Meeting on Strengthening Health Information Systems for Sustainable Development Goals and UHC Monitoring in the Western Pacific Region
22 – 24 January 2019
Manila, Philippines
WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC

MEETING REPORT

MEETING ON STRENGTHENING HEALTH INFORMATION SYSTEMS FOR SUSTAINABLE DEVELOPMENT GOALS AND UNIVERSAL HEALTH CARE MONITORING IN THE WESTERN PACIFIC REGION

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NOTE

The views expressed in this report are those of the participants of the Meeting on Strengthening Health Information System for Sustainable Development Goals and Universal Health Care Monitoring and do not necessarily reflect the policies of the conveners.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for Member States in the Region and for those who participated in the Meeting on Strengthening Health Information Systems for Sustainable Development Goals and Universal Health Care Monitoring in the Manila, Philippines from 22 to 24 January 2019.
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Keywords

Health information systems / Information systems / Public health informatics / Universal coverage
SUMMARY

The United Nations General Assembly adopted the 17 Sustainable Development Goals (SDGs) in 2015. They include universal health coverage (UHC), which is both a separate target as well as the platform that brings together programmes and actions for health and development. Through the WHO Regional Committee for the Western Pacific, Member States have adopted resolutions on UHC (WPR/RC66.R2 in 2015) and on the SDGs (WPR/RC67.R5 in 2016). In line with these resolutions, WHO in the Region is required to monitor and report biennially progress towards attaining the SDGs and UHC for its Member States. Furthermore, the WHO Thirteenth General Programme of Work (GPW13) is structured around three interconnected strategic priorities to ensure healthy lives and well-being for all at all ages: achieving universal health coverage, addressing health emergencies and promoting healthier populations.

The WHO Regional Office for the Western Pacific has undertaken a number of efforts to support Member States on monitoring progress towards the SDGs and UHC, recognizing that it is a complex process involving consideration of data collection, infrastructure, data transformation and capacity for data analysis to drive policy changes. At a meeting in May 2017, Member States and experts reviewed the regional monitoring framework and indicators. They also identified data sources and analytical frameworks and methods to monitor SDG/UHC progress to improve evidence-based health policy development. This was followed by the release of Monitoring Universal Health Coverage and Health in the Sustainable Development Goals: Baseline Report for the Western Pacific Region 2017 and Sustainable Development Goals and Universal Health Coverage: Regional Monitoring Framework – Applications, Analysis and Technical Information. In addition, Pacific island countries and areas, supported by the WHO Division of Pacific Technical Support and the Pacific Community, reported on progress of the Healthy Islands Monitoring Framework, with a report tabled at the Twelfth Pacific Health Ministers Meeting in August 2017.

Current efforts have highlighted specific challenges, including: data gaps for new indicators, limited disaggregated data to support equity analyses, limited time-series data to track health system performance over time, challenges in quality of data for decision support, and limited technical capacity to analyse and use data for decision-making and policy development. There is also some misalignment between national monitoring efforts and the requirements of SDG, UHC, Healthy Islands and GPW13 monitoring.

The Meeting on Strengthening Health Information Systems for Sustainable Development Goals and Universal Health Care Monitoring in the Western Pacific Region was held in Manila, Philippines, from 22 to 24 January 2019.

The meeting concluded that countries have made progress on strengthening their health information systems (HIS) for monitoring the SDGs and UHC, but data gaps remain. Assessing the current status of health service coverage, financial protection, availability and readiness, social environmental factors, health outcomes and quality of health services continues to be unfeasible in many countries in the Region due to limited availability and timeliness of data. Unclear definitions for new indicators and use of varying definitions across countries do not allow for reliable global and regional comparisons. Also, data quality and data collection methods used for various data sources are unknown or not shared; thus, reported estimates may be inaccurate and inconsistent. Furthermore, tracking the commitment to “leaving no one behind” is still a formidable undertaking with countries mostly generating national-level statistics that cannot be disaggregated to reveal social inequalities within a country and enable longitudinal tracking. Data from various sources such as population-
based surveys and facility information systems are not easily transformed to evidence and are often not accessible or shared for optimal use at community/facility, provincial and national levels.

Countries can apply new innovations, standards and tools developed at the global level to help improve country HIS such as: civil registration and vital statistics (CRVS) standards; International Classification of Diseases (ICD 11); Survey, Count, Optimize, Review, Enable (SCORE) technical package; Health Equity Assessment Toolkit; District Health Information System (DHIS2) implementation; geographic information systems; and WHO standards for analysis and use of facility data. Application of these innovations must have a clear purpose and be in line with country health information strategies, priorities and local context. Good practices and learnings generated from different programmatic interventions contribute as well to overall HIS improvement.

In the Western Pacific Region, countries at different stages of development are fully engaged and keen to move forward to strengthen their HIS for better monitoring the SDGs, UHC, the Healthy Islands vision and GPW13. Key enablers for monitoring and for ensuring data translate to evidence-based decision-making are: integration and harmonization of information systems, multisectoral governance, and legislation. Countries shared successful experiences with different aspects of HIS such as monitoring frameworks, data-informed decision-making, data quality, equity monitoring, vital statistics and unique identifiers. These were recognized as valuable learnings for other countries that are in earlier phases of HIS development.

Country participants also identified concrete practical actions for improving HIS in the coming years. SCORE also provided a useful framework to assess the state of a country’s HIS and path for future HIS development. It was recognized that a systems approach to HIS strengthening is complex, and skills must be developed to ensure it can be applied in a systematic way, including human resource capacity-building in epidemiology and biostatistics, ICD coding, systems adoption, and information and communications technology (ICT) project management.

Member States are encouraged to consider the following:

1. Develop a framework for HIS strengthening based on national priorities, identifying concrete short-term actions with a long-term vision and setting a country-specific scale for assessing HIS development.
2. Continue using a systems approach towards improving HIS and consider innovative tools that would best help the attainment of country priorities.
3. Closely coordinate with WHO for support on essential global goods to achieve tangible progress and just-in-time training.

WHO is requested to consider the following:

1. Provide technical support to countries on improving HIS, particularly in developing a HIS strengthening strategy, establishing governance mechanisms and standards, and building capacity for analysis and use of data.
2. Support countries with unique challenges such as the Pacific island countries and areas in sustaining HIS development and capacity.
3. Work with WHO collaborating centres, regional networks such as the Asia eHealth Information Network and Pacific Health Information Network, and other partners to identify opportunities for peer learning for regional and cross-country capacity-building.
4. Work with countries to establish a structured methodology for monitoring HIS progress in the Western Pacific Region.
1. INTRODUCTION

1.1 Meeting organization
The Meeting on Strengthening Health Information Systems for Sustainable Development Goals and Universal Health Care Monitoring in the Western Pacific Region, held in Manila from 22 to 24 January 2019, was part of the commitment of the World Health Organization (WHO) to support Member States on monitoring the Sustainable Development Goals (SDG), universal health coverage (UHC), the Healthy Islands vision and the WHO Thirteenth General Programme of Work (GPW13). It included presentations on progress and gaps in country health information systems (HIS), global and regional tools and standards and country implementation experiences, group discussions on surveys and facility data collection, country progress and priority actions to improve HIS and Survey, Count, Optimize, Review, Enable (SCORE) assessment preliminary results, as well as a poster walk on the Asia eHealth Information network and the District Health Information System (DHIS2). A help desk enabled participants to get specific advice on their priority HIS needs.

1.2 Meeting objectives
The objectives of the meeting were:
(1) to review the data gaps and weaknesses of HIS monitoring for SDG and UHC progress;
(2) to provide updates on global HIS strengthening initiatives, including: civil registration and vital statistics (CRVS) systems strengthening, International Classification of Diseases (ICD) development, and SCORE technical package and assessment tool, and consider how these can be applied by countries to improve SDG and UHC monitoring; and
(3) to identify and prioritize actions for countries and WHO to strengthen HIS monitoring for SDG and UHC progress.

2. PROCEEDINGS

2.1 Opening session
The opening session set the context for strengthening country HIS to address global commitments to achieving SDGs, UHC, Healthy Islands and GPW13, as well as consider the varying priorities and needs of the country. It also underscored the importance of establishing an effective mechanism to track and measure progress towards common and country-specific goals paying attention to data collection, analysis and use, for which indicators have been generated.

Identified data gaps in monitoring regional and national priorities may be addressed by applying global standards, innovative tools and resources for improving availability and comparability of data, translating data to information, and making information more usable for policies and actions.

2.2 Session 1 – Plenary: Identify gaps in country SDG, UHC and Healthy Islands monitoring and explore global tools
With the continuous efforts to improve SDG, UHC and Healthy Islands monitoring, robust country HIS are envisioned to come about in the Region by 2030. These digitally-enabled systems can efficiently manage a multitude of data sources with complex structures and use sophisticated data processing techniques to make data fit for purpose. Quality, timely and accessible information that
provides evidence for equity analysis and progress towards global and country priorities will facilitate decision-making at all levels.

Significant progress on SDG and UHC monitoring in the Region as of date includes the WHO publications Sustainable Development Goals and Universal Health Coverage: Regional Monitoring Framework – Applications, Analysis and Technical Information and Monitoring Universal Health Coverage and Health in the Sustainable Development Goals: Baseline Report for the Western Pacific Region 2017. These provide guidance to Member States on adapting global monitoring priorities into their national monitoring and evaluation framework and serve as baseline status for monitoring country progress towards SDG and UHC.

Countries in the Region have limited data availability of global priority indicators. Many countries lack disaggregated data for equity analysis and generally have not produced data for timely monitoring. SDG and UHC commitments involve capacity to generate data for national- and subnational-level monitoring, and this requires resources for compiling and utilizing different data sources. Engagement of data producers and consumers as well as the data and information technology experts is needed to establish overarching data governance to facilitate complex data processes. Clearly defined indicator metadata, established data-sharing mechanisms, and standards and tools for collecting, analysing and using data for policy are some key data governance elements that can address data gaps.

An update on global tools and standards for addressing data gaps was provided. The SCORE for health data technical package aims to assist Member States in strengthening country health data systems and capacities to respond to the monitoring requirements of the health SDGs, including universal health coverage and other national and subnational priorities. SCORE is a framework of five proven interventions: survey populations and health risks; count births, deaths and causes of deaths; optimize health service data; review progress and performance; and enable data use for policy and action. Participants discussed key elements, targets and standards for each of these interventions as well as the SCORE monitoring tool and methodology, and the forthcoming launch of a global repository of SCORE for health data essential tools and resources.

Health facility surveys are independent assessments that may provide information on availability, readiness and quality of services, provider knowledge and practice, and client perspective that cannot be extracted from routine health information systems. These can be essential data sources for countries without established health facility accreditation systems. Many types of health facility assessments are available and can be freely used by countries such as the Service Availability and Readiness Assessment, which has been implemented in at least 30 countries, mostly in Africa and Asia. Harmonized facility survey modules have been developed by WHO and partners to provide objective measures for independent evaluation of service availability and readiness, quality of care and safety, and management and finance. These assessments can be carried out by international or national experts, independent of people who are providing services. Countries are encouraged to adopt the modular approach where they choose modules to implement based on their priority assessment areas, aligning these to feed into routine analytic processes at all levels.

CRVS are complex systems that require advocacy, multisectoral partnership, a supportive legislative framework, institutional capacity, innovation, routine monitoring and evaluation of process and outcomes, and use of vital statistics for policy. Improving complex systems such as CRVS requires inter-agency collaboration to bring together information generated by different agencies. Without an
effective national CRVS coordination mechanism, ministries may continue to work in isolation and produce inconsistent estimates of mortality. Ministries can work together to understand how they can align their business processes, harmonize and link their data collections, to systematically achieve better coverage of birth and death registration.

Long-term investments in CRVS are required to see improvements in mortality statistics. Global and regional initiatives are being implemented to enable countries to strengthen CRVS. The World Bank in 2017 launched a CRVS eLearning course that covers all aspects including legal framework, deaths, births, national ID, digitalization and others. The International Statistical Classification of Diseases and Related Health Problems (ICD) for coding causes of death, the International Form of Medical Certificate of Death developed by WHO for recording all conditions relating to the death, and ICD rules for selecting and modifying cause of death enhance comparability of mortality data. Countries are encouraged to use the WHO Medical Certificate of Death to ensure high-quality mortality statistics.

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WHO has launched Start-Up Mortality List (SMoL), which uses a simplified set of coding rules and a shorter list of 107 causes of death compared to over 10,000 causes of deaths in the full ICD 10. It is integrated in the DHIS2 cause of death module and only requires two days of training to implement. Countries with limited resources may use SMoL to initially build capacity and progress towards using the detailed ICD list when ready.

Many tools are available for conducting verbal autopsy of deaths that occur outside of facilities. Countries are encouraged to use the WHO standardized instrument for verbal autopsy, which complements the WHO Medical Certificate of Death. It is used by 22 countries. Comprehensive implementation of verbal autopsy depends on population size of the country. For countries with large populations, verbal autopsy on a sample of deaths may be more feasible. Also, verbal autopsy is better integrated into routine CRVS.

Routine cause of death statistics may also be improved with surveillance systems. Cancer registries link to cancer deaths indicated in death certificates. Population-based cancer registries are most ideal. However, countries with low resources may start with a pathology registry expanding to hospital-based registry. The International Agency for Research on Cancer (IARC) developed a guide for planning and developing population-based cancer registration in low- and middle-income settings. Cancer registration includes the use of a notification form and ICD for oncology, which was developed by the International Association of Cancer Registries, and application of standard coding rules. CanReg5 is an open-source software programme developed by IARC for cancer registration that helps in generating reliable cancer statistics.

WHO supports countries in the Region to establish cancer registries in low- and medium-resource settings by providing cancer registration and cytology trainings. Cancer statistics may not be accurate due to varying diagnoses on primary cancer site and duplicate counting of cases because of lack of unique personal identifiers. Establishing registries require a collaborative approach among different ministries and partners. They also involve financial and technical support to fully implement the system and produce morbidity and mortality statistics to inform policy-makers, researchers, patients and families.
2.3 Lunch session: Pacific Health Information Network

The Pacific Health Information Network (PHIN) was established in 2006 to provide opportunities for health-care workers in Pacific countries and areas to learn, share and collaborate. In light of the common issues that beset the Pacific region such as fragmented information systems, weak health informatics capacity, lack of e-governance frameworks, weak partnerships and collaboration among agencies in public and private sectors, and lack of regulation of health providers, and with consideration of the high interest in HIS and digital health solutions, the PHIN Strategy 2018–2020 was developed. Strategic actions include strengthening leadership, governance and brand, advancement of capacity-building and inclusive growth, improvement of peer assistance, and strengthening of regional cooperation and multisectoral collaboration. While challenges related to funding, competing priorities, limited country and external partnerships abound, the network continues to provide a platform for professionals to connect and collaborate to improve health outcomes in the Pacific through sustainable digital solutions. One of its upcoming activities is the Digital Leadership Webinar to address the gaps in driving the digital health agenda.

2.4 Session 2 – Plenary and group work: Real practices from public health programmes

Technical programmes rely on a number of data sources for monitoring and evaluation such as a notifiable disease system, facility-based records, a disease-specific surveillance system, sentinel surveillance, household surveys, facility-based surveys, other settings-based surveys, census, vital registration systems, insurance records, risk factor surveillance and cancer registries. In some cases, secondary sources such as burden of disease modelling, global reported indicators and events-based surveillance are used in the absence of accurate data from primary sources.

Population-based surveys, facility records and other programme data collections, for example, are essential sources for epidemiologic context, input, output, outcome and impact indicators for monitoring and evaluating progress towards hepatitis B virus and hepatitis C virus elimination or for information on the cascade of diagnosis and treatment for people living with HIV. Immunization and vaccine-preventable disease control programmes make use of facility reports and surveys for immunization coverage, adverse events and diseases incidence, supply management systems reporting for stock-outs and wastage monitoring, to detect outbreaks, identify at-risk populations, and forecast vaccine procurement and distribution. These are only some of the many use cases that show the value of data in programme planning, management and evaluation.

The programmes reported common data gaps from facility data collection systems and population-based surveys. Facility data are often of limited scope and representation. Some data collections include only hospital cases and lack data from primary health care units. In most countries in the Western Pacific Region, data from the private sector are not captured. Data needed by technical programmes such as foodborne diseases, mental health, disability and rehabilitation are not included in routine data collection. Granularity of information is lost when reported to national levels, and determining denominators can be quite challenging. Longitudinal monitoring is often not feasible because of paper-based records and poorly developed electronic databases given programmes are not engaged during the design process.

Quality of data suffers as health staff are overburdened by different data collections as a result of vertical programme reporting requirements. Staff are not incentivized to provide good quality data, and managers or high-level staff fail to provide feedback. Appropriate data-sharing mechanisms are also lacking within the health ministry and between countries and WHO.
Unlike routine facility data collection, population-based surveys are donor dependent and not conducted frequently at regular interval. Some surveys are conducted every 5–7 years, when annual data are needed. Many surveys of similar sampling design are not integrated to maximize collection of programme indicators. Often programmes are not engaged in the design of demographic health surveys; thus, many indicators are not fit for their use. While surveys are good sources of disaggregated data, results may not be reliable because of implementation issues. In some instances, survey findings are not recognized by health ministries and programmes because of questionable survey data quality.

Countries shared how they address the gaps in population-based surveys and facility data collection. Governance for private facility data reporting, demand for data and data use can improve coverage of facility data. A mechanism that includes coordination among programmes to get consensus on what indicators to collect is a good practice. Many countries have standardized indicator definitions and standard templates for data collection to improve quality of data. Facility data collection systems are designed to address the data demands and use for many types of data consumers such as data collectors, programme managers and policy-makers.

Electronic medical records are a key solution for granular data and for longitudinal follow-up. Unique IDs for patients and for facilities as well as a common platform or use of an interoperability layer for countries with different systems are essential solutions for increasing data sharing and use and for longitudinal tracking. Governance mechanisms should be in place to maintain privacy and confidentiality of information.

Annual national health and morbidity surveys that incorporate different health priorities on a rotating basis will increase scope of survey indicators. An established user group in the bureau of statistics that coordinates with different sectors on surveys can ensure survey data will be usable. Global surveys such as the WHO STEPwise approach to surveillance can be combined with other programme areas.

2.5 Session 3 – Plenary: Real practices in countries on data use and translating data into evidence for decision making

The new ICD 11 launched in 2018 is readily available in electronic form and for implementing in an electronic environment. It was formulated by expert groups and consolidated, reviewed and field-tested, and prepared for implementation. They conducted migration of mortality coding tools, translations, assessment of impacts for updating, and test implementation for electronic coding tools. Experts from 55 Member States have contributed to the review of ICD 11 classification, rules and processes.

ICD 11 includes a translation platform, a coding tool, ICD FIT for field implementation testing and WHO Analysing Mortality Level and Cause-of-Death (ANACoD3) software on quality assurance, which is still in preparation phase. It is the most ready version for implementation among all ICD revisions. It has improved usability, has the most up-to-date scientific content and is eHealth-ready for use in digital environments linked to relevant other classifications and terminologies with multilingual support for translation and output. Countries were advised to seek further information on ICD 11 during the help desk session.

How countries transform data into evidence-informed policy development is in itself a political act, from indicator selection to data presentation to stakeholders for policy reforms at different levels in the health system. There is a huge inertia in policy reform that information may be able to address.
Indicators should be framed for specific actions related to accountability, quality improvement or compliance, with health goals or ambitions as primary drivers. The information system should be able to generate timely, valid and reliable measures of selected indicators. There should be clear targets, timelines and a shared commitment to acting on the status of the indicator findings.

Data should be presented in a format that brings it to life, is easy to understand and addresses the needs of the users at different points of the hierarchy to encourage their use. The more data are used closer to the point of generation, the higher the data quality will be. Local organization users mostly do not have access to data beyond what they collect. Thus, they have no opportunities to benchmark against others. The role of data consumers at the national or central level is to provide feedback down to lower levels/communities on comparative analyses.

Country presentations on real practices regarding information sources and evidence for decision-making

The Australian Institute of Health and Welfare (AIHW) shared its data quality practices, which include the use of the AIHW Quality Management Framework that guides the statistical production cycle, METeOR that provides a metadata registry and data quality statements to ensure a common understanding and interpretation of data, and the Validata tool for automated checking of data errors. While these tools aid in generating high-quality data, the key contributing factor towards an effective data quality assurance process is a workplace culture that values data quality.

The Center for Health Statistics and Information of the National Health Commission of China shared its country experience in conducting the largest and most comprehensive health survey conducted regularly to inform on the status of residents, health service demand and utilization, and meeting reporting requirements for the Healthy China 2030 plan, the SDGs and UHC. In the most recent Sixth National Health Service Survey, they employed a computer-assisted interview system, with trained interviewers using a unified mobile terminal, recording data on-site that allowed timely reporting and auditing of data and decreased the rate of missing survey questions. Political support, substantial financial investment and systematic planning led to successful implementation of this nationwide survey of over 94,000 households.

The Health Informatics Center of the Ministry of Health of Malaysia shared its implementation of the Malaysian Health Data Warehouse (MyHDW). Developed using local government-owned technology and artificial intelligence, MyHDW integrates medical records systems from hospitals and clinics and other health-related databases. It provides tools to process and visualize data in dashboards and maps for many purposes including SDG and UHC performance reporting. At least 20% of government health facilities that submit data to the Ministry of Health are connected to MyHDW, while integration of private facility data has not been implemented since data submission from the private sector is currently only voluntary. A Data and Information Governance Committee has been established to govern implementation and use of MyHDW, and policy procedures are in place to ensure data security and privacy.

2.6 Session 4 – Plenary: Opportunities for strengthening monitoring

WHO provided an update on the GPW13 measurement framework and UHC service coverage index development. The proposed GPW13 impact framework is a three-layer measurement system: healthy life expectancy or HALE as the overarching layer; followed by the UHC index, better protected index and healthier populations index that are aligned to the triple billion targets; and the third layer consists of the 46 programmatic targets and indicators to drive country performance. The 2017 UHC index has
been revised to capture effective coverage, defined as the fraction of health gain delivered through a health system intervention compared to what can be potentially delivered. WHO will work with Member States to assist them in generating and tracking these indicators.

Monitoring inequalities is essential for achieving health equity, UHC and the SDGs. It tracks the differences in health between population subgroups and identifies who is being left behind. It should not be carried out as a separate initiative but integrated in monitoring plans. The Health Equality Assessment Toolkit (HEAT and HEAT Plus) is a software application that aids in analysing and reporting health inequalities. The HEAT edition comes with the WHO Health Equity Monitor database that contains data for more than 110 countries, while the HEAT Plus, the upload database edition, enables users to upload their own datasets for equity analyses. It is available in English, French, Spanish and Portuguese, and a Chinese version is under development.

HEAT provides a good opportunity to explore data. Its usability can be maximized by linking to existing tools such as the urban health equity assessment and response tool and DHIS2 to enable seamless use of available data for equity analyses. The HEAT initiative can also be leveraged to encourage integration of programmatic data collections. Also, WHO can consider ways to demonstrate how the results of HEAT analysis can be used for practical purposes such as advocating an increase in health sector budget. WHO can organize a workshop on HEAT for countries in the Region to learn more about monitoring inequalities.

An update on monitoring progress towards the vision of Healthy Islands in the Pacific was provided. The 1995 Yanuca Island Declaration identified the Healthy Islands vision with key elements for holistic health development of children, environment, ageing, the ocean and ecologic balance. Two decades later, the Healthy Islands Monitoring Framework (HIMF) was developed to improve data collection and monitor progress towards the vision with support from WHO and the Pacific Community (SPC). The HIMF indicators come from primary sources such as surveys, facility records, census, surveillance systems, the region’s noncommunicable disease (NCD) policy dashboard and CRVS and from secondary sources such as global reports. While preferred, national data are often not comparable because of differences in definitions and methodology of estimation. Global estimates provide reliable indicators that show comparable progress of countries in the Pacific. The framework is regularly reviewed and revised to address data gaps. Recommended actions from the recent review in 2017 include using an electronic reporting system and promoting data exchange and use.

Estimating deaths in the Pacific remains a challenge, especially for island countries with small populations. Low proficiency of doctors to accomplish death certificates, inadequacy of diagnostic tools, low capacity of coders and complexity of ICD coding are some of the reasons for low death reporting rates in Pacific island countries. The Brisbane Accord Group, which is composed of SPC, WHO and other partners, provides CRVS-related trainings in the Pacific including medical certification of cause of death and mortality coding. WHO will continue to work with countries to increase capacity for strengthening CRVS.

**Country presentations on real practices regarding information sources and evidence for decision-making**

Like other countries in the Region, the Federated States of Micronesia has made progress in strengthening its HIS. The country has mapped its current information systems to identify areas for improvement, established a national committee to oversee HIS initiatives and constantly engaged key stakeholders. The current system is being upgraded from a paper to an electronic health record system
with the core services such as patient records, registry, vital statistics, outpatient services, emergency, dental and admissions already in place, while the programme services are being developed. The entire system is targeted to be fully operational by 2020. Other actions include legislation for mandatory health information reporting, establishment of one database, capacity-building for ICD coding, and improvement of data gathering from communities, peripheral and other clinics, and private and public hospitals. This system is also envisioned to automate reporting for SDG indicators.

Vanuatu shared how it uses information for action by aligning its health indicator framework with the country’s National Sustainable Development Plan 2016–2030, Health Sector Strategy 2017–2020, and regional frameworks such as SDG, UHC and Healthy Islands. The indicator framework makes use of a logical framework that identifies the inputs, processes or activities, outputs, outcomes, and impacts. Each indicator has a standard definition and additional information on other data attributes stored in a data dictionary. The inputs, processes and outputs are tracked frequently through routine data collection, and these allow managers to see and address the changes compared to outcome and impact indicators that require surveys and take a longer time to generate. Many challenges confront the country’s HIS, such as limited resources to conduct surveys and to meet SDG/UHC reporting requirements, especially the measurement of equity due to ICT limitations. Regular reviews are conducted to ensure the system can address the health information needs of the country.

2.7 Poster walk: Asia eHealth Information Network and DHIS2 data exchange tool

The Asia eHealth Information Network (AeHIN), composed of digital health advocates from academia, government, nongovernmental and private organizations, presented its core work on supporting governments to achieve the benefits from digital health through governance, architecture, programme management, and standards and interoperability.

The DHIS2 data exchange tool aims to improve data sharing between Member States and WHO in the Western Pacific Region. The tool collects 109 SDG and UHC indicators from all countries and 48 indicators from Pacific countries for Healthy Islands monitoring, with global estimates for some of these indicators. It shares standard metadata for each indicator and has a pivot table and dashboard functionality.

2.8 Session 5 – Plenary: Digital health and innovations to improve data access and use

Geographical information systems (GIS) provide a framework for gathering, managing and analysing data. GIS applications include disease surveillance, risk analysis, community health profiling, and health access and planning. GIS technology can determine exact locations of health issues or risks and strategic locations to improve access to health services. Applications are constrained by availability and quality of data as well as human resource capacity for GIS, hardware and software investments.

Country presentations on how eHealth and other innovative tools can improve health information and monitoring efforts

The Philippine Department of Health shared the development and implementation of the Philippine eHealth Program under the National eHealth Governance Committee, composed of the Department of Health, Philippine Health Insurance Corporation, Department of Science and Technology, Department of Information, Communication and Technology, and other key stakeholders from the private and public sector. The National eHealth Program components include governance, legislation, policy and compliance, eHealth solutions, standards and interoperability, strategy and investment, infrastructure, and human resources. Governance, policies and standards are in place, and electronic medical record
systems for hospitals and primary health care facilities are being implemented. Over 70% of the facilities are already using the system. The country is implementing the Philippine Health Information Exchange, which will enable secure data exchange to improve health-care delivery and decision-making. Interconnection of facilities and development of additional policies related to ICT infrastructure such as cloud hosting to support the eHealth system are ongoing.

Solomon Islands has leveraged the use of GIS to prioritize health zones by health programmes. It also has applied GIS to identify geographically isolated populations and identify strategic locations for a new health facility or mobile health clinic. Using geospatial analysis of data on size of catchment from the national census, distance or travel time from surveys, and level of service utilization from the routine health information system, health facilities can be reclassified and provided with additional resources to match the demands in the catchment area. This is a good example of how evidence from multiple sources is generated and used for decision-making and policy.

The Lao People’s Democratic People’s Republic has made progress in improving HIS with its roll-out of an integrated health management information system (HMIS) using DHIS2 software since 2013. This system hosts routine data for nine programmes, and surveillance and other data from different sources to provide information to hospital managers, programme managers and policy-makers. Its successful implementation was brought about by effective governance, a coordination and legislative framework, human resources who were trained to operationalize the system, as well as an upgrade in the infrastructure and optimized financing resources to sustain the operations.

The introduction of eHealth has improved health information and monitoring system in Mongolia. The country has an existing state policy on eHealth to manage information and technology development, aligning with the national enterprise architecture and international information and technology standards. The eHealth project includes building an eHealth integration system using enterprise architecture, data and information technology standards, data dictionaries, an information exchange platform, statistics dashboards, eHealth applications, investments in primary health care facilities, strengthening institutional capacity, and project management. Other initiatives include birth and mortality e-registration, drug e-registration, and health insurance.

The experience of the Fiji ICT unit in improving the country HIS highlights many challenges that countries face in introducing innovations such as budget limitations, complex and lengthy procurement processes, downtime issues, and limited human resources. The country has overcome many obstacles and produced applications, established better infrastructure, and enabled users to adopt the system. They use a virtual private network to enable global access and an access point network for within-country access of HIS applications such as dashboards for health statistics, ICT services and the complaints management system. Key factors to consider in identifying the appropriate technology are connectivity, infrastructure, people and demand for use.

Tonga too shared its progress in developing eHealth. The initiative included an assessment of the current state of eHealth components on leadership and governance, strategy and investments, applications and services, standards and interoperability, legislation, policy and procedures, infrastructure and workforce, and a planned future state of country eHealth components, including the solution to integrate information systems and enable a seamless flow of data in any health facility. The country eHealth strategy is almost complete, and the work on developing business and technical requirements is progressing.
2.9 Lunch session: An overview of the Framework to guide the secondary use of the My Health Record System in Australia

My Health Record (MHR) is an online summary of personal health information from individual interactions with different service providers, to enable use of health data at point of care in Australia. There are over 6 million consumers and more than 15 000 health-care provider organizations registered in MHR. The Framework for secondary use of MHR data was released in 2018, providing guidance for using data for research and public health purposes. The MHR Data Governance Board has been established; AIHW was appointed as the data custodian in charge of protecting confidentiality and reporting on national health and welfare. MHR data cannot be used for commercial and non-health-related purposes, for assessing social welfare benefits or taxes or by insurance agencies, and cannot be sold. Strict ethics approval processes including securing individual informed consent are applied for use of personally identifiable data from MHR.

2.10 Session 6 – Helpdesk to support HIS development

This session enabled country participants to learn more about HIS tools and processes for improving data quality and use: (1) CRVS and ICD, (2) transforming information to evidence-based policy, (3) GIS, (4) WHO standards for improving data quality and facility data, (5) DHIS2 infrastructure, roll-out and data visualization tools, and (6) HEAT. Each country participant registered for up to two helpdesks before the session. Each of the six helpdesks was run by an expert who provided advice or information sought by countries on the chosen HIS topic.

2.11 Session 7 – Group work: identify practical country actions to support HIS

In this group work session, participants shared their country HIS progress based on 2017 priority actions, data collection and analysis capacity of each country. They identified practical priority actions to achieving the envisioned HIS for 2030, as well as help needed from WHO and partners on HIS strengthening.

Most countries in the Region have started to transition to electronic data collection systems, and have been working towards harmonization and integration of disparate systems from different programmes and from public and private sectors. Common initial actions by countries shifting to digitalized systems include assessment of existing information systems, engagement of key stakeholders and development of an eHealth strategy. Among notable achievements in countries with existing electronic systems include getting high-level commitment for sustaining HIS improvement, establishment of a data governance policy, alignment of national objectives with the research agenda, standardization of reporting tools and establishing feedback mechanism at all levels. Others in countries with more advanced systems have concentrated their efforts in the last year to enabling an effective monitoring system for tracking the SDGs and establishing national strategic frameworks and plans for national priorities.

While some countries have established governance mechanisms for interagency collaboration on areas such as CRVS, other countries are still working towards gaining commitment from stakeholders in multiple sectors to collaborate on strengthening country HIS. CRVS is a priority in many countries, as well as eHealth, data governance, developing framework for the SDGs and UHC, automated data collection with dashboards and visualizations, and multisectoral collaboration for addressing SDG and UHC targets.
Countries requested WHO to provide technical assistance on how to collect new SDG and UHC indicators, aligning the national monitoring and evaluation framework with SDG and UHC frameworks, establishing protocols and guidelines for management of HIS, and training on data analysis, CRVS and ICD coding. Moreover, WHO support is needed to establish an effective peer learning mechanism, so countries at earlier stages of HIS development may learn from experiences of countries in the Region.

2.12 Session 8 – Plenary and group work: SCORE assessment tool methods
(interventions S and C)

WHO introduced the SCORE assessment tool and methodology, which was developed in consultation with experts on different areas of HIS. The SCORE assessment methodology relies on objective verification by independent experts through review of available country documents, reports and databases. A summary was provided of SCORE data availability based on preliminary desk review of globally available databases and online documents. The results of the preliminary assessment were shared with country participants to review and validate their country profiles as well as to identify missing sources and data gaps.

This session covered the key elements, targets, indicators and scoring, common challenges and related priority actions as well as tools and resources available for interventions to survey populations and health risks (S) and count births, deaths and causes of death (C).

S interventions consist of a system of regular population-based health surveys, surveillance of public threats and a regular population census. Surveys should be nationally representative, aligned with international standards on design, implementation, analysis and dissemination. They should also cover major health priorities and dimensions of inequality. Indicator- and event-based surveillance should be based on International Health Regulations standards. There should be complete and timely reporting of notifiable conditions from reporting sites to central levels. Population projections should be available for subnational units based on a census conducted in the past 10 years.

C interventions consist of full birth and death registration and certification and reporting of causes of death. Core attributes of a functional CRVS system to generate vital statistics include a legal framework, formal interagency collaboration, sufficient locations for birth and death registration, well trained registrars, data quality of assessment of vital statistics, performance monitoring, and publication of high-quality vital statistics reports. Assessing country capacity to generate cause of death statistics requires legislation for medical certification of causes of death, country-adopted ICD-related forms, training of medical students and statistical clerks, verbal autopsy, data quality checks, and production of cause of death statistics.

Country participants expressed concern about the scoring based on publicly available documents, country documents in local language and scoring penalties for recency of published reports. It was acknowledged that countries may have more recent data than are published in WHO or United Nations global databases. To complete assessments for SCORE indicators, countries need to be engaged to get access to internal documents such as weekly surveillance reports, rapid assessments, CRVS committee meeting reports and other documents that are not published online. A focal point needs to be identified for each country to facilitate sharing of internal documents that may require government clearance.
Participants also raised concern on sensitivity of the SCORE items to account for regional and country variation. For example, countries with small populations may only have one reporting sentinel or one survey compared to countries with more complex information systems. The standards are useful for national planning purposes regardless of country HIS complexity. However, modification of analysis and scoring is necessary to ensure sensitivity and comparability of country assessments in the global report and to also consider the potential lack of evidence from many countries on some SCORE indicators. Subgroup analysis by region, income or population size may be considered as well.

2.13 Session 9 – Plenary and group work: SCORE assessment tool methods (interventions O, R and E)

In this session, countries were informed on the key elements, targets, indicators and scoring, common challenges and related priority actions, as well as tools and resources available for interventions to optimize health service data (O), review progress and performance (R), and enable data use for policy (E).

O interventions consist of a routine facility and community reporting system with patient monitoring, a regular system to monitor service availability, quality and effectiveness and health service resources such as health financing and health workforce. Indicators include availability of annual statistics for selected indicators derived from facility data, coverage levels of reporting from facilities, existence of a functional facility reporting system, a well-established system to independently monitor health services, availability of data on national health expenditure and data on health workforce, and existence of a national human resources HIS.

R interventions consist of regular analytical progress and performance reviews with equity and institutional capacity for analysis and learning. Indicators include availability of an annually produced high-quality analytical report of health sector progress and performance and institutional capacity in data analysis at national and subnational levels.

E interventions consist of data- and evidence-driven policy planning, data access and sharing, and strong country-led governance data. Indicators include data- and evidence-based national health plans and policies, publicly available health statistics, standards-based national monitoring and evaluation, a standards-based national digital health/eHealth strategy, and existence of foundational elements to promote data use and access.

Countries confirmed that for many of the items, they collect related data and have internal documents that can provide evidence for SCORE assessment. Participants also highlighted variation in indicator definitions and lack of applicability of certain indicators to country context. Adjustments will be done in the analyses to account for country variation.

The results from SCORE assessment are intended to help countries understand their country HIS situation comprehensively and identify gaps and potential actions for improvement. Countries do not need to drastically change priorities but should consider applying the HIS strengthening actions that align with their national health goals and information system development pathway.

2.14 Session 10 – Plenary: SCORE overall summary and feedback

The SCORE for health data package provides a coherent framework that enables countries to identify critical gaps and needs in country data systems, focus investments on priority interventions that have maximum impact, and access best practice actions, tools and standards.
The key concerns identified by countries in conducting SCORE assessment include the lack of country documents in the public domain, documents in local language and other type of documents available as evidence for the indicators. Other issues include lack of human resources to accomplish data entry, use of a “traffic light” instead of a numerical scoring system, the need to improve terminology of items to be more sensitive, problems applying indicators to country context and adjustments on scoring. Assessment of SCORE items is based on an external review of any country document regardless of its publication status or language. Countries will need to provide the documents to WHO to complete the assessment. The assessment will be accomplished by an external expert. Item scoring will be modified to consider regional and country-specific contexts.

The next steps for completing a SCORE assessment were discussed with countries. WHO and Member States agreed on the timelines for data collection, validation and provision of government clearance for publishing SCORE results.

2.15 Session 11 – Plenary: Conclusion and way forward

Countries have made progress improving their HIS. They are well engaged and committed to move forward. A systems approach to HIS strengthening with a focus on integration using ICT is common practice in the Region. Countries should carefully select, introduce and apply ICT innovations that are fit for purpose. As countries in the Region vary by stage of HIS development, opportunities abound for harmonization and peer support networks to leverage country experiences and learnings.

Several global tools and standards are available for countries to use as a guide for HIS development. SCORE is a comprehensive framework for improving country capacity for monitoring the SDGs and UHC, identifying gaps in data systems, and providing tools and resources to fill the gaps. Countries need to apply tools that are in line with their country priorities and HIS development context. Short- and long-term actions should be identified and implemented to meet country health goals.

Close coordination and constant communication with WHO are needed to acquire support for global goods to achieve the SDG, UHC, Healthy Islands and GPW13 goals.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

In the Western Pacific Region, countries at different stages of development are fully engaged and keen to move forward to strengthen their HIS for better monitoring of the SDGs, UHC, the Healthy Islands vision and GPW13. Key enablers for monitoring and for ensuring data translate to evidence-based decision-making are integration and harmonization of information systems, multisectoral governance, and legislation. Successful country experiences with different aspects of HIS such as monitoring frameworks, data-informed decision-making, data quality, equity monitoring, vital statistics and unique identifiers were recognized as valuable learnings for other countries that are in earlier phases of HIS development.

Global tools and standards for strengthening HIS are available for countries to use, including SCORE, which provides a useful framework to assess the state of a country’s HIS and path for future system development. It was recognized that a systems approach to HIS strengthening is complex, and that skills must be developed to ensure it can be applied in a systematic way, including human resource
capacity-building in epidemiology and biostatistics, ICD coding, systems adoption, and ICT project management.

3.2 Recommendations

3.2.1 Recommendations for Member States

Member States are encouraged to consider the following:

1. Develop a framework for HIS strengthening based on national priorities, identifying concrete short-term actions with a long-term vision and setting a country-specific scale for assessing HIS development.
2. Continue using a systems approach towards improving HIS and consider innovative tools that would best help the attainment of country priorities.
3. Closely coordinate with WHO for support on essential global goods to achieve tangible progress and just-in-time training.

3.2.2 Recommendations for WHO

WHO is requested to consider the following:

1. Provide technical support to countries on improving HIS, particularly in developing a HIS strengthening strategy, establishing governance mechanisms and standards, and building capacity for analysis and use of data.
2. Support countries with unique challenges such as the Pacific island countries and areas in sustaining HIS development and capacity.
3. Work with WHO collaborating centres, regional networks such as the Asia eHealth Information Network and Pacific Health Information Network, and other partners to identify opportunities for peer learning for regional and cross-country capacity-building.
4. Work with countries to establish a structured methodology for monitoring HIS progress in the Western Pacific Region.
ANNEXES

Annex 1. List of participants, temporary advisers, observers/representatives and Secretariat

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# Annex 2. Meeting programme

<table>
<thead>
<tr>
<th>Time</th>
<th>Day</th>
<th>Programme Details</th>
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<tbody>
<tr>
<td>08:30</td>
<td>Day 1, Tuesday, 22 January</td>
<td><strong>Opening ceremony</strong>&lt;br&gt;Chair: Gan Joo&lt;br&gt;Opening remarks&lt;br&gt;Regional Overview&lt;br&gt;Participated introductions&lt;br&gt;Mission objectives and process&lt;br&gt;Gan Joo&lt;br&gt;Administrative announcements&lt;br&gt;Raymond Arntz</td>
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<tr>
<td>08:50</td>
<td>Day 1, Tuesday, 22 January</td>
<td><strong>Key points from the first day</strong>&lt;br&gt;Stephanie Duquet</td>
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<tr>
<td>09:45</td>
<td>Day 1, Wednesday, 23 January</td>
<td><strong>Session 2: Plenary: Opportunities for strengthening monitoring</strong>&lt;br&gt;Chair: Denise Neale&lt;br&gt;<strong>Methodologies for within and across country comparability</strong>&lt;br&gt;• CGMS: assessment framework and UIC services average ratings development&lt;br&gt;• Monitoring health indicators, like mortality, disease, and disability&lt;br&gt;• Health indicators monitoring and early warning&lt;br&gt;• Discussion</td>
</tr>
<tr>
<td>10:00</td>
<td>Day 1, Wednesday, 23 January</td>
<td><strong>Key points from the previous sessions</strong>&lt;br&gt;Denise Neale</td>
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<tr>
<td>10:15</td>
<td>Day 1, Wednesday, 23 January</td>
<td><strong>Section 3: Plenary: Digital health and innovation to improve data access and use</strong>&lt;br&gt;Chair: Stephanie Duquet&lt;br&gt;Using CDS for disease surveillance (with an example&lt;br&gt;access Eric Briand/WHO CAN)&lt;br&gt;Country presentations on how digital and other innovative tools can improve health information and monitoring efforts (identified countries will present their proposed datasets before the meeting)&lt;br&gt;Introduction to the Regional Action Agenda and use of health intelligence and data sharing across countries and data to support SGS and UIC monitoring, review, and sharing&lt;br&gt;Discussion&lt;br&gt;Introduction to the Group work: Group work for reference sessions: Aseannotated Diagnostic&lt;br&gt;11:15</td>
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<tr>
<td>13:30</td>
<td>Day 1, Wednesday, 23 January</td>
<td><strong>Session 2: Plenary and Group work: Real practices from public health programmes</strong>&lt;br&gt;Chair: Stephanie Duquet&lt;br&gt;<strong>Presentation on behalf of WHO</strong>&lt;br&gt;WHSN technological efforts on data use and needs&lt;br&gt;Luiz Taha&lt;br&gt;<strong>Group discussion</strong>&lt;br&gt;Population-based survey data and Facility health data&lt;br&gt;Luiz Taha, Raquel Del Rio, Patricia Andino, Jane Scally, David Harlow&lt;br&gt;Discussion</td>
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<tr>
<td>14:00</td>
<td>Day 1, Wednesday, 23 January</td>
<td><strong>Session 3: Plenary and Group work: Real practices in countries on data use and transferring data into evidence for decision making</strong>&lt;br&gt;Chair: Stephanie Duquet&lt;br&gt;<strong>Presentation on behalf of WHO</strong>&lt;br&gt;Stephanie Duquet&lt;br&gt;<strong>Discussion</strong>&lt;br&gt;Data use and transferring data into evidence for decision making&lt;br&gt;Stephanie Duquet&lt;br&gt;Countries presentations on real practices regarding information access and evidence for decision making (identified countries will present their proposed data before the meeting)&lt;br&gt;Discussion</td>
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<tr>
<td>14:15</td>
<td>Day 1, Wednesday, 23 January</td>
<td><strong>Session 4: Plenary: Overall summary and feedback</strong>&lt;br&gt;Chair: Stephanie Duquet&lt;br&gt;<strong>Group work report</strong>&lt;br&gt;Feedback from the group discussions&lt;br&gt;Secretary of Health report and next steps regarding momentum, translation and impact&lt;br&gt;Karin Elemen&lt;br&gt;Discussion</td>
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<tr>
<td>14:30</td>
<td>Day 1, Wednesday, 23 January</td>
<td><strong>Session 5: Plenary: Conclusion and Way Forward</strong>&lt;br&gt;Chair: Gan Joo&lt;br&gt;Potential changes in actions based on WGII&lt;br&gt;Secretary of regional action for better monitoring SGS, UIC, and health indicators for document countries and WHO&lt;br&gt;Stephanie Duquet/Denise Neale&lt;br&gt;Closing remarks and way forward for WHO and other countries Gan Joo</td>
</tr>
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**FPO/PHS/FRG: 11/2019**

*Note: Session 6: Plenary: Real practices in countries on data use and transferring data into evidence for decision making is cancelled. Stephane Duquet will present the data use and transferring data into evidence for decision making.*