COMMUNITY HEALTH WORKERS

GUIDANCE ON STRATEGIC INFORMATION TRAINING MATERIALS





















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COMMUNITY HEALTH WORKERS

GUIDANCE ON STRATEGIC INFORMATION TRAINING MATERIALS

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Abbreviations

CBIS community-based information system

CHIS community health information system

CHW community health worker

CRVS civil registration and vital statistics

DHS Demographic and Health Survey

DQR data quality review

EPI Expanded Programme on Immunization

HIS health information system

HMIS health management information system

iCCM integrated community case management

ICT information and communications technology

M&E monitoring and evaluation

MICS Multiple Cluster Indicator Survey

MoH ministry of health

MUAC mid-upper arm circumference

PID personal user identification

PPT PowerPoint

Q&A questions and answers

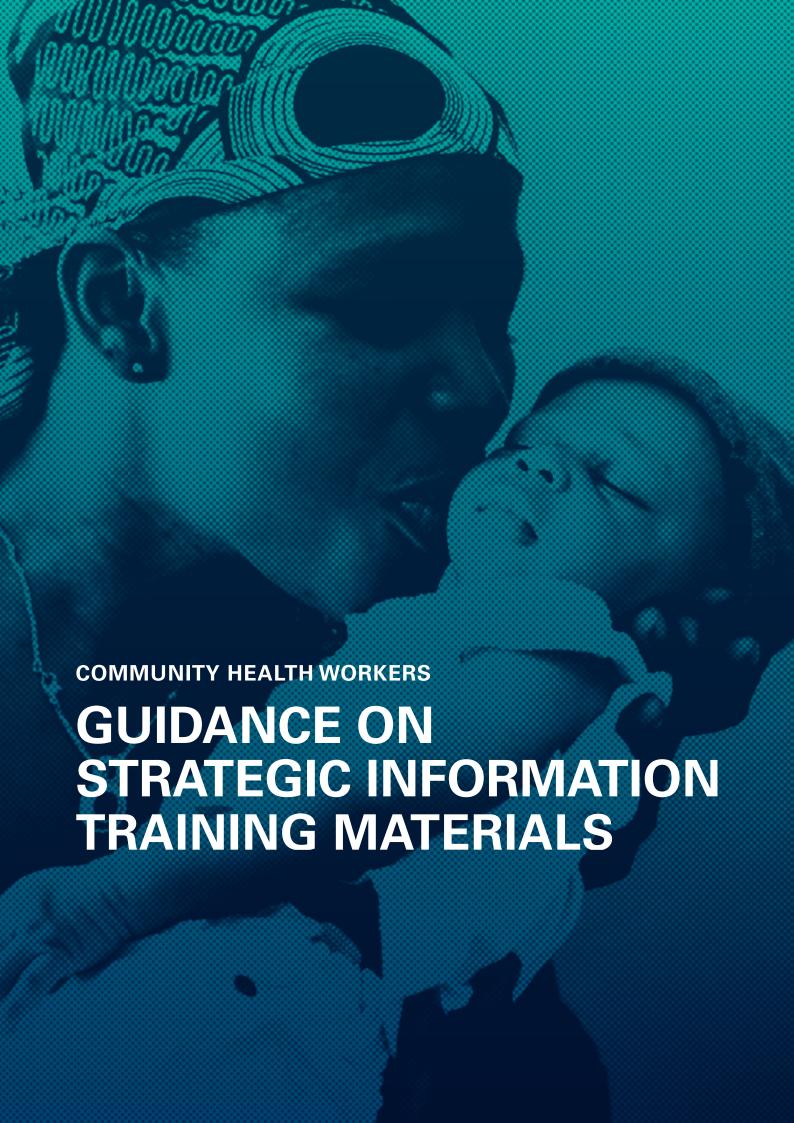
SDGs Sustainable Development Goals

SOPs standard operating procedures

TB tuberculosis

UNICEF United Nations Children's Fund





Training Design

UNICEF Community Health Information System Guidance

Goal of this training _____

This training curriculum is designed to help participants develop the knowledge and skills required to harmonize indicators that are essential for the monitoring of community health programmes, as well as to develop indicators and data elements for a community health information system (CHIS). The content of this training curriculum is based on the UNICEF Guidance for Community Health Worker Strategic Information and Service Monitoring, complemented by additional resources.

Target audience: The course is designed for ministry of health (MoH) programme managers at national and subnational levels.

Learning objectives ____

At the end of the course, participants will be able to:

- Explain the importance of community health to reach the Sustainable Development Goals (SDGs).
- Explain why it is vital to align indicators with national policies and to build strong CHIS.
- Use the Guidance to develop a functional CHIS.

Workshop methods _____

A variety of training methods are used in each of the sessions. Methods may include small group work, individual work, exercises, lectures and large group discussions. Facilitators should take care to avoid lengthy lectures or large group discussions, which could hinder broader participation and processing of information, always bearing in mind that different participants learn through different methods. In general, adults learn best when there are ample opportunities for them to participate, so a number of different small and large group activities are suggested at different stages of the curriculum.

Each module has a section at the end with the reference material that is the basis for that module. The high-level agenda/macro design of the workshop sessions is presented below.

High-level agenda/macro design

Session	Time	Objectives	Methods	Content
Welcome and Introduction	30 minutes	 Participants feel comfortable with other participants Participants know what to expect in the training 	Have participants introduce themselves to one another and state their expectations of the workshop Preview the workshop objectives Review briefly the schedule and the topics of the workshop Measure participants' knowledge through a pre-test	Pre-test
Importance of community health programming and information systems	30 minutes	Participants have a common understanding of community health and CHIS, and a common language for talking about these	PowerPoint (PPT) presentation for terminology Questions and answers (Q&A)	 Guidance pp. 2–5 What is community health? Who are community health workers (CHWs)? What is their role? Why are they important to improving community well-being and strengthening primary health care? What are the essentials components and functions of a CHIS?
2. CHIS development and adaptation process	40 minutes	Participants are grounded in the current strengths, opportunities and challenges of the current CHIS Participants understand the importance of standardization and alignment of indicators	PPT presentation Small group exercise to identify current strengths, opportunities and challenges with the current CHIS and reflect on the process to upgrade Plenary discussion	Guidance pp. 9–10, 12–13, 17 Focus on page 17: CHIS development process (Figure7) How and where we want to go in CHIS - Current status of CHIS in the country DHIS2 Guidelines
3. Reviewing national policy on prioritizing modules	60 minutes	 Participants will be able to select which module fits the country's community health policy Participants are grounded on prioritizing data case uses 	PPT presentation Small group exercise on prioritization and reflection on structuring such a process in their country to determine who should be there and what information they would need Plenary discussion	Guidance pp. 18–28
4. Reviewing CHW tasks and CHIS maturity by indicator	60 minutes	 Participants will be able to define CHW tasks that encompass community health policy Participants will be able to use the maturity score 	PPT presentation Small group exercise to apply the CHIS maturity score to different indicators Discuss learning and challenges from this process Plenary discussion	Guidance pp. 29–32
5. Estimating the report burden and reviewing data quality	30 minutes	 Participants will learn how CHW workload reporting burden will impact data quality Participants will learn the importance of data quality Participants will be able to develop a plan for quality data 	PPT presentation Small group exercise to develop a harmonized plan for data quality Plenary discussion	Guidance pp. 32–35 Guidance pp. 36–40
6. Outlining data analysis, use and equity	30 minutes	Participants will be able to develop a data analysis plan	PPT presentation Small group exercise to draft a data analysis plan	Guidance pp. 41–50
7. Closing	15 minutes	 Participants learn how to use data (including for equity) 	Plenary discussion	Post-test Course evaluation



Module 1

Importance of Community Health Programming and Information Systems

Introduction

Slide

Importance of community health programming and information systems

Module 1

Community Health Workers Guidance on Strategic Information – Training material

Module 1 Importance of community health programming and information systems

Slide

Module objective:

Participants have a common understanding of community health and community health information systems (CHIS), and a common

language for talking about these.



nunity Health Workers Guidance on Strategic Information – Training materials

Importance of community health programming

Why is community health important?



Module 1 Importance of community health programming and information systems

Module topics:

- Community health worker definitions and roles
- What is community health and why it is important
- Functions of community-based/community health information systems (CBIS/CHIS)
- Components of CBIS/CHIS
- Relationship between CBIS/CHIS and health information systems



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Module 1 Importance of community health programming and information systems

Who are Community Health Workers (CHWs)?

"Health workers based in communities (i.e., conducting outreach beyond [primary health-care] PHC facilities or based at peripheral health posts that are not staffed by doctors or nurses), who are either paid or volunteer, who are not professionals, and who have fewer than two years training but at least some training, if only for a few hours."



Who are community health workers (CHWs)?

Adapted from: WHO Guideline on Health Policy and System Support to Optimize Community Health Worker Programmes

Module 1 Importance of community health programming and information systems

Why is community health important?

- · The global community has committed, through the Sustainable Development Goals, to end preventable child deaths; hunger; the epidemics of HIV/AIDS, tuberculosis, malaria and NTDs; and violence against women; and to achieve universal health coverage (UHC), gender equality and empowerment of women and girls.
- Strengthening the delivery of essential health services at the community level will be instrumental to achieving these ambitious targets.



Community Health Workers Guidance on Strategic Information – Training materials

The official definition of CHWs in the International Labour Organization (ILO) International Standard Classification of Occupations (ISCO) refers to CHWs as a distinct occupational group (ISCO 3253) within the associate health professional category.¹

Community health workers should be members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers.

CHWs provide health education and referrals for a wide range of services, and support and assistance to communities, families and individuals. These include education about preventive health measures and gaining access to appropriate curative health and social services. They create a bridge between providers of health, social and community services, and communities that may have difficulty accessing these services. CHWs should play a clear role in coordination and collaboration between the community and health facilities. Their tasks may include:

- Providing education to communities and families on a range of health issues, including family
 planning, control and treatment of infectious diseases, poisoning prevention, HIV risk factors
 and measures to prevent transmission, risk factors associated with
 substance abuse, domestic violence, breastfeeding and other topics.
- Assisting families to develop the necessary skills and resources to improve their health status, family functioning and self-sufficiency.
- Conducting outreach efforts to pregnant women and other high-risk populations, including those who are not receiving needed preventive and other health-care services.
- Ensuring parents understand the need for children to receive immunizations and regular health care.
- Working with parents in their homes to improve parent-child interaction and to promote their understanding of the various aspects of child development: physical, intellectual, emotional, language and social development.
- Providing advice and education on sanitation and hygiene to limit the spread of infectious diseases.
- Storing and distributing medical supplies for the prevention and cure of endemic diseases such as malaria and tuberculosis (TB) and instructing members of the community in the use of these products.
- Assisting families in gaining access to medical and other health services.

The generic definition and the blurred boundaries among these health workers, the existence of overlapping terminology in the literature (such as 'lay health workers', 'front-line health workers', 'close-to-community providers'), as well as widely differing policies relating to their scope of practice, education and relation with health systems, have at times undermined efforts to strengthen service delivery systems at community level.

What are community health programmes?

Adapted from: Community Health Worker Assessment and Improvement Matrix (CHW AIM): Updated program functionality matrix for optimizing community health programs

Community health programmes are locally based education, promotion and treatment programmes available typically through CHWs or volunteers who cover different technical areas such as child health, HIV/AIDS, malaria, etc. The selection of these areas is based on the country's health policy.

World Health Organization, WHO Guideline on Health Policy and System Support to Optimize Community Health Worker Programmes, WHO, Geneva, 2018, https://apps.who.int/iris/bitstream/handle/10665/275474/9789241550369-eng.pdf, accessed 31 August 2020.

CHW role and recruitment: How the community, CHWs and the health system articulate the CHW role and how CHWs are selected.

Community health programmes have several key components to ensure their functionality, including:

- Training: How pre-service training is provided to CHWs to prepare them for their role and ensure they have the necessary skills to provide safe and quality care; and how ongoing training is provided to reinforce initial training, teach CHWs new skills and help ensure quality.
- Accreditation: How health knowledge and competencies are assessed and certified prior to practising, and recertified at regular intervals while practising.
- Equipment and supplies: How the requisite equipment and supplies are made available when needed to deliver expected services.
- Supervision: How supportive supervision is carried out such that regular skill development, problem solving, performance review and data auditing are provided.
- Incentives: How a balanced incentive package reflecting job expectations including financial compensation in the form of a salary – and non-financial incentives is provided.
- Community involvement: How a community supports the creation and maintenance of the CHW programme.
- 8. Opportunity for advancement: How CHWs are provided career pathways.
- Data: How community-level data flow to the health system and back to the community, and how they are used for quality improvement.
- 10. Linkages to the national health system: The extent to which the MoH has policies in place that integrate and include CHWs, community health committees, etc. in health system planning and budgeting, and provides logistical support to sustain district, regional and/or national CHW programmes.

Note that the ninth component is about data and CHIS.

Importance of CHIS

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring

A CHIS is a combination of paper, software, hardware, people and processes which seeks to support informed decision making and action taking of CHWs. A well-functioning CHIS is necessary to routinely monitor health, needs and practices at the community level, including during emergencies, to inform communities, health-care professionals, policymakers and other stakeholders about how best to deliver quality services to all people, when and where they need them, assuming principles of equity and rights. A CHIS is not intended to be a 'parallel system'; rather, it is an extension of the national health information system (HIS) into the community.





Functions of a CHIS

Adapted from: Model of a Community-Based Information System: Essential components and functions



A CHIS is one example of a community-based information system (CBIS), and as such, has a number of key functions, as described below.

Promoting community engagement in health

Community engagement can lead to the improved use, availability and quality of health and social services delivered. Information generated by a CHIS is an important resource for community members to engage in monitoring health services, and to ensure that service delivery organizations are held accountable to those they serve.² Because a CHIS records basic data on population event health programme transactions, case-based data and supply chain, it provides access to data about these services and allows community health committees or other community groups to define and prioritize the community's needs, set objectives and targets for meeting those needs, and participate in planning, implementing and monitoring programmes.

Identifying people in need of services

CHWs can take a more proactive role in identifying and seeking out the people who need services in their catchment areas by conducting household visits and using tools to track case management, cases lost to follow-up, and index case tracing. A well-designed CHIS has tools that facilitate these processes for CHWs and allow civil society organizations and facilities to monitor community-level activities. A CHIS tracks and triggers actions for disease surveillance, routine care provision and referrals.

Kaseje, D., et al., 'Evidence-Based Dialogue with Communities for District Health Systems' Performance Improvement', Global Public Health, vol. 5, no. 6, pp. 595–610, 16 February 2010.

Supporting case management and care coordination

'Case management' is the process of holistically gathering information about an individual's needs and providing services and referrals to meet these needs. Case management has four sub-functions:

- 1) documenting individual-level needs to support individual care planning,
- 2) enabling bidirectional referrals,
- 3) tracking patients lost to follow-up, and
- 4) enabling the supervision of CHWs.3

CHWs assess and document their clients' needs so that they or other health workers can follow up with them efficiently and effectively. Information from case management can be entered into a CHIS and fill the information gap between community- and facility-based health and social welfare services provided to specific clients for their ongoing needs.

Ensuring accountability

One of the primary functions of collecting and sharing information about activities conducted at the community level is to ensure accountability of government and donor funds.

Ensuring accountability involves feeding back data to the community, as through community meetings and participatory monitoring and evaluation (M&E), about services CHWs have delivered. By providing information to the community, community members can hold CHWs and facility-level service providers accountable for the services they are supposed to deliver to the community, and advocate for additional services they may need. It is essential to provide feedback to communities on the work that is being conducted on their behalf and the outcomes that are being achieved. Government and donor funds need to be tracked to ensure accountability, counter corruption, and support resource allocation decisions. Furthermore, the information can be fed back to CHWs and communities in a timelier manner, so they can take action with clients or local leaders and/or decision makers. Note that with paper-based systems, it may take a long time – months, or even longer – for information to be fed back to the CHWs and community.

Components of a CHIS

Adapted from: Model of a Community-Based Information System: Essential components and functions





MEASURE Evaluation, Fundamentals of Implementation Research, MEASURE Evaluation, Chapel Hill, 2012, <www.measureevaluation.org/resources/publications/ms-12-55/at_download/document>, accessed 2 November 2022.

MEASURE Evaluation, Community-Based Health Information Systems in the Global Context: A review of literature, MEASURE Evaluation, Chapel Hill, 2016, https://www.measureevaluation.org/resources/publications/wp-16-161/at_download/document, accessed 2 November 2022.

System design

System design is essential to the development of a CHIS. Without a strong design, the system – whether it is paper-based, electronic, or a hybrid of both – will be deficient and will not produce the information required for reporting and decision-making purposes. System developers need to be clear about the following:

- The purpose of the CHIS and the data requirements, including what data are collected and not collected.
- Alignment with governances, policies, data security, privacy requirements, etc.
- The different workflows in community health or social welfare programming, including the roles and responsibilities of various players, how the data flow through the system, and what information is needed by whom and when.
- How front-line workers interact with clients and collect data during a client visit, their challenges and motivations, what they perceive as the strengths and weaknesses of the existing system, and what information they need from the system.
- The technology that is currently available and that could feasibly be used for the CHIS.
- Interoperability and integration potential with other HIS.
- Infrastructure to support the CHIS is also an important factor to consider when designing the system.

By understanding these elements, system designers can identify possible constraints and enablers, and construct a system that meets the needs of the programme, CHWs, communities and other stakeholders to support decision making. The system design process should be informed by the results of systematic assessments conducted using well-tested tools.

Assessments using such tools reveal a system's strengths and weaknesses and inform the development of plans for systems improvement.⁴ Follow-on assessments can be conducted to show changes in the information system and identify areas still requiring strengthening.

Leaders planning the CHIS need to determine how the system will link to the national health management information system (HMIS). At a minimum, the CHIS data on community service delivery (including prevention) must be available at all levels of the health system, and the community-level data must be identifiable and able to be disaggregated from health facility data. Leaders will need to determine how the CHIS and HMIS interact.

It is important to understand the end users' perceptions of the tools and their capacity to use the tools. In the case of paper-based systems, CHW literacy rates will determine their ability to use complex registers and forms, the time it will take them to collect the data, and their ability to aggregate large numbers. In terms of mobile data collection, some front-line workers may be more familiar with feature-enhanced phones or smartphones, and some workers may not be comfortable carrying around tablets, for fear of being robbed. Such issues should be considered in a system's design, to avoid imposing an undue burden on CHWs. Please see Module 5, which discusses how to take reporting burden into account when selecting CHIS indicators.

Examples of these tools are the Performance of Routine System Information Management (PRISM) tool, <www.measureevaluation.org/resources/publications/ms-11-46-d.html>; the 12 Components of a National M&E System, <www.unaids.org/sites/default/files/sub_landing/files/1_MERG_Assessment_12_Components_ME_System.pdf>; the Stages of Health Information Systems ImprovementToolkit, <www.measureevaluation.org/his-strengthening-resource-center/his-stages-of-continuous-improvement-toolkit.html>; and the DHIS2 Community Health Information System AssessmentTool, <www.healthdatacollaborative.org/fileadmin/uploads/hdc/Documents/Working_Groups/CHISGuidelines_version_August29.pdf>, pp. 181–196.

Whether the CHIS is digital or paper, its tools need to be tested to ensure that the assumptions made by the designers hold true and that the system produces the information it is intended to produce. The system design process also determines how information collected in the CHIS will be managed. Will household folders be stored in a specific location? Will there be a database into which data are entered from paper records? Or will there be a full digital system, whereby data are entered in a mobile device at the community or household level? If there are digital components, infrastructure (power source and internet) requirements to support the system need to be defined or developed.

Leadership and governance

Strong leadership and governance are needed to:

- Bring stakeholders operating at the community level together to better coordinate service delivery and M&E.
- Bring ministries together for larger budget discussions to ensure steady financing schemes.
- Simplify, harmonize and standardize CHIS tools, indicators and reporting systems to avoid burdening CHWs with excessive data collection and multiple parallel systems.
- Further develop policies (aligned with national HIS digital policies) around the use of technology at the community level, including mobile applications, confidentiality and security.
- Ensure that community data are used.
- Institutionalize a training strategy.
- Establish uniform CHW incentives or employment standards.
- Ensure harmonization across partners in terms of data, systems and software for community health data.

Policies, plans and guidelines addressing these issues will lay the foundation for health and social welfare ministries to make the case to other ministries and to civil society and the private sector about the importance of a harmonized and responsive government-led CHIS.

An effective way to provide governance is to establish a steering committee that can take the stewardship of creating and/or strengthening the CHIS (please see Module 3 for more information).

System management

Management functions need to be in place, which entail:

- management of financial and human resources
- oversight of the processes and functioning of the CHIS.

Ensuring the availability of adequate financial resources and their proper use is essential for a CHIS to operate as planned. Many CHISs do not produce good-quality information, and one of the factors may be lack of appropriate financing at each level of the system. Once the CHIS is operational, funding is needed to cover personnel, supervision, training/professional development, equipment, and operating costs. The costs include, but are not limited to, M&E staff, information and communications technology (ICT) staff, training, printing, transportation, technology, maintenance and internet service.

Human resources (programme managers, M&E staff, digital programmers and CHWs) and training of those resources are other essential elements for a well-managed CHIS. Without the appropriate human resources for system design, development, training and implementation, the CHIS could break down at different points. Staff who interface with the system need to have the skills and the capacity to work with the system. These could include M&E skills, computer programming skills, or capacity to use the tools developed to collect, analyse and use information.

Data sources

Data sources for a CHIS can range from non-routine population-level information (e.g., household surveys) to routinely collected information (e.g., case management information and women and child health cards). The CHIS model focuses mainly on routine sources of information; however, there are often cases when non-routine information should be triangulated with routine information to identify trends, or validate the accuracy of routine data. By triangulating data, governments and programmes can review programme effectiveness, quality and areas for improvement.

The following is a non-exhaustive list of CHIS data sources.

Routine data sources

- Basic health and social services: Examples include household registration forms; case management/care coordination tools for antenatal and postnatal care, neonatal care, integrated community case management (iCCM) (malaria, diarrhoeal disease and pneumonia), home-based care, orphans and vulnerable children care, immunization cards, family planning register/tracker, referral forms, and HMIS.
- Specialized health or social services (for example, for HIV,TB, Ebola virus, etc., or for certain
 populations such as orphans and vulnerable children): Household vulnerability assessments;
 suspected case notification/community surveillance tools (health or child protection);
 case follow-up/outcome capture tools (referral completed, treatment completed, participation
 in household economic strengthening, and death registry); school enrolment and attendance
 records.

Non-routine data sources

 Population-based surveys; population-based HIV impact assessments; knowledge, attitude and practice surveys; censuses; civil registration and vital statistics (CRVS); Expanded Programme on Immunization (EPI) coverage survey; Standardized Monitoring and Assessment of Relief and Transitions (SMART) nutrition method.

Data management

For the CHIS to produce information for decision making, it needs detailed, documented data management processes. Under data management, programmes operationalize the M&E plans developed under the governance component. Standard operating procedures (SOPs) need to be developed that describe the processes for entering data into the system, whether on paper or electronically; how the data flow through the system; how they are cleaned and validated; and how they are compiled and analysed. The SOPs should be sufficiently detailed to serve as a job aid for those implementing the system. This component also includes documenting naming conventions for data elements; access rights for system users; and data protection and confidentiality. Lastly, this component addresses how paper-based files and digital data are stored and accessed, how data are archived, and for how long they should be retained.

Information products and dissemination

Once the data have been cleaned and analysed, a variety of information products can be developed, informed by stakeholders' information requirements. Information products can be distributed through several channels, such as national and subnational community health or social service meetings, websites, social media, SMS and conferences. To develop information products, M&E and management information system teams need to understand the different stakeholders' main programmatic questions, have the capacity to compile and analyse the information to answer those questions using multiple data sources, and be able to present the information in a way that stakeholders can use.

For example, a community group may not find a 50-page, text-heavy report useful; it would rather have a brief document with vivid charts, graphs and pictures showing how the community is doing. In contrast, the head of community health in the MoH may want a longer, more detailed document to understand the bigger picture of what is happening in community health throughout the country. There are also information products used by civil society and CHWs to make decisions about case management, care coordination and supervision.

Data quality

If the system is not performing as planned, data quality could be jeopardized. For example, if the data elements are not defined well in community health and are not standardized, with the same data elements collected at the facility (e.g., number of confirmed malaria cases), then the data reported further up in the system may not reflect the reality on the ground, which could lead to inaccurate forecasts for supply orders (e.g., amount of anti-malaria medicines). Although CHIS share the characteristics and shortcomings of the broader routine MIS, of which they are/should be a part, the complexity of increasing numbers of CHWs working at community level, the diversity of programmes, and the geographic dispersion of service delivery points create unique challenges for data quality and data use. In addition to these factors, data quality could be affected by insufficient training of data collectors; low literacy rates among CHWs who are tasked with collecting data; the sheer amount of data being collected; the complexity of the forms used to collect data; lack of data verification at the household level; and overburdening of CHWs. (Please refer to Module 5 for a more extensive discussion on data quality.)

Data use

The goal of a well-functioning CHIS is to have stakeholders use the information it generates to inform decisions at all levels of the system. Data-informed decision making refers to the proactive and interactive process that consider data during programme monitoring, review, planning and improvement; advocacy; and policy development and review.⁶ This means that the health ministry has access to good-quality community health data to inform policies and programmes, and that community groups also have access to information to be able to hold those accountable for the services they are supposed to offer. Data generated by the system can also be used to support performance management of CHWs and their supervisors, and to plan for supervision visits.

Guenther, Tanya, et al., 'Routine Monitoring Systems for Integrated Community Case Management Programs: Lessons from 18 countries in Sub-Saharan Africa', *Journal of Global Health*, vol. 4, no. 2, 020301.

Foreit, Karen, Scott Moreland and Anne Lafond, Data Demand and Information Use in the Health Sector: A conceptual framework, MEASURE Evaluation, Chapel Hill, 2006.

Several factors need to be considered when assessing the data use component:

- (1) the system's ability to produce good-quality information in usable formats for the right audiences;
- (2) skills required to interpret the data;
- (3) the level of integration in the decision-making process; and
- (4) alignment of the information with stakeholders' needs.

The ability to use data for decision making is influenced by governance structures, human capacity and level of commitment. Data use is often impacted by the availability of funds for activities such as evidence-informed decision making, or data review meetings; as well as the political will to advocate for the decision.

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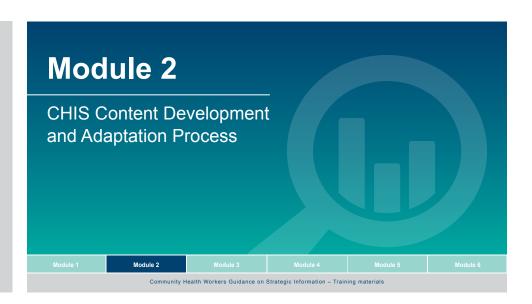
Module 2

CHIS Content Development and Adaptation Process

Introduction

Slide

2.0



Slide

2.1



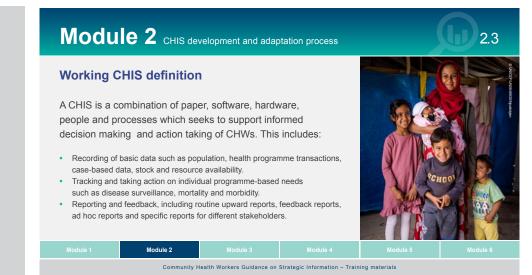


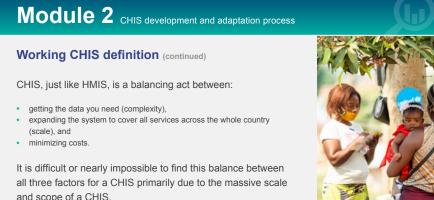
Community Health Workers Guidance on Strategic Information – Training materials

Definition of a CHIS

Adapted from: WHO Guideline on Health Policy and System Support to Optimize Community Health Worker Programmes







and scope of a CHIS.

Module 2

Community Health Workers Guidance on Strategic Information – Training materials

A CHIS is a combination of paper, software, hardware, people and processes which seeks to support informed decision making and action taking of CHWs. This includes:

- Recording of basic data such as population, health programme transactions, case-based data, stock and resource availability.
- **Tracking and taking action** on individual programme-based needs such as disease surveillance, mortality and morbidity.
- **Reporting and feedback,** including routine upward reports, feedback reports, ad hoc reports and specific reports for different stakeholders.

Figure 1 shows how the functions of the CHIS are related to data flow leading to decision making.

Figure 1. Data flow to decision making



Source: DHIS2 Community Health Information System Guidelines (p. 19).

Community data are captured primarily by CHWs and relate to the functions of recording, tracking and reporting the activities they perform. The nature of CHIS varies with different contexts.

- In some cases, they are manual and paper-based registers, diaries, tally sheets and reporting forms.
- In other contexts, they are ICT based using devices such as mobile phones, tablets and computers.
- In most cases, they represent some kind of hybrid mode that combines elements of paper and ICT-supported solutions.

Many countries are in the process of moving towards more automated digital software, such as DHIS2, CommCare, OpenSRP, CHT, etc., based on the CHIS – a process which this guidance document aims to support

What is the difference between a CHIS and a HIS?

Adapted from: DHIS2 Community Health Information System Guidelines



CHIS and HIS - differences and intersections

Module 2 CHIS development and adaptation process

- HIS can cover information about the full range of services provided by the health system.
- CHIS concerns activities provided to members of a community, typically by CHWs living in the community or through outreach services conducted by CHWs from a facility.
- CHIS is part of HIS
- CHIS data must feed seamlessly into the HIS to avoid duplications and redundancies.
- HIS must be capable of providing feedback and support to strengthen the CHIS.

2.6

2.5

Health Information System (HIS)

- The HIS collects data from health and other relevant sectors, analyses the data and ensures their overall quality, relevance and timeliness, and converts the data into information for health-related decision making.
- Key functions include:
 - data generation
 - compilation
 - o analysis and synthesis
- communication and use

Community Health Workers Guidance on Strategic Information – Training m

Health interoperability service

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A HIS is broadly defined as a system that integrates data collection, processing, reporting and use of the information necessary for improving health service effectiveness and efficiency through better management at all levels of health services.

It encompasses all health data sources, including health facility and community data, electronic health records for patient care; population-based data, human resources information; financial information, supply chain information, and surveillance information, along with the use and communication of this information.8

 $United\ Nations\ Development\ Programme,\ 'Health\ Information\ Systems',\ UNDP,\ New\ York,\ < www.undp-capacitydevelopment-health.org/en/\ Annual Conference of the Confer$ capacities/focus/health-information-systems/>, accessed 19 September 2022.

Historically, a HIS concerned information for services provided at the public health level, but over time, the concept of a HIS has expanded to other non-public facilities and to community-level activities. A CHIS is that part of a HIS which concerns activities provided to members of a community, typically by CHWs living in the community or through outreach services conducted by CHWs from a facility.

However, it is important to emphasize that within the architectural approach we see the CHIS and HIS as intricately interconnected. This implies that CHIS and HIS are not parallel systems, but that CHIS is the extension of HIS into the community. CHIS data must feed seamlessly into the HIS to avoid duplications and redundancies, and the HIS must be capable of providing feedback and support to strengthen the CHIS.

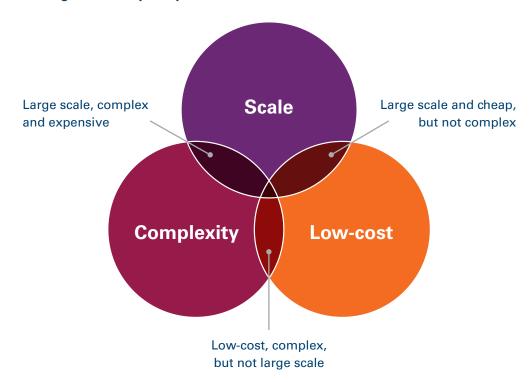
A well-functioning CHIS – as with a HIS – is a balancing act between getting the data you need (complexity), expanding the system to cover all services across the whole country (scale), and minimizing costs. Typically, the goal of a HIS would be to find a balance between the following three factors: scale, complexity and cost. However, it is exceptionally difficult or nearly impossible to find this balance between all three factors for a CHIS, primarily due to the massive scale and scope of a CHIS.

Therefore, a CHIS implementer should focus initially on selecting just two of the three factors. Most countries will be likely to prioritize a CHIS that is large in scale and low-cost, but this requires that the complexity must be minimized and tightly controlled (see Figure 2).

Balancing scale, complexity and cost

Adapted from: DHIS2 Community Health Information System Guidelines

Figure 2. Balancing scale, complexity and cost



Source: DHIS2 Community Health Information System Guidelines (p. 21).

On a practical level, minimizing complexity results in a very simple reporting platform that captures a small number of key indicators. Extensive use of job aids and automated feedback mechanisms will help CHWs, and CHW supervisors understand the data and perform their tasks accordingly.

Assessing the status of the CHIS

Slide

2.7



Prior to any revision of the existing CHIS, it is critical to have a strong understanding of the strengths and weakness of the current CHIS. Information on the status of the CHW programme, the enabling environment, the kinds of data and data systems, and digital health is critical to ensuring a road map can be designed and a way forward envisaged. There is a rapid Readiness Assessment adapted from existing tools available in the Small Group Exercise at the end of this module. The goal of the rapid assessment is to make a quick appraisal of a country's CHIS by scoring and reviewing its different components to determine the starting points when implementing the UNICEF guidance to move the country's CHIS forward. The tool covers:

- CHW programmes (community health policy, scale of the CHW programme, CHW tasks)
- Enabling environment (leadership and governance, legislation, funding for CHIS)
- CHW data (indicator selection, CHW data collection system, CHIS report)
- Digital health (policy, interoperability between CHIS and HMIS, CHW digital skills, electronic data entry)

This assessment works better if a team of HIS, digital health and programme managers within the MoH works collaboratively to assess the different levels of CHIS maturity. To use the tool in a real-world application, it would be important to share it with participants ahead of time, so they can come prepared to discuss and develop consensus on the responses.





Module Selection

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring

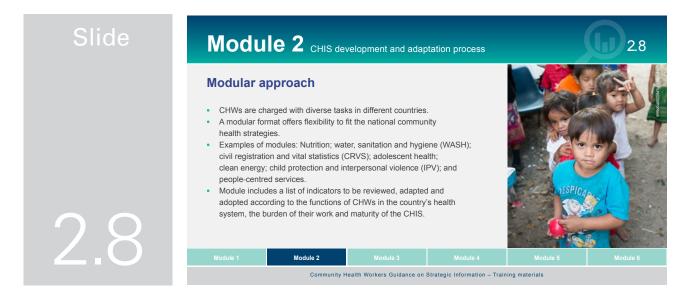
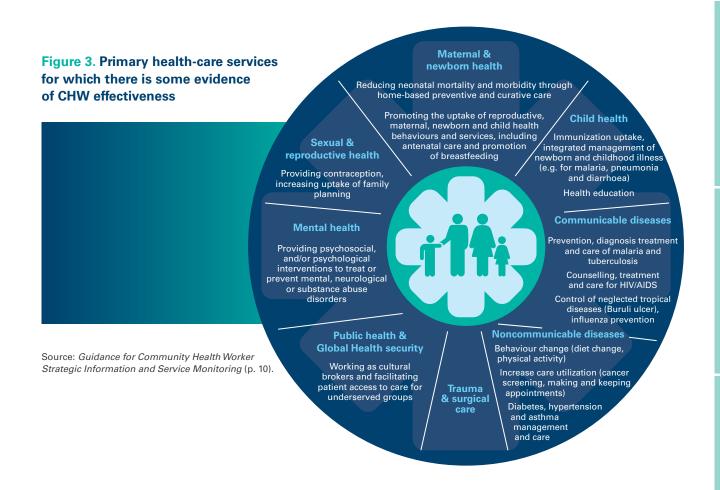
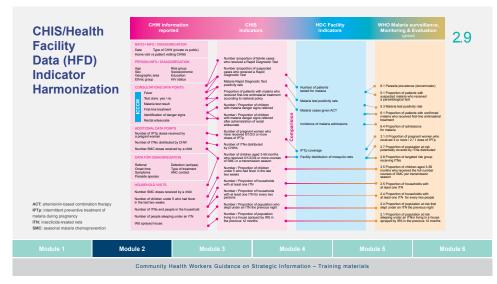


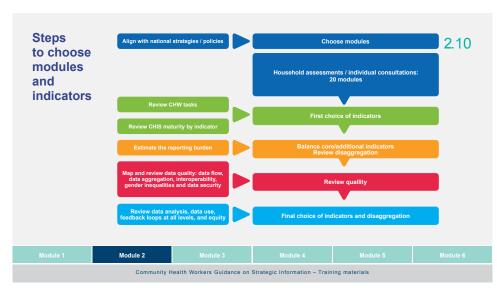
Figure 3 provides a list of technical areas that are included in the Guidance. The selection of the technical areas should fit within the epidemiological profile and the community health policy of the country. The whole process of choosing standardized CHW indicators is illustrated in slides 10 and 11. While the figure describes a series of linear steps, in reality it should be seen more as reflecting a **dynamic**, **iterative process**, **involving different aspects such as the technical**, **financial and governance**, **to cite only a few examples**. Multiple iterations will be needed to settle on a set of CHW indicators.







Slide 2.10



Instructions and template for small group exercise

CHIS development and adaptation process

Brief description:

- The objective of this exercise is to give participants a chance to experience reflecting on the current situation of their country's CHIS.
- Participants would fill this in for their own country. If there are more than one participant from any country, they can work together.
- Materials needed: Computer with Microsoft software.

Process/steps/instructions:

In 30 minutes:

- 1. Read through and complete the assessment tool individually (or with others from your country).
- 2. Complete the action plan tool.
- 3. Prepare for the plenary presentation by summarizing the major points from your assessment and action plan.

Template or format for groups to complete:

Rapid CHIS Readiness Assessment Tool

Guidelines: Please note that the assessment determines a score for each element, which will provide information on the areas the country CHIS needs assistance on in order to move it to the next level. The goal of the rapid assessment is to make a quick appraisal of a country's CHIS by scoring and reviewing its different components to determine the starting points when implementing the UNICEF guidance to move the country's CHIS forward.

Instructions:

- For each table, choose the description that best matches the situation in your country right now.
 There is a comments box below each table within which you can add some explanatory text about your context, whether you feel you need more information or consultation to finalize the status level, or other comments.
- 2. After completing the assessment tool, identify those components and gaps that should be prioritized for attention and action and complete the Action PlanTool. In general, indicators with lower scores should receive attention first so as to improve the programme overall.

The tool:

CHW programme

Standardized CHW package health policy

Maturity	Description	Status
Nascent	There are no community health policies.	
Emerging	The community health policy has been drafted.	
Established	A community health policy has been passed but is not consistently implemented.	
Optimized	A community health policy has been passed and is consistently enforced. Policy is regularly reviewed and updated as required.	
Comments		

CHW scope of practice legislation and implementation

Maturity	Description	Status
Nascent	There is no official government policy on CHW scope of practice, and there may be some small CHW programmes implemented within or outside government.	
Emerging	There is a draft policy on CHW scope of practice and some CHW programmes led by government at subnational scale.	
Established	There is an official policy on CHW scope of practice, and the government is implementing the CHW programmes, with trained CHWs deployed to 25–50 per cent of the country.	
Optimized	There is an official policy on CHW scope of practice and the government is implementing CHW programmes covering 50–100 per cent of the country.	
Comments		

Enabling environment

CHW programme governance

Maturity	Description	Status
Nascent	There is no CHIS Technical Working Group (TWG).	
Emerging	There is an established CHIS TWG structure, led by ministry senior staff and with representation from key stakeholder groups, but it is inactive.	
Established	There is a CHIS TWG that meets regularly but is not fully functional (unclear leadership and/or not able to manage all CHIS development, implementation and sustainability).	
Optimized	There is a CHIS TWG with clear leadership and active participation from all key stakeholders which manages the development, implementation and sustainability of the CHIS.	
Comments		

CHIS funding

Maturity	Description	Status
Nascent	There is no separate budget line (or reserved funding) for CHIS development.	
Emerging	There is adequate funding available for CHIS development.	
Established	The annual budget line for CHIS exists, but it is not sufficient for maintenance.	
Optimized	The annual budget exists and is sufficient for maintaining ongoing routine activities.	
Comments		

CHW data

CHIS indicator selection

Maturity	Description	Status
Nascent	Indicators have not yet been selected for the CHIS.	
Emerging	Indicators have been selected and validated for the CHIS.	
Established	CHIS collects data for the selected indicators, but the indicators are not used for decision-making activities.	
Optimized	CHIS collects data for the selected indicators and the data are used for decision-making activities.	
Comments		

CHW data collection system

Maturity	Description	Status
Nascent	Some data are collected by CHWs, but collection is neither standardized nor consistent, and data are not reliably complete, accurate, or timely.	
Emerging	There is an approved procedure for data collection and review carried out by CHWs and their supervisors covering completeness, accuracy and timeliness of data.	
Established	Data are being captured by standardized tools, not as a stand-alone process. Aggregated and disaggregated data are made available to CHWs and their supervisors.	
Optimized	Data are regularly reviewed at all levels from individual CHWs to national to inform decisions and actions. Data analytics are automated and allow easy understanding of the data through visualizations and dashboards.	
Comments		

CHW data collection system

Maturity	Description	Status
Nascent	The CHIS report has quality issues and is not done in a timely manner.	
Emerging	The CHIS report is done in a timely manner, but it has quality issues.	
Established	The CHIS report is done in a timely manner, and its quality is acceptable, but the report is not used programmatically.	
Optimized	The CHIS report is done in a timely manner, its quality is acceptable, and the report is used for decision making.	
Comments		

Digital health

Policy

Maturity	Description	Status
Nascent	There is no e-health policy (transmission and storage of community health data).	
Emerging	E-health policy exists for CHIS but does not cover all necessary areas (legality, confidentiality and privacy).	
Established	Policy covers most CHIS aspects of legality, confidentiality and privacy.	
Optimized	Policy exists covering all aspects of CHIS legality, confidentiality and privacy.	
Comments		

CHW within national digital health policies

Maturity	Description	Status
Nascent	CHWs are not considered within the national digital health policies, systems and services (including CHW master registries, digital health architecture and standards).	
Emerging	A plan has been developed to include CHW programmes as part of relevant digital health policies, systems and services.	
Established	CHW programmes are included within some digital health policies, systems and services.	
Optimized	CHW programmes are included within relevant digital health policies, systems and services.	
Comments		

CHW digital skills

Maturity	Description	Status
Nascent	Some CHWs have some familiarity with using mobile phones. They have received some CHW training, but it is not standardized across all CHW programmes.	
Emerging	All CHWs are literate and have a basic level of education (e.g., primary) and can demonstrate ability to use mobile phones and tablets. The CHW training is extensive but is not standardized.	
Established	All CHWs have a basic level of education (e.g., primary) and can use digital tools. There is a standardized CHW training curriculum.	
Optimized	All CHWs have a basic level of education (e.g., primary) and can use digital tools. There is a standardized CHW training curriculum. CHWs pass a competency test.	
Comments		

Electronic data entry

Maturity	Description	Status
Nascent	Data capture is required on both electronic and paper systems.	
Emerging	After an initiation phase with dual data capture, there is a plan to move to single electronic entry (with a system for evaluating data consistency and accuracy) and milestones to go paperless.	
Established	The system is electronic at subnational scale, with paper records printed as needed for hard copy. There are established procedures if the electronic system fails and for settings with poor connectivity.	
Optimized	The system is electronic at national scale, with paper records printed as needed for hard copy. There are established procedures if the electronic system fails and for settings with poor connectivity.	
Comments		

Interoperability of CHIS and HMIS

Maturity	Description	Status
Nascent	CHIS is stand-alone and does not interoperate with HMIS/DHIS2.	
Emerging	CHIS interoperates with a few other systems, such as DHIS2, patient records at facilities or LMIS for stock management.	
Established	The digital tool for CHWs interoperates with all other relevant digital health systems at varying levels of scale, supporting continuity of care.	
Optimized	The digital tool for CHWs interoperates with the national digital health architecture, linking with all relevant services, supporting full continuity of care.	
Comments		

Note: The components of this rapid assessment were sourced from looking at Living Goods' Digital Health Tools for Community Health Worker Programs: Maturity model and toolkit, the DHIS2 Community Health Information System Guidelines and UNICEF's Guidance for Community Health Worker Strategic Information and Service Monitoring.

Action Plan Tool

Component	Gap(s)	Action(s) required
CHW programmes		
Enabling environment		
CHW data		
Digital health		

Plenary:

Rapid CHIS Readiness Assessment Tool

Each country has 3 minutes to present their major findings in the plenary session.

At the end of the presentation, the trainer will highlight a few key points that illustrate:

- the importance of understanding the current situation with your CHIS before determining the way forward
- the importance of moving from assessment to action.

References

United Nations Children's Fund, World Health Organization, Global Fund to Fight AIDS, Tuberculosis and Malaria, United Nations Entity for Gender Equality and the Empowerment of Women, and Gavi, the Vaccine Alliance, *Guidance for Community Health Worker Strategic Information and Service Monitoring*, UNICEF, New York, 2021.

Available at: <www.healthdatacollaborative.org/working-groups/community-data/guidance-for-community-health-worker-strategic-information-and-service-monitoring/>

University of Oslo, *DHIS2 Community Health Information System Guidelines*, Health Data Collaborative, 2022.

Available at: <www.healthdatacollaborative.org/fileadmin/uploads/hdc/Documents/Working_ Groups/CHISGuidelines_version_August29.pdf>







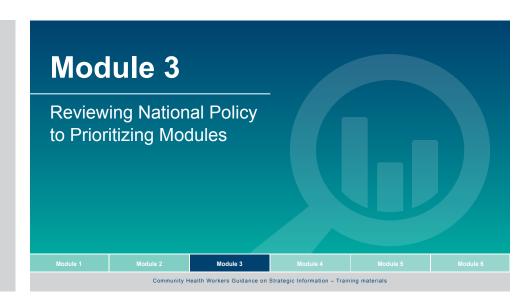
Module 3

Reviewing National Policy to Prioritizing Modules

Introduction

Slide

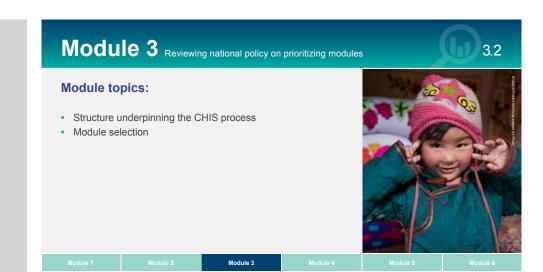
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Slide

3.1





Slide

3.2

Slide

3.3

Steps to choose modules and indicators

Review CHW tasks

Review CHIS maturity by indicator

Estimate the reporting burden

Map and review data quality: data flow, data aggregation, interoperability, gender inequalities and data security

Review data analysis, data use, feedback loops at all levels, and equity

Module 1

Module 2

Module 3

Choose modules

Choose modules

Strategic Indicators

Review data consultations:

Balance core/additional indicators

Review disaggregation

Review quality

Final choice of indicators and disaggregation

Module 1

Module 2

Module 3

Module 4

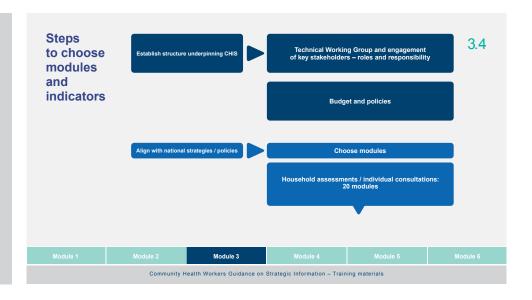
Module 5

Module 6

Community Health Workers Guidance on Strategic Information – Training materials

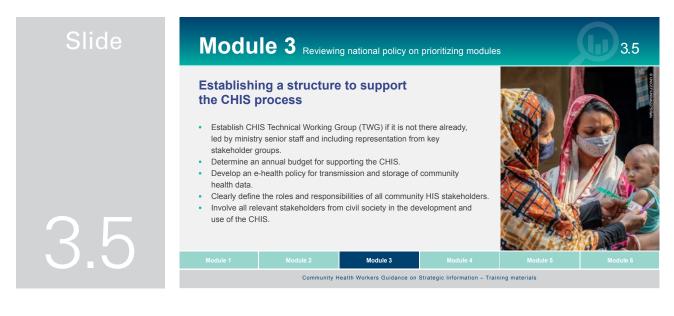
Slide

3.4



Establishing a structure to support the CHIS process

Adapted from: DHIS2 Community Health System Guidelines



Before making any changes or revisions to the CHIS there should be a structure to lead this undertaking, with a linkage to the national HIS and/or e-health working groups.

A short example can be used to highlight how it could work:

A country is in the process of examining its community health services and, in that regard, wants to assess the strengths and weaknesses of its overall CHIS before planning specific interventions.

The first step they take is to form a Steering Committee that will oversee the process.

The Steering Committee conducts a stakeholder identification exercise to see who should be involved, aiming for a rather small group due to logistical reasons. The Steering Committee should be responsible for the following oversight and direction:

- Ensuring appropriate stakeholder engagement in the design/revision processes.
- Ensuring the CHIS is interlinked with the broader HIS, with maximum interoperability.
- Ensuring that partners' parallel systems are harmonized and brought into the CHIS and ultimately into the HIS.
- Ensuring that reporting burden for CHWs is not too heavy, by reviewing any additional indicators to be added.

A CHW and a representative from a community health committee should be selected to bring in the viewpoint of the community itself. They are selected since they have experience with how the data collection and feedback is working between the CHW and the facilities to which they report, and understand how the CHW interacts with the community at large.

An information officer from a facility should be included since this person handles the flow of data between the CHWs and the wider HMIS, and has knowledge of the facilities' challenges with medical stock distribution.

A sample of items (from the DHSI2 Community Health Information System Guidelines) that could be assessed is in Table 1 below.

Table 1. Governance checklist for CHIS creation/adjustment

Each district has a community health programme officer, and their participation should be included as well.

Exa	imples of factors that need to be assessed and verified for CHIS creation/adjustment ⁹
	Is there an established CHISTechnical Working Group (TWG) led by ministry senior staff and including representation from key stakeholder groups?
	Is there a long-term sustainability plan for the CHIS?
	Is there an annual budget for supporting the CHIS?
	Is there a country e-health policy for transmission and storage of community health data?
	Are relevant stakeholders from civil society involved in the development and use of the CHIS?
	Are relevant stakeholders from civil society, traditional structures and community change agents receiving targeted, actionable data feedback mechanisms?
	Is CHW reporting integrated in one system, linked to the national HMIS?
	Are all data on community health activities reported on time?
	Are there automatic tools or procedures available to ensure high data quality before reporting?
	Are phones, reliable electricity and network coverage available for CHW reporting?
	What are the mechanisms for financing and topping up phone subscriptions or credits?
	To what extent are CHWs familiar with feature phones and/or smartphones?
	To what extent are CHWs' supervisors familiar with feature phones and/or smartphones?
	Is pre-service training on CHIS available for CHWs?
	Is refresher training on CHIS available for CHWs?
	Is supervisor training available for CHWs?
	Are CHWs using standardized tools for reporting and requisitioning commodities?

Module selection

Data use case

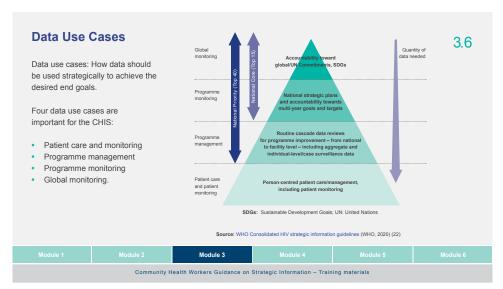
Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring

Data use cases show how data should be used strategically to achieve the desired end goals.

Slide 7 shows the data use cases as a continuum, with the data pipeline starting from individual data and then being aggregated. Depending on the maturity of the CHIS, the data quality and the alignment of individual-level and aggregate data (elements and indicators), indicators can be considered and used for patient care and patient monitoring, programme management, programme monitoring, and even global monitoring.

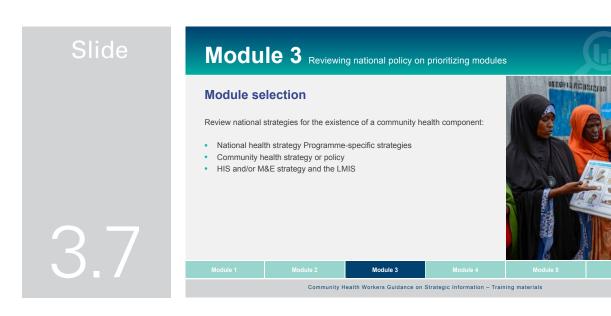
For additional examples, please see: DHSI2 Community Health Information System Guidelines, p. 181.





Review national strategies for the existence of a community health component

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring

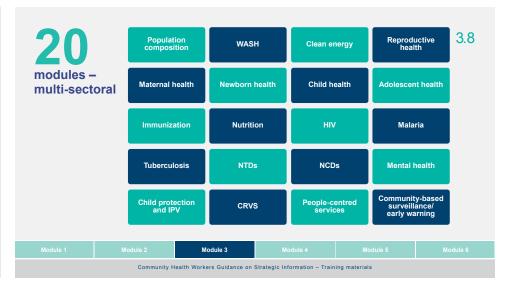


As the community health system must be integrated into the overall national health system, the CHIS must also be integrated with the national HIS, ensuring alignment with existing national strategies, policies and action plans, including, but not limited to:

- National health strategy
- Community health strategy (and corresponding M&E plan if it exists)
- HIS and/or M&E strategy and the logistics management information system (LMIS)
- Digital health or e-health strategy digitalization is an opportunity to decrease the reporting burden
- Programme-specific strategies (e.g., reproductive, maternal, newborn, child and adolescent [RMNCAH] and RMNCAH and nutrition (RMNCAH+N); malaria elimination; elimination of mother-to-child transmission of HIV and syphilis; HIV prevention and treatment delivery through differentiated care; 'reach every district/child' immunization approach; TB control strategy; strategies addressing gender equality and violence against women; control/elimination/eradication of neglected tropical diseases, etc.).

These national strategies will inform which modules should be prioritized in developing community health indicators.

Slide



It is vital to understand that while the Guidance has 20 modules, only those technical areas that are part of the country's national health strategy (including the community health strategy) should be selected. For instance, if the community health strategy plans to deliver only iCCM, then only modules relevant to iCCM should be reviewed. It would be useful to discuss the prioritization and selection at the beginning of selected data case uses, depending on the maturity and development of the CHIS.

Digitalization

Adapted from: WHO Guideline: Recommendations on digital interventions for health system strengthening

In recent years digitalization has changed the business model in many areas, including community health. The widespread use of digital health solutions (e-health or mhealth) in recent years provides an excellent opportunity to tackle health system challenges and assist front-line health workers in their daily routine. WHO recommends nine digital interventions for health system strengthening:

- Birth and death notification
- Stock notification and commodity management
- Client-to-provider telemedicine
- Provider-to-provider telemedicine
- Targeted client communication (targeted communication to individuals)
- Health worker decision support
- Digital tracking of health status of patients/clients and services provided within a health record (digital tracking)
- Provision of educational and training content to health workers (mobile learning/mLearning)

Digitalization, when well designed, can allow:

- CHWs to monitor the indicators of their own community in real time to understand where gaps in services, access and equity exist.
- Improved communication between CHWs and other health-care providers/supervisors.
- Targeted supervision based on CHW performance.
- Coordination of referrals.
- Integrated decision support, job aids and service delivery protocols for CHWs.
- · Automatic generation and upload of regular aggregate reports with specific disaggregation.
- Alerts or prompts raised according to service protocols.

In terms of **data flow and aggregation**, the use of both digitalization and personal user identification (PID) should enable the collection of data elements that can be used to configure indicators (e.g., percentage, ratios) or estimates of the population covered in catchment areas, and also bridge these with information from facilities or other records and registries (e.g., CRVS, data on HIV and TB, etc.). WHO is also working on 'digital accelerator kits' to standardize the reference health content that would reside in digital systems (registers in health-care facilities).

Working with better and more granular data quality is also possible with digitalization, which can support further assessments of data. For example, in many countries, birthweight is aggregated only into two categories of low birthweight or not low birthweight. However, with digitalization the actual birthweights can be captured and reported, assessed for data quality, and adjusted to account for any data quality issues, such as data heaping¹¹ or outliers, if needed.

Alignment with existing monitoring frameworks

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring

It is important that the proposed set of community indicators be reviewed to align them as much as possible with published guidelines, as well as to enable the data flow from the community level to the facility, district, national and global levels, where necessary. Figure 4 provides some examples of the above-mentioned guidelines.

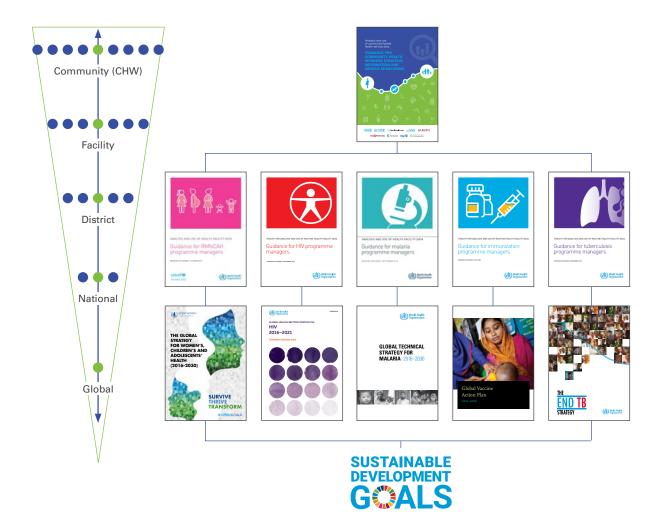




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World Health Organization, 'Digital Health', WHO, Geneva, 2022, <www.who.int/health-topics/digital-health#tab=tab_1>, accessed 2 November 2022.

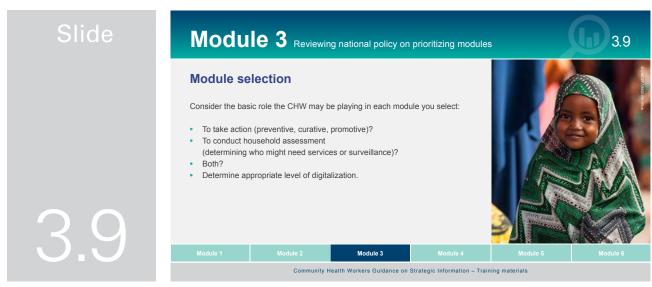
Figure 4. Samples of published guidance for alignment



Source: : Guidance for Community Health Worker Strategic Information and Service Monitoring (p. 12).

Household assessments versus CHW consultations

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring



CHWs conduct different tasks in different settings. In many health systems, these activities fall on a continuum between two main types of activities: individual consultations and household assessments.

- Ongoing individual consultations: These are consultations performed by CHWs on a regular basis, and can either happen at the health post or during home visits. This constitutes the core of their activities.
- Household assessments: In certain countries, CHWs do annual or semi-annual household assessments
 that are akin to survey or census activities. These visits usually aim to assess some characteristics
 of the population, of specific practices (e.g., vector control; water, sanitation and hygiene), but also to
 deliver some interventions. These visits can be instrumental for estimating the population count in the
 CHWs' catchment area, which can provide useful information and be used for microplanning purposes.





Instructions and template for small group exercise

Reviewing national policy to prioritize module

Brief description:

- The objective of the exercise is to give participants a chance to experience operationalizing the concepts
 of setting up a structure that should spearhead the CHIS and reviewing national policies, matching them
 with CHIS modules.
- Group size should be 4–6 participants from different countries.
- Materials needed: Computer with Microsoft software.

Process/steps/instructions:

In 30 minutes:

- 1. As a group, select a note-taker for your discussion and a presenter for the plenary session.
- 2. Individually:
 - a. Review your national CHW policy/strategy for the technical areas CHWs operate in.
 - b. Select all the potential modules that would be relevant for your country.
 - c. Identify the three most important modules for your country and be ready to justify why you selected these.
- 3. As a group:
 - a. Share the selected modules and your justification for choosing them.
 - b. Discuss the similarities and differences in modules selected and why.
 - c. Identify at least one insight for the group that you will take back to your country when you are doing this process there.
- 4. Prepare for the plenary presentation by summarizing the major points from your discussion.

Template or format for groups to complete:

Use this table to record your discussions, filling out the columns of this table with the modules selected by each participant, and their justifications:

Participant	Module	Module	Module	Justifications

V	lod	lul	es	and		ns	ig	hts:
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Plenary:

Presenters from each group should be given 3 minutes to present their major findings in the plenary session.

At the end of the presentation the trainer will highlight a few key points:

- The importance of the structure that spearheads CHIS development.
- The importance of the module selection process and its impact on next steps.





References

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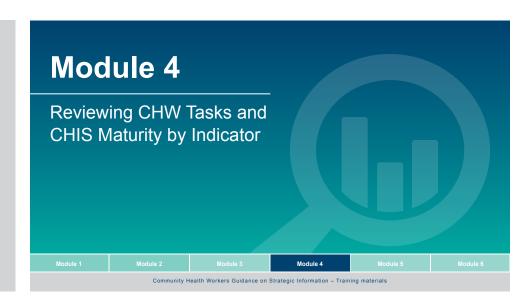
Module 4

Reviewing CHW Tasks and CHIS Maturity by Indicator

Introduction

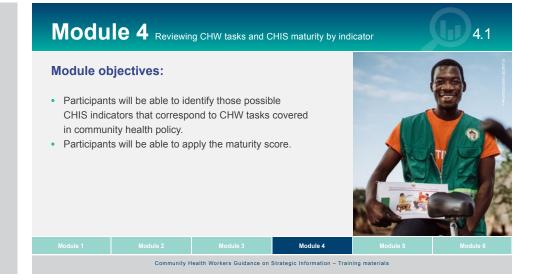
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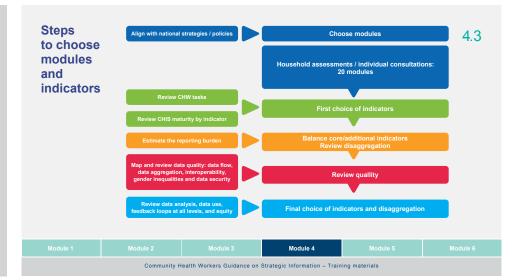


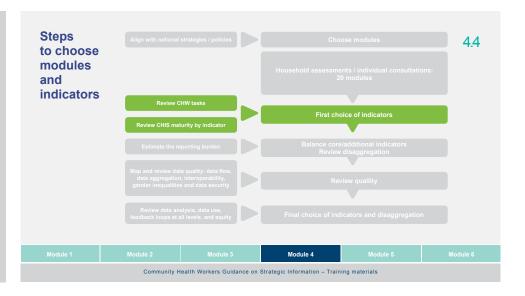
Module topics:

- Where we are in the process
- Reviewing module indicators in light of CHW tasks
- Reviewing indicator maturity score to assess indicator appropriateness
- · Choosing CHIS indicators

Module 4 Reviewing CHW tasks and CHIS maturity by indicator 4.2

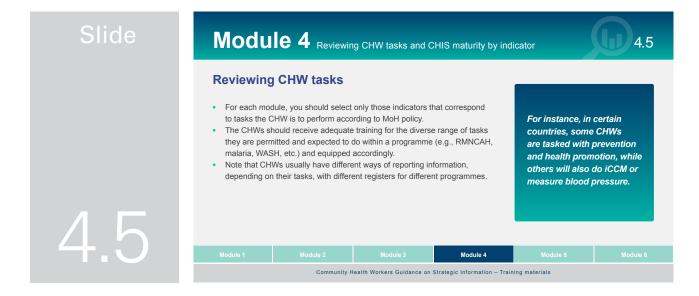
Community Health Workers Guidance on Strategic Information – Training materials





Reviewing CHW tasks

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring



Different countries prioritize different tasks and functions for CHWs as they deem appropriate (e.g., health education, service delivery, data collection, etc.).

For instance, in certain countries, some CHWs are tasked with prevention and health promotion, while others will also do iCCM or measure blood pressure. Depending on their roles and responsibilities, they will be equipped with specific measurement materials, training and instructions for referral.

For each module, the range of generically possible CHW tasks are listed along with their corresponding indicators, but the specific indicators should only be considered if CHWs are performing these tasks or it is planned that they will be performing them in the country.

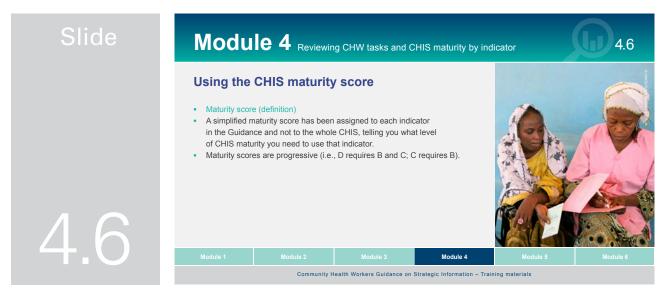
The same indicators can appear in more than one module, as they may be critical for different modules (e.g., child health and nutrition).



Maturity score (definition)

Adapted from:

- Digital Health Tools for Community Health Worker Programs: Maturity model and toolkit
- Health Information Systems Interoperability Maturity Toolkit
- Guidance for Community Health Worker Strategic Information and Service Monitoring

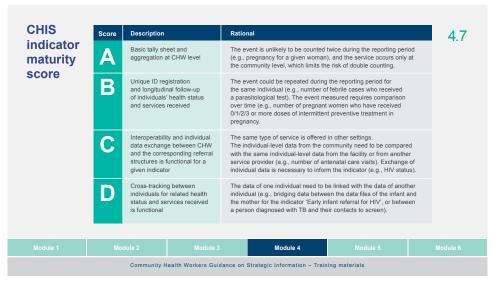


A maturity model is an approach used where a desired goal has been articulated (what maturity looks like). The model identifies stages to attaining this goal as a result of continuous improvement.

For example, a maturity framework (i.e., model) has been suggested to assess the maturity of interoperability of the routine HIS, where different domains (leadership, human resource, technology) can be evaluated along five levels of maturity (nascent being the lowest to optimized being the highest).¹²

In the case of guidance for CHIS, the maturity score is assigned to each indicator, not the whole CHIS. This simplified maturity score will tell you what level of CHIS maturity you need in order to use that indicator (see Slide 4.7: Table 2). Note that the maturity scores are progressive (i.e., D requires B and C; C requires B).





Source: Guidance for Community Health Worker Strategic Information and Service Monitoring (p. 30).

MEASURE Evaluation, 'Health Information Systems Interoperability MaturityToolkit', MEASURE Evaluation, Chapel Hill, www.measureevaluation.org/tools/health-information-systems-interoperability-toolkit.html.

The use of a PID is critical for patient care and monitoring and case surveillance, and for supporting decision making at points of service, including longitudinal tracking of persons across services and sites (community and facility); however, some users may not have any form of ID, or the ID they have may not be usable in the CHIS.

Because the development and design of CHIS are frequently service specific, CHWs usually have different ways of reporting information, depending on their tasks, using different registers for different programmes. For instance, longitudinal tracking systems with unique IDs at CHW level may be available only for follow-up of pregnancies. Therefore, a given indicator should be considered only if the CHIS has the maturity necessary for the specific indicator to be reported. Some examples include:

- Number of insecticide-treated bed nets (ITNs) distributed by CHWs can be reported with a basic tally sheet (A score).
- Proportion of children 6–59 months with mid-upper arm circumference (MUAC) < 115 mm (severe acute malnutrition) requires longitudinal tracking of the child (B score) to avoid double counting in case there is another consultation with the same child at another time with a CHW during the reporting period.
- Number of preterm newborns discharged from facility that received follow-up on kangaroo mother care by CHW will require the CHW to obtain information from the facility. Such indicators require data interoperability between the referral structure and the CHW (C score).
- TB contact screening implies cross-tracking between the data of different people for related health status and services received (D score).



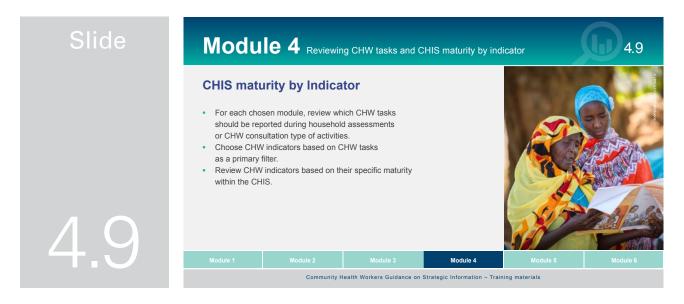




Reviewing CHW tasks and CHIS maturity by indicator

Adapted from:

- Guidance for Community Health Worker Strategic Information and Service Monitoring
- Strengthening the Capacity of Community Health Workers to Deliver Care for Sexual, Reproductive, Maternal, Newborn, Child and Adolescent Health, Technical Brief by the H4+ (UNAIDS, UNFPA, UNICEF, UN Women, WHO and the World Bank)



It is important to clarify the different steps to take to determine the maturity of CHW tasks by indicator:

- For each chosen module, review which CHW tasks should be reported during household assessments or CHW consultation type of activities.
- Choose CHW indicators based on CHW tasks as a primary filter.
- Review CHW indicators based on their specific maturity within the CHIS.

The next example demonstrates these steps for the maternal health module, starting with Table 3, which outlines the definition of the area of health care the module covers, the problems it addresses and its relevance for CHWs.

Table 2. Example of module definition and relevance

Maternal health

Key definitions: Maternal health refers to the health of women during pregnancy, childbirth and the postnatal period.

Problem: Every day in 2017, approximately 810 women died from preventable causes related to pregnancy and childbirth. Most maternal deaths are preventable, as the health-care solutions to prevent or manage complications are well known.

Relevance to CHWs: CHWs can contribute to improving the coverage of essential maternal health interventions, especially at the primary health-care level and in underserved and hard-to-reach areas. CHWs can be providers of maternal health-related health promotion and preventive care and increasingly of curative care, thanks to new rapid diagnostic tests, simplified treatment protocols, and mobile health technologies and support systems.

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring (p. 23)

Table 4 provides the sample of indicators, and the criteria one can use for selecting them, including maturity, household assessment, etc.

Table 3. List of sample indicators for the maternal health module, rated by function, maturity and other relevant modules

M	aternal health	壬	SO	MATURITY	POP	WASH	ENE	SRH	MAT	NB	ᆼ	AOD	EPI	HIV	MAL	ТВ	NTD	CP/IPV	CRVS	NCD	NOT	MEN	PCS	CBS
35	Proportion of pregnant women who have first antenatal care (ANC) contact with CHW in first trimester	N	Υ	В					P															
36	Proportion of antenatal care contacts during which women received breastfeeding counselling	N	Υ	A					P												P			
37	Proportion of community antenatal care contacts in the reporting period during which pregnant women were given/prescribed iron-containing supplements	N	Y	A					P												P			
30	Proportion of antenatal care attendees tested for syphilis	N		В				Α	Р					Α										
38	Proportion of people with raised blood pressure measured by CHW	Υ	Υ	С					Р											Р				
28	Number of HIV tests conducted (testing volume) and the proportion of HIV- positive results returned to people (positivity)	Υ	Υ	С				P	P		P	P		P										
39	Number of pregnant women referred for maternal complications	N	Υ	A					Α															

The maturity score column is scored as A, B, C, or D.

 $Abbreviations \ used \ in \ the \ other \ columns \ have \ the \ following \ designations:$

A: additional;¹³ ADO: adolescent health; CBS: community-based surveillance/early warning; CH: child health; CP/IPV: child protection and interpersonal violence; CRVS: civil registration and vital statistics; CS: individual consultation; ENE: clean energy; EPI: immunization; HH: household assessment; HIV: human immunodeficiency virus; MAT: maternal health; N: No; NB: newborn health; NCD: non-communicable disease; NTD: neglected tropical disease; NUT: nutrition; P: priority; PCS: people-centred services; POP: population composition; MAL: malaria; MEN: mental health; SRH: sexual and reproductive health; TB: tuberculosis; WASH: water, sanitation and hygiene; Y: Yes

Refers to the letter in the indicator columns and not to maturity score A.

Instructions and template for small group exercise

CHW tasks and CHIS maturity by indicators

Brief description:

- The objective of the exercise is to give participants a chance to experience operationalizing the concepts of CHW tasks and CHIS maturity by indicator.
- Group size should be 4–6 participants from different countries.
- Materials needed: Computer with Microsoft software.

Process/steps/instructions for group work:

In 30 minutes:

- 1. As a group, select a note-taker for your discussion and a presenter for the plenary session.
- 2. Individually:
 - a. Using the CHIS module selected in Module 3, identify two to three indicators that align with the CHW tasks in your country.
 - b. For each of these indicators, verify the needed maturity level in terms of your country's HIS and (potential) CHIS.
 - c. Finalize your choice of indicators and fill in the table with both your selected indicator and its maturity level. Be prepared to offer justifications for your selection.
- 3. As a group:
 - a. Share your indicator choices and justifications.
 - b. Identify some common themes as well as differences in your selections, as well as any insights that will help you when undergoing this process in your country.
 - c. Prepare for plenary presentation.

Template or format for groups to complete:

Use this table to record your discussions, filling out the columns of this table with the indicators selected by each participant:

Participant	Indicator 1	Indicator 2	Indicator 3	Justifications
	Example: Proportion of children 6–59 months with MUAC < 115 mm (severe acute malnutrition) [B]			

	Justification	Themes	and	Insights
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Brief description:

Presenters from each group should be given 3 minutes to present their major themes and insights in the plenary session.

At the end of the presentation the trainer will highlight a few key points:

- The importance of understanding the role of CHIS indicator maturity needs in terms of the country's HIS.
- The relationship between indicators and CHW tasks.





References

United Nations Children's Fund, World Health Organization, Global Fund to Fight AIDS, Tuberculosis and Malaria, United Nations Entity for Gender Equality and the Empowerment of Women, and Gavi, the Vaccine Alliance, *Guidance for Community Health Worker Strategic Information and Service Monitoring*, UNICEF, New York, 2021.

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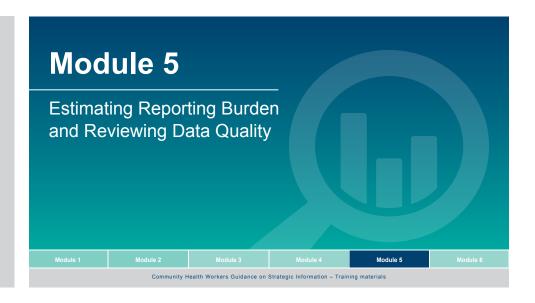
Module 5

Estimating Reporting Burden and Reviewing Data Quality

Introduction

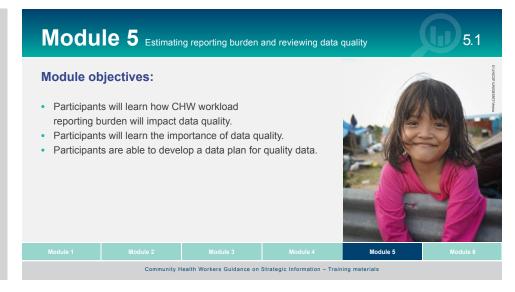
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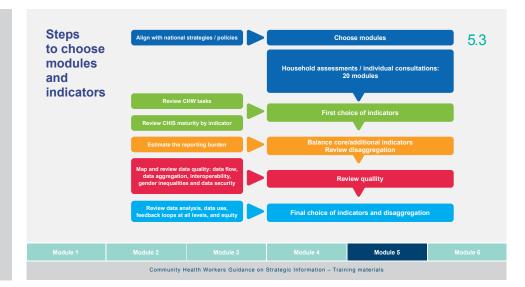
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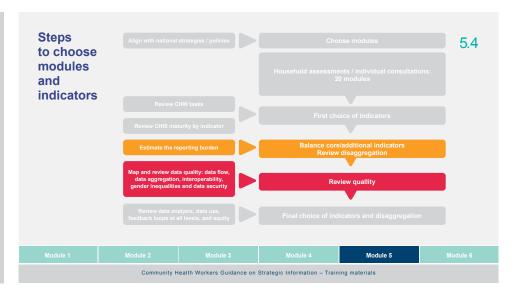
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As initial steps to examining reporting burden related to CHW indicators, it is important to differentiate among different types of information sources. Some examples include:

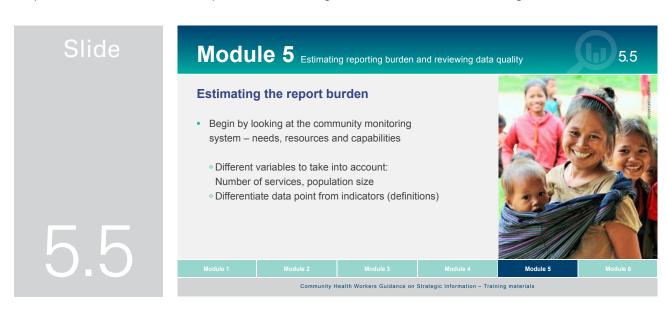
- National household surveys with sampling methods
- · Data obtained through community-led monitoring
- · Triangulation of various sources of data
- Completeness of referrals from CHWs as noted at facility level.

By understanding the source of data, you will have a strong basis for determining which indicators should be prioritized for the overall community monitoring landscape in the country.

Important: The indicators presented in the CHIS should be considered part of the **whole reporting burden** for CHWs. If there are sets of indicators not included within the scope of this guidance, **additional data points that CHWs need to report should be reviewed**.

Estimating the reporting burden

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring



It is difficult to estimate the optimal or maximum number of data points and indicators a CHW can report, as the burden is very much linked to the design of the tools provided, the time the CHW can dedicate to this task, their level of training and other factors. The maximum number of indicators that a CHW can report monthly for a paper-based system should aim not to exceed 40, as informed by our global survey consultation.¹⁴ When designing a CHIS, these numbers should be used as benchmarks to evaluate the reporting burden for CHWs.

When considering reporting burden, we must make a distinction between data points and the indicators themselves:

- Data points are the data the CHWs collect (numbers) and record.
- Indicators generally have numerators and denominators, and may require additional calculation (e.g., proportions, ratios, or rates) that the CHW may or may not be able to compute.

Guidance for Community Health Worker Strategic Information and Service Monitoring, p. 32.

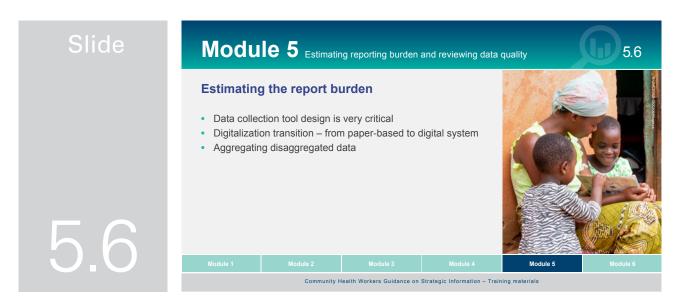
Any additional data transformation translates into additional burden and adds to the risk of incurring errors. However, if the calculation is simple and straightforward, with results that are key for CHWs to act on, this calculation can be considered.

Any type of ratio or rate calculation should be avoided if the CHW has not had specific training and supervision. Therefore, deciding how, by whom and at what level the indicator should be calculated is a critical decision when designing the CHIS.

Design Thinking

Adapted from:

- CHIS Guidance: Metadata by indicator
- Guidance for Community Health Worker Strategic Information and Service Monitoring
- Kleczka et al., 'Rubber StampTemplates for Improving Clinical Documentation'
- Liedtka, 'Why Design Thinking Works'
- Saleh, 'Everything You Need to Know About Agile Methodologies'



To be successful, an innovation process – such as designing a CHIS – must deliver on three things:

- 1. superior solutions
- 2. lower risks and costs of change
- 3. buy-in from employees and stakeholders.

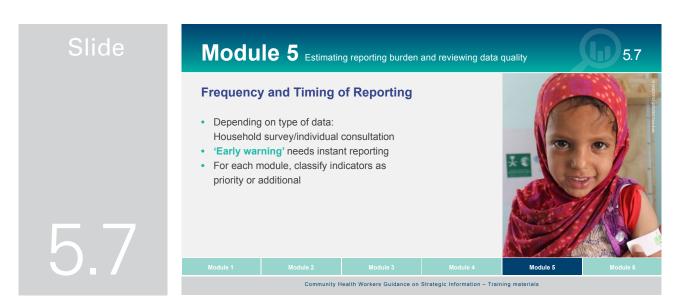
Bringing diverse voices into the process, such as that of CHWs and civil society leaders, is vital for the success of the CHIS design.

Part of the equation in design thinking is **digitalization**. Digitalization offers advantages of being able to reduce the reporting burden by pulling data with disaggregation, and calculating indicators, if the development of digitized tools is user-centred and responsive to change (for instance, through Agile methods). In the *CHIS Guidance: Metadata by indicator*, companion to the *CHW Guidance*, there is a digitalization column that indicates what digitalization could facilitate for each indicator, including for the reporting burden. When transitioning from a paper-based to a digital system, it is critical to carefully manage the transition to avoid prolonged double reporting through both systems. Bridging technologies as rubber stamp templates can be helpful. Initially, it may be important to design tools that they do not look/feel too different from existing methods, so as to lower the adaptation stress; new questions should only be added progressively. Fast-paced change can negatively impact comparability to previous data collection rounds that used paper-based records.

Aggregating disaggregated data is another major source of reporting burden. In general, with paper-based systems, requests for disaggregation should be limited. The more categories that are considered (binary or different categories – for example, age), the heavier the burden. Multifactor aggregations (for example, women/aged 15–19/postpartum) are particularly difficult with paper tools.

Frequency of reporting

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring



The frequency and timing of reporting is tightly linked to the reporting burden, as a heavy workload can result in delayed reporting. For individual consultations, most reporting is usually done on a monthly basis. On the other hand, for early warning, the detection of a given event or health risk alert categorized by national policy as potential risks for public health should trigger instant reporting through previously set communication channels, and appropriate feedback.

An established frequency, according to the nature of the event or cases (for instance, daily, biweekly, weekly, bimonthly, monthly) could be decided.

The Agile methodology was designed as a simple, iterative way to turn an idea with a number of requirements into a software solution. It uses constant planning, understanding, updating, communication, development and delivery, by dividing it into many stages that interact with customer feedback. Development and testing are synchronized, and every phase of the project or software development is monitored.

¹⁶ Kleczka, Bernadette, et al., 'Using Rubber Stamps and Mobile Phones to Help Understand and Change Antibiotic Prescribing Behaviour in Private Sector Primary Healthcare Clinics in Kenya', BMJ Global Health, vol. 4, no. 5, e001422, 29 September 2019.

Digitalization could have the potential to assist in the frequency of reporting and related feedback loops and data use. This shorter feedback loop can allow CHWs to ensure faster interventions in a data-driven culture.

Example:

Number of malaria-positive cases by rapid diagnostic test treated: This indicator, collected in real time, could be a simple yet clear example of where digitalization could be a game changer. If there were an upward trend in number of positive malaria cases **not** treated, the programme manager could intervene promptly to address the issue.

Interoperability

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring



Interoperability can be defined as "the ability of different information systems, devices and applications (systems) to access, exchange, integrate and cooperatively use data in a coordinated manner, within and across organizational, regional and national boundaries, to provide timely and seamless portability of information and optimize the health of individuals and populations globally." It has an important role to play in integrating the CHIS with the other parts of the HIS. Without interoperability, it would not be easy to analyse these data and use them as part of the larger health system.

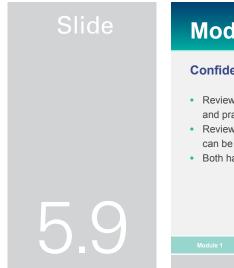
There are four levels of interoperability:

- 1. **Foundational (Level 1)**: Establishes the interconnectivity requirements needed for one system or application to securely communicate data to and receive data from another.
- 2. **Structural (Level 2):** Defines the format, syntax and organization of data exchange, including at the data field level for interpretation.
- 3. Semantic (Level 3): Provides for common underlying models and codification of the data, including the use of data elements with standardized definitions from publicly available value sets and coding vocabularies, providing shared understanding and meaning to the user.
- 4. Organizational (Level 4): Includes governance, policy, social, legal and organizational considerations to facilitate the secure, seamless and timely communication and use of data both within and between organizations, entities and individuals. These components enable shared consent, trust and integrated end-user processes and workflows.

Definition is taken from the Healthcare Information and Management Systems Society website at: www.himss.org/resources/interoperability-healthcare#Part1.

Standards – such as standardization of indicators – provide a common language and a common set of expectations that enable interoperability between systems (CHIS and HIS).

Confidentiality and data security





Data disclosed to the CHW¹⁸ should be kept protected. If data are shared, the individual(s) concerned should be alerted and they should consent to the sharing of the data. There should be careful consideration of CHWs collecting and storing sensitive data.

Dimensions of data quality assessment

Adapted from: Toolkit for Analysis and Use of Routine Health Facility Data: General principles





If paper-based registers, assessment files and other data are stored at the CHW's place of residence, there is a danger of breach of confidentiality and privacy for the client/patient, as well as risk of exposure to water, humidity and pests. One solution is to provide a locked box to the CHW to use to store these documents securely.

Completeness

Completeness is expressed as the percentage of expected reports submitted to a higher level of the reporting system. For calculation of reporting completeness, the numerator is the number of reports received and the denominator is the number of CHWs expected to submit each form.

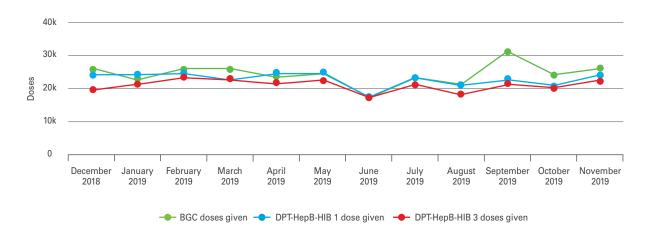
For example, 12 monthly reports are expected from each CHW per year. It is important to assess completeness of reporting for each form (such as iCCM, family planning, nutrition, EPI). The expected number of reports may vary in different countries and different parts of the same country.

Internal consistency of reported data

Internal consistency relates to the coherence between different data elements that have an expected relationship with each other. Assessment of internal consistency examines whether data values follow expected patterns over time and in relation to each other. Data entry error is an important cause of inconsistency. Errors may occur, for example, when data are added up or transcribed from a tally sheet or register to a monthly report, or transcribed or entered from a monthly paper report into an electronic database.

A key step for assessing internal consistency includes looking for outliers. These are values that are unusually high or low in comparison with historical trends. Major data entry errors can be identified by screening for outliers. Tables or charts showing trends over time can be used to quickly identify outlier values. Figure illustrates how the expected month-to-month stability in the number of maternal health and immunization services delivered can be used to identify very large outliers (for example, the September 2019 value of BCG doses), based upon nationwide total values. To identify smaller outliers, the same chart can be viewed at a lower level of the health system, where they are more visible. Outliers often reflect poor data quality, but they can also be the result of true changes in events.

Figure 4. Example of using graphs to identify outliers



Source: Toolkit for Analysis and Use of Routine Health Facility Data: General principles (p. 19).

Internal consistency also examines those data elements that have a predictable relationship to check whether the expected relationship does in fact exist between them. For example, the number of children receiving the first dose of diphtheria—tetanus—pertussis vaccine (DTP1) is expected to be roughly equal to the number of children receiving the first dose of oral polio vaccine (OPV1), as these vaccines are given at the same time.

External consistency with other data sources

External consistency examines the level of agreement between two data sources that measure the same health indicator. Indicators derived from CHIS data may be compared with indicators obtained through:

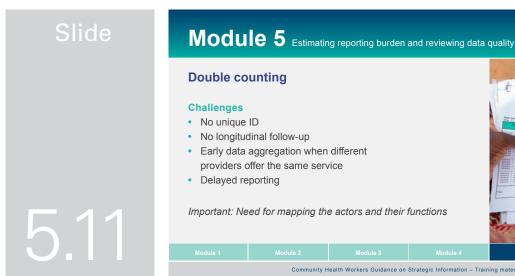
- Estimates from population-based surveys
- Parallel data systems (e.g., vertical, programme-specific systems)
- Sentinel site data.

The most important data sources for comparison with CHW data are population-based surveys.

External comparison of population data

External comparison of population data examines the adequacy of the population data used to obtain denominators for calculating CHIS indicators on rate and coverage. Different sources of population estimates (for which the values are calculated differently) are compared to assess the level of agreement between them. The greater the consistency between estimates from different sources, the greater the likelihood that the values represent the true population value. If the population estimates from the different sources are very different, the coverage estimates based on the respective denominators can be very different for a given indicator, even if the programmatic output (numerator) is the same.

Double counting





There are several challenges that can lead to double counting:

- No PID
- No longitudinal follow-up
- Early data aggregation when different providers offer the same service
- Delayed reporting
- Important: Need for mapping the actors and their functions

Table 5 presents some solutions for the common challenges to double counting.

Table 4. Challenges and solutions for double counting

Key challenge	Double counting issue	Solution
No unique ID	If there is no unique ID the same person may be counted as several individuals each time they receive services, even if the visits are to the same care provider.	In the context where there is no legal ID, provide or use a functional unique ID for each user (e.g. name, unique ID).
No longitudinal follow-up	Even with a unique ID, the same person may be counted as several individuals for each visit if there is no individual patient record (problem with tally sheets).	The format of the register or reporting form allows for longitudinal follow-up.
Early data aggregation when different providers offer the same service	When the same service is provided by different actors (e.g. rapid diagnostic test for HIV), early data aggregation will prevent reconciliation of the data using the unique ID. For instance, if we count the number of women tested for HIV, aggregation should occur after data has been reconciled with the unique ID between different structures offering the same service (e.g. two CHWs offering HIV rapid testing to the same woman, or at community and facility level).	Aggregate data only after reconciliation by unique ID.
Delayed reporting	Delayed reporting may lead to double or under reporting if the data are never accounted for because they arrived late.	Provide clear standard operating procedures (SOPs) on how to deal with late reporting and monitor and supervise what is actually done.

For each indicator, mapping the actors involved and their functions (task, data collection, data aggregation, calculation, transmission, action, feedback, etc.) leads to better understanding of the data flow and identifying where double counting may occur. It is also useful to define for each point at which data are captured or transmitted the exact process and responsibilities for how that event is accomplished (Table 3).

Source: Guidance for Community Health Worker Strategic Information and Service Monitoring (p. 37).



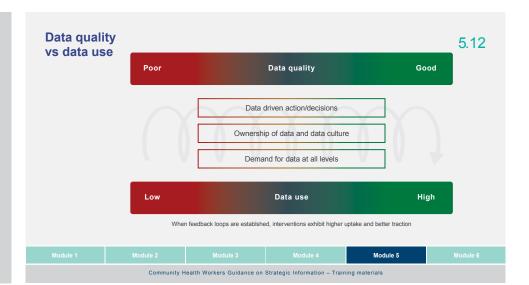


Data quality versus data use

Adapted from: DHIS2 Community Health Information System Guidelines

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Slide

5.14



The link between data quality and use, as shown in Slide 13, requires actions from both the demand and supply sides, and strengthening of their interlinkages. Actions on the demand side include improving awareness and capacities of stakeholders to use data for strengthening community health management, while actions on the supply side focus on improving the overall quality of these interlinkages. Among important factors that could hamper data quality include CHW characteristics, such as whether they are literate if they need to fill out paper forms. CHIS managers should design strategies to ensure that these factors do not impact negatively on data quality.

Instructions and template for small group exercise

Estimating report burden and developing a data quality review (DQR) – a road map on how to check on the CHIS quality data for an indicator

Brief description:

- The objective of the exercise is to give participants a chance to experience operationalizing the concepts of a data quality plan.
- Group size should be 4–6 participants from different countries.
- Materials needed: Computer with Microsoft software.

Process/steps/instructions for group work:

In 20 minutes:

- 1. As a group, select a note-taker for your discussion and a presenter for the plenary session.
- 2. Define 'report burden' and discuss its impact on data quality.
- 3. Choose two to three indicators from Module 4 to use to build out a DQR.
- 4. For each indicator:
 - Describe the approach, methodology and frequency you will use to undertake the review.
 - Describe the dimensions of data quality you will examine.
- 5. Prepare for plenary presentation.

Template or format for groups to complete:

Use this table to record your discussions, filling out the columns of this table for each of the indicators you selected:

Definition of 'report burden' and its impact on data quality:

Task	Indicator 1	Indicator 2	Indicator 3

Plenary:

Presenters from each group should be given 3 minutes to present their major findings in the plenary session.

At the end of the presentations, the trainer will highlight a few key points:

- Importance of report burden and its impact on data quality.
- Importance of designing a DQR.

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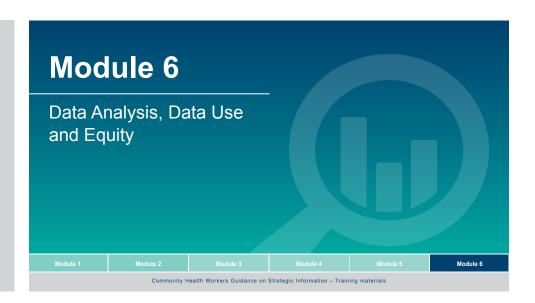


Module 6 Data Analysis, Data Use and Equity

Introduction

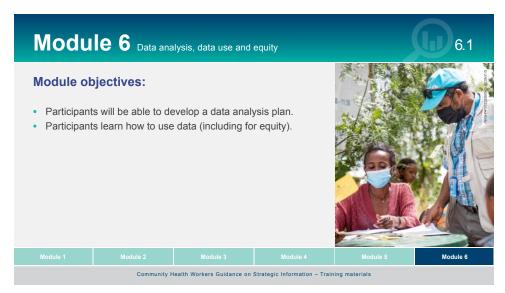
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6.1



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Module topics:

- The concept of data democratization in CHIS
- · Key concept of data analysis
- · Issues and challenges with denominators
- · Data analysis stakeholders, indicators and digitalization

Module 6 Data analysis, data use and equity

- Feedback loops (definition)
- Equity
- Gender

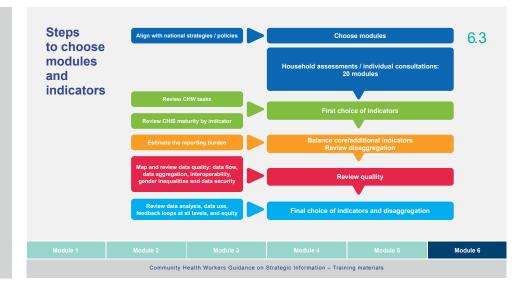


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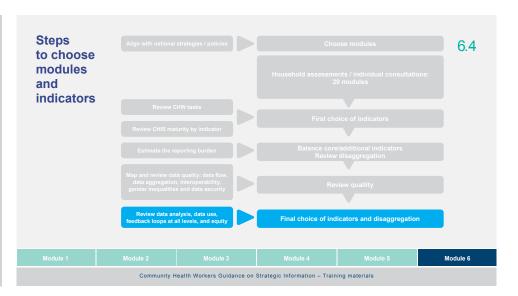
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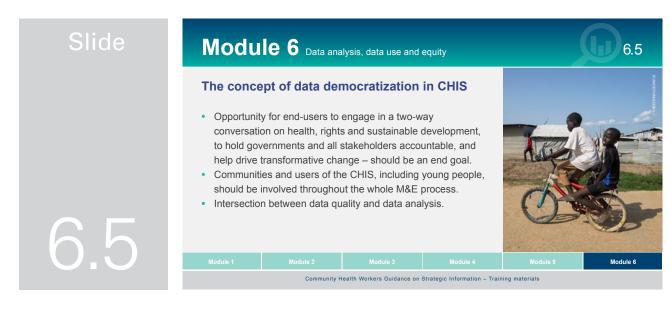
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Feedback loops

The concept of data democratization in CHIS

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring



Data use culture

Adapted from: Arenth et al., Defining and Building a Data Use Culture

A major obstacle to accelerating health gains and optimizing the efficiency and effectiveness of health-care delivery is that decision makers at all levels of the health system are not using data at all times or in an optimal way to drive planning, performance management and the delivery of services.

In a data use culture:

- People demand data they value, seek out and use timely, high-quality data as a standard way
 of doing business.
- People understand their role as data producers and users collecting, analysing, reporting and applying data to inform decisions and increase the impact of their work.
- People are motivated and empowered to use and act on data.
- People use data to inform decision making, even if the data highlight a lack of progress against stated goals.
- Managers support and encourage their staff to systematically collect, analyse, report and use data transparently and in real or near time at every level.
- Organizations have, value and adhere to established data collection and use policies.
- Organizations have data use champions at all levels, including in leadership roles.
- Organizations have interoperable systems that provide real- or near-time, relevant, accessible and accurate data to staff at all levels.

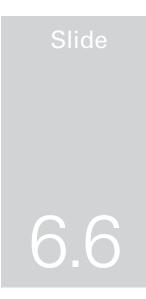
With a CHIS, CHWs should be able to provide clear, openly accessible information about their operations, including their data collection methodology. Data collected by the CHIS should be disseminated as quickly as possible after collection and should be openly accessible to the public, either through electronic or paper-based means, as not all communities will have the possibility of accessing the data electronically.

Feedback of data (data loops) to all stakeholders has shown its **potential to improve surveillance systems** as well as the **quality of health services** and the **corresponding data**. As an example, in Lusaka District in Zambia, enhanced surveillance and implementation of a data feedback loop have substantially increased malaria testing rates and decreased the number of unconfirmed malaria cases and courses of artemisinin-based combination therapy consumed within just two years.¹⁹

Key concepts of data analysis

Adapted from:

- Improving the Quality of Health Services: Tools and resources
- Guidance for Community Health Worker Strategic Information and Service Monitoring









See See <a href="http://bidinitiat

Descriptive data analysis is an important component of data analysis, particularly for routine health information systems, including CHIS. Table presents definitions of the basic types of descriptive statistics you might use.

Table 5. Definitions of key descriptive statistics

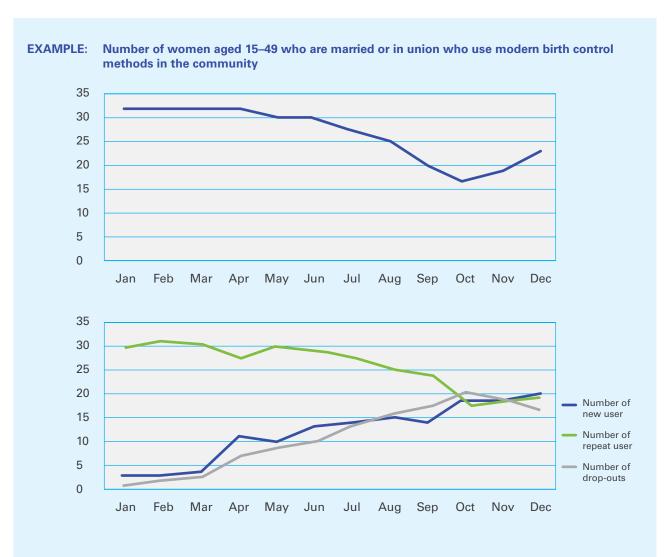
Term	Definition
Rate	A rate is frequency with which an event or case occurs in a defined population over a specified period of time. A rate is often expressed as events per 1,000 population per year. Some rates are expressed per 10,000 or per 100,000 population. All events or persons in the numerator are included in the numerator.
Ratio	A ratio is a comparison values, showing their size in relation to each other. It is calculated by dividing the first value by the second. The numerator is not contained in the denomination. Ratios are written in various ways, e.g. 3:4, 3 to 4, or 0.75 or 75%
Proportion	A proportion is the number of events or cases that occur in a defined population, expressed as a fraction, decimal or a percentage. All events or persons in the numerator are also included in the denominator.
Coverage	Coverage is a measure of the extent to which services provided cover the potential need for these services in a population. It is expressed as a percentage in which the numerator of service units provided, multiplied by 100, and the denominator is the target population in need of service.

Source: WHO Toolkit for Analysis and Use of Routine Health Facility Data: General principles (p. 24).



Figure 6 provides some examples of how to visualize trends in CHIS data that will help decision makers determine appropriate next steps.

Figure 6. Examples of type of graphs for data visualization of CHIS data



This indicator is critical for tracking the prevalence of contraceptive use among women of reproductive age and to monitor changes over time.

In this example, the overall number of women seems to plummet around August, but longitudinal tracking and advanced disaggregation by new or repeat users could have flagged the rise in dropouts much earlier – in April. Communication with CHWs and women and men to investigate the reasons behind this trend (such as secondary effects, whether women can negotiate/decide on contraceptive use, etc.) may have allowed earlier action and correction.

Source: Guidance for Community Health Worker Strategic Information and Service Monitoring (p. 43).

Data analysis stakeholders, indicators and digitalization

Adapted from: Guidance for Community Health Worker Strategic Information and Service Monitoring





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6.8

Slide



6.9





Equity

Adapted from:

- Guidance for Community Health Worker Strategic Information and Service Monitoring
- 'Social Determinants of Health'





WHO defines equity as "the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other means of stratification". (Cambridge dictionary) ²⁰

The Sustainable Development Goal (SDG) agenda pledges to: "leaving no one behind and reaching the furthest behind first".

The CHIS should be able to allow for important data disaggregations for equity analysis. Social determinants of health can influence health equity in positive and negative ways, and determine which vulnerable groups would be most important to track for equity, using data disaggregation. The following lists some examples of social determinants of health:

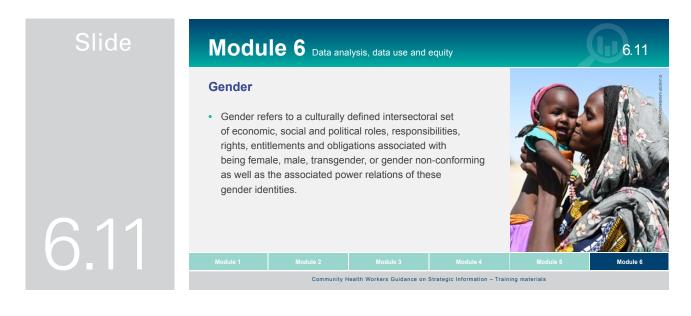
- Gender
- Income and social protection
- Education
- · Unemployment and job insecurity
- Working life conditions
- Food insecurity
- · Housing, basic amenities and the environment
- Early childhood development
- Social inclusion and non-discrimination
- Structural conflict
- Access to affordable health services of decent quality

Also see the WHO 'Health Inequality Monitor' web page at: https://www.who.int/data/inequality-monitor/about#:~:text=Health%20equity%20is%20 the%20absence,economic%2C%20demographic%20or%20geographic%20characteristics>.

Gender

Adapted from:

- Guidance for Community Health Worker Strategic Information and Service Monitoring
- Progress on the Sustainable Development Goals: The gender snapshot 2019



Gender norms and roles make up the underlying context for health and are a key consideration for equity. Gender disparities in health are well documented; for example, according to data from 51 countries, only 57 per cent of women aged 15–49 who are married or in a union make their own decisions about sexual relations and the use of contraceptives and reproductive health services.

Gender affects providers as well, including CHWs. Gender influences perceptions and policies around CHW compensation (volunteer versus paid) and burden of care (expected CHW workload in terms of compensation and together with gendered household, childcare and other labour). It is estimated that around 70 per cent of CHWs are female and those who are unpaid are most likely to be female.²¹

Historically, women are disadvantaged in many ways; therefore, when integrating gender, there is often work that addresses constraints that create these disadvantages. Collection of sex- and age-disaggregated data is critical for gender-integrated M&E. It may also be beneficial for CHW programmes when tracking key indicators by CHW gender (male, female, transgender, etc.), to note possible gendered patterns in workload, data quality, and so on.

Steege, Rosalind, et al., 'How Do Gender Relations Affect the Working Lives of Close to Community Health Service Providers? Empirical research: a review and conceptual framework', Social Science and Medicine, vol. 209, pp. 1–13, 2018.

Instructions and template for small group exercise

Developing a data analysis plan

Brief description:

- The objective of the exercise is to give participants a chance to experience operationalizing the concepts into a data analysis plan with important disaggregations and data visualization for CHIS indicators.
- Group size should be 4–6 participants from different countries.
- Materials needed: Computer with Microsoft software.

Process/steps/instructions for group work:

In 20 minutes:

- 1. As a group, select a note-taker for your discussion and a presenter for the plenary session.
- 2. Choose two to three indicators from Module 4 to use to build out a data analysis plan.
- 3. For each indicator:
 - Confirm the target group for each indicator.
 - Identify two to three important disaggregations you would want in your analysis, such as geography, gender, etc.
 - Define operationally the equity considerations for each indicator.
 - Determine how the indicators will be visualized (e.g., numbers, graphics, etc.).
- 4. Prepare for plenary presentation, summarizing the major points from your small group discussion.

Template or format for groups to complete:

Use this table to record your discussions, filling out the columns of this table for each of the indicators you selected:

Task	Indicator 1	Indicator 2	Indicator 3
Indicator			
Target group			
1st Disaggregation			
2nd Disaggregation			
3rd Disaggregation			
Equity definition			
Data visualization			

Plenary:

Presenters from each group should be given 3 minutes to present their major findings in the plenary session.

At the end of the presentation, the trainer will highlight a few key points:

- Importance of country-specific disaggregations depending on context-specific equity and inclusion considerations.
- Importance of preparing for appropriate data visualizations.
- A data analysis plan is a critical part of designing a CHIS.

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Annex:

Pre-test and Post-test



Correct answers are in bold.

Pre-test

- 1. What is your current position?
 - a. Programme manager
 - b. Health information system manager
 - c. Other
- 2. How long have you been involved in your current position?
 - a. Less than 2 years
 - b. 2 years or more
- 3. How would you define an indicator?
 - a. A measure of an activity
 - b. An approach
 - c. Indicators are defined only if there are numerators and denominators
 - d. Don't know
- 4. Is the community health information system (CHIS) part of the community health policy?
 - a. Yes
 - b. No
 - c. It depends
 - d. Don't know

- 5. What factors contribute to the practicality of a CHIS? (Multiple answers are allowed)
 - a. Cost
 - b. Scale
 - c. Complexity
 - d. All the above
 - e. None of them
 - f. Don't know
- 6. Which of the following are components of a community-based information system (CBIS)/CHIS? (Multiple answers are allowed)
 - a. System analysis
 - b. System design
 - c. System management
 - d. Leadership and governance
 - e. Data sources
 - f. Information products and dissemination
 - g. Data quality
 - h. Data management
 - i. Data use
 - j. Data refinement
 - k. None of them
 - I. Don't know
- 7. What is the difference between a CHIS and a health information system (HIS)?
 - a. They are different systems that do not relate to each other
 - b. They are two parts of the same system
 - c. They are different systems that feed into each other
 - d. Don't know

8. What is the source of indicator selection in your country's CHIS?

(Multiple answers are allowed)

- a. Health management information system
- b. Community health strategy
- c. National policy
- d. Global health strategies (e.g., HIV/AIDS global policy; maternal, newborn and child health global policy)
- e. All the above
- f. None of the above
- g. Don't know

- 9. Which of the following are modules in the CHIS Guidance? (Multiple answers are allowed)
 - a. Nutrition
 - b. Water, sanitation, and hygiene (WASH)
 - c. Civil registration and vital statistics (CRVS)
 - d. Adolescent health
 - e. Clean energy
 - f. Child protection and interpersonal violence (IPV)
 - g. People-centred services
 - h. Antenatal care
 - i. Diarrhoea
 - j. None of them
 - k. Don't know

Post-test

- 1. Why is community health important?
 - Strengthening the delivery of essential health services at the community level will be instrumental to achieving the Sustainable Development Goals
 - b. Community health is optional to reach the Sustainable Development Goals
 - c. Community health is not well defined
 - d. Don't know
- 2. Which of the following are components of community-based information systems (CBIS)/ community health information systems (CHIS)? (Multiple answers are allowed)
 - a. System analysis
 - b. System design
 - c. System management
 - d. Leadership and governance
 - e. Data sources
 - f. Information products and dissemination
 - g. Data quality
 - h. Data management
 - i. Data use
 - j. Data refinement
 - k. None of them
 - I. Don't know

- 3. Which of the following are differences between a CHIS and a health management information system (HMIS)? (Multiple answers are allowed)
 - a. A HMIS concerns information for services provided at a health facility
 - A CHIS concerns activities provided to members of a community, typically by community health workers living in the community
 - c. A CHIS and a HMIS are intricately interconnected
 - d. Data in a CHIS are collected by facility-level health workers when they do community outreach
 - e. CHIS data must feed seamlessly into the HMIS to avoid duplications and redundancies
 - f. A HMIS must be capable of providing feedback and support to strengthen the CHIS
 - g. Don't know
- 4. Which of the following are modules in the CHIS Guidance? (Multiple answers are allowed)
 - a. Nutrition
 - b. Water, sanitation, and hygiene (WASH)
 - c. Civil registration and vital statistics (CRVS)
 - d. Adolescent health
 - e. Clean energy
 - f. Child protection and interpersonal violence (IPV)
 - g. People-centred services
 - h. Antenatal care
 - i. Diarrhoea
 - i. None of them
 - k. Don't know

- 5. Information reported by community health workers can be used to measure indicators at what levels?
 - a. CHIS, health facility, global
 - b. CHIS, health facility
 - c. Don't know
- 6. What resources would you use to select a module? (Multiple answers are allowed)
 - a. The national health strategy
 - b. Programme-specific strategies such as community health strategy
 - c. Global health strategies
 - d. Other country health strategies
 - e. None of the above
 - f. Don't know
- 7. How would you select an indicator for the CHIS?
 - Select only those indicators that correspond to tasks the community health worker is to perform according to current ministry of health policy
 - b. Select indicators for tasks you feel the community health worker could be doing
 - c. Don't know
- 8. At what level does the CHIS maturity score operate?
 - a. Maturity by indicator
 - b. Maturity by interoperability
 - c. Maturity by health information system
 - d. Maturity by HMIS
 - e. All of the above
 - f. Don't know
- 9. How many levels does the CHIS maturity score have?
 - a. 1
 - b. 4
 - c. 2
 - d. 4
 - e. 6
 - f. 8
 - g. 7

For the following indicators, choose the appropriate CHIS maturity score.

- 10. Proportion of households with primary reliance on clean fuels and technologies for cooking
 - a. A
 - b. B
 - c. C
 - d. D
- 11. Location of drinking-water point
 - a. A
 - b. B
 - c. C
 - d. D
- 12. Number of households in the catchment area
 - a. A
 - b. B
 - c. C
 - d. D
- 13. Number of HIV tests conducted (testing volume) and the proportion of HIV-positive results returned to people (positivity)
 - a. A
 - b. B
 - c. C
 - d. D
- 14. Proportion of children receiving antibiotic treatment for fast breathing and/or chest indrawing
 - a. A
 - b. B
 - c. C
 - d. D
- 15. Which are the dimensions of data quality? (Multiple answers are allowed)
 - a. Reporting completeness and timeliness
 - b. Internal consistency of reported data
 - c. External consistency with other data sources
 - d. External comparison of population data
 - e. External comparison with world population
 - f. None of the above
 - g. Don't know

16. What are the elements that are important factors for quality of CHIS data?

(Multiple answers are allowed)

- a. Design of reporting tools
- b. Coordination and adequate training of all people involved in the CHIS
- c. Data collection and data cleaning
- d. Analysis, use and communication of data
- e. Monitoring data quality
- f. Characteristics of the community health worker
- g. Digitalization
- h. Interoperability
- i. None of the above
- j. Don't know

17. How would you define the 'virtuous cycle of data use and data quality'?

- a. Data quality and data use are intimately interconnected the more data are used, the better the quality
- b. Data quality is delinked from data use
- c. Data use is not important and therefore has no implication on data quality
- d. None of the above
- e. Don't know

18. What is a rate?

- a. It is a frequency with which an event or a case occurs in a defined population over a specified period of time. A rate is often expressed as events per 1,000 per year. All events or persons in the numerator are also included in the denominator.
- b. It is a comparison of values, showing their size in relation to each other. It is calculated by dividing the first value by the second. The numerator is not contained in the denominator.
- c. It is the number of events or cases that occur in a population expressed as a fraction, decimal, or percentage. All events or persons in the numerator are included in the denominator.
- d. None of the above
- e. Don't know

