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Implementation of the Healthy Islands monitoring framework:

Health information systems

Pacific island countries and areas (PICs) are gradually improving their health information systems (HIS) and moving from predominantly manual to automated systems. However, the development of the Healthy Islands monitoring framework revealed key monitoring challenges for many PICs.

Major data gaps exist in some PICs because the key data sources are not functioning well, including civil registration and vital statistics (CRVS), hospital and health facility records, and disease surveillance systems. There are also challenges related to development, implementation and maintenance of sustainable electronic health records.

Continued investments in HIS and CRVS must remain a national priority to ensure that PICs are able to make evidence-based decisions. Coordination of investments by development partners and the use of regional mechanisms, such as the Pacific Health Information Network and the Brisbane Accord Group, will be essential to sustaining ongoing support for HIS and CRVS in the region. The strengthening of HIS will be a critical factor in monitoring progress toward achieving the Healthy Islands vision and other commitments, such as achieving universal health coverage. Ministers are invited to discuss proposed actions and agree on future directions.

1. BACKGROUND

Health information systems (HIS) are an essential part of health-care delivery systems, providing critical information for planning, targeting and monitoring. Many Pacific island countries and areas (PICs) are gradually improving their information systems, but gaps in data availability, quality and use remain.

This document presents a snapshot of the progress in HIS development in the Pacific, the challenges that countries have faced in the process, and some suggested solutions. This is related with the recommendations in the 2015 Yanuca Island Declaration, namely: 1.2 improve the quality of data and evidence for policy- and decision-making, resource allocation and progress tracking; and 3.4 ensure reliable and timely data on key health indicators. The document is mainly based on the results of the rapid self-assessment that was coordinated by the Pacific Health Information Network (PHIN), culminating in the regional meeting on Strengthening Health Information Systems in the Pacific in 2016. Annex 1 includes the full assessment report *Health Information Systems in the Pacific at a Glance 2016*.

Furthermore, the development of the Healthy Islands monitoring framework revealed key monitoring challenges for many PICs. The set of 48 core indicators has some data gaps that need to be addressed to improve the ability to track regional progress. The success of the monitoring framework is greatly influenced by the robustness of countries' HIS.

2. PROGRESS AND ACHIEVEMENTS

2.1 Data sources

Among 15 PICs that participated in the HIS self-assessment, nine PICs have already developed detailed, costed HIS strategic plans that address core weaknesses. Many of the PICs have already undertaken a civil registration and vital statistics (CRVS) assessment and have specified steps to address challenges identified during the HIS assessment. Several PICs use the International Classification of Diseases (ICD) coding for both mortality and morbidity and at least one country has started using the IRIS software, a free electronic system for automated coding of causes of death that could improve the comparability of mortality statistics across countries. Fifteen countries and three areas are working in accordance with the *Pacific Vital Statistics Action Plan 2015–2018*, which was developed to improve birth, death and cause-of-death statistics in the Pacific.

The availability of health and risk factor data has improved considerably, mainly due to international and national health surveys. All PICs have implemented at least one health and risk factor survey using standardized survey instruments for children, youth and adults. The majority of the PICs have conducted several health and risk factor surveys, with the same instruments allowing cross-country and in-county comparisons over time; almost half of them have conducted a survey within the past three years.

2.2 Indicators

Many of the PICs already have a national minimum set of core indicators that is being regularly reported on. As part of the Healthy Islands monitoring framework, it is proposed that all PICs report on 48 health-related indicators, harmonizing the indicator definitions further across the Pacific. Furthermore, through the Pacific Monitoring Alliance for Noncommunicable Disease Action, all PICs have agreed to improve the quality of monitoring noncommunicable disease (NCD) policies and actions.

2.3 Electronic health information systems

PICs have implemented various electronic HIS over time. This has supported health system functions such as management, medical records, medication prescribing, dispensing and procurement, surveillance of NCDs and infectious diseases, and policy decision-making. In general terms, different performance levels can be observed between PICs. While many electronic HIS approaches are still in the early stages, such as national level electronic patient record implementation, several have gone to scale, such as the use of web-based reporting systems for aggregated health facility data (e.g. the District Health Information System known as DHIS2), and disease and risk factor surveillance through portable devices. Countries are increasingly interested in implementing electronic health records (EHR), particularly because they offer several advantages over paper records. They can improve the quality of care, provide real-time patient data and enable easier access to information. Recent investments and initiatives, supported by partners, will accelerate the process of HIS digitalization further.

3. CHALLENGES

3.1 Providing more accurate, complete and timely data

PICs face challenges in providing accurate, complete and timely data from their own HIS. WHO, the Pacific Community (SPC) and other agencies regularly produce comparable estimates for every country for most indicators included in the Healthy Islands monitoring framework. However, these global and regional estimates may occasionally include considerable uncertainty. It is clear that investments in national data generation and analysis are needed for many indicators. For instance, data dictionaries are not still available in many PICs.

Major data gaps exist at the national level in some PICs because the key data sources are not functioning well, including CRVS systems, hospital and health facility records, and disease surveillance systems. As a result, there are challenges in obtaining data for some health indicators, particularly indicators on service coverage and quality. Most of the PICs also lack reliable national mortality data disaggregated by cause of death.

3.2 Developing, implementing and maintaining electronic health records

There are also challenges related to development, implementation and maintenance of sustainable EHRs. These all require adequate funds and the involvement of many individuals, including clinicians, information technologists, educators and consultants. Countries and hospitals considering use of EHR

need information about the legal requirements, how to deal with issues related to confidentiality and access to sensitive patient information, and the financial and other resources needed to implement and maintain a sustainable system.

Although EHRs can bring numerous benefits, there is no regional data available on their level of adoption and use by all PICs. EHR efforts seem to mainly concentrate on creating standalone records in urban hospitals and different PICs use different EHR systems. On the other hand, health information at the primary care level is still focused on reporting aggregated data. National identification or unique health numbers that allow the tracking of patients across multiple systems are seldom used for HIS in the Pacific. The inclusion of a unique national identifier in data collections (also for disease registries and surveys) would also enable linking and incorporating data from several sources, but legal and ethical considerations must be properly addressed. National identification numbers are often used far beyond the health sector for purposes of work, taxation, banking and other government-related functions.

It is important to recognize the role that technology can play in HIS strengthening, while keeping in mind that the performance of an information system and the quality of decisions it supports depends also on the quality of other nationwide data collection efforts that report on population health status and the analysis of collected data. This includes, for instance, the conventional CRVS reporting, disease registries, and survey and census data.

3.3 Generating disaggregated information and an equity-focused analysis

Lastly, there is a lack of disaggregated information and generally limited capacity in countries to undertake an equity-focused analysis of information and use it to refine policy making and implementation. As a result, available data are not always translated into action.

4. FUTURE DIRECTIONS

4.1 Recommendations for governments

The 12th Pacific Health Ministers Meeting may consider:

- Agreeing on the future directions below for implementation.

Governments may consider:

- Through the PHIN mechanism, promoting regional approaches to the adoption of standards, technologies, solutions and methodologies not only for data, information and knowledge management but also for decision-making and informed policy development.
- Formulating HIS country action plans based on challenges in HIS development and prioritized HIS competencies.
- Ensuring that countries have well-functioning, high quality data sources for generating key population health indicators, including CRVS, census and health surveys tailored to country needs and in line with international standards. Then using the data for annual operational planning and for evidence-based policy decisions.

- Assessing feasibility (including legal and ethical aspects) of using national identification numbers for health care or developing unique health numbers to allow patients to be tracked across multiple systems and identifying duplication of patients when different systems are linked.
- Conducting an assessment prior to the implementation of EHR, focusing on key issues in EHR adoption and sustainability.

4.2 Recommendations for development partners

Development partners may consider:

- Continuing to strengthen regional networks such as PHIN and the Brisbane Accord Group to share best practices, document lessons learnt, enhance standardized training packages, and build better regional support systems.
- Supporting the documentation of and extracting relevant lessons for PICs, especially for those that are trying to design electronic information systems for hospitals and primary health care facilities.
- Supporting the strengthening of capacities at the national level, including in designing, collecting, analysing, using and disseminating quality and accurate health data.
- Supporting the Pacific to work towards a common vision and approach for an interconnected and interoperable health information system at national and regional levels in the future.