitoring data are a public good; sharing data and ensuring it is accessible to the international community are crucial for informing responses to current and future health emergencies.
- **Timely and comprehensive data collection:** The prompt and thorough collection of data are needed to identify trends to ensure rapid decision-making about response strategies; and it is important to ensure that rigorous data quality checks are performed in the backend.
- **Evidence-informed decision-making:** Data collected through monitoring provide the evidence necessary to support decision-making and guide effective adjustments to policies and responses.
- **Mode-of-transmission-based approach:** Monitoring focuses on data relevant to the mode of disease transmission so that responses can be tailored to the specific characteristics of each outbreak.
- **Continual learning and improvement:** Monitoring feedback loops facilitates continual learning from previous responses, thus informing improvements for better research, and readiness and response strategies.

2.2 Part of the emergency preparedness and response cycle

Monitoring decision-making about PHSM and implementation is an integral part of the entire emergency management cycle, ensuring agility, effectiveness and continual improvements in public health responses through all levels of the emergency management cycle.



2.2.1 Preparedness

During the preparedness phase, PHSM monitoring can be strengthened through activities such as establishing monitoring systems, training personnel and undertaking simulation exercises to facilitate a swift and flexible transition into the response phase when an emergency arises.



2.2.3 Recovery

During the recovery phase, data collected through monitoring play a vital role in efforts to evaluate the impact of PHSM and guide the restoration of public health and social systems within a country; additionally, valuable lessons can be extracted for future planning.



2.2.2 Response

During the emergency response phase, the monitoring process is crucial to track PHSM policies, assess their implementation, understand their effectiveness and uptake, facilitate real-time decision-making and ensure that a country's response is coordinated as well as adapted to the evolving situation.



2.2.4 Prevention

Historical data, collected through monitoring, can contribute to the prevention phase by using the analysis of past data to refine a country's emergency strategies and action plans. This phase supports the development of evidence-based interventions to prevent the re-emergence of diseases and mitigate potential hazards through risk-prevention strategies.



3. Establishing a monitoring system



Preparedness

3.1 Step 1: establishing the monitoring system

Establishing a PHSM monitoring system will facilitate the systematic and harmonized collection of data on PHSM policies implemented by governments during health emergencies. Setting up such a system requires establishing a dedicated team for monitoring, effectively collaborating with relevant stakeholders during all phases of the health emergency and identifying sustainable financial resources for setting up and maintaining the monitoring system.

3.1.1 Define the mandate, functions, roles and responsibilities

The initial phase of developing a PHSM monitoring system involves establishing a specialized monitoring function and ensuring there is a dedicated team. Because PHSM are implemented at many different levels and across sectors, it is possible to assemble this team at a regional, national or subnational level within various

governmental and academic sectors, including public health institutes, ministries of health, national research centres and universities. Where systems already exist, they can be used to avoid duplication of effort.

As a starting point, a monitoring system can be embedded within the area of government responsible for PHSM decision-making. This ensures that monitoring assets are strategically positioned to gather policy information effectively (discussed further in Section 3.2, Step 2). Establishing a monitoring system here encourages seamless collaboration and information-sharing. Depending on the country's context and capacities, a public health institute may be well placed to perform the monitoring function. Academic institutions can also be considered if the government does not have adequate capacity to set up this function directly.

Wherever the monitoring system is established, it is critical that this entity is able to carry out data collection and entry, data analysis and interpretation, and the preparation and dissemination of reports. Additionally, the organization should also be able to coordinate with other emergency response teams and have the expertise or resources to engage in training and capacity-building.

When initiating a monitoring system, it is important to document the experience from the beginning to leave a legacy for future response teams so that they can re-establish monitoring systems quickly and efficiently.



Pro tip

The placement of the PHSM monitoring team can promote collaboration, data standardization and efficient decision-making during the emergency response effort

Wherever the PHSM monitoring system is based, ensure that it is closely linked to other sectors involved in emergency response at the national and subnational levels, and especially to the team that might be developing PHSM policies. This will allow for standardization of data collection and facilitate the use of PHSM monitoring data in decision-making. Also, open communication will protect against duplication of effort and enable collaboration.

3.1.2 Identify key stakeholders based on the event

The success of a PHSM monitoring system hinges on effectively identifying and collaborating with relevant stakeholders before, during and after the health emergency. Lessons identified from past emergencies underscore the value of this synergy. Relevant stakeholders may come from a wide range of groups, such as local government and health authorities, and nongovernmental and civil society organizations, from the local level to the intermediate and national levels and even the global level. Local governments and health authorities can help with subnational PHSM policy monitoring, and nongovernmental and civil society organizations are critical for PHSM policy dissemination and communication. These various stakeholders can offer additional information about how PHSM policies are applied to inform intra- and after action reviews at the national or subnational level. For these reasons it is essential for a PHSM monitoring team to establish clear communication and coordination mechanisms with stakeholders. This includes determining protocols for exchanging data, sharing insights and updating each other on the changing landscape of the health emergency.

3.1.3 Identify financial resources for monitoring

Establishing and sustaining a PHSM monitoring system requires appropriate financial resources, both for the initial set up of the team and for the ongoing operational costs of monitoring activities. The diverse factors that influence the financing needed for PHSM monitoring include the following:

- **scale of the emergency** – large-scale emergencies may require more extensive resources for data collection, analysis and reporting, and for information-sharing;
- **type of data collection and analysis** – larger financial investments for technology, human resources and infrastructure may be required if more frequent and comprehensive monitoring are necessary;
- **human resources** – the budget should include funding for professionals skilled in data analysis, reporting and information technology because this expertise is essential for set up and for ongoing operations;
- **geographical spread of the emergency** – the costs of data collection and communication are affected by the geographical scope of the response to the public health emergency, including the number of regions or localities affected;
- **duration of the emergency** – prolonged emergencies may necessitate funding for monitoring during an extended period;
- **types of reporting and communication** – additional financing for administrative and technological costs may be necessary if a greater level of reporting and communication is required, such as providing regular updates to stakeholders and the public, or for international reporting;
- **supportive infrastructure** – resources are required across all phases of the health emergency to ensure there is reliable infrastructure for data collection, storage and communication, including

ensuring Internet connectivity and the availability of servers and secure platforms;

- **capacity-building needs** – investment in training and capacity-building for the monitoring team and other stakeholders is essential to ensure effective and accurate data collection, analysis and reporting;
- **scale up** – the ability to scale up monitoring to meet the demands of large-scale emergencies and evolving situations requires flexibility in budgeting;
- **coordination and collaboration** – collaborating with other relevant agencies, both national and international, can lead to resource-sharing and cost reductions.

Establishing a sustainable PHSM monitoring system is crucial for ensuring its continuity throughout a public health emergency, especially during prolonged situations. The sustainability of PHSM monitoring systems during public health emergencies depends on:

- **managing human resources:** plan for staff turnover and prioritize continual training to ensure that the monitoring team can adapt as emergencies evolve;
- **ensuring financial stability:** stable financial resources are essential to cover the operational costs of monitoring, particularly given the uncertainty that usually surrounds the duration of an emergency;
- **using reliable data management systems:** regularly assess and upgrade data management systems and confirm they are specifically tailored to PHSM monitoring. This ensures they will remain robust and can be adapted to changing data requirements;
- **demonstrating value in PHSM monitoring:** translate the insights gained from monitoring into

research and policy actions to demonstrate the value of the system;

- **leveraging existing activities:** maximize the utilization of existing surveillance activities, such as IHR (2005) reporting pathways, to optimize resources and support the long-term sustainability of the PHSM monitoring system.



Response

3.2 Step 2: designing data collection methods

A systematic approach to finding PHSM policies requires a well-defined and tailored search strategy. Trustworthy and valuable information may be identified from a range of sources, including government announcements, and reports from international agencies and local media outlets. These can be assembled into a comprehensive source list that can be used for routine monitoring. Additionally, a method should be chosen for saving source materials to preserve them for future reference. Schedules should be established for monitoring, using both human and automated alerts, and for data entry, both of which can be adjusted as needed. While it is important to follow an established data collection method, it is also necessary to maintain flexibility and adapt methods as appropriate to the evolving emergency.



Special case:

If the monitoring system is situated within the government body issuing the PHSM, then it should be possible to have direct access to information about the measures. Policy coordination of and authority for PHSM may vary across national contexts, residing in the central government, a dedicated entity, individual ministries, the health sector or non-health sector (e.g. education, financing, transportation, food and agriculture). Hence, it is critical to foster collaboration and establish communication channels among relevant actors to ensure timely data-sharing and joint monitoring. (See Section 3.4, Step 4 for information about peer validation and cross-checks.)

3.2.1 Information sources

The first step in designing a data collection method is to create a source list. Begin by monitoring government websites for announcements about PHSM.



Government websites and official social media platforms that are likely to post announcements include those of the central government, the head of state, the Ministry of Health, institutes of public health and dedicated hazard-specific webpages.



Navigate to the press release or announcements section of each website or government social media platform to find clearly articulated descriptions of measures and details of their implementation.



If there are no news updates on websites or social media platforms, consider the legal texts or decrees enabling the application of measures, which also are often available on government websites.



Note the URLs of the government websites that provide information about PHSM implementation; these will be the most important sources to monitor regularly. Also ensure that multiple sources are reviewed to cross-reference information about implementation.

Sources may change over time: for example, a government may create a dedicated page for a hazard or decommission a dedicated page in favour of the main page for the Ministry of Health; thus, the list of main sources to be monitored should be regularly reviewed.



Pro tip

Government announcements come in different forms

Some governments prefer to announce measures via press conferences rather than issuing written press releases or statements on social media platforms; in this case, if video or transcripts are not available through the government's social media channels, search for information from national or international media sources that covered the press conference.

Additionally, consider assembling a list of secondary sources to supplement the primary government sources.



Begin with reputable media or thematic sources known to cover the geographical or subject area of the hazard, or both. An example of a thematic source would be the United Nations Educational, Scientific and Cultural Organization's (or UNESCO's) dashboard of school closures that was compiled during the COVID-19 pandemic.



Expand the source list by using a search engine to perform keyword searches that include a combination of terms in all applicable languages, such as the name of the country or area, the type of PHSM and the hazard. Automated alerts can augment

manual searches. Many search engines (e.g. Google, Bing) monitor the Internet and provide email alert notifications when a new result matching the search query appears online.



Validate the information on the resulting webpages by comparing it with government sources, whenever possible. However, when using media sources note that if articles cite the primary source of their information, efforts should be made to access the original source of that information or confirm that information via a second source.



Add websites deemed useful and reliable to the source list.

3.2.2 Archiving

Because websites are continually updated or may be taken down at any time, it is important to create

an archive version of the source. This can be done by using a simple online archiving tool or by printing the page as a PDF.



Pro tip

Do not lose what may have taken hours to find

Install a browser extension with an archiving tool to quickly archive webpages.

3.2.3 Frequency and process of data entry

The frequency of PHSM data collection and monitoring depends on the dynamic needs of the emergency response and the information requirements of policy-makers. During the early stages of an emergency when measures are rapidly changing, it may be necessary to collect data more frequently, possibly daily, to capture real-time developments. As the situation stabilizes, the monitoring frequency necessary to identify policy changes can be determined based on the recent pace of policy changes, perhaps reducing the schedule to weekly, biweekly or monthly, as appropriate. As an example, mpox (monkeypox) monitoring by one monitoring team began with weekly data collection at the beginning of the emergency, but as the situation progressed and the associated measures reached a more stable state, the monitoring frequency was adapted. It transitioned first to a biweekly schedule and eventually to monthly monitoring, reflecting the evolving needs and conditions of the response.

3.2.4 Key takeaways

Designing and establishing a data collection method to systematically identify PHSM policies is a critical component of monitoring PHSM. Key components to accomplish this include:

- **dynamic source management** – Keep an up-to-date list of primary monitoring sources. Regularly review and update it to align with changing information on government webpages;
- **source verification** – Always verify information from the media. Check it against the original sources or credible secondary sources before including it in the data collected;
- **keyword web searches** – Conduct web searches using specific keywords. To identify relevant sources, combine the name of the country or area with the focused PHSM and the emergency type;
- **systematic data collection** – Capture information about all PHSM systematically. Monitor the main sources methodically and record website URLs and access dates;
- **archiving and verification** – Archive sources using methods such as online tools or save webpages as PDFs. This ensures data retention and allows sources to be verified;
- **monitoring frequency and tools** – Establish a monitoring schedule that can be adapted as the situation develops. Use real-time monitoring tools to track dynamic changes effectively.



Response

3.3 Step 3: categorizing and recording measures and implementation

This step involves documenting and categorizing essential information related to different aspects of PHSM policies and their implementation. The minimum set of critical policy elements for measures includes: the high-level PHSM category; level of enforcement; setting; geographical region; targeted population; country, territory or area; date of implementation; description of the measure; and the source of the information and date it was obtained (or accessed). See Annex 2 for detailed information about these elements.

A database can be constructed using software such as Microsoft Excel, and the designated data input sheet can serve as a repository where the critical policy elements outlined in this step are recorded.

The following sections provide descriptions of and instructions about recording the minimum set of critical policy elements about PHSM policies, which

will ensure systematic and harmonized classification, thus enabling researchers and policy-makers to group similar measures for comparative analyses. This guidance also provides the flexibility to either expand the critical policy elements to add additional levels or to create new critical policy elements to capture unique country contexts.

3.3.1 Category

The first step after finding that a measure has been implemented is to identify its appropriate category in the PHSM classification matrix in Annex 3; the matrix can be used to place PHSM into standardized, cascaded categories, starting from first- and second-level categories, and moving on to high-level indicators. This is a critical step in the data collection process, so it is important to ensure that the monitoring team works in a harmonized way to guarantee that the classification of measures is consistent and clear within the appropriate taxonomy category.

The classification matrix in Annex 3 is a versatile tool designed for PHSM used during health emergencies, with a focus on infectious diseases. However, this tool could be applied to PHSM utilized during other hazards.

Considering the diverse and dynamic nature of health emergencies, these three levels of categories may require an additional level of indicators to increase context specificity. Any additional categories may be defined and agreed by the monitoring team at the beginning of each health emergency.



Pro tip

Focus on emergency measures not routine recommendations

During PHSM monitoring, focus on emergency-specific measures to provide relevant and actionable insights instead of routine recommendations and measures that are in place year-round.

3.3.2 Level of enforcement

The level of enforcement that is applied to the measure is classified according to an ordinal scale and ranges from a PHSM policy being lifted (classified as 0) to its

introduction, extension or amendment, which includes the level of compliance required (e.g. information, recommendation) for a measure (classified as 1, 2, 3 or 4) (Table 1) (12).

Table 1. Scale for classifying the level of enforcement of public health and social measures

Ordinal scale	Description	Example
0: Lifted	A measure has been phased out or removed	Advising that masks are no longer required when taking public transport
1: Inform	Provides information about options regarding specific activities or behaviours	Providing information to the public about the benefits of wearing masks while on public transport
2: Guide	Suggests specific activities or behaviours through recommendations or enabling measures	Providing a recommendation to individuals that they should wear masks while on public transport
3: Restrict options	Restricts options for specific activities or behaviours, thereby strongly promoting or discouraging the activities or behaviours while offering limited alternatives	Requiring individuals to wear masks while on public transport or pay a fine
4: Eliminate options	Eliminates options for specific activities or behaviours (e.g. through prohibition), thereby determining people's activities or behaviours and offering no alternatives (i.e. any alternative activities or behaviours are associated with high costs)	Making it compulsory to wear a mask on public transport; those who are not wearing a mask will not be allowed to take public transport

3.3.3 Setting

This variable captures attributes of the physical setting in which the policy is being enacted. The settings to which the measure applies can be classified as:

- unspecified
- businesses and services
- homes
- nursing and care homes
- educational settings
- domestic public transportation
- points of entry for transportation by land
- points of entry for transportation by water
- points of entry for transportation by air
- health care settings for the general public
- leisure, social, cultural or faith-based settings
- prisons
- camps and settlements for refugees or internally displaced persons
- informal settlements and slums
- outdoor public places
- other (specify).

See Annex 3 for a detailed description of these settings.

3.3.4 Geographical scope

This variable captures the geographical level at which the policies are implemented, also expressed as an ordinal value. Record the geographical level of the policy using the following system:

- 1: national scope, indicating that the policy applies to the entire country;
- 2: subnational scope (e.g. at the state or provincial level), indicating that the policy applies to a specific subnational locality within the country;
- 3: local scope (e.g. at the city or district level), indicating that the policy applies to an even more specific subnational locality within the country.

3.3.5 Country, territory or area

The country, territory or area variable serves as a categorical component, capturing the specific location where a measure is enacted. This variable not only allows for the precise identification of the geographical location of each measure but also enables regional and international comparisons and mapping. Enter the name of the country or area in a standardized format to allow the precise location of each measure to be identified, and for regional and international comparisons and mapping.

3.3.6 Target population

This variable captures the population targeted by the policy change, either general (i.e. the general population within the area of monitoring is affected) or targeted (i.e. a subpopulation or specific group of people is targeted, often those most at risk of serious injury or illness). When recording measures into the database, classify whether a measure has a specific or general target population as follows.

- 0: targeted, indicating that the policy measure is specifically directed at a particular subgroup or population. The specific population being targeted should be listed in the database. While target populations are not standardized or

defined in this guide, examples include but are not limited to –

- older adults
- children
- adolescents and young adults
- individuals who are immunocompromised or have a chronic illness
- pregnant women
- essential workers
- members of low-income households
- members of marginalized populations
- people living with disabilities
- migrants or displaced people
- people with an infectious disease and/or their contacts;
- 1: general, indicating that the policy measure applies to the general population or the entire country. A measure can still be classified as general if it is broadly applicable to the population but contains a few exceptions (e.g. a mask mandate for everyone except children younger than 12);
- N/A: not applicable, used when the policy measure does not have a specific target population.

3.3.7 Date of implementation

Record the date on which the policy or policy change is implemented. Ensure that the date recorded is the true implementation date and not the date of an announcement because measures are often announced in advance to allow time for adequate preparation. It is advisable to follow up on measures announced far in advance in case they are subsequently cancelled or altered before implementation.

3.3.8 Description of measure

The measure is described in a free-text field that allows additional detailed information to be captured about the enacted policy, including its nature, the population and places affected, the duration and any other guidelines or requirements that provide additional context to the policy. This description helps to clarify the policy's intent and expected outcomes.

3.3.9 Source

Provide the source of information about the measure, such as a URL, a PDF or an official government

announcement. This allows users to verify the data and access further details about the policy or policy change, if necessary.

Figs. 1 and 2 show examples of how to identify the high-level category and other policy elements of a specific PHSM (e.g. the setting, implementation date, target population) that need to be monitored, with information about how this policy can be entered into a database (see Annex 3).

Fig. 1 focuses on a PHSM policy being introduced and Fig. 2 showcases a policy that has been lifted.

Fig. 1. Example of monitoring variables for the introduction of a public health and social measure policy

Source www.gov/news/press_releases

Category **Masks compulsory on public transport** **Setting**

Country, territory or area Last modification: 22.06.2020
Country B

Level of enforcement At its meeting on 1 July 2020, the Government of Country B took decisions on measures to prevent the renewed spread of COVID-19. In view of the rising number of new infections since mid-June and the increase in people traveling for the summer, the government has decided to make masks compulsory on public transport throughout the country starting from Monday, 6 July.

Implementation date **Geographical scope**

An urgent recommendation is already in place to wear a mask when travelling on public transport at peak times. However, few people are following this advice. Since the stay-at-home measures were lifted last month, more people are travelling on public transport and as a result, it is often not possible to respect the recommended physical distance.

Target population From Monday, 6 July, persons over the age of 12 will have to wear a mask in on all forms of public transport within the country, including trains, trams and buses, as well as ferries and boats.

Today's decision by the Government...

Example database entry using Fig. 1

Description of measure	Face masks are now compulsory on public transportation in Country B
Category	(see Annexes 2 and 3) First-level category – Personal protection measures Second-level category – 4: Personal protective equipment High-level indicator – 4.1: Masks
Level of enforcement	4: Eliminate options
Setting	Domestic public transportation
Geographical scope	1: national
Target population	1: general
Country, territory or area	Country B
Source	www.gov/news/press_releases_example1

Fig. 2. Example of monitoring variables for public health and social measures that have been lifted

Source www.emergencyPHSM_news/update921

Face mask guidance update

Implementation date Published: 22 September 2023
 Part of: Subnational location A **Geographical scope** **Intervention**

Starting Tuesday (23 September), individuals in health and social care settings will no longer receive recommendations to wear face masks.

Level of enforcement This return to pre-pandemic guidance signifies that the use of masks will now be determined by clinical necessity, adhering to infection prevention and control recommendations. Consequently, facemasks will no longer be a routine requirement for staff, patients, service users, and visitors within health and social care settings.

Setting This decision comes after a comprehensive review of the guidance that was implemented during the COVID-19 pandemic to safeguard the well-being of staff, patients, service users, and visitors. It reflects the acknowledgment that the situation in Country A has transitioned into a more stable phase of the pandemic.
 Chief Medical Officer commented...

Target population

Example database entry using Fig. 2

Description of measure	The use of face masks in health and social care settings will no longer be advised.
Category	(See Annexes 2 and 3) First-level category – Personal protection measures Second-level category – 4: Personal protective equipment High-level indicator – 4.1: Masks
Level of enforcement	0: lifted
Setting	<ul style="list-style-type: none"> Nursing and care homes Health care settings for the general public
Geographical scope	2: subnational
Target population	0: targeted
Country, territory or area	Country A
Date of Implementation	16 May 2023
Source	www.emergencyPHSM_news/update921_example2



Response

3.4 Step 4: quality assurance

Validating the data is a crucial element in the monitoring process to ensure the accuracy and credibility of the information being collected. The validation process helps identify and correct any errors or inconsistencies in the data collection process, thereby increasing the reliability and trustworthiness of the data. The process of validating data also helps to identify any gaps or missing information, allowing for a more comprehensive understanding of PHSM implementation. Data quality assurance can be managed by using the following steps.

- Quality assurance step 1: check completeness –
 - regularly assess database entries for completeness, ensuring that all relevant data fields are populated;
- Quality assurance step 2: check the timeliness of the data –
 - review the timeliness of data entries, ensuring that data are up to date and reflect the most recent information;
- Quality assurance step 3: peer validation and monitoring principles –
 - for peer validation, exchange databases among PHSM monitoring team members or individuals familiar with the monitoring methodology to review entries for a selected time frame or category of measures;
 - discuss any discrepancies or uncertainties in the categorization of measures with other PHSM team members;
 - document the outcomes of these discussions in a set of monitoring principles.



Pro tip

Data validation is difficult during the acute phase of an emergency; use these simple tricks to stay on top of quality assurance

Due to time constraints, extensive data validation steps will likely not be feasible during the acute phase of an emergency. A quick method of performing checks is to use the Sort function of the database to ensure that the formatting, categorization and dates appear to be accurate. When time allows, arrange to swap databases with a trained colleague to perform peer validation.



Response

3.5 Step 5: data quantification and processing (optional)

While this quantification step is not essential, it offers significant advantages and allows data to be rapidly applied to the emerging situation. Quantifying the data into a PHSM index allows for in-depth analysis, comparisons, visualizations and interpretation. A PHSM index captures, visualizes and analyses the types and stringency of PHSM policies through a set of selected indicators, and it can be a valuable tool for policy-makers and researchers. An index facilitates a detailed understanding of how individual PHSM contribute to a comprehensive response through a secondary analysis of the monitoring data together with other critical indicators, such as data about the epidemiology or hospital capacity. The stringency of PHSM responses can be analysed and compared across different countries and regions, providing insights into common strategies, outliers and emergent patterns that can be seen only through a region-level analysis.

Basic quantification of PHSM data is built into the monitoring methodology in this guidance through the categorization of variables collected in the database, but further steps must be taken to create a PHSM index that allows for analysis of the stringency of the measures. In order to create a PHSM index, indicator measures must be selected, such as mask-wearing and limiting gatherings. For each indicator measure, variables are selected that will contribute to the index; these generally include the level of enforcement, geographical scope and the target population, although the setting could also be considered. Weights are then applied to each variable, and an index value

can be calculated for each indicator to quantify the stringency. A simple average of PHSM index values for all selected indicators forms the overall index. For instance, if mask-wearing was chosen as an indicator, its database values for level of enforcement, geographical scope and target population would be combined through a formula to determine the stringency of mask-wearing policies at a particular time. Various methods have been developed that can help calculate PHSM indexes (2, 13).



Response

3.6 Step 6: planning for data analysis and dissemination

It is important to develop a plan to analyse and disseminate data from PHSM monitoring to stakeholders and other parties. This plan may involve developing reports, visualizations or a dashboard to display the data. It is also important to consider the ways in which the data can be communicated to the public. Creating a dashboard is an accessible way to share information, and it can be continually updated. However, if resources are not available to create and maintain a dashboard, developing a report can be a less labour-intensive communication option. Creating a template can simplify the process and setting a schedule can ensure that the report is shared with stakeholders (Table 2).

Table 2. Types of data analysis relevant to public health and social measures

Type of analysis	Description	Example
Trend	Examines monitoring data over time to identify patterns or changes in PHSM measures	Examine the trend in the adoption of mask mandates in different regions over time to identify the timing and duration of these measures
Comparative	Compares data between different regions, countries or time periods to assess variations in PHSM implementation	Compare stay-at-home orders across multiple countries to assess variations in policy responses to the same health emergency
Descriptive	Provides a comprehensive overview of PHSM measures, including their frequency, distribution and characteristics	Create a summary report that outlines the distribution of quarantine policies among different states within a country
Correlation	Investigates potential relationships between PHSM measures	Investigate the correlation between mask recommendations and the incidence of new cases
Geospatial	Utilizes geographical data to assess the spatial distribution of PHSM measures	Map the geographical distribution of mask-wearing mandates to assess the spatial impact on compliance and its relation to disease incidence

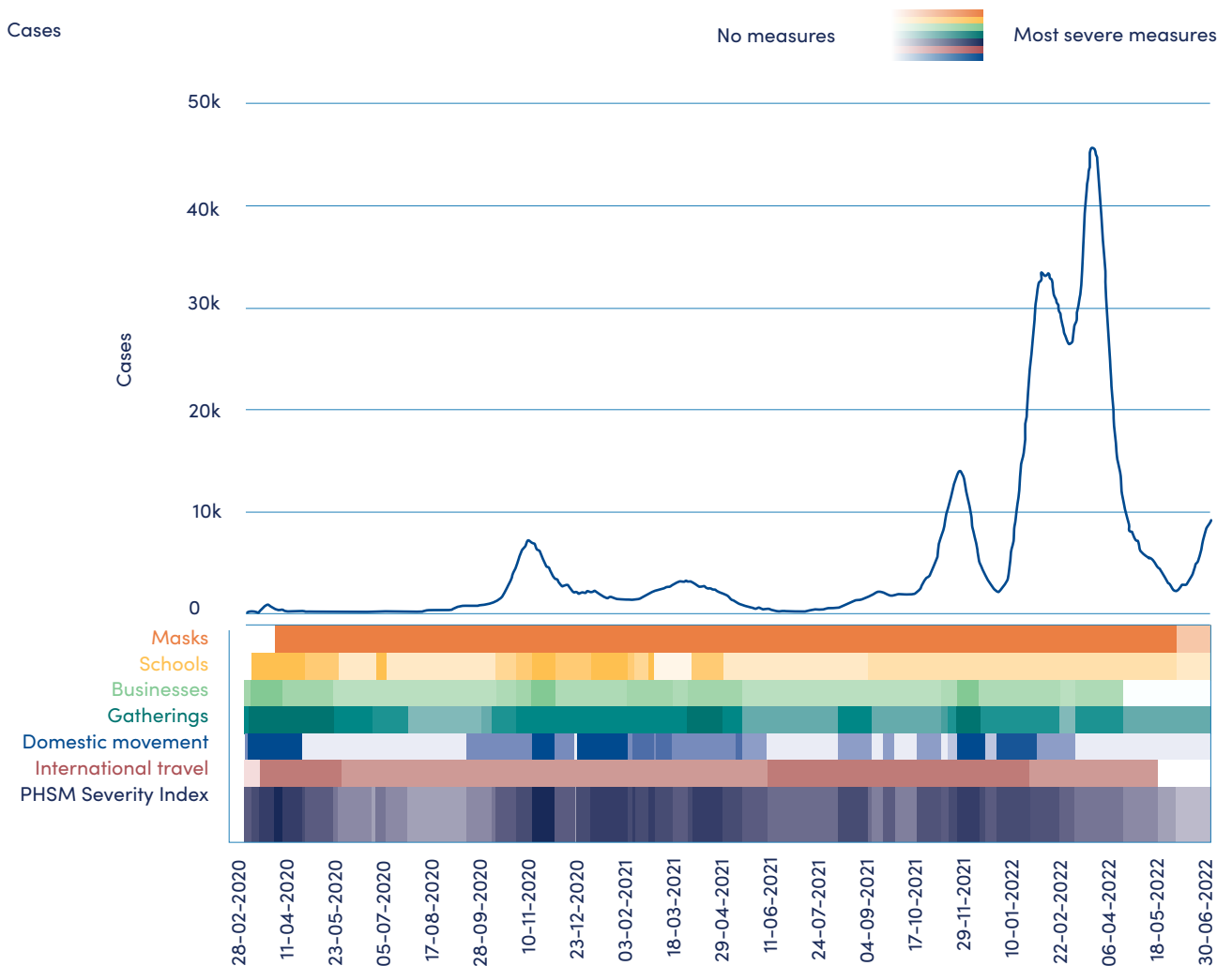
PHSM: public health and social measures.

Data can be visualized in various ways to support an understanding of complex information and to transform raw data into contextual and meaningful insights. For example, timelines can be made for categories of measures using the date of implementation alongside the epidemiological data to produce a national overview of implemented measures, their stringency and the number of cases (Fig. 3). By using the country, territory or area variable, simple maps can be made that display the status of each type of measure in a country. Time-lapse maps can be developed using the date of implementation to show the progression

of PHSM over time. By using subnational data, a map can display the varying levels of an indicator across a country at a given point in time, such as school closures. For a view over time, a map could show the number of days that an indicator of a certain level was in place, such as the number of days schools were closed in each subnational area. If data are available for multiple countries, measures can be mapped to allow for cross-country or cross-regional comparisons of PHSM responses, and these can help identify common strategies, outliers and emergent patterns.

Fig. 3. Country or area analysis showing daily cases of COVID-19 above the severity index for public health and social measures (PHSM) as an example of a visualization that uses the PHSM index with epidemiological data

As of 4 September 2023



Source: Public health and social measures in response to COVID-19 [website]. Copenhagen: WHO Regional Office for Europe; 2024 (<https://phsm.euro.who.int/covid-19>, accessed 22 March 2024).

4. Considerations for using monitoring data



Recovery



Prevention

4.1 Using data for decision-making and responses

PHSM monitoring data can be used to support policy-makers by providing an overview and historical record of the interventions implemented in response to a health emergency. The records of measures applied and a simple visualization of the measures can provide stakeholders with insight into a situation. Displaying the sequence in which PHSM were implemented and the relative stringency of implementation of the various measures can provide clarity about a country's response. These analyses can be utilized alongside epidemiological and other data to inform policy-makers, address public policy questions and craft the most appropriate PHSM strategy for a country's context. The evidence that emerges from scientific research conducted using PHSM monitoring data will further empower decision-makers to develop more

effective and efficient evidence-based responses to emergencies. PHSM implementation issues, such as compliance fatigue, can be addressed by using monitoring data with data about behavioural insights to develop new approaches to apply measures.

It is essential that those responding to an emergency have knowledge of the current PHSM policies being applied, and historical monitoring data are also useful in assessing a situation and its evolution. Timely PHSM monitoring data facilitate coordination among different response teams and, thus, the updated data should be incorporated into and regularly communicated throughout the national response operations.

4.2 Using data for research

Following the use of PHSM during the COVID-19 pandemic, it has become a priority to understand the effectiveness of such measures in mitigating the spread of diseases as well as their impact on societies (14, 15). PHSM monitoring data can be used to conduct research about individual interventions as well as groups of interventions. PHSM data have been used in research looking into how to control emerging epidemics (16), influenza (17) and COVID-19. The effects of implementing PHSM on morbidity, mortality and other outcomes of interest can be investigated through statistical analysis using monitoring data in conjunction with other data sets. Monitoring data that are systematically collected and harmonized will be easier to compare and use in scientific research.

4.3 Gaining additional insights by incorporating other data sources

PHSM are integral components of government responses during health emergencies, interacting with and complementing other public health interventions. Given the multifaceted nature of PHSM decision-making, using a diverse array of data is essential to inform critical decision points. These decisions can span from determining the appropriate combinations of measures to introducing, scaling them up or down, or phasing them out, as well as ensuring uptake and adherence, and mitigating unintended negative consequences. It is imperative that PHSM are considered in concert with other government responses, such as medical countermeasures, as well as epidemiological patterns; public awareness, knowledge and perceptions; and impacts on health, health systems, societies and economies. These data must be carefully evaluated and integrated throughout

the PHSM decision-making process to ensure that measures and their implementation are evidence-informed, context-specific and equitable.

4.3.1 Epidemiological data

PHSM and epidemiological data are intrinsically linked, with measures being implemented in response to an epidemiological situation and the situation responding to the measures. In the simplest form, PHSM monitoring data can be used with epidemiological data in a descriptive manner, for example by plotting on an epidemiological curve the date on which a measure was implemented to view their interaction, with an acknowledgment that other interventions and factors may be influencing epidemiological patterns, such as a time lag from the date a measure is implemented to its impact on the spread of disease. Table 3 highlights some analyses that could be considered.

Table 3. Analyses to be considered when evaluating public health and social measures with epidemiological data

Analysis	Description
Impact assessment	Analyses the relationship between specific PHSM and changes in epidemiological indicators (e.g. numbers of cases and hospitalizations, and mortality rates); can be used to determine whether the implementation of measures corresponds to changes in disease transmission
Impact assessment and geospatial analysis	Examines the geographical distribution of cases and the implementation of PHSM measures; can be used to determine whether specific regions or areas benefitted more from certain measures and whether localized measures are associated with a decrease in transmission or change in outcomes
Time lag	Assesses the lag between implementation of PHSM and observable effects in epidemiological data; understanding the delay in impact can help fine-tune decision-making
Transmission dynamics	Explores the impact of PHSM on the transmission of the disease; this type of analysis may include the basic reproduction number (i.e. R0) and its changes in response to various measures

PHSM: public health and social measures.

4.3.2 Behavioural insights

PHSM-related policies, services and communication need to be informed by context-specific insights into the factors that make it more difficult or undesirable to follow PHSM (i.e. barriers) and factors that make it easier and desirable to follow them (i.e. drivers), as experienced by the target populations. Barriers and drivers include issues related to individual motivation, acceptance and knowledge, as well as the structural and sociocultural contexts. By taking

a community-centred approach to introducing and adjusting PHSM, decision-makers can help ensure that these measures are not only heard and understood but also are acceptable and feasible, and have the smallest possible negative impact on the lives and livelihoods of the people affected. Table 4 describes the types of behavioural and cultural analyses that can be conducted using PHSM monitoring data to gain additional behavioural insights.

Table 4. Analyses to be considered when evaluating public health and social measures with behavioural insights

Analysis	Description
Compliance and behavioural patterns	Analyses the correlation between specific PHSM policies and public compliance; this can help identify which measures are more likely to be followed by the population and the behavioural factors influencing compliance
Cultural factors	Investigates the influence of cultural factors, beliefs and norms on the adoption of PHSM policies; this can be useful to help tailor messaging and policies to align with cultural practices and values
Sociodemographic	Examines how sociodemographic factors, such as age, gender, income and education, impact compliance with PHSM; this information can be used to guide targeted interventions

PHSM: public health and social measures.

4.3.3 Social listening, risk communication, community engagement and infodemic management

Risk communication, community engagement and infodemic management play crucial roles in facilitating the dissemination of accurate and timely information about PHSM, fostering community understanding and engagement, and enhancing the uptake of and adherence to measures. Tailored and culturally sensitive messaging, along with proactive engagement using diverse communication channels, allows for

informed decision-making about and active uptake and adherence to PHSM among the public.

Social listening is a crucial tool to use alongside PHSM policies since it provides insight into public sentiment about measures. Social listening involves evaluating public discourse in the media (both traditional and digital) for a range of target populations to gain understanding of public sentiment about the PHSM policies being implemented (Table 5).

Table 5. Sentiment analysis combining monitoring data from public health and social measures with social listening

Analysis	Description
Sentiment	Compares social listening data with data from PHSM monitoring to gauge public sentiment towards specific measures; this analysis of public reactions, concerns and attitudes can help policy-makers understand how measures are perceived and how they affect public compliance and behaviour

PHSM: public health and social measures.

4.3.4 Data about medical countermeasures

PHSM monitoring data can play a crucial role in informing studies of both the effectiveness and uptake of medical countermeasures (Table 6). Furthermore, it provides valuable insights for optimizing PHSM implementation. For instance, integrating vaccination

data with PHSM monitoring data allows for the identification of specific settings and populations that may require targeted interventions. If the data indicate low vaccination uptake in a particular geographical area, then they could signal the need to implement more stringent protective measures in that location.

Table 6. Analysing the relationship between public health and social measures and medical countermeasures

Analysis	Description
Correlation between medical countermeasures and PHSM	Analyses the correlation between the use of medical countermeasures (e.g. vaccination) and the presence or absence of specific PHSM policies

PHSM: public health and social measures.

4.3.5 Social protection policies and programmes

Social protection is critical to mitigate the socioeconomic consequences of health emergencies and related response measures, including PHSM. Strong social protection and health systems contribute to ensuring resilience to and recovery from emergencies, and strengthening these systems through multisectoral cooperation and sufficient investment should be part of considerations around epidemic and pandemic preparedness and prevention. Monitoring social protection policies and programmes and coordinating PHSM with social protection response measures can increase adherence to PHSM and

reduce unintended negative impacts, including the exacerbation of health and social inequities (Table 7) (3, 18, 19).

Table 7. Analyses to be considered when evaluating public health and social measures with social protection policies and programmes

Analysis	Description
Identification of coverage gaps and opportunities for action	Monitors social protection policies and programmes, including newly introduced and expanded benefits implemented alongside PHSM policies, to help identify coverage gaps in terms of benefits, inclusivity or access to social protection measures; using social protection data and PHSM monitoring data together helps to identify opportunities for action for PHSM, and can aid decision-making about social protection (e.g. whether to introduce new benefits or increase eligibility) to ensure an equitable and balanced implementation of PHSM and to facilitate adherence
Equity assessment of socioeconomic well-being (20)	Assesses the impact of pandemic preparedness, prevention and response and recovery policies on equity and the socioeconomic well-being of different segments of the population to help understand the unintended socioeconomic and equity consequences of PHSM; for example, vulnerable and disadvantaged populations may bear a disproportionate burden of PHSM and thus benefit from additional mitigation measures

PHSM: public health and social measures.

4.3.6 Macroeconomic considerations

In order to mitigate the potential adverse impact of PHSM on populations, it is crucial to incorporate economic considerations into the decision-making process. This involves examining factors such as cost-effectiveness, loss in productivity and economic

inequity. By leveraging PHSM monitoring data with sources of economic data, policy-makers can gain valuable insights into the impact of measures and make informed decisions that strike a balance between public health and economic well-being. Table 8 describes one type of analysis that can be conducted.

Table 8. Analysing the relationship between public health and social measures and economic considerations

Analysis	Description
Economic impact analysis	Evaluates the economic impact of PHSM by comparing monitoring data with economic indicators; this can help assessments of the direct and indirect effects of measures on various sectors, such as employment, consumer spending and production, providing insights into overall economic stability and potential vulnerabilities

PHSM: public health and social measures.

4.4 Constraints on PHSM monitoring data

The quality of PHSM monitoring is limited by the sources of the data. These limitations include whether data are available in a timely manner and whether they come from a reliable source, the availability of accurate translations, and the continuity of available data. Further limitations include the potential for human error, differing interpretations of the text of the PHSM policy and the challenges of consistency due

to the need to continue to dedicate human resources to monitoring. In addition, monitoring policies does not reflect the enforcement of or compliance with recommended and mandatory measures. Compliance with PHSM may vary across and within countries due to cultural beliefs and individual health beliefs and behaviours, as well as levels of trust in a government. A PHSM monitoring system is limited by the categories of variables and levels of information specificity selected when the system is designed and whether there is flexibility to change it after inception.

5. Conclusions

This global guidance on monitoring PHSM policies during health emergencies is an important tool for countries navigating such measures. It provides a structured framework and systematic approach that can be used to guide countries that are establishing a monitoring system and collecting data about PHSM policies. These efforts serve as the foundation for assessing the impact of PHSM on public health outcomes.

It is imperative to recognize that this guidance is dynamic and adaptable to mirror the evolving nature of PHSM and monitoring practices. As monitoring systems develop during emergencies, this guidance will evolve, incorporating fresh insights and good practices. This approach ensures that the guidance will remain a cutting-edge resource, always aligned with the latest knowledge and advancements in the field.

By using this guidance, countries can enhance their monitoring capabilities and foster a culture of data-driven decision-making that contributes to the global endeavour to fortify health emergency preparedness and response activities.

While recognizing the value of this guidance, we must also acknowledge the limitations of monitoring PHSM policies. To unlock the full potential of monitoring, it must be seamlessly integrated into the broader emergency response framework and harmonize with other essential components. Monitoring should not be seen in isolation but as an integral part of a holistic approach in which data and insights flow through all phases of preparedness, response, recovery and prevention. Only then can the monitoring of PHSM policies truly fulfil its role in safeguarding public health during emergencies.

References

1. Considerations for implementing and adjusting public health and social measures in the context of COVID-19: interim guidance, 14 June 2021. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/handle/10665/341811>, accessed 28 February 2024).
2. A systematic approach to monitoring and analysing public health and social measures in the context of the COVID-19 pandemic: underlying methodology and application of the PHSM database and PHSM Severity Index: updated July 2022. Copenhagen: WHO Regional Office for Europe; 2022 (<https://apps.who.int/iris/handle/10665/357854>, accessed 28 February 2024).
3. Polonsky JA, Bhatia S, Fraser K, Hamlet A, Skarp J, Stopard IJ, et al. Feasibility, acceptability, and effectiveness of non-pharmaceutical interventions against infectious diseases among crisis-affected populations: a scoping review. *Infect Dis Poverty*. 2022;11:14. doi:10.1186/s40249-022-00935-7.
4. Measuring the effectiveness and impact of public health and social measures [website]. Geneva: World Health Organization; 2024 (<https://www.who.int/activities/measuring-the-effectiveness-and-impact-of-public-health-and-social-measures>, accessed 28 February 2024).
5. Cheng C, Desvars-Larrive A, Ebbinghaus B, Hale T, Howes A, Lehner L, et al. Capturing the COVID-19 crisis through public health and social measures data science. *Sci Data*. 2022;9:520. doi:10.1038/s41597-022-01616-8.
6. A global analysis of COVID-19 intra-action reviews: reflecting on, adjusting and improving country emergency preparedness and response during a pandemic. Geneva: World Health Organization; 2022 (<https://iris.who.int/handle/10665/365488>, accessed 28 February 2024).
7. Wenham C, Hale T, Green K, di Melo BA, Furst R, Kamenkovich N, et al. What would a data framework for policy responses to pandemic diseases look like? Scoping paper. Oxford: Blavatnik School of Government; 2023 (<https://doi.org/10.35489/BSG-WP-2023/050>, accessed 28 February 2024).
8. Resolution WHA74.7. Strengthening WHO preparedness for and response to health emergencies. In: Seventy-fourth World Health Assembly, Geneva, 24 May–1 June 2021. Resolutions and decisions, annexes. Geneva: World Health Organization; 2021:21 (https://apps.who.int/gb/ebwha/pdf_files/WHA74-REC1/A74_REC1-en.pdf, accessed 28 February 2024).
9. Strengthening preparedness for health emergencies: implementation of the International Health Regulations (2005): interim progress report of the Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 response. Geneva: World Health Organization; 2021 (https://apps.who.int/gb/ebwha/pdf_files/EB148/B148_19-en.pdf, accessed 28 February 2024).
10. Wieler LH. Statement to the 148th Executive Board by the Chair of the Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response. Geneva: World Health Organization; 2021 ([https://www.who.int/news/item/19-01-2021-statement-to-the-148th-executive-board-by-the-chair-of-the-review-committee-on-the-functioning-of-the-international-health-regulations-\(2005\)-during-the-covid-19-response](https://www.who.int/news/item/19-01-2021-statement-to-the-148th-executive-board-by-the-chair-of-the-review-committee-on-the-functioning-of-the-international-health-regulations-(2005)-during-the-covid-19-response), accessed 28 February 2024).

11. WHO's work in health emergencies: strengthening preparedness for health emergencies: implementation of the International Health Regulations (2005). Geneva: World Health Organization; 2021. Geneva: World Health Organization; 2021 (https://apps.who.int/gb/ebwha/pdf_files/WHA74/A74_9Add1-en.pdf, accessed 28 February 2024).
12. Rehfuess EA, Movsisyan A, Pfadenhauer LM, Burns J, Ludolph R, Michie S, Strahwald B. Public health and social measures during health emergencies such as the COVID-19 pandemic: an initial framework to conceptualize and classify measures. *Influenza Other Respir Viruses*. 2023;17:e13110. doi:10.1111/irv.13110.
13. Hale T, Angrist N, Goldszmidt R, Kira V, Petherick A, Phillips T, et al. A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nat Hum Behav*. 2021;5:529–38. doi:10.1038/s41562-021-01079-8.
14. Enria D, Feng Z, Fretheim A, Ihekweazu C, Ottersen T, Schuchat A, et al. Strengthening the evidence base for decisions on public health and social measures. *Bull World Health Organ*. 2021;99:610–10A. doi:10.2471/BLT.21.287054.
15. Semenza JC, Adlhoch C, Baka A, Broberg E, Cenciarelli O, De Angelis S, et al. COVID-19 research priorities for non-pharmaceutical public health and social measures. *Epidemiol Infect*. 2021;149:e87. doi:10.1017/S0950268821000716.
16. Peak CM, Childs LM, Grad YH, Buckee CO. Comparing nonpharmaceutical interventions for containing emerging epidemics. *Proc Natl Acad Sci USA*. 2017;114:402328. doi:10.1073/pnas.1616438114.
17. Smith SMS, Sonogo S, Wallen GR, Waterer G, Cheng AC, Thompson P. Use of non-pharmaceutical interventions to reduce the transmission of influenza in adults: a systematic review. *Respirology*. 2015;20:896–903. doi:10.1111/resp.12541.
18. Almeni M, Gentilini U, Orton I, Dale P. Social protection and jobs responses to COVID-19: a real-time review of country measures. Washington (DC): World Bank; 2020 (<https://hdl.handle.net/10986/33635>, accessed 28 February 2024).
19. Universal social protection to achieve the Sustainable Development Goals [website]. Geneva: International Labour Organization; 2024 (<https://www.social-protection.org/gimi/WSPDB.action?id=32>, accessed 28 February 2024).
20. Transforming the health and social equity landscape: promoting socially just and inclusive growth to improve resilience, solidarity and peace. Copenhagen: WHO Regional Office for Europe; 2023 (<https://www.who.int/europe/publications/item/WHO-EURO-2023-7761-47529-69924>, accessed 28 February 2024).

Annex 1. Methods used to develop this guidance

In developing this guidance document, the World Health Organization (WHO) undertook a multistage process to understand the lessons learned from recent pandemics, analysing gaps and priorities, and gathering input and feedback from technical experts and key stakeholders in monitoring public health and social measures (PHSM).

Review of relevant frameworks and indicators

In the developing this guidance, a comprehensive review was undertaken of monitoring and evaluation frameworks, indicators and PHSM policy trackers tailored to COVID-19. This assessment involved examining various PHSM and policy monitoring systems, such as ACAPS (previously the Assessment Capacities Project), CoronaNet, Health Intervention Tracking for COVID (known as HIT-COVID), the Oxford COVID-19 Government Response Tracker, WHO European Region's PHSM in Response to COVID-19 dashboard, the European Centre for Disease Prevention and Control–Joint Research Centre of the European Commission Response Measures Database, and the WHO COVID-19 Dashboard. By leveraging established frameworks and indicators, we aimed to align the guidance with proven monitoring and evaluation practices for PHSM during responses to public health emergencies. Additionally, by delving into PHSM policy trackers specific to COVID-19, we aimed to capture valuable insights and experiences gained from the ongoing pandemic. These trackers offered valuable data and analyses about PHSM implementation worldwide, contributing to a comprehensive understanding of the measures' effectiveness and impact.

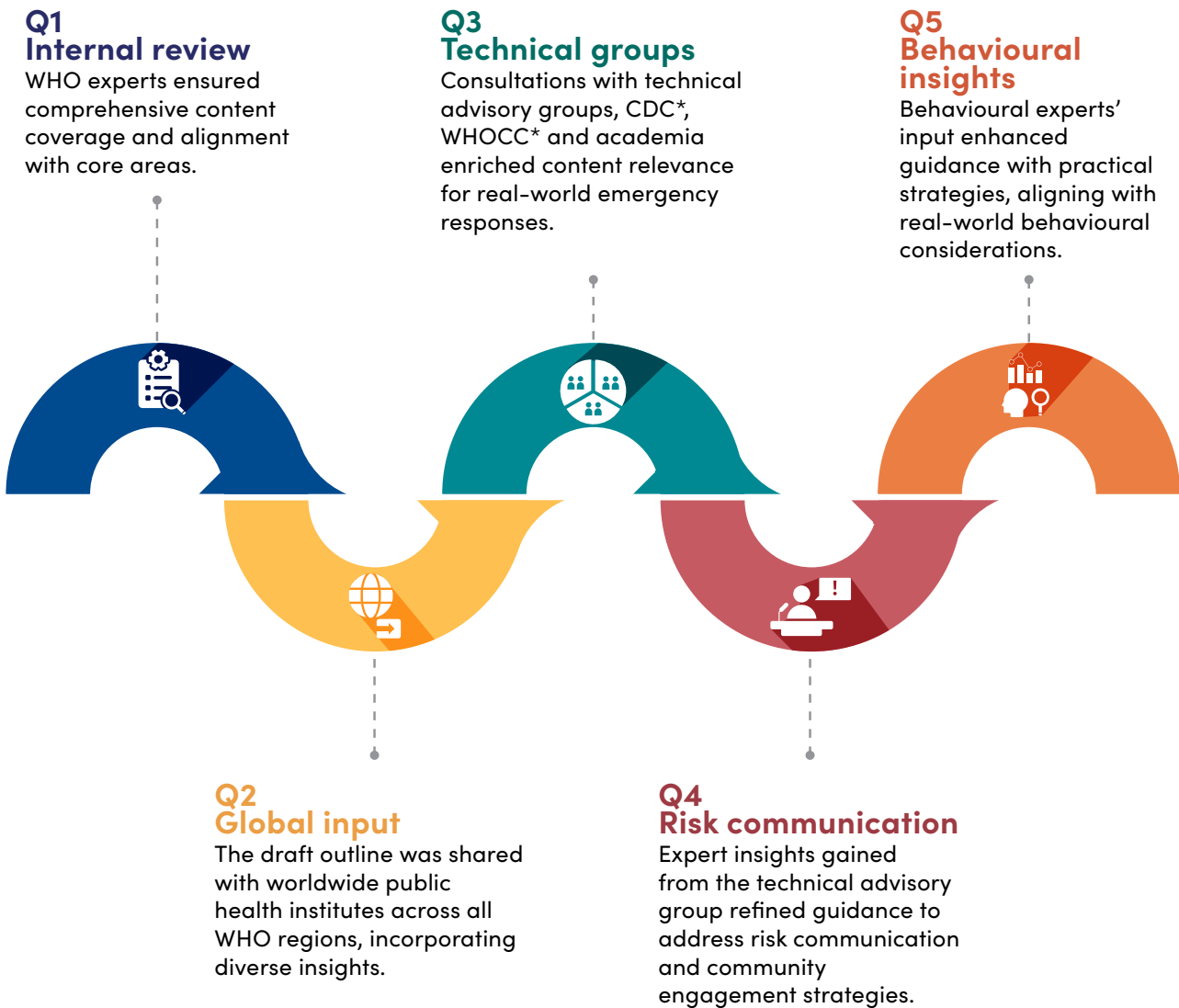
Consultation process

The development process (Fig. A1.1) encompassed a series of consultation steps, beginning with an internal review of the outline and drafts by:

- the WHO internal PHSM Steering Group, composed of WHO focal points for PHSM in all six regional offices and from 10 technical teams at headquarters; and
- other technical teams in regional offices and at headquarters, particularly those working in the areas of risk communication, behavioural insights and health emergency programmes.

The outline for the guidance was extensively reviewed by global public health institutions from across all six WHO regions during the June 2023 WHO meeting, Building coalitions for strengthening public health and social measures during health emergencies, to ensure its relevance and applicability to diverse situations. The draft guidance was deliberated at the Second WHO global technical consultation on public health and social measures during health emergencies, convened in November 2023 to examine key technical and strategic approaches in PHSM monitoring during current and past emergencies.

Fig. A1.1 Overview of consultation process



*CDC: United States Centers for Disease Control and Prevention; *WHOCC: World Health Organization collaborating centre

Annex 2. Minimum set of critical policy elements for a database

Critical policy elements are the essential details that need to be collected for each public health and social measure (PHSM) policy being reported, and these will ensure systematic and harmonized classification, thus enabling researchers and policy-makers to group similar measures for comparative analyses. Table A2.1

highlights the minimum set of critical policy elements necessary for monitoring PHSM policies, but there is flexibility to either expand the critical policy elements to add additional levels or to create new critical policy elements to capture unique country contexts.

Table A2.1. Minimum set of critical policy elements needed for public health and social measures policies

Category		
Description	Type	Values
This refers to the cascade of categories applied to measures, starting with the first- and second-level PHSM categories, followed by the high-level indicators (outlined in Annex 3).	Categorical	<ul style="list-style-type: none"> • First level category • Second level category • High-level indicator (see Annex 3)
Level of enforcement		
Description	Type	Values
This indicates the level of intensity of the PHSM policy. The ordinal values range from 0 (denoting a policy being lifted) to 4 (denoting the most severe policy change – that is, making the intervention mandatory by eliminating the option to decide not to adhere).	Ordinal	0: Policy lifted or removed 1: Inform 2: Guide 3: Restrict options 4: Eliminate options

Setting		
Description	Type	Values
<p>This refers to the specific context or location where the policy change is enacted. It may include schools, workplaces or public spaces, among other environments. The setting helps to identify the direct impact and applicability of a policy change.</p>	Categorical	<ul style="list-style-type: none"> • Unspecified • Businesses and services • Homes • Nursing and care homes • Educational settings • Domestic public transportation • Point of entry for transportation by land • Point of entry for transportation by water • Point of entry for transportation by air • Health care settings for the general public • Leisure, social, cultural, faith-based settings • Prisons • Camps and settlements for refugees or internally displaced persons • Informal settlements and slums • Outdoor public places • Other (specify)
Geographical scope		
Description	Type	Values
<p>This refers to the administrative level at which the measure is applied, expressed as an ordinal value.</p>	Ordinal	<p>1: National</p> <p>2: Subnational</p> <p>3: Local (e.g. city or district level)</p>
Country, territory or area		
Description	Type	Values
<p>This specifies the name of the country or administrative area that is implementing the policy change and reflects the level of monitoring (i.e. national or regional).</p>	Categorical	Name of country, territory or area
Target population		
Description	Type	Values
<p>This indicates which segment of the population is affected by the policy change. It can be either general (applying to the entire population within the monitored area) or targeted (focusing on a specific subpopulation or group of people, such as elderly people, children or frontline workers).</p>	Binary	<p>0: Targeted</p> <p>1: General</p> <p>N/A: Not applicable</p>

Date of implementation		
Description	Type	Values
This refers to when the policy change comes into effect, providing a timeline for understanding the chronological development of PHSM policies.	Date	Date

Definition of measure		
Description	Type	Values
The cell for describing the measure is a free-text field that captures detailed information about the enacted policy, including its nature, the population targeted and the location, the duration and any specific guidelines or requirements. This description helps to clarify the policy's intent and expected outcomes.	Text string	Free text

Source		
Description	Type	Values
This field provides a reference to the original information, such as a URL for a webpage, a PDF document or an official government announcement. This information allows users to verify the data and access further details about the policy change, if necessary.	Text string	Free text, URL, PDF

Access date		
Description	Type	Values
This refers to the date on which the policy is identified and entered into the database.	Date	Date

Annex 3. Policy categories and subcategories for public health and social measures, with examples

This classification matrix helps place public health and social measures (PHSM) policies into cascaded categories, starting from a first level-PHSM category and moving down to identify the second-level PHSM category, and its associated high-level indicators (Table A3.1). Categorizing PHSM policies using this

taxonomy is a critical step in the data collection process, so it is important to ensure that the monitoring team works in a harmonized way to guarantee that the classification of measures is consistent and clear within the appropriate taxonomy category.

Table A3.1. Classification matrix for monitoring public health and social measures

First-level PHSM category ^a	Second-level PHSM category and High-level indicators
<p>Active case-finding and contact identification measures</p> <p>These are systems and actions implemented to identify, track and manage potential and confirmed cases of disease. They may include case-finding, testing and contact-tracing, as well as isolation (i.e. to separate individuals with a confirmed or suspected infection) and quarantine (i.e. to separate individuals with an increased risk of infection from those at risk of becoming infected).</p>	<ol style="list-style-type: none"> 1. Active case-finding <ol style="list-style-type: none"> 1.1. Screening for symptoms 1.2. Test-based screening 1.3. Contact tracing 2. Case-specific measures <ol style="list-style-type: none"> 2.1. Isolation 3. Contact-specific measures <ol style="list-style-type: none"> 3.1. Quarantine
<p>Personal protection measures</p> <p>These measures comprise personal protective equipment as well as personal hygiene behaviours that reduce the risk of individuals transmitting and/or becoming infected with a pathogen that has epidemic or pandemic potential.</p>	<ol style="list-style-type: none"> 4. Personal protective equipment <ol style="list-style-type: none"> 4.1. Masks 4.2. Gloves 4.3. Face shields 4.4. Bed nets 5.5. Long or other protective clothing 4.6. Barriers for safer sex 4.7. Repellents 5. Personal hygiene measures <ol style="list-style-type: none"> 5.1. Hand hygiene 5.2. Respiratory hygiene and cough etiquette 5.3. Food safety measures 5.4. Safe handling of personal equipment and supplies 5.5. Safe breastfeeding practices

First-level PHSM category ^a (cont.)	Second-level PHSM category and High-level indicators (cont.)
<p>Environmental measures</p> <p>These measures target the physical infrastructure and environment, including the human–animal interface, through modifying, repurposing and/or appropriately maintaining existing or newly set up structures to limit transmission of a pathogen with epidemic or pandemic potential.</p>	<ul style="list-style-type: none"> 6. Physical infrastructure <ul style="list-style-type: none"> 6.1. Physical barriers (e.g. Plexiglass or Perspex screens, room dividers) 7. Vector control <ul style="list-style-type: none"> 7.1. Building and housing modifications (e.g. using window screens, closing eaves) 7.2. Spraying (e.g. indoor residual or outdoor) 7.3. Reservoir control (e.g. draining stagnant and standing water, covering water containers) 8. Water and sanitation safety <ul style="list-style-type: none"> 8.1. Disinfecting drinking water 8.2. Modification of access to safe drinking water 8.3. Wastewater management 8.4. Solid waste management 9. Surface cleaning <ul style="list-style-type: none"> 9.1. Safe handling of equipment and supplies 9.2. Surface cleaning and disinfection 9.3. Surface decontamination 10. Indoor air quality <ul style="list-style-type: none"> 10.1. Ventilation 10.2. Air filtering 10.3. Humidity control 11. Animal–human interface <ul style="list-style-type: none"> 11.1. Culling 11.2. Safe handling of carrion and infected livestock/ animals 11.3. Regulation of animal movement and products 11.4. Livestock quarantine 11.5. Livestock isolation 11.6. Restriction of farming, fishing, hunting and/or selling of animals

First-level PHSM category ^a (cont.)	Second-level PHSM category and High-level indicators (cont.)
<p>Social measures</p> <p>These are measures implemented at the national and subnational levels comprising (i) modifying social interactions between individuals and groups of people, including gatherings; (ii) adapting, cancelling or modifying the timing of services or activities, or a combination of these; and (iii) adapting or restricting movement within and between specific settings and within or across national borders.</p>	<ul style="list-style-type: none"> 12. Social interactions and gatherings <ul style="list-style-type: none"> 12.1. Physical distancing 12.2. Restrictions or modifications of private gatherings/mass gatherings 12.3. Restrictions or modifications of public gatherings/mass gatherings 13. Domestic mobility <ul style="list-style-type: none"> 13.1. Stay-at-home order or curfew 13.2. Restrictions on public transport 13.3. Restrictions on movements (e.g. maximum distance people can be away from their home) 13.4. Entry restrictions (e.g. for districts, zones, settlements) 13.5. Exit restrictions (e.g. for districts, zones, settlements) 14. Modifications to activities and services <ul style="list-style-type: none"> 14.1. Modifications to access (e.g. closures of schools or businesses, restricting access to individuals with a vaccination certificate or individuals who test negative, extending holidays for schools) 14.2. Modifications to types of activities (e.g. implementing distance or online learning or teleworking; providing services online or remotely; cancelling school meals) 14.3. Safe burial practices

First-level PHSM category ^a (cont.)	Second-level PHSM category and High-level indicators (cont.)
<p>International travel and trade measures</p> <p>These measures follow a risk-based approach to reduce the travel- and trade-associated cross-border exportation, importation and onward transmission of a pathogen with epidemic or pandemic potential.</p>	<ul style="list-style-type: none"> 15. Trade measures for imported goods <ul style="list-style-type: none"> 15.1. Restriction 15.2. Ban 15.3. Inspection 16. Trade measures for exported goods <ul style="list-style-type: none"> 16.1. Restriction 16.2. Ban 16.3. Inspection 17. Travel related screening or testing <ul style="list-style-type: none"> 17.1. Exit or entry screening for symptoms, or both 17.2. Exit or entry screening for vaccination or immunity, or both 17.3. Exit or entry screening for travel or contact history, or both 17.4. Exit or entry testing for infection, or both 18. International border measures <ul style="list-style-type: none"> 18.1. Ban on entry 18.2. Ban on exit 18.3. Entry restriction 18.4. Exit restriction 19. Quarantine upon arrival <ul style="list-style-type: none"> 19.1. Home quarantine 19.2. Hotel/non-health care-facility/institutional quarantine 19.3. Health care facility quarantine 20. Travel advice or warning <ul style="list-style-type: none"> 20.1. Travel advice 20.2. Travel warning
Setting	Description
Unspecified	Setting or location to which the measure applies or where it is to be implemented is not specified or it targets the general population
Businesses and services	Commercial establishments and enterprises, including offices, retail stores, restaurants, gyms and manufacturing facilities where trade is conducted or services are offered; includes workplaces and professional environments other than health care facilities
Homes	Places of residence of individuals, families or households, such as houses, apartments or other shelters

Setting (cont.)	Description (cont.)
Nursing and care homes	Public or private residential facilities providing long-term personal and nursing care, for example for older people or people living with disabilities
Educational settings	Educational institutions ranging from early day care and kindergarten to primary and secondary schools to institutes of higher education, such as universities
Domestic public transportation	Mass transportation settings (buses, trains, trams, boats, ferries etc) and related infrastructure (bus or tram stops, train stations, docks, ports etc)
Points of entry for transportation by land	Ground-based transportation settings and infrastructure, such as land crossings, roads and railways, and public transport, including trains, trams and buses
Points of entry for transportation by water	Water-based transportation settings, such as shipping vessels, ferries, cruise ships and ports
Points of entry for transportation by air	Air travel- and aviation-related settings, such as airports, airplanes and helicopters
Health care settings for the general public	Health care facilities, such as hospitals, clinics and centres for outpatient care, that are accessible to the public (i.e. this category does not include measures directed at health care workers); the category does not include long-term care facilities
Leisure, social, cultural or faith-based settings	Facilities and spaces for leisure, social, cultural and faith-based activities, such as cinemas, theatres, museums and places of worship
Prisons	The term prison covers all institutions where a state holds people deprived of their liberty
Camps and settlements for refugees or internally displaced persons	Places providing protection and assistance to people who have been forced to flee their homes due to war, persecution or violence
Informal settlements and slums	Residential areas where inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit, such as squats or informal rental housing; neighbourhoods that lack, or are cut off from, basic services and city infrastructure; and areas where housing may not comply with current planning and building regulations; informal settlements and slums are often situated in geographically and environmentally hazardous areas
Outdoor public spaces	Outdoor spaces, such as beaches, parks and playgrounds, that are accessible to the public
Other	Specify

PHSM: public health and social measures.

^a These categories are based on Annex 3. An updated version of the conceptual framework for public health and social measures in the context of infectious disease transmission is available in: Building coalitions for strengthening public health and social measures during health emergencies: meeting report, Cascais, Portugal, 14–15 June 2023. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/i/item/9789240084438>, accessed 19 March 2024).

World Health Organization
20, Avenue Appia
1211 Geneva 27
Switzerland

Email: phsm@who.int

