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Analysis and use
of community-based
health service data

GUIDANCE FOR COMMUNITY HEALTH WORKERS STRATEGIC INFORMATION AND SERVICE MONITORING





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Note on the document

This document will be reviewed and updated periodically to ensure that it remains aligned with the most recent guidelines and evidence. Feedback to the document will contribute to its evolution and improvement over time.

This joint guidance document reflects the activities of individual agencies around an issue of common concern. The principles and policies of each agency are governed by the relevant decisions of its governing body. Each agency implements the interventions described in this document in accordance with these principles and policies and within the scope of its mandate.

ABBREVIATIONS

ACT	Artemisinin-based combination therapy
ANC	Antenatal care
ART	Antiretroviral therapy
BMI	Body mass index
BMU	Basic management unit
CBS	Community-based surveillance
CHIS	Community health information systems
CHW	Community health worker
COVID-19	Coronavirus disease
CRVS	Civil registration and vital statistics
DHIS2	District Health Information Software 2
DHS	Demographic Health Survey
DQR	Data Quality Review
DTP3	Diphtheria tetanus toxoid and pertussis
ECHO	Evidence for Contraceptive Options in HIV Outcomes
EMTCT	Elimination of mother-to-child transmission
EWAR	Early Warning, Alert and Response
FGM	Female genital mutilation
GAVI	Gavi, the Vaccine Alliance
GPAQ	Global Physical Activity Questionnaire
GPS	Global positioning system
HAP	Household air pollution
HDC	Health Data Collaborative
HIS	Health information system
HIVST	HIV self-testing
HMIS	Health management information system
HPV	Human papillomavirus
HTS	HIV testing service
iCCM	Integrated Community Case Management
ICD	International Classification of Diseases
ICRC	International Committee of the Red Cross
ICT	Information and communication technology
ID	Identification
IDSR	Integrated Disease Surveillance and Response
IFRC	International Federation of Red Cross Red Crescent Societies
IPTp	Intermittent preventive treatment of malaria in pregnancy
IPV	Interpersonal violence
IRS	Indoor residual spraying
ISH	International Society of Hypertension
IT	Information technology
ITN	Insecticide-treated nets
KMC	Kangaroo Mother Care
LAM	Lactational amenorrhea method
LGBTI	Lesbian, gay, bisexual, transgender and intersex

LMIS	Logistics management and information system
M&E	Monitoring and evaluation
MDA1/MDA2/MDA3	Mass drug administration [in the context of preventive chemotherapy]
MERG	Monitoring and Evaluation Reference Group
MODA	Multiple overlapping deprivation analysis
MUAC	Mid-upper arm circumference
NCD	Non-communicable disease
NGO	Non-governmental organization
NT	Neonatal tetanus
NTD	Neglected tropical disease
OPV	Oral polio vaccination
ORS	Oral rehydration salts
PC	Preventive chemotherapy
PEPFAR	United States President's Emergency Plan for AIDS Relief
PHC	Primary health care
PKDL	Post kala-azar dermal leishmaniasis
PLHIV	People living with HIV
PrEP	Pre-exposure prophylaxis
RDT	Rapid diagnostic test
RMNCAH	Reproductive, maternal, newborn, child and adolescent health
RMNCAH+N	Reproductive, maternal, newborn, child and adolescent health and nutrition
SAGE	Strategic Advisory Group of Experts
SAM	Severe acute malnutrition
SBA	Skilled birth attendant
SDG	Sustainable Development Group
SMC	Seasonal malaria chemoprevention
SOP	Standard operating procedure
SRH	Sexual and reproductive health
STI	Sexually transmitted infection
STOPTB	Stop TB Partnership
T1/T2/T3	Targeted treatment intervention [in the context of preventive chemotherapy]
TB	Tuberculosis
THE GLOBAL FUND	The Global Fund to Fight AIDS, Tuberculosis and Malaria
TPT	Tuberculosis preventive treatment
UHC	Universal health coverage
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNPFII	United Nations Permanent Forum on Indigenous Issues
UNSD	United Nations Statistics Division
USAID	United States Agency for International Development
VL	Visceral leishmaniasis
WASH	Water, sanitation and hygiene
WHO	World Health Organization
WHZ	Weight-for-height z-score



FOREWORD

There are currently many gaps and fragmented approaches to information on community level of care.

This guide:

- responds to the 2019 World Health Assembly resolution [WHA72.3](#) that urges for a) alignment of data and digital efforts to optimize Community Health Worker (CHW) programmes, and b) generation of a stronger evidence base for the impact of CHWs;
- supports monitoring community action, in line with promoting human rights-based approaches to equity focused data, for Leaving No One Behind;
- provides a set of standardized indicators;
- aims to reduce fragmentation and frontline reporting burdens by aligning partner and national reporting mechanisms; and
- facilitates the harmonization and integration of CHW indicators into broader country Health Information Systems (HIS).

The guide was drafted by the multi-agency Community Health Information Systems working group in the [Health Data Collaborative \(HDC\)](#). This collaboration's crossed constituencies, agencies and boundaries are aimed at supporting better evidence for community level efforts.

The guide's aims lie at the heart of the HDC mission and objectives: *building country data and digital capacities* to collect, analyse and use better data; *aligning* reporting mechanisms to reduce fragmentation and front line health worker reporting burdens; *adapting global tools for SDG targets* and integrating these into country owned HIS - supporting *community efforts to monitor equity*.

On behalf of the HDC, we would like to thank all individuals and agencies that provided inputs for this important guide. We would also like to thank all Community Health Workers who work tirelessly for their communities and hope that this guide may reduce reporting burdens and document the impact of CHWs, to eventually design better programs for communities left behind.

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EXECUTIVE SUMMARY

Community health workers (CHWs) are non-professional health workers, either paid or volunteer, who are based in communities and provide outreach beyond primary health-care facilities or who are based at health posts not staffed by professional medical staff. Compared to other types of health workers, CHW cadres across and even within countries are remarkably diverse in terms of their tasks, functions and degree of institutionalization into the formal health sector.

A major obstacle to delivering services of good quality to children, adolescents and adults – including to key and vulnerable populations at the community level – is the dearth of data on community-level care and how they are managed and used. The absence of standardized and aligned CHW services indicators still limits the development of well-functioning community health information systems (CHIS), their integration within broader health information systems (HIS) and monitoring and evaluation (M&E) frameworks inclusive of both community- and facility-based service data. To facilitate the harmonization of monitoring of CHW services, this guidance offers a modular set of common indicators reported by CHWs at the time they provide services.

These indicators are aligned with existing monitoring frameworks, and are flexible enough to be adapted for different country contexts and varying maturity levels of different CHIS.

Areas covered by this guidance are:

- **population composition**
- **water, sanitation and hygiene (WASH)**
- **clean energy**
- **sexual and reproductive health (SRH)**
- **maternal health**
- **newborn health**
- **child health**
- **adolescent health**
- **immunization**
- **HIV**
- **malaria**
- **tuberculosis (TB)**
- **neglected tropical diseases (NTDs)**
- **child protection and interpersonal violence**
- **civil registration and vital statistics (CRVS)**
- **non-communicable diseases (NCDs)**
- **nutrition**
- **mental health**
- **people-centred services**
- **community-based surveillance (CBS)/early warning.**

Annex 1 lists the indicators by module, and a separate volume accompanying this guidance details the metadata for each indicator.

During the process of selection of indicators, six principles are critical for a human rights-based approach to data: participation, data disaggregation, self-identification, transparency, privacy and accountability. It is important to ensure and plan for the participation of all relevant stakeholders, including for planning, data collection, dissemination and analysis of data. The views of vulnerable or marginalized groups, and groups who are at risk of discrimination, should be represented. These principles are critical in designing an equity-focused process, well articulated with community-led monitoring, to address specific data use cases, and inform all stakeholders for targeted action to reach the 2030 Sustainable Development Agenda.

The following are the key steps to choosing and standardizing CHW indicators for the main implementing partners:

1. REVIEW NATIONAL STRATEGIES TO PRIORITIZE MODULES



COUNTRY LEADERS

- Identify who is responsible for setting up or updating the CHIS, especially in terms of the standardization of CHW indicators.
- Map key actors, including communities, the private sector and civil society organizations, implementers (nongovernmental organization [NGOs], including for community-based surveillance [CBS]) and all other key stakeholders.
- Review all relevant national or subnational strategies.
- Evaluate carefully the plans and ongoing initiatives for digitalization and their impact in terms of the choice of indicators, including for maturity and costs.
- Review the two main types of CHW activities (consultations versus household assessments), including which tasks CHWs are allowed to perform.
- Identify the specific CHW indicator modules to prioritize.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Actively participate in the process and provide feedback on key modules to focus on.
- Plan how best to align and standardize CHW indicators, and how best to contribute to CHIS.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Actively participate in the process and provide feedback on key modules to focus on.
- Allow community-led organisations to bring their experience in community led monitoring to inform CHW strategic information.

FUNDING PARTNERS

- Review with country leaders and implementing partners costs and sustainability of the plan.
- Ensure good governance of the whole process of standardization of CHW indicators.

ACADEMIA

- Review whether there are opportunities to learn from the standardization and digitalization process to facilitate it – for instance, through implementation research.

2. REVIEW CHW TASKS AND CHIS MATURITY BY INDICATOR



COUNTRY LEADERS

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

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Review which tasks CHWs are doing and coordinate with country leaders so these are captured by CHIS.

3. REVIEW THE REPORTING BURDEN OF CHWs



COUNTRY LEADERS

- Estimate the CHW reporting burden by considering the total number of data points to be collected, the number of indicators to calculate, disaggregation, frequency of reporting, the design of data collection instruments and the average catchment area.
- Based on this assessment, review the number of indicators, their disaggregation and reporting frequency; prioritize indicators and basic types of disaggregation.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Actively participate in the selection process and provide feedback on key CHW tasks and corresponding indicators to focus on, as well as CHW reporting burden.
- Discuss alignment in terms of frequency of reporting and disaggregation.
- Share best practices on reporting tools.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Actively participate in the process and provide feedback on key indicators to focus on.
- Contribute to and articulate the choice of indicators with community-led monitoring.

FUNDING PARTNERS

- Review with country leaders and implementing partners costs and sustainability of the tools, especially if undergoing digitalization.

ACADEMIA

- Review the best ways to estimate the reporting burden of CHWs.



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4. REVIEW THE QUALITY OF REPORTING



COUNTRY LEADERS

- For each indicator considered, assess potential double counting and how it can be minimized.
- Explore the feasibility of clinical assessment indicators in terms of resources, training and reliability.
- Consider all levels of CHIS interoperability and whether they are taken into account within a comprehensive health information system strategy.
- Ensure necessary policies or legal framework and standard operating procedures (SOPs) are in place to ensure confidentiality.
- Review whether there are issues with processes and practices ensuring confidentiality.
- Review whether data security in all its dimensions can be ensured.
- Based on these evaluations and a review of data quality in general, consider whether certain CHW indicators should be measured or tested for feasibility before scaling up.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Offer feedback on issues and best practices on data quality, feasibility, confidentiality and data security for the indicators considered.
- Review specifically issues of double counting between implementing partners.
- Review how best to operationalize interoperability to best contribute to CHIS.
- Discuss alignment in terms of measurement, including for clinical assessments.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Provide feedback on issues of data quality, confidentiality and data security for the indicators considered.
- Offer possible solutions or share known best practices.

FUNDING PARTNERS

- Review how best to support improvement initiatives for data quality with data use, interoperability and data security/confidentiality.
- Review how to support the sustainability of training, supervision and reporting resources.

ACADEMIA

- Research on best ways to improve data quality, interoperability and data security/confidentiality.

5. KEY STEPS FOR ACTION WHEN REVIEWING DATA USE, EQUITY AND FEEDBACK LOOPS



COUNTRY LEADERS

- Aim for a rights-based strategy for data democratization.
- Review whether there are multicomponent interventions in place to improve data quality, access and use.
- Establish clear SOPs for each chosen indicator, including the ways it should be collected, calculated (with denominators if relevant), analysed and provided feedback on, and possible actions it could trigger.
- Ensure communities are included in the processes with feedback loops, convening participatory routine data reviews with community/civil society partners.
- Establish the monitoring approach for equity in general (including gender, age and geographic location) and vulnerable and key populations in particular.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Articulate different feedback loops between partners.
- Review and articulate equity strategies and their monitoring between implementing partners, including for vulnerable populations.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Put in place feedback monitoring with country leaders and implementing partners.
- Articulate CHW indicators with community-led monitoring.
- Participate in assessing inequities, underserved populations, and human rights and gender related barriers to services.
- Representatives of vulnerable populations should supervise equity monitoring strategy.

FUNDING PARTNERS

- Ensure good governance in terms of data use, feedback loops and equity strategy.

ACADEMIA

- Research on best ways to improve feedback loops, equity, articulation of different community monitoring systems, including community-led monitoring, and monitoring and participation of vulnerable populations.



1. INTRODUCTION

The global community has committed, through the [Sustainable Development Goals](#) adopted in 2015 (1), to end preventable child deaths, hunger, the epidemics of HIV/AIDS, tuberculosis, malaria and neglected tropical diseases (NTDs), and violence against women, as well as to achieve universal health coverage (UHC), gender equality and the empowerment of all women and girls. To achieve these ambitious targets by 2030, particularly in resource-limited settings, strengthening the delivery of essential health services at the community level is instrumental, especially in those areas often far from health-care facilities and the formal health systems in countries.

Several milestones have contributed to building momentum for community health:

- [One Million Community Health Workers \(1mCHW\) Campaign](#) in 2013 (2)
- [2014 ICCM symposium](#) (3)
- [Political Declaration on HIV/AIDS](#) of 2016 (4)
- [Institutionalizing Community Health Conference](#) in 2017 (5)
- [The Declaration of Astana](#) (6)
- [Global Action Plan for Health and Well-being for All](#), in four cross-cutting “accelerator” areas: primary health care, community and civil society engagement, determinants of health, and data and digital health (7)
- [2019 World Health Assembly second Universal Health Coverage \(UHC\) resolution](#) recognizing the contributions made by community health workers (CHWs) to achieving UHC and the 2019 World Health Assembly resolution [WHA72.3](#), which urged all Member States to “align the design, implementation, performance and evaluation of community health worker programmes, by means including the greater use of digital technology, with the consolidated evidence presented in the WHO guideline on health policy and system support to optimize community health worker programmes, with specific emphasis on implementing these programmes in order to enable community health workers to deliver safe and high-quality care;” and which requested the Director-General “to continue to collect and evaluate data on community health worker performance and impacts, in order to ensure a strong evidence base for their promotion, especially in the context of low- and middle-income countries.” (8)
- [WHO guideline on health policy and system support to optimize CHW programmes](#) (9)
- [United Nations \(UN\) Political Declaration of the High-level Meeting on Universal Health Coverage: “Universal health coverage: moving together to build a healthier world”](#) recognizing that “community-based services constitute a strong platform for primary health care” and CHWs are part of a “skilled health workforce...who are an important element of strong and resilient health systems” (10).

A major obstacle to delivering services of good quality to children, adolescents and adults, including to key and vulnerable populations at the community level is the dearth of **data on community-level care** (i.e. all the data collected on service provision, management of supplies, etc.) and **how they are managed and used**. A well-functioning community health information system (CHIS) is necessary to routinely monitor health, needs and practices at the community level, including during emergencies, to inform communities, health-care professionals, policy-makers 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.

UNICEF, WHO, the Global Fund, and other organizations within and outside of the [Health Data Collaborative \(HDC\)](#) (11) have been supporting countries to strengthen their data and information systems, by developing modular facility guidance documents, configuration packages and training materials to introduce and support implementation of internationally agreed data standards. In addition, the HDC developed a CHIS guidance to assist countries to design, operationalize, monitor and evaluate their programmes (12).

The absence of standardized and aligned CHW services indicators still limits the development of well-functioning CHIS, their integration within broader health information systems (HIS) and monitoring and evaluation (M&E) frameworks, inclusive of both community and facility-based service data. This also limits data analysis and use that can strengthen service quality for individual patient care and monitoring, programme management and programme monitoring, and benchmarking and comparison of results across and within countries and implementers. The gap in awareness of needs, quality and the efficiency of interventions reduces accountability as well as lessens the possibility of adjustments following a precision public health approach, including for resources allocation and informed decision-making. This in turn affects the sustainability of primary health care (PHC) at the community level.

1.1 Definitions

1.1.1 Community health workers (CHWs)

The 2018 *WHO guideline on health policy and system support to optimize community health worker programmes* defines CHWs as “health workers based in communities (i.e. conducting outreach beyond 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 recommends remunerating practising CHWs for their work with a financial package commensurate with the job demands, complexity, number of hours, training and roles that they undertake. WHO also recommends contracting agreements for paid CHWs and suggests that a career ladder should be offered to them (9).

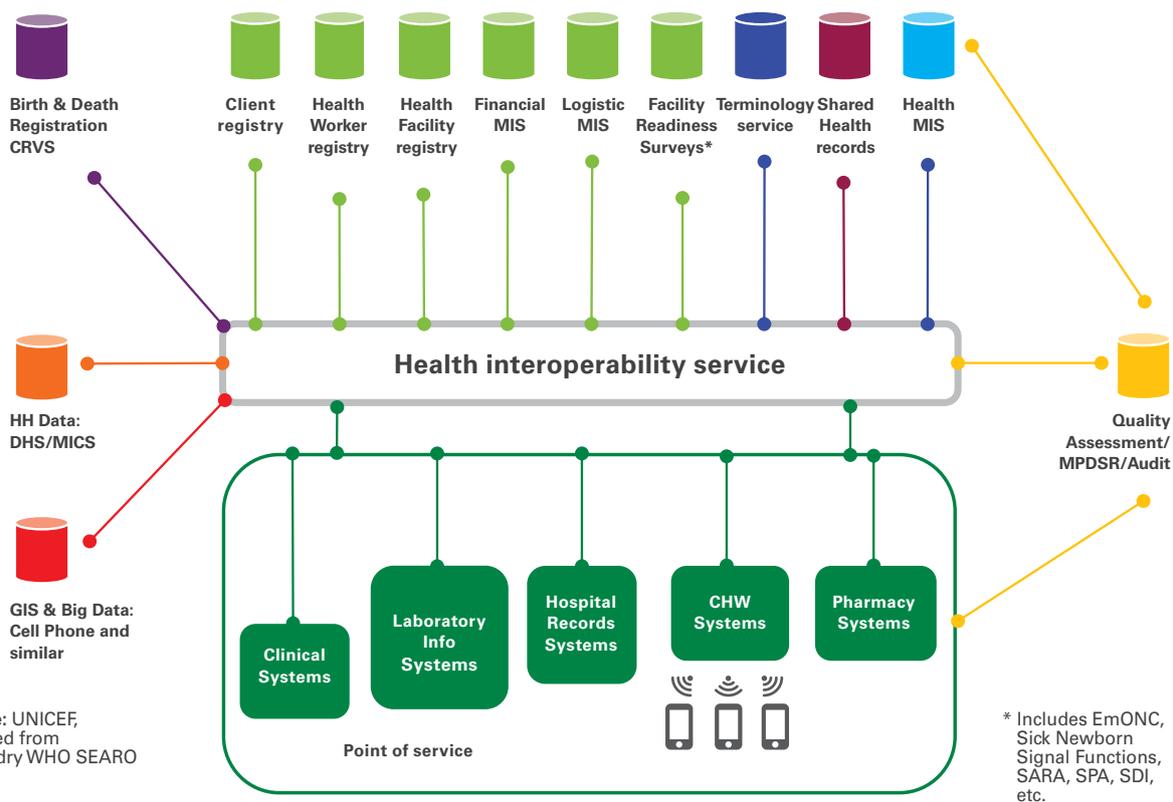
Compared to other types of health workers, CHW cadres across and even within countries are remarkably diverse in terms of their tasks, functions and degree of institutionalization into the formal health sector. This guidance therefore applies to any type of CHW covered by this definition, if the tasks they perform are listed and if they are part of the formal monitoring system (CHIS).

1.1.2 Community health information system (CHIS)

According to WHO, the broad **health information system (HIS)** “provides the underpinnings for decision-making and has four key functions: (i) data generation, (ii) compilation, (iii) analysis and synthesis, and (iv) communication and use. The health information system 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” (13). Fig. 1 illustrates the main components of a HIS.

As shown in Figure 1, the HIS includes different systems, such as health management information systems (HMIS) and logistic management information systems (LMIS). Ideally, data can flow seamlessly from the points of service up and then back down through the system, for decision-making, and course correction, including quality improvement and strengthening integration.

Figure 1 Main components of a health information system



Source: UNICEF, Adapted from M Landry WHO SEARO

* Includes EmONC, Sick Newborn Signal Functions, SARA, SPA, SDI, etc.

CHW: community health worker; **CRVS:** civil registration and vital statistics; **DHS:** Demographic and Health Survey; **GIS:** geographic information system; **HH:** household; **MICS:** Multiple Indicator Cluster Surveys; **MIS:** management information system; **MPDSR:** maternal and perinatal death surveillance and response

Courtesy of OpenHIE

A **CHIS** is a combination of paper, software, hardware, people and processes which seeks to support informed decision-making and action by CHWs and related actors (e.g. head of facility responsible for the CHW, community health nurse, community data managers, etc.) in the health system. CHIS functions include (12):

- Recording of basic data, such as population events (births, deaths, movement), health programme transactions (clinical or public health-focused), case-based data, health-care product stock and resource availability.
- Tracking and triggering action on individual programme-based needs such as disease surveillance, routine care provision, follow-up visits, referrals to facilities, and tracking basic targets related to morbidity and mortality.
- Reporting and feedback, including routine upward reports, feedback reports, ad hoc reports and specific reports for different stakeholders, including supervisors and other forms of supportive supervision.

As shown in the Fig., CHIS is part of the broader HIS. CHIS includes the same HIS components when they are dedicated to community health systems and targeted at different points of care such as CHW systems, HMIS and LMIS when they apply to community health, and other components.

1.1.3 Other key definitions

Household: A small group of persons who share the same living accommodation, who pool some, or all, of their income and wealth, and who consume certain types of goods and services collectively, mainly housing and food (14).

Community-led organisations, groups and networks: Entities, whether formally or informally organized, for which the majority of governance, leadership, staff, spokespeople, membership and volunteers, reflect and represent the experiences, perspectives, and voices of their constituencies and who have transparent mechanisms of accountability to their constituencies. Community-led organisations, groups, and networks are self-determining and autonomous, and not influenced by government, commercial, or donor agendas. Not all community-based organisations are community led.

Community-based monitoring: Mechanisms that service users or local communities use to gather, analyse and use information on an ongoing basis to improve access, quality and the impact of services, and to hold service providers and decision-makers to account (15).

Community-based surveillance (CBS): According to WHO, CBS is the systematic detection and reporting of events of public health significance within a community by community members (16) (see [Red Cross Red Crescent's dedicated website](#) for more information (17)).

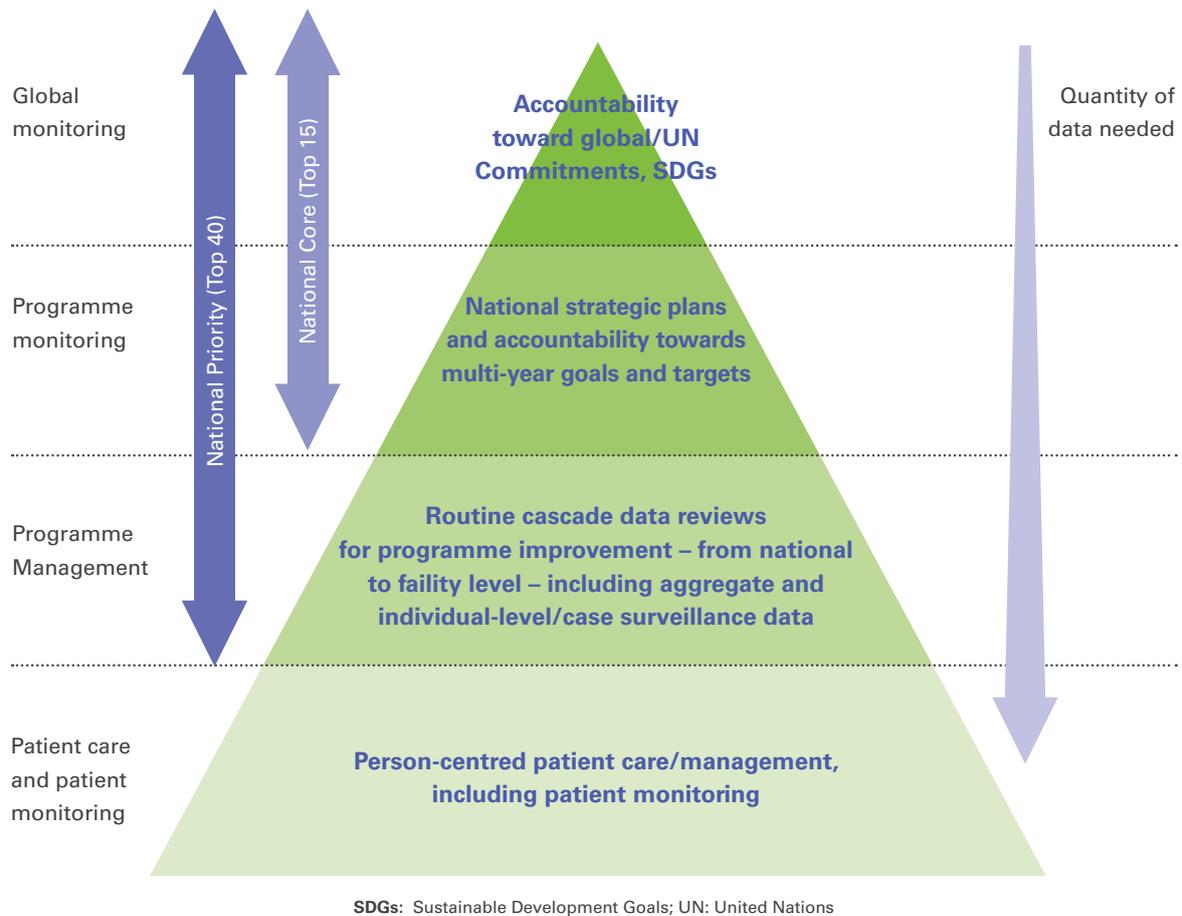
Community-led monitoring: Community-led monitoring refers generally to monitoring mechanisms by which service users and/or local communities gather, analyse and use information on an ongoing basis to improve access to, quality and impact of services, and to hold service providers and decision-makers to account. It is specifically designed, informed and implemented by and for communities themselves and the organizations, groups and networks that represent them to improve their health and human rights. Priorities/goals/objectives of community-led monitoring are determined by and respond to the needs and aspirations of their constituents. **For tuberculosis (TB), the Stop TB Partnership is leading the work on community-led monitoring at a global and technical level** (18). The United States President's Emergency Plan for AIDS Relief (PEPFAR) has also published specific [tools](#) (19).

Community-based response: Responses that are delivered in settings or locations outside of formal health-care facilities. They can be provided by a range of stakeholders, including community groups and networks, civil society organizations, the government and the private sector (20).

Community-led response: Actions and strategies that seek to improve the health and human rights of their constituencies, that are specifically informed and implemented by and for communities themselves and the organizations, groups and networks that represent them. Community-led responses are determined by and respond to the needs and aspirations of their constituents. Community-led responses include advocacy, campaigning and holding decision-makers to account; monitoring of policies, practices, and service delivery; participatory research; education and information sharing; service delivery; capacity-building; and funding of community-led organizations, groups and networks. Community-led responses can take place at global, regional, national, subnational and grassroots levels, and can be implemented virtually or in person. Not all responses that take place in communities are community led (21).

Data use cases: Data use cases refer in general to descriptions of how data should be used strategically to achieve the desired end goals. Four data use cases can be considered for this guidance: patient care and monitoring, programme management, programme monitoring and global monitoring (see Fig. 2) (22).

Figure 2 Health data use cases



Source: WHO Consolidated HIV strategic information guidelines (WHO, 2020) (22)

1.2 Objectives

This guidance has the following objectives:

- Align reporting of country-level HIS and national and partner implementers on a set of standardized indicators for CHWs.
- Facilitate the harmonization and integration of these indicators into HIS by providing a modular list aligned with existing strategic information guidelines and monitoring frameworks, that is nonetheless flexible enough to be adapted for different country contexts and CHIS maturity levels.

1.3 Scope

This guidance builds on previous works by presenting:

- Key elements to consider for reviewing and choosing CHW services indicators (including national strategies, CHW tasks and reporting role, maturity of CHIS for a given indicator and data flows, quality, equity and data use);
- A modular set of standard indicators and guidance for monitoring CHW services through the CHIS with input from CHWs; and
- Recommendations for data analysis and use, including ethical considerations.

This guidance considers the four data use cases described in Figure 2 as a continuum, with the data pipeline starting from individual data 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.

1.3.1 Limitations

One of the general principles shared by WHO on routine health-care facility data is that data be collected at clinics, hospitals and other health service points (public, private, community-based) at the time that the services are provided (23).

In accordance with this approach, this document focuses on **data collected from CHWs at the time they provide services**.

The primary objective of these indicators is to routinely monitor the health of the population in the CHW's catchment area and the services provided by the CHW, to facilitate informed decision-making by the CHW, their supervisor, district or national stakeholders, and to improve customized provision of care. Additional data on CHW services can also be collected at the facility level using complementary and optimally aligned indicators (for instance, when the facility receives a person newly diagnosed with HIV who has been referred by CHWs for treatment initiation, or a person living with HIV on antiretroviral therapy who was lost to follow-up and who has returned to care based on the community tracing service intervention of a CHW).

Generic indicators on the performance of the CHW or on the community health system are not within the scope of this work. The purpose of these indicators includes evaluating the capacity of the CHW (e.g. CHW training, CHW knowledge), the CHW's practice of services (for example, quality of care, such as service quality, acceptability and satisfaction by users, completeness of reporting), or the efficiency of the supporting health system (e.g. stock-outs, access, equity, non-discrimination, etc.).

However, some indicators may relate to these different dimensions. For instance, supervisors may set certain targets with the CHWs (for example, monthly target for community-based HIV testing), which can be considered as a dimension of performance measurement.

This guidance **does not cover community-led monitoring**.

Finally, this guidance does not **provide prescriptive descriptions of CHWs' tasks or of CHIS designs** (for example, whether CHW data should be sent directly to HMIS or via facilities), which vary among countries. For that reason, this document remains software/tool agnostic.

1.3.2 Intended audience

The intended audience for this guidance is primarily government and stakeholders supporting the development, design and improvement of CHIS. This includes national and subnational health policy and community development stakeholders; policy-makers defining standards and data-related policies; health finance and resource managers; resource allocation decision-makers; data managers; M&E and health informatics professionals; community representatives and social welfare groups; CHW professional associations; women's organizations, including the networks of women living with HIV and those providing services addressing violence against women; community and district-level health partners; equity and rights organizations and activists; and academic researchers.





2. OPERATIONAL APPROACH AND DEVELOPMENT PROCESS FOR THIS GUIDANCE

2.1 A modular approach for flexibility of use

Due to the fact that **CHWs are charged with diverse tasks in different countries**, this guidance is organized into **modules**. This format offers flexibility to fit the national community health strategies, the epidemiological situation and the key functions of CHWs in specific countries (for example, indicators on malaria will not be needed in non-malaria settings). WHO published a [guideline on health policy and system support to optimize community health](#) in 2018, which listed a range of primary health-care domains for which there is evidence of the effectiveness of CHW services (9) (Figure 3). We have added several modules to the areas mentioned in this framework, based on new WHO guidelines and recommendations. For instance for nutrition; water, sanitation and hygiene (WASH); civil registration and vital statistics (CRVS); adolescent health; clean energy; child protection and interpersonal violence (IPV); and people-centred services. Each module includes a list of indicators to be reviewed, adapted and adopted according to the functions of CHWs in the country's health system, the burden of their work and maturity of the CHIS. Some indicators are common across different modules.



Figure 3 Primary health-care services for which there is some evidence of CHW effectiveness



Source: WHO guideline on health policy and system support to optimize community health worker programmes (9)

In the future, specific modules may be added, following a life-course approach – for instance, for healthy ageing or disability. Other key aspects may also be explored, such as how to enhance data quality and data use, better integrate the private sector or the measurement of equity and key populations in the CHIS, promote gender equality based on the work of our partners (for example, [Promoting gender equality in sexual, reproductive, maternal, newborn, child and adolescent health \(24\)](#)), or for specific settings or circumstances (rapid urbanization settings/slums, fragile humanitarian settings, hard-to-reach remote rural, mass population movements, or [challenging operating environments \(25\)](#)).

This work is aligned with the other existing [guidance documents on analysis and use of health-care facility data](#) (23).

Examples of existing facility guidance documents include those for:

- Reproductive, maternal, newborn, child and adolescent health (RMNCAH)
- HIV
- Immunization
- Malaria
- TB
- Hepatitis

Other documents under development include: nutrition, non-communicable diseases (NCDs), NTDs, early warning, civil registration of births and deaths, etc.

Indicators in this modular guidance should be chosen based on national strategies, CHWs' tasks and CHIS maturity, then prioritized according to their relative importance (priority/additional). The list of indicators in this document should be considered a menu from which countries may select desired indicators; countries should not use all the indicators. The process for selecting indicators is described in detail in Chapter 3 [Using this guidance](#).



2.2 A simplified maturity score by indicator

Within countries, the level of maturity of a HIS and CHIS can be very diverse and complex to evaluate. Several comprehensive frameworks have been developed, including the [WHO SCORE](#) for HIS (index O1.3 for CHIS) (26); [CHW AIM](#) by Community Health Impact Coalition, Initiatives Inc., UNICEF and the United States Agency for International Development (USAID) (27); [PRISM Tools](#) for CHIS (28) by MEASURE Evaluation (29) and the District Health Information Software 2 ([DHIS2](#)) guideline by University of Oslo (12). Other aspects of CHIS maturity are also captured across various digital health maturity assessment tools, such as the [CHW digital health maturity assessment](#) (30).

HIS are not always homogeneous in terms of maturity, whether at community or facility level. When a CHIS is becoming more mature, its capacities may be developed through a phased approach. For instance, in certain settings, longitudinal tracking and interoperability between the CHIS and the facility data can be first developed for pregnant women but not yet for other types of patients. A CHIS can also become fragmented because information is being reported differently for different programmes or in different registries, and sometimes because of information and communication technology infrastructure constraints. In this case, the fragmentation by itself is a sign of the lack of maturity of the CHIS.

When countries review their indicators, they need to be able to quickly assess whether key capacities are in place for tracking and reporting specific indicators (for example, longitudinal tracking, interoperability between the CHIS and the facility data, possibility to cross-track individuals, etc.).

For the unique purpose of facilitating the choice of CHW indicators, we extracted key elements from the tools mentioned above to specify which type of CHIS maturity is needed for each indicator. This maturity scoring is further described in section 3.2, [Review CHW tasks and CHIS maturity by indicator](#), of this guidance.

2.3 Alignment with existing monitoring frameworks

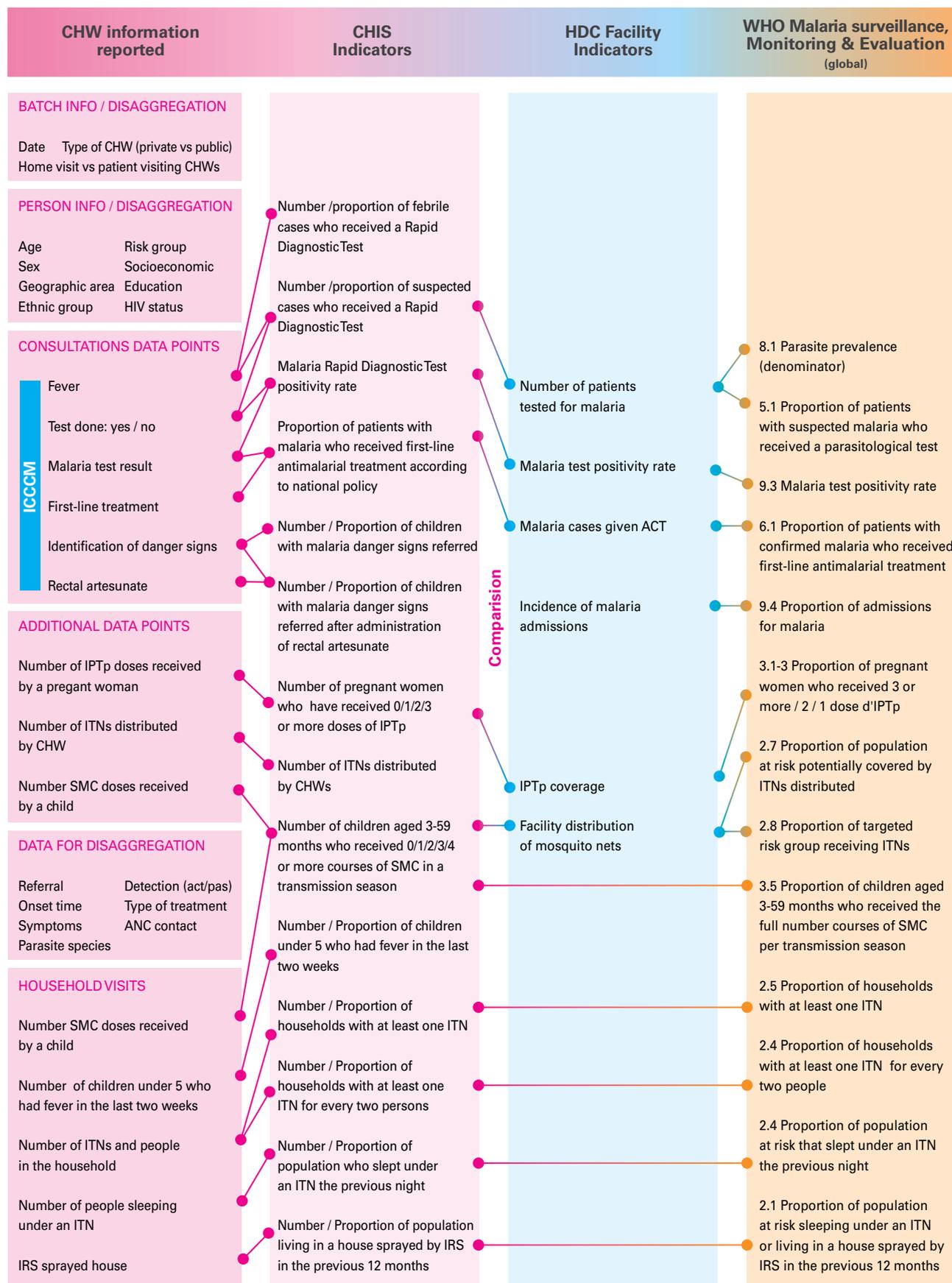
To facilitate data flow, data aggregation and interoperability across the HIS, indicators should be aligned from the community level to the global level as much as possible. Typically, global strategies and frameworks – such as the [Monitoring Framework for the Sustainable Development Goals \(31\)](#) or [UN Every Woman Every Child Global Strategy \(32\)](#) – have been endorsed by countries after comprehensive processes of consultation and validation. WHO publishes normative guidelines as global goods; for example, the [WHO Consolidated HIV strategic information guidelines \(22\)](#) are based on a robustly representative, participatory/partner-based process. Similarly, the Office of the United Nations High Commissioner for Human Rights (OHCHR) published [Human rights indicators: a guide to measurement and implementation](#) based on international human rights laws, treaties and declarations (33). Derivative guidances are then produced in alignment with these guidelines, such as the [guidance documents on analysis and use of health-care facility data \(23\)](#).

This document is also a derivative guidance based on multiple guidelines (referenced in the Metadata by indicator volume of this guidance). The proposed set of community indicators has been reviewed so their metadata align as much as possible with published guidelines, and to allow the data to flow from the community level to the facilities, district, national and global levels, where necessary (Figure 4). Figure 5 depicts the data flow from the community to global strategic planning for malaria.

Figure 4 Community indicators aligned with indicators from global strategies and Health Data Collaborative facilities



Figure 5 Alignment of malaria indicators from data collection at the community level to global technical strategy

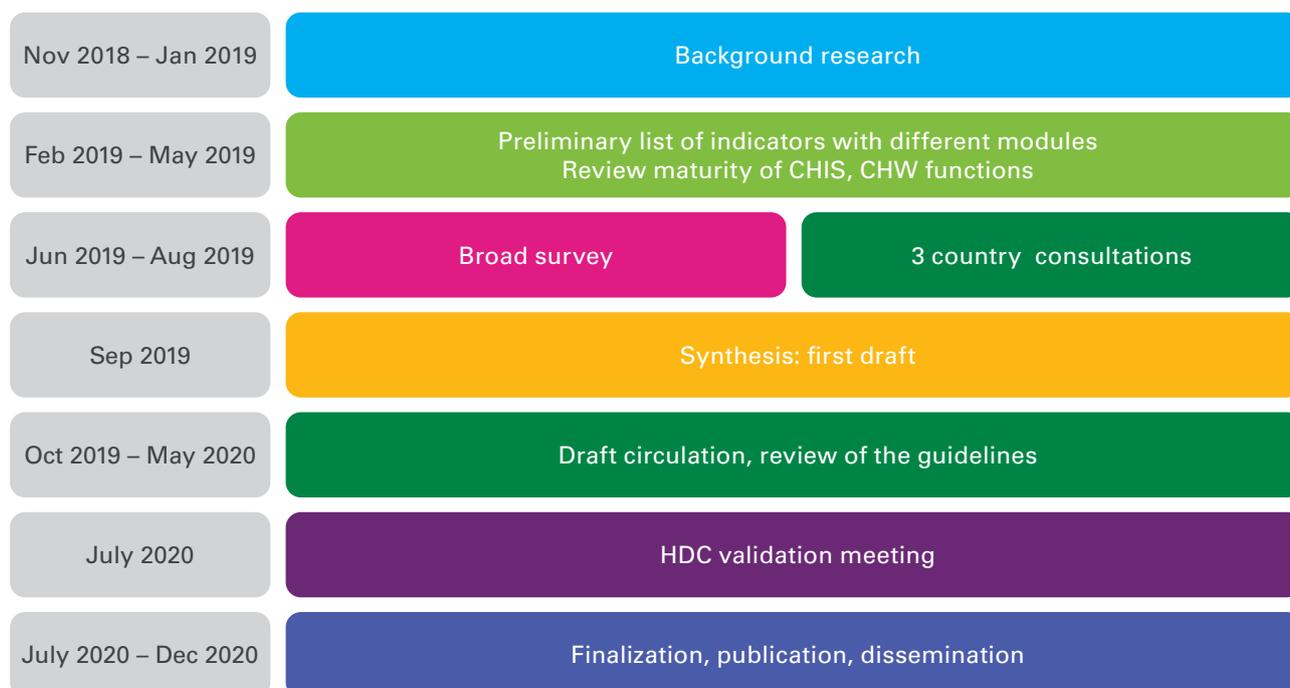


ACT: artemisinin-based combination therapy; IPTp: intermittent preventive treatment of malaria during pregnancy; ITN: insecticide-treated nets; SMC: seasonal malaria chemoprevention

2.4 Development process

This guidance was developed following a participatory and iterative approach (Delphi-like). The original idea to develop these guidelines was initiated by the HDC Community Data Working Group. Figure 6 illustrates the steps undertaken during this work with an associated timeline.

Figure 6 Process of development with corresponding timeline



Descriptions of steps taken:

Background research: Identification of the most relevant global monitoring frameworks, review of CHW main functions and realization of an exploratory mapping of CHIS in high-burden countries (for example, mortality, income level).

Draft list of indicators: Community indicators were designed to be aligned both with global and facility-recommended indicators, and with CHW functions. As the functions of CHWs vary significantly within countries, a modular approach has been applied. A list of priority and additional indicators for each module has been drafted.

Global survey with stakeholders: Stakeholders from 15 organizations in 15 locations reviewed the first list of indicators and provided feedback.

Country consultation workshops: Three countries were identified after an exploratory mapping of CHIS, based on different criteria (paper or digital systems, maturity and focus of CHIS): Bangladesh, Ethiopia and Liberia. These three countries represented different types of CHIS, with different mixes of paper and digital data tools, different divisions of services between public and private sectors, and different maturity stages of their CHIS. The objective of these validation workshops was to carry out an in-depth review of the draft list of indicators and to learn key issues and best practices relevant to this work from different points of view – including from CHWs – on national strategies, digitalization, CHIS maturity, CHW tasks, data collection and reporting, data flow, data analysis, data quality, data use and equity. The organized workshops were also used to solicit feedback on how best to format/design/disseminate the results, and to implement them. In each country, field visits and interviews with experts, government officials, and representatives from United Nations agencies and nongovernmental organizations (NGOs) were conducted.

Synthesis and HDC validation: Results from the survey were analysed and synthesized. Insights from the validation workshops and lessons from the field visits helped in preparation of the first draft, in coordination with relevant UNICEF sections.

Draft circulation: The different versions of the draft were circulated within key contributing organizations. Meetings with experts from other organizations were instrumental to better inform the guidance and to reach consensus, following an iterative process. The draft was also shared with members of the HDC Community Data Working Group. Based on all the feedback collected, a second draft was prepared.

Technical review meeting: Because of the coronavirus disease (COVID-19) pandemic, a previously planned in-person workshop was re-organized into 16 virtual meetings to validate the different pieces of the guidance.

Publication: Based on inputs from the technical review, the guidance was finalized, edited, reviewed by all contributing organizations, translated into French and published online.

Dissemination: Dissemination material was shared through the broad network of international HDC partners, including regional and country offices, and webinars were organized.



3. USING THIS GUIDANCE

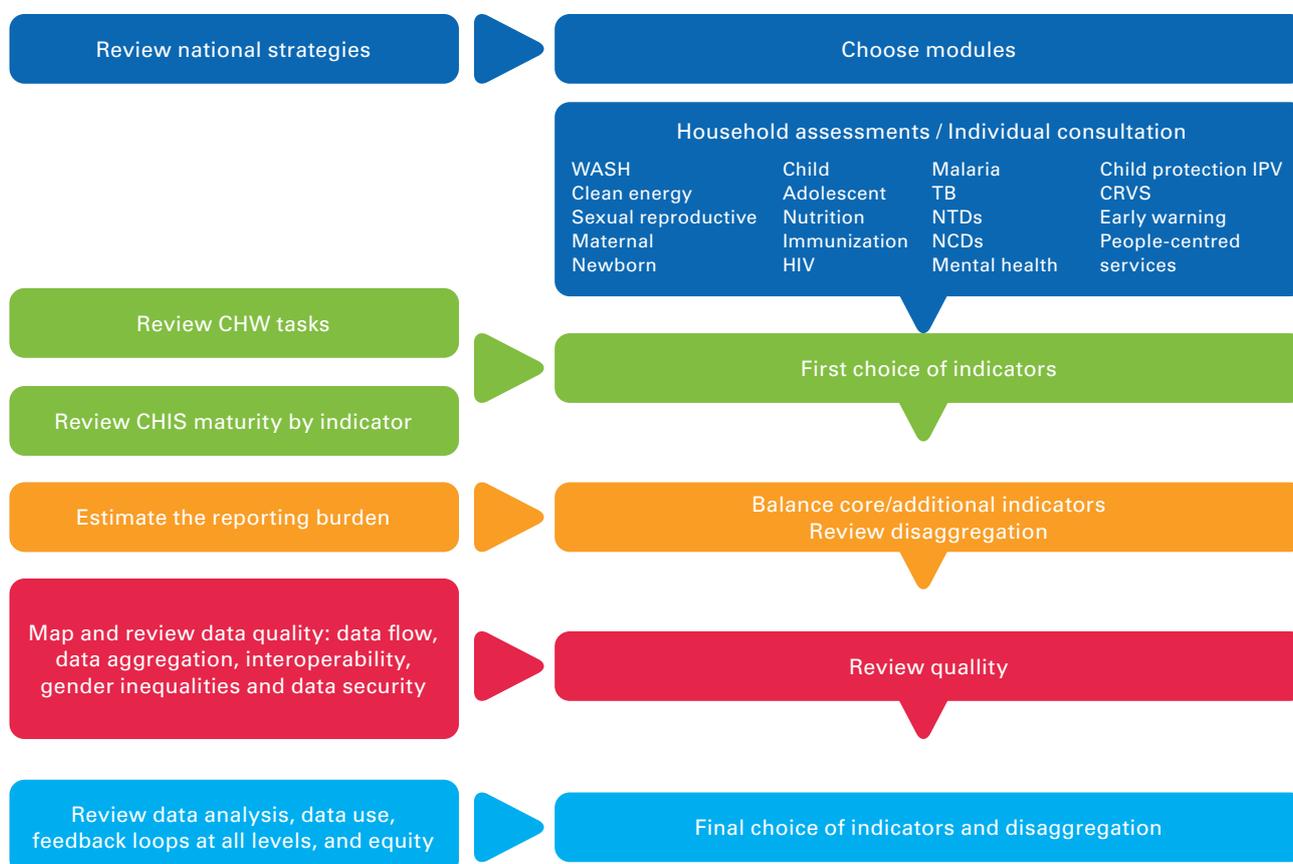
The whole process of choosing standardized CHW indicators is illustrated in Figure 7. While the figure describes a series of steps, the process should be understood as a **dynamic iterative process**. Multiple iterations will be needed to settle on a set of CHW indicators.

The **list of indicators** in Annexes 1 and 2 of this guidance consist of a **menu** from which countries can select desired indicators; **countries should not use all indicators**.

Heads of states and governments have pledged to leave no one behind in the [2030 Agenda for Sustainable Development](#) (1). **Six principles** have been stated for a **human rights–based approach to data** that should be kept in mind during this whole process: **participation, data disaggregation, self-identification, transparency, privacy and accountability** ([more details](#)) (34). During the process of selection of indicators, it is important to ensure and plan for the participation of all relevant stakeholders, including for planning, data collection, dissemination and analysis of data. The views of vulnerable or marginalized groups, and groups that are at risk of discrimination, should be represented. These principles are critical for designing an equity-focused process that is well articulated with community-led monitoring, to address specific data use cases and to inform all stakeholders for targeted action to reach the 2030 agenda.

This document should be updated every 3–5 years to reflect the changes in recommendations and global strategies. In countries, the choice of CHW indicators will also need to be updated periodically, ideally aligned with the national review cycles of HMIS or CHIS data collection instruments as part of the HMIS periodic review process; doing so would limit the costs and burden of changing the reporting systems too frequently.

Figure 7 Main steps to consider when choosing modules and indicators



CHIS: community health information system; **CHW:** community health worker; **CRVS:** civil registration and vital statistics; **IPV:** interpersonal violence; **NCDs:** noncommunicable diseases; **NTDs:** neglected tropical diseases; **TB:** tuberculosis; **WASH:** water, sanitation and hygiene

3.1 Review national strategies to prioritize modules

To facilitate the integration of CHIS within the HIS, adopting a **health systems perspective** is particularly critical. In the process of standardization of indicators for CHW services, **good governance, national ownership, government leadership and stakeholder engagement** are critical for design and harmonization. A **mapping of the key actors** in community health (government, system end-users, CHW, data managers, private sector, community-led organisations, NGOs, funding partners, etc.) is essential to **reduce fragmentation** and align data flows and reporting mechanisms. Collaboration across sectors and agencies is particularly critical at this stage as community health can involve multisectoral activities; for example, CRVS can involve ministries other than health, such as the ministry of the interior. Attention must also be paid to consider how best to integrate the **private sector** in this reporting effort. Accreditation or licensing renewal can be key opportunities to bring private stakeholders into the CHIS monitoring effort (35,36). For instance, renewal of accreditation for a private entity to work at the community level in a country can be conditional on them aligning and participating in the CHIS reporting. Other areas to focus on can be the difference in linking systems and actors involved in community health in **urban and rural** settings, and in establishing reporting systems for use in emergencies.

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:

- The national health strategy
- The community health strategy
- The HIS and/or M&E strategy and the LMIS
- The digital health or e-health strategy – digitalization can substantially reduce the reporting burden, but the transition between paper-based and digital CHIS should be adequately resourced and very carefully planned (including training of CHWs and supervisors and addressing backlog of data)
- Programme-specific strategies (e.g., RMNCAH and nutrition [RMNCAH+N]; malaria elimination; elimination of mother-to-child transmission [EMTCT] of HIV and syphilis; HIV prevention, treatment delivery through differentiated care; “reach every district/child” immunization approach; TB control strategy; gender equality and violence against women strategies; control/elimination/eradication of NTDs, etc.).

These national strategies will inform which modules should be prioritized in developing CHW indicators. For instance, a national health strategy would not focus on malaria in countries without malaria endemicity; therefore, the malaria module should not be considered in these countries. National strategies should also inform what CHWs are allowed to do, or expected to do. For instance, if the community health strategy plans to deliver only Integrated Community Case Management (iCCM), only modules relevant to iCCM should be reviewed.

The HIS and/or M&E strategy can help to prioritize which reporting system to use and how best to articulate the different sources of reporting. For instance, in certain contexts, certain indicators may be better measured either by household surveys such as the [Demographic and Health Surveys \(DHS\)](#) (37) or school surveys rather than routine systems. For example, tobacco consumption by adolescents can sometimes be more accurately reported in school surveys rather than routine systems. Multiple sources can also be helpful for triangulation of data, but may increase costs and the reporting burden.

Reflecting on whether certain data use cases need to be prioritized can also be helpful at this stage.

A [broader evaluation for HIS strengthening](#) (38) and [CHIS strengthening](#) (12) may be needed to ensure the system and its whole architecture, including the human resources, are functional and can support the activities planned (e.g. reporting material, connectivity, servers, information technology [IT] assistance, etc.). It is also important to review how best the CHIS can be articulated with community-led monitoring.

Sustainable resources available for the CHIS should also be estimated and budgeted properly. For instance, the Strategic Advisory Group of Experts (SAGE) on Immunization stressed that adequate resources should cover the costs of personnel dealing with data collection, analysis and reporting at all levels; electronic information systems (e.g. computers, servers) and their maintenance; data review meetings; and communications. Additionally, the SAGE on Immunization highlighted that personnel costs (number of staff and time spent to adequately manage information systems or for data collection and reporting) were often overlooked or underestimated, particularly when information systems were expanded and improved (39). Training costs and costs inherent to data security should also be included in this list.

Toolkits such as the [Human rights indicators guide to measurement and implementation \(33\)](#) can also help to implement a human rights perspective.

3.1.1 Digitalization

Digitalization consists of leveraging digital technologies to transform business models. The widespread use of digital health solutions (ehealth or mhealth) in recent years provides an excellent opportunity to tackle health system challenges and assist front-line health workers in their daily routine. Digitalization of CHIS is occurring in many countries. Good governance, national ownership and government leadership – through a digital health or ehealth strategy – are instrumental to ensure standardization and interoperability of different systems, ideally both for public and private systems.

The [WHO guideline on recommendations on digital interventions for health system strengthening](#) 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); and provision of educational and training content to health workers (mobile learning/mLearning) (40).

Digitalization, when well designed, can considerably boost efficiency of the CHIS by automating many steps of processes – for instance, automatically extracting data, compiling and calculating indicators, and reducing the workload and risks of error with quality checks. It can allow the CHW to monitor the indicators of their own community in real time to understand where gaps in services, access and equity exist. Other potential improvements to CHIS efficiency through digitalization include: improved communication between CHWs and other health-care providers/supervisors; targeted supervision based on CHW performance; coordination of referrals; integrated decision support, job aids, service delivery protocols for CHWs; automatic generation and upload of regular aggregate reports with specific disaggregation; and alerts or prompts raised according to service protocols. Using digital tools, data collection itself can be monitored in real time or near-real time, which can assist in identifying CHWs who are experiencing difficulties with data collection activities.

In terms of **data flow and aggregation**, the use of both digitalization and individual personal identifiers 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” (41) to standardize the reference health content that would reside in digital systems (registers in health-care facilities) (42).

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 heaping (43) or outliers, if needed.

In the same way, transition to a digital CHIS will allow **automatic aggregation of disaggregated data** and timeliness of reporting (e.g. electronic immunization registries (44)). For instance, information collected during annual or semi-annual household visits, especially for equity purposes (e.g. education or wealth), can then be used to disaggregate other indicators on the same households or individuals from these households. In Bangladesh, simple poverty scores allow disaggregation of the data by wealth quintiles (see [Equity](#) section 3.5.4).

The **number of community indicators** produced by aggregating the data reported by CHWs can be increased depending on the degree of automatization by digitalization, and the maturity of the CHIS. A paper-based CHIS with very few community indicators, reported monthly, requires manual data c (e.g. tallying, aggregation of data), with the risk of data entry error as at facility level. For instance, with digitalization, fields can be put in place, providing range limits to reduce the risk of error or even falsification.

Digitalization can also simplify the **updating of recording tools** as, for instance, age groups are redefined; past data can even be re-pooled to provide past trends and align with updated categories.

Digitalization can become a phenomenal **accelerator** if carefully designed with a health system perspective and bringing all stakeholders to the table from the start, including end-users. Finally, new opportunities are emerging with the use of data science and artificial intelligence – for instance, with portable diagnostics, and clinical decision support to enhance data analysis and use.

For planning, costing and implementing digital health interventions, the comprehensive [Digital implementation investment guide](#) could be used as guidance (45). It is critical for assessment of readiness of the digital ecosystem to take place prior to deciding on which digital health intervention to scale up.

According to the World Bank, **costs** of technology, communication and connectivity are reduced overall, and new technologies such as the global positioning system (GPS) and mobile phones are driving down the overall costs of data collection (46). Attention must, however, be paid to related costs (number of personnel and additional time spent, maintenance, sustainability, infrastructure, etc.) to rigorously evaluate the cost-effectiveness of new CHIS systems (39). Specific tools can help to map out the costs of digital interventions – for instance, the [Supplement on Evidence-to-decision frameworks of the WHO guideline recommendations on digital interventions for health system strengthening](#) (47) – or to help with calculation ([How to calculate total lifetime costs of enterprise software solutions](#) (48)).

Specific **management methods** like Agile (49), based on the 12 principles of the Agile manifesto (50) that stress the importance of collaboration and rapid prototyping (51), can facilitate the software development process. An example that follows this method is the UNICEF/WHO Joint Monitoring Programme (52).

3.1.2 Household assessments versus CHW consultations

CHWs conduct different tasks in different settings. In many health systems, these activities fall in 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 (vector control, WASH), but also to deliver some interventions. These visits can be instrumental for estimating the population count in the CHWs' catchment area, which can be used for microplanning, and provide useful information

for disaggregation, such as socioeconomic status, education status, and so forth. The quality and comprehensiveness of these household assessments depend on the characteristics of the catchment area assigned to the CHWs (area, density and number of people, facility of access), and the logistics (time dedicated for these visits, vehicle use, etc.).

Countries should reflect strategically on how they want to balance and monitor these two types of routine data collection activities, as indicators may differ and data may be used in different ways depending on whether CHWs are conducting ad hoc consultations or carrying out household assessments. Certain modules present the same indicators for household assessments or individual consultations. Countries may wish to count these indicators for both or just one type of these activities. For instance, “*Number/Proportion of persons who are not up to date with immunizations and referred*” can be counted both during household assessments and individual consultations, or just during one of these two types of activities. The timing of the household assessments is also an important parameter to consider, especially if indicators collected are sensitive to seasonality (e.g. WASH, malaria).

In both cases, the role of CHWs in coordinating CHIS and HMIS should be strengthened, as the community point of contact for data.

3.1.3 Choosing modules

The review of national strategies and policies, the extent of digitalization and CHWs’ activities should inform the choice of specific modules. The modules presented in this guidance are listed in Table 1.

Table 1 List of modules

Module	Rationale
<p>Population composition</p>	<p>Key definitions: Population composition refers to the demographic makeup of persons within a geographic area (53).</p> <p>Problem: It is critical for CHWs and district managers to evaluate the size and composition of the population in the catchment areas to adequately plan for services and resources. At least once a year, CHW can review the population in their catchment area.</p> <p>Relevance to CHWs: Knowing how many children, adolescents, pregnant women or adults are living in their catchment areas allow CHW to target better their interventions. Some of the indicators are also necessary to calculate the denominators of other indicators (such as live births).</p>
<p>Water, sanitation and hygiene (WASH)</p>	<p>Key definitions: WASH is the collective term for “water, sanitation and hygiene”. Due to their interdependent nature, these three core issues are grouped together. While they are separate fields of work, each is dependent on the presence of the other. For example, without toilets, water sources become contaminated; without clean water, basic hygiene practices are not possible (54).</p> <p>Problem: Safe drinking water, sanitation and hygiene is a prerequisite to health, contributes to livelihood and dignity, and helps to create resilient communities living in healthy environments. Drinking unsafe water impairs health through illnesses such as diarrhoea, and untreated excreta contaminates ground water and surface water used for drinking water, irrigation, bathing and household purposes. Safe and sufficient WASH plays a key role in preventing numerous NTDs such as trachoma, soil-transmitted helminths and schistosomiasis. Poor WASH conditions still account for 842 000 diarrhoeal deaths every year and constrain effective prevention and management of other diseases, including malnutrition, NTDs and cholera. Additionally, the challenge of antimicrobial resistance</p>

Module	Rationale
	<p>is another key reason to extend and improve drinking-water supply, sanitation and wastewater management infrastructure and services to prevent infections and help save antibiotics and other drugs for future needs. Improved wastewater treatment will also help control discharges of pharmaceuticals and resistant microbes to the environment. Evidence suggests that improving service levels towards safely managed drinking-water or sanitation (indicators for Sustainable Development Goals [SDG] 6.1 and 6.2) such as regulated piped water or connections to sewers with wastewater treatment can dramatically improve health by reducing diarrhoeal disease deaths. In addition to health impacts, access to sustainable WASH services is a critical aspect of equity, is an essential element of quality UHC, is recognized by the United Nations as a fundamental human right, and is cost-effective. The economic returns of WASH continue to be high, with benefits of nearly five United States dollars for every dollar invested (55). Finally, WASH has a central role to limit COVID-19 infections.</p> <p>Relevance to CHWs: CHWs are key to promoting and monitoring WASH in their communities.</p>
<p>Clean energy</p>	<p>Key definitions: Clean energy refers to the use of fuels and technologies for household cooking, heating and lighting that are considered clean for health at the point of use. Fuels and technologies considered clean are determined based on the 2014 WHO <i>Guidelines for indoor air pollution from household fuel combustion</i> (56). These include electricity, liquefied petroleum gas, natural gas, biogas, solar and alcohol fuel stoves, heaters and lights.</p> <p>Problem: The share of the global population with access to clean fuels and technologies was 63% in 2018, leaving approximately 2.8 billion people without access. Families who continue to rely on polluting fuels and technologies for their daily needs are exposed to harmful household air pollution (HAP). These include kerosene and inefficient biomass stoves (57). Exposure to HAP contributes to millions of deaths from NCDs (including heart disease, stroke and cancer) and pneumonia. In 2016, HAP from cooking with polluting stoves and fuels was responsible for 3.8 million deaths and 7.7% of the global mortality (58). This health burden would be even greater if it accounted for all the homes using kerosene and dirty lighting, or space heating with smoky heaters. Use of these polluting devices also often means huge amounts of time must be devoted to gathering fuel instead of remunerated work, schooling, and other productive or leisure activities. HAP is not restricted to the household alone; it contributes to ambient pollution and affects climate change.</p> <p>Relevance to CHWs: CHWs can contribute to increasing our understanding of the fuels and devices that households use to cook, heat and light their homes, and the related health impacts of these choices.</p>
<p>Sexual and reproductive health (SRH)</p>	<p>Key definitions: SRH implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so.</p> <p>Problem: Family planning reinforces people's rights to determine the number and spacing of their children; reduces the need for abortion, especially unsafe abortion; and by preventing unintended pregnancy, prevents deaths of mothers and children. Among the 1.9 billion women of reproductive age (15–49 years old) worldwide in 2019, 1.1 billion have a need for family planning; of these, 842 million are using contraceptive methods and 270 million have an unmet need for contraception (59). More than 1 million sexually transmitted infections (STIs) are acquired every day worldwide; 988 000 pregnant women were infected with syphilis in 2016, resulting in over 350 000 adverse birth outcomes, including 200 000 stillbirths and newborn deaths. Human papillomavirus (HPV) infection causes 570 000 cases of cervical cancer, representing 6.6% of all female cancers, and over 300 000 cervical cancer deaths each year (60,61).</p>

Module	Rational
	<p>Relevance to CHWs: CHWs can contribute to improving the coverage of essential SRH interventions, especially at the primary health care level and in underserved and hard-to-reach areas. CHWs can be providers of SRH-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. The WHO/H4+ technical brief on strengthening the capacity of CHWs to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health lists key related CHW interventions (62).</p>
<p>Maternal health</p>	<p>Key definitions: Maternal health refers to the health of women during pregnancy, childbirth and the postnatal period.</p> <p>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 (63).</p> <p>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. The WHO/H4+ technical brief on strengthening the capacity of CHWs to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health lists key related CHW interventions (62).</p>
<p>Newborn health</p>	<p>Key definitions: A newborn infant, or neonate, is a child under 28 days of age.</p> <p>Problem: Maternal health and newborn health are closely linked. Globally, 2.5 million children died in the first month of life in 2018 – approximately 7000 newborn deaths every day. Children who die within the first 28 days of birth suffer from conditions and diseases associated with lack of quality care at birth or skilled care and treatment immediately after birth and in the first days of life (64).</p> <p>Relevance to CHWs: CHWs can contribute to improving the coverage of essential newborn health interventions, especially at the primary health care level and in underserved and hard-to-reach areas. CHWs can be providers of newborn 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. The WHO/H4+ technical brief on strengthening the capacity of CHWs to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health lists key related CHW interventions (62).</p>
<p>Child health</p>	<p>Key definitions: The United Nations Convention on the Rights of the Child defines a child as every human being below the age of 18 years, unless under the law applicable to the child, majority is attained earlier (65). This module focuses more specifically on children between the age of 29 days and 9 years.</p> <p>Problem: In 2018 an estimated 6.2 million children and adolescents under the age of 15 years died, mostly from preventable causes. Of these deaths, 5.3 million occurred in the first 5 years. Leading causes of death in children under 5 years are preterm birth complications, pneumonia, birth asphyxia, congenital anomalies, diarrhoea and malaria. More than half of these early child deaths are preventable or can be treated with simple, affordable interventions, including immunization, adequate nutrition, safe water and food, and appropriate care by a trained health-care provider when needed (66). NCDs are another critical issue (41 million children under 5 years old are overweight or obese (67)).</p> <p>Relevance to CHWs: Child health is a key component for community health through, but not limited to, the iCCM strategy. CHWs can contribute to improving the coverage of essential child health interventions, especially at the primary health care level and in underserved and hard-to-reach areas. CHWs can be providers of child health-related health promotion</p>

Module	Rational
	<p>and preventive care and increasingly of curative care, thanks to new rapid diagnostic tests, simplified treatment protocols, and mobile health technologies and support systems. The WHO/H4 technical brief on Strengthening the capacity of CHWs to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health lists key related CHW interventions (62).</p>
Adolescent health	<p>Key definitions: Adolescents are defined as persons aged 10–19 years. Young adolescent refers to 10–14-year-olds, while older adolescent refers to 15–19-year-olds (68).</p> <p>Problem: More than 1.1 million adolescents died in 2016, over 3000 every day, mostly from preventable or treatable causes. Road traffic injuries were the leading cause of death among adolescents in 2016. Other major causes of adolescent deaths include suicide, interpersonal violence, HIV/AIDS and diarrhoeal diseases. NCDs also especially affect young people, now and in the future – two thirds of premature deaths in adults are associated with childhood conditions and behaviours, and behaviour associated with NCD risk factors is common in young people: over 150 million young people smoke; 81% adolescents do not get enough physical activity; 11.7% of adolescents partake in heavy episodic drinking (67).</p> <p>Relevance to CHWs: CHWs can contribute to improving the coverage of essential adolescent health interventions, especially at the primary health care level and in underserved and hard-to-reach areas. CHWs can be providers of adolescent 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. The WHO/H4+ technical brief on strengthening the capacity of CHWs to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health lists key related CHW interventions (62).</p>
Immunization	<p>Key definitions: Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body's own immune system to protect the person against subsequent infection or disease (69).</p> <p>Problem: Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments (69). Polio eradication is one of the key initiatives of WHO and UNICEF, with a decrease in the number of cases due to wild poliovirus by over 99% since 1988, from an estimated 350 000 cases then, to only 33 reported cases worldwide in 2018 (70).</p> <p>Relevance to CHWs: Immunization is one of the core components of CHW work. They play an important role in promoting demand for immunization, checking vaccination status and giving reminders about vaccinations. In some countries CHWs vaccinate people.</p>
HIV	<p>Key definitions: HIV is an infection that attacks the body's immune system, specifically the white blood cells called CD4 cells. HIV destroys these CD4 cells, weakening a person's immunity against infections such as TB and some cancers (71).</p> <p>Problem: In 2019, 38 million people globally were living with HIV; 81% knew their status, 67% were accessing treatment and only 59% were virally suppressed. Furthermore, 1.7 million people became newly infected and 690 000 people died from AIDS-related illnesses (72).</p> <p>Relevance to CHWs: UNAIDS Global AIDS Monitoring 2020 (73) lists 10 commitments, and the seventh is to ensure that at least 30% of all service delivery is community led by 2030 (see definition of community led on p28). All CHWs organised, managed and responsible to community-led organisations would contribute to 30% service delivery goal. Several interventions relating to testing uptake, treatment and retention can be conducted by CHWs with adequate training and oversight. Involvement of people living with HIV (peer CHWs) has proven to be effective, particularly in vertical transmission and adolescent HIV programmes.</p>

Module	Rationale
Malaria	<p>Key definitions: Malaria is a life-threatening disease that is preventable and curable, caused by parasites that are transmitted to people through the bites of infected female Anopheles mosquitoes.</p> <p>Problem: In 2018, there were an estimated 228 million cases of malaria worldwide, and the estimated number of malaria deaths stood at 405 000 (74). About half of all people at risk of malaria in Africa were protected by an insecticide-treated net (ITN) in 2018 compared to 29% in 2010, but ITN coverage has been at a standstill since 2016. Vector control (ITN and indoor residual spraying) is the main way to prevent and reduce malaria transmission (74).</p> <p>Relevance to CHWs: The first pillar of the Global technical strategy for malaria 2016–2030 (75) is to ensure universal access to malaria prevention, diagnosis and treatment, and includes scaling up community-based diagnostic testing and treatment. The third pillar is to transform malaria surveillance into a core intervention. Malaria indicators are part of the iCCM strategy.</p>
Tuberculosis (TB)	<p>Key definitions: TB is caused by bacteria (<i>Mycobacterium tuberculosis</i>) that most often affect the lungs. It is curable and preventable.</p> <p>Problem: TB was one of the top 10 causes of death worldwide in 2018, with an estimated 1.5 million deaths. In 2018, there were 10 million new cases worldwide, of which 5.7 million were men, 3.2 million were women and 1.1 million were children. People living with HIV accounted for 9% of the total (76).</p> <p>Relevance to CHWs: There is a clear need for community-based TB activities, which have been documented as cost-effective. Community interventions are key for the End TB Strategy, such as Engage-TB (77).</p>
Neglected tropical diseases (NTDs)	<p>Key definitions: NTDs consists of a group of 20 diseases and disease groups (78).</p> <p>Problem: NTDs are ancient diseases of poverty that impose a devastating human, social and economic burden on more than 1 billion people worldwide, predominantly in tropical and subtropical areas. NTDs are designated as “neglected” partly because they are frequently overlooked by health systems. Actions against NTDs both contribute to and benefit from strengthened health systems and especially primary and community health care.</p> <p>Relevance to CHWs: As described in the new NTD roadmap 2021–2030 (79), integrated NTD interventions – from prevention to diagnosis, treatment, care and rehabilitation – can be delivered through community or primary facilities in the national health system and CHWs have a key role to play, including in terms of social mobilization, preventive chemotherapy, targeted prevention, vector control, one-health approaches, active case finding, support networks and self-care.</p>
Child protection and interpersonal violence	<p>Problem: A quarter of all adults report having been physically abused as children. One in five women and one in 13 men report having been sexually abused as a child (80). A total of 137 women are killed by their partners or family members every day (81). In addition, 30% of ever-partnered women globally have experienced physical or sexual violence by a partner in their lifetime (82). Among girls and women around the world, 650 million were married as children and over 200 million have undergone female genital mutilation (FGM). FGM can lead to serious health complications – including prolonged bleeding, infection and infertility – or even death, and it is estimated that FGM causes an additional one to two perinatal deaths per 100 deliveries (83). In 2014, it was estimated that around 120 million girls under the age of 20 (about one in 10) had been subjected to forced sexual intercourse or other forced sexual acts at some point of their lives (84).</p> <p>Key definitions: Child protection refers to preventing and responding to violence, exploitation and abuse against children – including commercial sexual exploitation, trafficking, child labour and harmful traditional practices, such as female genital mutilation/cutting and child marriage (85). Interpersonal violence refers to violence between individuals, and is subdivided into family and intimate partner violence and community violence.</p>

Module	Rationale
	<p>The former category includes child maltreatment, intimate partner violence and elder abuse; the latter is broken down into acquaintance and stranger violence and includes youth violence, assault by strangers, violence related to property crimes and violence in workplaces and other institutions (86).</p> <p>Relevance to CHWs: The WHO/H4+ technical brief on strengthening the capacity of CHWs to deliver care for sexual, reproductive, maternal, newborn, child and adolescent health lists possible CHW interventions (62).</p>
<p>Civil registration and vital statistics (CRVS)</p>	<p>Key definitions: A name and nationality are every child’s right, enshrined in the Convention on the Rights of the Child and other international treaties (87). Civil registration is defined as the “continuous, permanent, compulsory, universal recording of the occurrence and characteristics of vital events pertaining to the population, as provided through decree or regulation in accordance with the legal requirements in each country, with full respect of rules regulating the protection and privacy of individual information” (88). States have the obligation to register children immediately after birth and for their identity to be preserved, as it lays the foundation for safeguarding civil, political, economic, social and cultural rights. Civil registration records produce vital statistics that contribute to a country’s vital statistics system. The vital statistics system can also include other sources of vital statistics such as surveys, censuses and HMIS, including CHW data. Civil registration systems, when functioning well, remain the preferred source.</p> <p>Causes of death are legal death records maintained by the civil registrar that should include the cause(s) of death for each death registered. WHO has developed global standards for cause-of-death data based on the International Classification of Diseases (ICD) rules and guidelines, which the United Nations incorporates into its principles and recommendations for vital statistics systems. The global standard is physician certification of cause of death using the international Medical Certificate of Cause of Death Form and the assignment of ICD codes, or, in cases where a physician is not available to certify the cause of death, WHO has developed a verbal autopsy instrument to which an ICD code is assigned to the probable cause of death based on symptoms and circumstances of a death reported by a respondent.</p> <p>Problem: One in four children under age 5 do not officially exist (89). Their deaths would not be counted. In 2015, less than half of all deaths worldwide were registered in a national death registration system with information on cause of death. Death registration data are one of the predominant data sources needed to monitor the health-related SDGs. Given the limitations of surveys and censuses, well-functioning CRVS systems are ultimately needed to properly monitor mortality and related indicators (90).</p> <p>Relevance to CHWs: CHWs can be critical to record births, deaths and the number of people in their catchment area. These numbers are essentials to calculating many other indicators in this guidance.</p>
<p>Non-communicable diseases (NCDs)</p>	<p>Problem: NCDs kill 41 million people each year, equivalent to 71% of all deaths globally. Tobacco use, physical inactivity and unhealthy diets all increase the risk of dying from an NCD (91).</p> <p>Key definitions: NCDs, also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors. The main types of NCDs are cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes (91).</p> <p>Relevance to CHWs: In certain countries, CHWs have shown they can improve population behaviour change (diet change, physical activity), increase care utilization (cancer screening, making and keeping appointments) and improve diabetes, hypertension, and asthma management and care.</p>

Module	Rationale
Nutrition	<p>Problem: Every year, around 3 million children die due to undernutrition (92). An estimated 144 million children under 5 years were stunted, 47 million wasted and 38 million overweight in 2019 (93). Breastfeeding is critical to child growth, development and immune function, and if scaled-up, can save 820 000 child lives every year (94). Vitamin A deficiency affects 190 million children under 5 years who suffer from an increased risk of visual impairment (including night blindness), morbidity, and death from measles and diarrhoea (95).</p> <p>Key definitions: Nutrition is a critical part of health and development. Better nutrition is related to improved infant, child and maternal health, stronger immune systems, safer pregnancy and childbirth, lower risk of NCDs (such as diabetes and cardiovascular disease) and greater longevity. Malnutrition, in every form, presents significant threats to human health. Today the world faces a double burden of malnutrition that includes both undernutrition and overweight, especially in low- and middle-income countries (96).</p> <p>Relevance to CHWs: CHWs have a central role in counselling and monitoring nutrition in their communities, including for breastfeeding and as a component of iCCM.</p>
Mental health	<p>Problem: Globally, 26.65% of years lived with disability are caused by mental (14.4%), neurological (8.59%) and substance use (3.65%) disorders (97), with about 3 million deaths attributable to alcohol use (98) and about 0.5 million to drug use (99). Around half of all mental health conditions start by age 14, and suicide is the second leading cause of death in young people aged 15–29. However, 80% of people with these conditions do not have access to and do not receive services. In addition, people with mental health conditions experience stigma, discrimination, violation of human rights and social exclusion across many settings.</p> <p>Key definitions: Mental health is a state of mental well-being in which people cope well with the many stresses of life, can realize their own potential, can function productively and fruitfully, and are able to contribute to their communities. Mental health conditions include mental, neurological and substance use disorders, as well as suicide risk and associated psychosocial, cognitive and intellectual disabilities.</p> <p>Relevance to CHWs: CHWs are an important part of the workforce to deliver mental health interventions. These include activities and interventions relevant to the whole community and some that are aimed at people or groups at higher risk of developing mental health conditions or people who have already been identified as having such a condition. Examples include activities and/or interventions that: address stigma around mental health; promote mental health and prevent mental health conditions; provide support for people with mental health conditions, their carers and families; and promote recovery and rehabilitation for people with mental health conditions (100).</p>
People-centred services	<p>Key definitions: People-centred health services is an approach to care that consciously adopts the perspectives of individuals, families and communities, and sees them as participants as well as beneficiaries of trusted health systems that respond to their needs and preferences in humane and holistic ways.</p> <p>Problem: For many conditions such as TB or HIV, access to care (physical accessibility, financial affordability, acceptability) is limited.</p> <p>Relevance to CHWs: CHWs can review people’s needs and help people access more holistic care when relevant, with financial, legal, or mental health support.</p>
Community-based surveillance (CBS)/ Early warning	<p>Key definitions: According to WHO, CBS is the systematic detection and reporting of events of public health significance within a community by community members (16). Early warning systems are in most instances timely surveillance systems that collect information on epidemic-prone diseases in order to trigger prompt public health interventions (101). In the context of CHW services, they form the most upstream part of the broader public health Early Warning, Alert and Response (EWAR) system.</p>

Module	Rational
	<p>Problem: Specific events or susceptible cases to track should be based on the local context and the diseases designated for surveillance there, and categorized by national policy as potential risks for public health. Examples include the customization of Integrated Disease Surveillance and Response (IDSR) diseases, and the syndromes (syndromic surveillance system) or diseases designated for CBS in each context.</p> <p>Relevance to CHWs: The recent pandemics of Ebola and COVID-19 show the importance of including CHWs in surveillance systems. CHWs can be the first agents on the field to identify potential public health threats. Immediate reporting is critical, but aggregation of cases can be important to monitor with adjusted frequencies of reporting. In addition to integrating CBS into CHW activities, local actors such as community volunteers, community leaders and key informants can also be engaged.</p>

KEY STEPS FOR ACTION WHEN REVIEWING NATIONAL STRATEGIES TO PRIORITIZE MODULES



COUNTRY LEADERS

- Identify who is responsible for setting up or updating the CHIS system, especially in terms of the standardization of CHW indicators.
- Map key actors, including communities, the private sector and civil society organizations, implementers (NGOs, including for CBS and all other key stakeholders).
- Review all relevant national or subnational strategies.
- Evaluate carefully the plans and ongoing initiatives for digitalization and their impact in terms of the choice of indicators, including for maturity and costs.
- Review the two main types of CHW activities (consultations versus household assessments), including which tasks CHWs are allowed to perform.
- Identify the specific CHW indicator modules to prioritize.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Actively participate in the process and provide feedback on key modules to focus on.
- Plan how best to align and standardize CHW indicators, and how best to contribute to CHIS.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Actively participate in the process and provide feedback on key modules to focus on.
- Allow community-led organisations to bring their experience in community led monitoring to inform CHW strategic information.

FUNDING PARTNERS

- Review with country leaders and implementing partners the costs and sustainability of the plan.
- Ensure good governance of the whole process of standardization of CHW indicators.

ACADEMIA

- Review whether there are opportunities to learn from the standardization and digitalization process to facilitate it – for instance, through implementation research.

3.2 Review CHW tasks and CHIS maturity by indicator

CHWs perform different tasks in different countries, for which they are authorized, trained and provided with specific guidelines and materials. Within the health system, CHWs should receive adequate training for the diverse range of tasks they are permitted and expected to do within a programme (e.g. RMNCAH, malaria, WASH, etc.) and in terms of functions (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, CHW tasks are listed – corresponding indicators should be considered only if these tasks are performed or planned in the country.

The same indicators can appear in different modules as they may be critical for different modules (for example, child health and nutrition). Annex 1 shows the complete list of indicators and the module(s) in which they appear.

In 2012, WHO and UNICEF recommended **iCCM** of childhood illness as a key community-level intervention. Annex 2 lists the indicators that can be used specifically for iCCM.

If **health promotion** is a critical part of the CHW's task, it can sometimes be difficult to quantify (e.g. time, specific content, etc.) when reporting these activities in a routine CHIS. Decision-makers should balance whether the impact of health promotion activities may be better captured by surveys, or reflected by the uptake of interventions by the client (for example, the increasing numbers of people sleeping under ITN could reflect the promotion of ITN). Supervisors and programme managers must keep in mind that **not all CHW key activities may be reflected in the routine CHIS.**

The use of **personal user identification** (ID) 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, with 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. A given indicator should be considered then only if the CHIS has the maturity necessary for this specific indicator to be reported.

Therefore, **a simplified maturity score has been assigned to each indicator** and not to the whole CHIS, based on the WHO SCORE for HIS (index O1.3 for CHIS) (26) and **PRISM Tools** for CHIS (28) by MEASURE (29). The table below describes each maturity score with its rationale. These maturity scores are usually progressive (D requires B and C; C requires B).

Maturity score	Description	Rational
A	Basic tally sheet and aggregation at CHW level	The event is unlikely to be counted twice during the reporting period (e.g. pregnancy for a given woman), and the service occurs only at the community level, which limits the risk of double counting.
B	Unique ID registration and longitudinal follow-up of individuals' health status and services received	The event could be repeated during the reporting period for the same individual (e.g. number of febrile cases who received a parasitological test). The event measured requires comparison over time (e.g. number of pregnant women who have received 0/1/2/3 or more doses of intermittent preventive treatment in pregnancy).
C	Interoperability and individual data exchange between CHW and the corresponding referral structures is functional for a given indicator	The same type of service is offered in other settings. The individual-level data from the community need to be compared with the same individual-level data from the facility or from another service provider (e.g. number of antenatal care visits). Exchange of individual data is necessary to inform the indicator (e.g. HIV status).
D	Cross-tracking between individuals for related health status and services received is functional	The data of one individual need to be linked with the data of another individual (e.g. bridging data between the data files of the infant and the mother for the indicator "Early infant referral for HIV", or between a person diagnosed with TB and their contacts to screen).

For instance, the indicator *Number of ITNs distributed by CHWs* can be reported with a basic tally sheet (A score).

Another example, *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 the child in case there is another consultation at another time with the CHW during the reporting period.

An indicator such as *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).

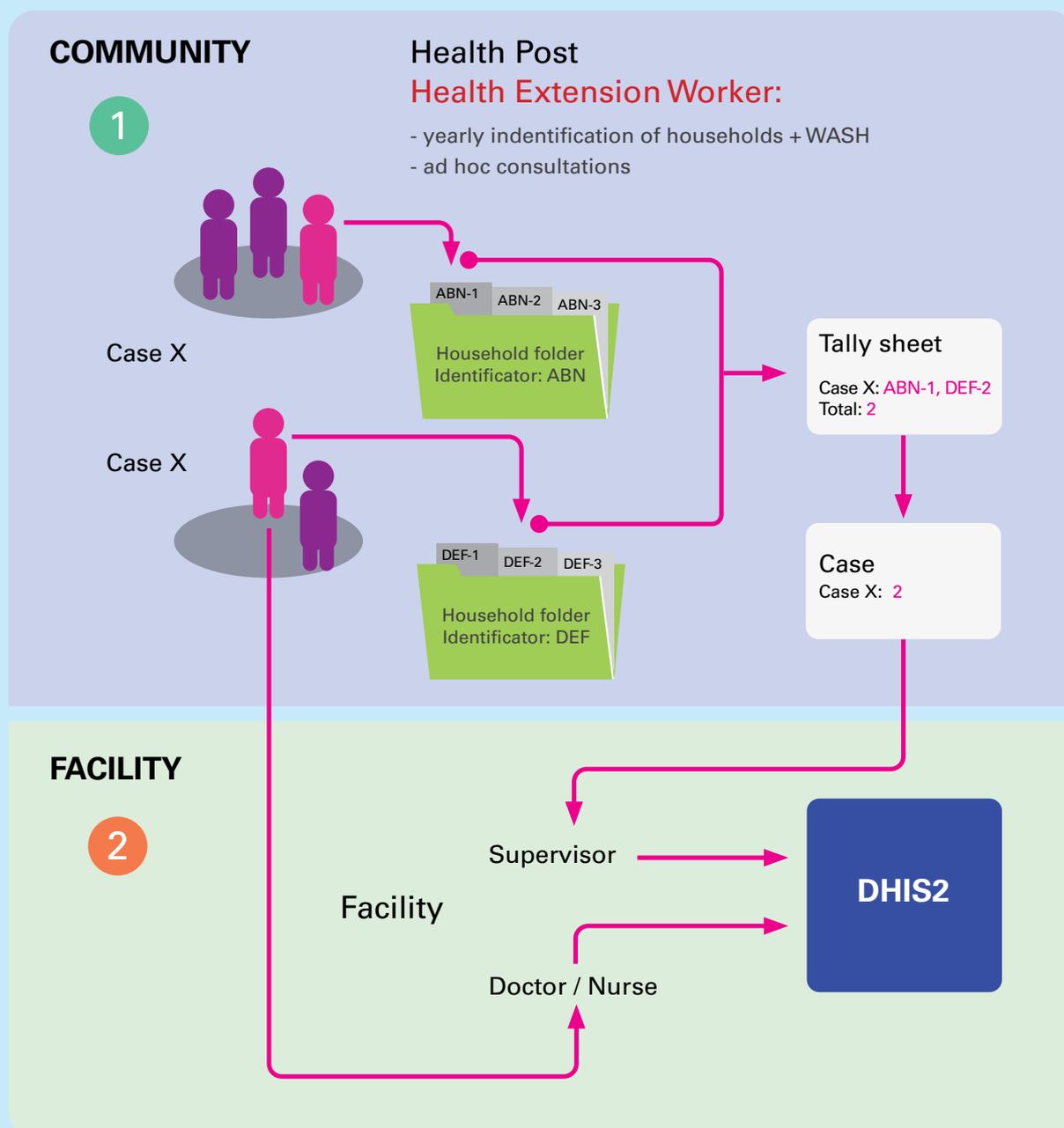
Finally, indicators like *TB contact screening* imply cross-tracking between the data of different people for related health status and services received (D score).

For each indicator, it is critical to review whether the CHIS has the required maturity for the indicator, as described above. If it does not, it may not be feasible to report the indicator, or the risk of double counting may be too high to produce reliable information for this indicator. In general, the broader the type of tasks CHWs assume, the more integrated the CHIS needs to be within the HIS.

Country example

In Ethiopia, households are mapped and labelled with a unique identifier. Each individual in the household receives a sub-number. These identifiers are used to count the total number of cases. When quality control occurs, it is easier to track backwards from each patient's health record in the corresponding household folder. This indicator has a maturity score of B.

Issues occur for double counting when the same service is delivered both by CHW (called health extension workers) and at the facility level, because of early aggregation at the community level. Longitudinal tracking, integrating both community and facility levels, is developed for certain services; for instance, antenatal care contacts. This indicator has a maturity score of C. This example is illustrated below.



1. Use of unique patient identifiers allows quality control (supervisor can find back a specific patient)
2. Early aggregation is a problem when patients consult for the same problem in the facility

DHIS2: District Health Information Software 2; **WASH:** water, sanitation and hygiene

3.2.1 First choice of indicators

Once national strategies and CHW tasks are identified, a first choice of indicators can be selected considering the maturity of the CHIS for each indicator (or related programme).

KEY STEPS FOR ACTION WHEN REVIEWING CHWS TASKS AND CHIS MATURITY



COUNTRY LEADERS

- 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.
- Then, review CHW indicators based on their specific maturity within the CHIS.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Review which tasks CHWs are doing and coordinate with country leaders so they are captured by the CHIS.

3.3 Estimate the reporting burden

Initially, it is critical to **consider the different pieces of community monitoring, and the best way to articulate them given needs, resources and capabilities**. Some types of information may be better collected through national household surveys with sampling methods, or through community-led monitoring. Some other types of information may be better obtained by triangulating different sources of data. Some indicators on completeness of referrals from CHWs may actually be better informed at the facility or the referral structure level when people arrive. Based on this analysis, some indicators can be prioritized according to the overall community monitoring landscape in the country.

After these considerations, the **CHW workload and reporting burden** are critical to map and evaluate as they can **impact the quality of the data reported** (e.g. delay in reporting, errors, etc.) and CHW productivity. The size of the target population that the CHW will be serving and the amount of services to be done should also be added to the equation as it can affect the workload, frequency of reporting, and working time within the reporting area.

The indicators presented in this document should be considered part of the **whole reporting burden** for CHWs. For instance, performance indicators are not within the scope of this guidance. If CHWs need to also report on their own performance, or for additional programmes that are not considered in the modules, **additional data points that CHWs need to report should be reviewed**.

When evaluating this burden, it is **critical to differentiate the collection of data points from the indicators themselves**: data points are the data the CHWs will collect (numbers); indicators may require additional calculation (e.g. proportions, ratios, or rates) that the CHW may or may not be able to compute. Any additional data transformation translates into more burden and adds to the risk of incurring errors. On the other hand, if the calculation is simple and straightforward, with results that are key for CHW 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. Deciding **how, by whom and at what level the indicator should be calculated** is therefore a critical decision when designing the CHIS.

The **design of the collecting tools** (and digital tools in particular) is also critical, and should account for linguistic, cultural and technological disparities. **Design thinking** (102) – including the CHWs and end-users in general in the design process – is critical in testing the feasibility and efficiency of these tools (103,104) (digital and paper-based (105)). Tablet devices can, for instance, be considered for CHWs with low literacy, as larger screens allow for development of data collection tools that utilize images rather than text.

Digitization can 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 metadata by indicator in a separate volume, the digitalization column indicates what digitalization could facilitate for each indicator, including for the reporting burden.

When **transitioning from paper based to digital system**, it is critical to carefully manage the transition to avoid prolonged double reporting through both systems. Bridging technologies as rubber stamp templates (106,107) can be helpful. Initially, it may be important to design tools so that they don't look/feel too different from existing methods, to lower the adaptation stress; new questions should only be added progressively. Fast-paced change can negatively impact comparability to previous data collection rounds using paper 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.

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. When designing a CHIS, these numbers should be used as benchmarks to evaluate the reporting burden for CHWs.

Finally, during the iterative process of the selection of indicators, managers of the different programmes should review the whole list of indicators and agree on the balance of indicators from each of the modules.

3.3.1 Frequency of reporting

Frequency of reporting can vary a lot between indicators, according to the objective of the indicator and the specific country HIS. Indicators collected during **household assessment** should usually be reported at least once a year. The timing of the household assessment should take into account seasonality, especially for the WASH and malaria modules. For **individual consultations**, based on our consultation process, most of the reporting was done monthly.

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. Besides immediate reporting and response during these events, it can also be useful to report the aggregate number of events or susceptible cases with a certain frequency, according to the nature of the event or cases (for instance, daily, biweekly, weekly, bimonthly, monthly).

The timing of reporting is **tightly linked to the reporting burden**, as a heavy workload can result in delayed reporting.

The frequency of reporting can also be related to **feedback loops and data use**. For instance, some digital tools can perform basic calculations and display visualizations without the month-long approval from a district management team. This shorter feedback loop allows CHWs to ensure faster interventions in a data-driven culture.

In the same manner, when possible, countries can identify a core set of analyses available in real time for CHWs so they can learn and strengthen this data and learning culture. CHWs should not just input information with a long delay before analysis comes back to them.

3.3.2 Balance priority/additional indicators and review disaggregation

For each of this review of burden, prioritizing and reducing the number of indicators may become necessity.

For each module, indicators have been classified as either priority or additional, to help with the prioritization exercise. Countries might first consider the priority indicators if they need to reduce the reporting burden.

The [2030 Agenda for Sustainable Development](#) stresses that “quality, accessible, timely and reliable disaggregated data will be needed to help with the measurement of progress and to ensure that no one is left behind.” (1) The United Nations Statistics Division (UNSD) defines **disaggregation** as: “the breakdown of observations, usually within a common branch of a hierarchy, to a more detailed level to that at which detailed observations are taken. With standard hierarchical classifications, statistics for related categories can be grouped or collated (aggregated) to provide a broader picture, or categories can be split (disaggregated) when finer details are required and made possible by the codes given to the primary observations.” (108) Income, sex and age are common characteristics recommended for disaggregation (109), but these characteristics are not enough if the goal is to leave no one behind and to aim for equity.

For each indicator metadata, disaggregation has two levels: basic and advanced. Advanced disaggregation can result in more information and allow specific analysis, but it may be considered only in digital CHIS, where aggregation can be automated and will not add to the reporting burden of CHWs. For instance, data can be re-aggregated automatically for specific characteristics already filled in the CHIS (education level, socioeconomic status, migratory status, etc.).

For each indicator, countries should carefully identify the disaggregation needed for each indicator.

KEY STEPS FOR ACTION WHEN REVIEWING THE REPORTING BURDEN



COUNTRY LEADERS

- Estimate the CHW reporting burden by considering the total number of data points to be collected, the number of indicators to calculate, disaggregation, frequency of reporting, the design of data collection instruments and the average catchment area.
- Based on this assessment, review the number of indicators, their disaggregation and reporting frequency; prioritize indicators and basic types of disaggregation.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Actively participate in the selection process and provide feedback on key CHW tasks and corresponding indicators to focus on, as well as CHW reporting burden.
- Discuss alignment in terms of frequency of reporting and disaggregation.
- Share best practices on reporting tools.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Actively participate in the process and provide feedback on key indicators to focus on.
- Contribute to and articulate the choice of indicators with community-led monitoring.

FUNDING PARTNERS

- Review with country leaders and implementing partners the costs and sustainability of the tools, especially if undergoing digitalization.

ACADEMIA

- Review the best ways to estimate the reporting burden of CHWs.

3.4 Review quality

All data have limitations that affect their reliability and interpretation, such as missing values, bias, measurement error, and human errors in data entry and computation (23). **Data quality** has been defined by the SAGE on Immunization as “data that are accurate, precise, relevant, complete and timely enough for the intended purpose (or “fit-for-purpose”), such as to monitor programme performance, support efficient programme management or provide evidence for decision-making.” (110)

Data collected by CHWs should be used for programme monitoring. Poor-quality data that cannot be trusted for programming become a purposeless reporting burden. This reporting burden can further lower the quality of the data. On the other hand – for instance, for immunization – a review of data use suggests there is a **dynamic, cyclical relationship between data quality and data use** (111).

Continuous quality improvement is a management approach involving the continuous study and improvement of the processes of providing health-care services to always better meet the needs of patients and other persons (112). The SAGE on Immunization recommended adopting a data-driven continuous quality improvement approach as part of health system strengthening at all levels.

The HDC has published a **Data Quality Review (DQR) Toolkit** (113) for facility data. The DQR Toolkit should be adapted to include the CHIS and its specificities in its review.

The quality of CHW services and reporting should be assessed when choosing which indicators can be reported, and then periodically reassessed. This evaluation should be part of a broader effort led by the ministry of health, integrating the CHIS in the whole review of the HIS. At the national level, a DQR coordinating group should develop a **harmonized plan for data quality** assessments encompassing the CHIS and its articulation with the rest of the HIS. This plan for data quality assessments should ideally include:

- **Routine (quarterly) review** of completeness, timeliness and consistency of reported data. Routine data quality assessments (for example, [the toolkit \(114\)](#)) should include the CHIS. The role of supervisors is instrumental to involve CHWs in these reviews and translate them into learning experiences. In digital systems, built-in automatic checks can identify errors in near-real time, so they can be corrected as they occur.
- An **annual independent assessment of a core set of tracer indicators** (if possible in different maturity stages) to assess the reporting and the plausibility of trends reported during the previous year, and a **verification of data quality on a sample of reporting units**; among these tracer indicators, it can be interesting to choose indicators that **share data with the facility level** to allow a review of issues of double counting or data flow.
- **Periodic independent assessments of programme-specific data** (every 3–5 years), timed to meet the planning needs of the specific programmes to support programme reviews.
- Development and monitoring of **data quality improvement plans and data improvement plans for data use**.

This DQR framework examines each of the selected indicators from four perspectives, or dimensions:

- Dimension 1: **Completeness** (extent to which priority data elements are included in each report) and **timeliness** of data (whether reporting units submit their data on time).
- Dimension 2: **Internal consistency** of reported data (outliers, comparison over time, and between indicators).
- Dimension 3: **External consistency** – that is, agreement with other sources of data, such as surveys.
- Dimension 4: **External comparisons of population data** (a review of denominator data used to calculate rates for performance indicators).

Critical elements to review are the **design of reporting tools, coordination and adequate training** of all people involved in the CHIS: **collection, cleaning, analysis, use and communication of data**. Monitoring the **data quality by the context** (e.g. tools used) and **CHW characteristics** (e.g. age, education, gender, training, etc.) can help to better understand barriers, and target interventions to enhance quality of data reporting; it can be general or specific to some indicators (for example, specific indicators for issues to do with gender barriers).

Some key elements in particular are to be checked when selecting indicators, as outlined in the following section.

3.4.1 Avoiding double counting

Unintentional double or multiple counting of the same event is a critical challenge for CHIS data quality and use. Four main **sources of multiple counting** are presented in Table 2.

Table 2 Sources of multiple 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).

Table 3 Data capture standard operating procedures from CHIS Guidelines (12)

Event	Event name
Dataset/reporting tool(s)	The name of the data set or reporting tool(s).
Modality of transmission or entry	Name the application that is used and on what device; or outline the paper trail to data entry.
Responsible person	This is the person/role that is ultimately responsible for the completion of this event.
Periodicity	The frequency in which this event takes place – for example, monthly, weekly, quarterly.
Event deadline	When the event should be completed. For example, “The 10th of the current month,” “By 17:00 on Tuesday of the current week,” or “By the 5th of the first month in the new quarter.”
Data transmission or entry incentive	What is the reporting incentive and how is the incentive delivered? (if applicable)
Data quality checks performed	Outline what checks are performed during this event. This does not include the quality checks performed after the data have been submitted.
Access to reporting tools	How necessary reporting tools (e.g. registries, reporting forms, applications, phones, etc.) are stored, accessed and replenished.
Narrative	Describe the event in long text. This is very specific and could include best practices, instructions on completing the paper registries, instructions for ordering or making new registries, instructions for using mobile phones, etc. Think practically about what could form bottlenecks for data submission.

In general, it is critical to ensure the **alignment of individual-level and aggregate data** (elements and indicators) within both community- and facility-based recording and reporting tools (paper or electronic).

3.4.2 Clinical assessments

The **choice of indicators reporting on clinical assessments** such as **anthropometric measurements** (e.g. weight, height) assessed at the community level should be very carefully taken, as it **involves considerable resources** for these indicators to be calculated accurately and efficiently for timely use.

Accuracy of these measurements, and thus the quality of the indicators calculated with these measurements, can be challenging to achieve. A strong investment in **standardization of measurement processes** (types of measuring tools by age, calibration, mobility of tools), **dedicated training, and continuous focus on quality of measurement to ensure validity and reliability** is needed. For example, the **DQR Toolkit** could be used as guidance (113). For **children under 5**, WHO/UNICEF published the *Recommendations for data collection, analysis and reporting on anthropometric indicators in children under 5 years old* (115).

Calculation of certain indicators (e.g. proportions) is a process that **can be done at a higher level** to lower the risk of errors. However, when the quality of measurement can be guaranteed, these indicators can become extremely valuable, especially when **leveraging digitalization** (e.g. automatic calculation, etc.). Definitions and computation of the anthropometric and other **nutrition** indicators can be found in the *Global Nutrition Monitoring Framework* (116).

3.4.3 Systems interoperability

When the CHIS is fragmented, interoperability becomes a major issue. The [Healthcare Information and Management Systems Society \(117\)](#) defines interoperability 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.” (118)

Four levels are considered:

- Foundational (interconnectivity requirements to securely communicate data);
- Structural (format, syntax and organization of data exchange);
- Semantic (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); and
- Organizational (governance, policy, social, legal and organizational considerations).

Standardization of the indicators is mainly related to **semantic interoperability**, but all levels are critical. For instance, standardization can facilitate data exchanges when parallel systems are already in place.

When indicators are chosen, it is important to review numerators, denominators and disaggregation groups. For instance, age groups between modules may have different cut-off points and it is then important to take all of them into account. Even so, having standardized definitions of indicators throughout the HIS and a clear vision of how these indicators should be compatible is necessary, but not sufficient.

Good data governance and leadership are necessary to clarify the limit of each system and how they should articulate one to the other. It is critical that the government have in place a comprehensive HIS strategy that considers the best-fit software, data structure definitions, data structure/exchange standards and more, in order to enable a truly interoperable HIS. Working on all interoperability levels between these systems (paper-based or digital) can help tremendously in managing and using data more efficiently.

3.4.4 Confidentiality and data security

Reviews of confidentiality and data security processes are essential, as they will influence trust and the acceptance of services. Data disclosed to CHWs should be protected and kept private, and confidentiality of individuals’ responses and personal information should be maintained. Privacy and confidentiality must be considered alongside access to information, and information that identifies individuals or discloses an individual’s personal characteristics should not be made public as a result of data dissemination. When personal data are released, this should only be done with the permission of the individual concerned (or their appropriate representatives) (34). Training and supervision are therefore paramount. CHWs must have robust data-protection mechanisms and SOPs, including well-designed data collection tools and anonymisation procedures. Confidentiality should **cover all services, with some requiring more stringent confidentiality considerations** (for example, HIV especially for key populations, **violence, STIs**), so as not to further stigmatize and potentially endanger people who use these services (119).

The use of a unique ID can be applied to violence and HIV information to maintain anonymity and confidentiality.

Ethical standards should be reviewed for all sensitive information, from data collection data during household assessments or individual consultations, to storing and sharing data because of their sensitive nature, including for data on adolescent health, violence, HIV, tobacco, alcohol or drug abuse. Some **key considerations for sensitive data collection and use can be found in:**

- A synthesis of evidence on the collection and use of administrative data on violence against women: background paper for the development of global guidance (UN Women) (120)
- mhGAP intervention guide for mental, neurological and substance use disorders in nonspecialized health settings (WHO) (121).

Data security encompasses all data processing, analysis and use, including anonymization procedures, and data protection from destruction, unwanted actions or unauthorized access and/or use.

KEY STEPS FOR ACTION WHEN REVIEWING THE QUALITY OF REPORTING



COUNTRY LEADERS

- For each indicator considered, assess potential double counting and how it can be minimized.
- Explore the feasibility of clinical assessment indicators in terms of resources, training and reliability.
- Consider all levels of CHIS interoperability and whether they are taken into account within a comprehensive HIS strategy.
- Ensure necessary policies or legal framework and SOPs are in place to ensure confidentiality.
- Review whether there are issues with processes and practices ensuring confidentiality.
- Review whether data security in all its dimensions can be ensured.
- Based on these evaluations and a review of data quality in general, consider whether certain CHW indicators should be measured or tested for feasibility before scaling up.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Offer feedback on issues and best practices in data quality, feasibility, confidentiality and data security for the indicators considered.
- Review specifically issues of double counting between implementing partners.
- Review how best to operationalize interoperability to best contribute to CHIS.
- Discuss alignment in terms of measurement, including for clinical assessments.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Provide feedback on issues of data quality, confidentiality and data security for the indicators considered.
- Offer possible solutions or share known best practices.

FUNDING PARTNERS

- Review how best to support improvement initiatives for data quality with data use, interoperability and data security/confidentiality.
- Review how to support the sustainability of training, supervision and reporting resources.

ACADEMIA

- Research on best ways to improve data quality, interoperability and data security/confidentiality.

3.5 Data analysis, data use and equity

Data collection should be used to **inform decision-making for action to improve programmes**. This concerns all stakeholders, and **data should be fed back to the community and used by all relevant CHIS stakeholders**, in line with the principles of participation, transparency and accountability (34). Government leadership should convene regular, inclusive data reviews.

Data democratization – the opportunity for end-users to engage in a two-way conversation on health, rights and sustainable development, to hold governments and all stakeholders accountable, and help drive transformative change – should be an end goal. Communities and users of the CHIS, including young people, should be involved throughout the whole M&E process – from data collection through to interpretation, dissemination and advocacy – as well as in making data more readily available. Their insights, opinions and experiences can prove invaluable to countries when deploying and advancing these systems (122). Community-led monitoring should benefit from CHIS information and vice versa.

Data democratization can be enabled by a **supporting comprehensive data use culture** – the customs, dispositions and behaviours of a particular group or organization to support and encourage the use of evidence, including facts, figures and statistics, to inform their decision-making (123). This involves making data more readily available in forms that are accessible and comprehensible to end-users and other stakeholders, sometimes by better leveraging innovative technologies and existing platforms to engage end-users (e.g. young people) (122). This may require long-term investments in platform maintenance, upgrades and technical skills in order to sustain digital archives in formats that are accessible and do not age out through periodic upgrades or system updates.

CHWs should be able to provide clear, openly accessible information about their operations, including the 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. CHWs are also accountable for upholding human rights in their operations, and data should be used to hold States and other actors to account on human rights issues (34).

In its [2019 report on quality and use of immunization and surveillance data](#), the SAGE on Immunization noted that multicomponent interventions within and across five key areas – governance, people, tools, processes for continuous quality improvement, and evidence towards improving data quality, access and use as part of a health systems approach – are often more effective for improving health data quality and use (39).

3.5.1 Denominators

Because the CHIS should be integrated into the HIS, indicators can be used in the same way at both community and facility levels to **estimate both community and population-based coverage estimates for health interventions** (or other data values). Estimation of population health by CHW indicators will require robust community health systems. The denominators used for the chosen CHW indicators should reflect this. When the community health system is not inclusive of the entire population in its catchment area, then denominators should not be considered sufficient for calculating population-based values. Instead these values would reflect the values only in the population reached by CHWs. In this case, denominators should only reflect service delivery (e.g. people seen, people screened, etc.).

On the other hand, if the community health system encompasses the entire population in its catchment area – for instance, through the annual or semi-annual household assessments (e.g. headcounts or microcensuses) or the use of household registration and individual identifiers – then the denominators can better reflect population-based estimates, especially at subnational level. In these cases, when CHWs actually know the population size they cover, CHWs’ denominator population estimates could be considered. These periodic household assessments are practised in many countries to map the population in the catchment area and can considerably strengthen the CRVS system. Regularity of the household assessments is important to limit issues of field enumeration. Clear guidance on common issues should be specified. For instance, specifying how to count birth if there is a difference between the place of occurrence and the place of usual residence, as these differences tend to be larger for smaller administrative areas (124).

If the data collection process is of sufficiently good quality – with sufficiently clear delineation of the areas; enough time; good incentives; adequate training, supervision, transport and resources – and with comprehensive mapping, these measurements may become more representative than modelled estimates from surveys that are done only every five to 15 years. In this case, these population and demographic data could also be an invaluable resource at the facility and district levels. Triangulation of data sources can provide the best estimates until the CRVS system becomes well developed, which can help to generate accurate target population estimates.

The reporting of these denominators may be done by CHWs, but the calculation of the indicators (ratios, rates, etc.) is preferably done at a higher level.

Finally, alternative sources of population density maps can also be used, either for triangulation or when no other estimates are available (e.g. [High Resolution Settlement Layer/HRSL \(125,126\)](#), [Worldpop \(127\)](#) or [GRID3 \(128\)](#)).

3.5.2 Data analysis

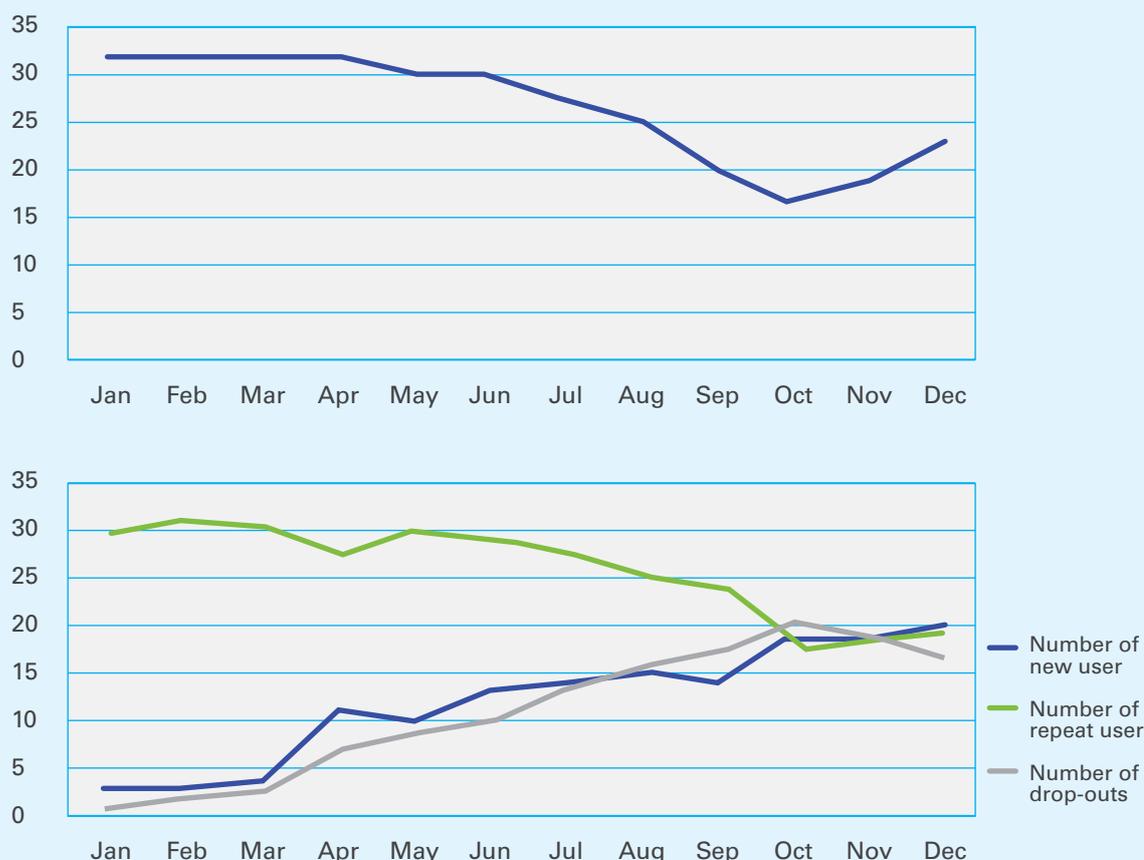
Data analysis and discussion can be done **at all levels** by all CHIS and HIS stakeholders, with good **communication channels** to ensure rapid response and accountability.

CHWs and supervisors need to be involved as they are best positioned to help investigate the key mechanisms that impact trends.

District and data managers can build **dashboards** for all CHIS stakeholders to help them in their daily decision and action processes. When identifying high- versus low-performing areas, communication between the district level, supervisors and CHWs is critical to adjust actions. Many types of analyses are available (for example, trends, magnitudes, identification of defaulters) that should serve a given objective (for example, detection of outbreaks).

Disaggregation by relevant characteristics for a given indicator is also a very important component of data analysis, as it can help enhance target action or better understanding of a phenomenon, with the caveat already mentioned of the potential increase in reporting burden.

EXAMPLE: Number of women aged 15–49 who are married or in union who use modern birth control methods in the community



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.

For each indicator, the **age groups** should be reviewed according to the last updated version of existing guidelines and the reporting burden that any disaggregation will create. It is important to ensure that the **same age groups are used across different indicators** (for example, for child or adolescent indicators) so that CHWs are not collecting and aggregating a range of different disaggregates. This includes ensuring that the age specification in CHIS tools is aligned with facility-based data entry and reporting tools.

Digital systems will allow automatic pooling and when an update must be done, it can also re-pool past data accordingly. They can also be preprogrammed to issue propositions or alarms for specific action.

The **clustering of cases** is an important dimension to analyse at the community level. Action and workload will be extremely different if 20 cases of infectious diseases (malaria, HIV, tuberculosis, etc.) or noninfectious issues (e.g. malnutrition, delay in immunization schedule, mental health issues) are scattered in 20 households compared with being concentrated in only three. Therefore, household assessments should also be used to map households in order to aggregate and analyse data by households in the future. It is therefore particularly interesting to present both the number of households as well as the number of individual cases.

3.5.3 Feedback loops

A feedback loop is defined as “a system for improving a product, process, etc. by collecting and reacting to users’ comments.” (129) For each indicator in this guidance, there should be a very clear mapping of the way data will be reported and their associated feedback loops. Identification of the referral structure and management of the feedback loop are critical to clarify, as some indicators may target the facility as the referral structure, but others not. For example, it may be more appropriate for CRVS indicators to be communicated to a civil registration office and not to the facility. How different referral structures interact based on the information provided is essential to establish.

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** (for example, 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 in Lusaka District in Zambia within just two years (130)).

Feedback loops should be embedded in a **learning culture of continuous quality improvement and transparency**. Data should not be used to punish, but to inform and enable CHWs to get support where needed for better impact. The main objectives are to enhance task understanding; facilitation of decision-making; development of shared understanding between CHWs and supervisors; discussion of assumptions, biases and blind spots; and informing on best practices and potentially bottom-up solutions and insights. Simple, visual feedback is preferred, and should communicate data as well as broader messaging, such as interpretations and solutions. Built-in digital alerts and notifications could allow better services, if designed appropriately.

As shown for HIV, behaviour change messages and communication approaches can have the desired impact if they are targeted to particular population groups and settings, and linked to increased access to prevention commodities, such as condoms and sterile injecting equipment (131).

The feedback should involve the **community itself** and/or **civil society organizations**. In some countries, periodic (e.g. weekly) participatory routine data review meetings with the community representatives are held. In others, the data are displayed on a board in the community. Data should also be used to better inform community interventions (e.g. distribution of ITNs).

Formal or informal communication is critical for effective feedback. Records can be used to share and record information (home-based records). In some countries, cell phones or social media platforms are used to convey messages quickly. These new tools are great opportunities to improve the frequency and efficiency of information flow between CHWs and their supervisors, as well as facilities and community representatives, for instance, for surveillance and response. Still, technological solutions cannot be considered a magic bullet. Success and scale-up of these innovations depend to a large extent on other key elements, such as a skilled and motivated workforce, strong governance, sustainable financing, adequate infrastructure (e.g. computers, connectivity and technical support), as well as clear operating procedures and processes (39). Reporting chains must be standardized and tested. CHWs and supervisors need adequate training to become more comfortable working with data.

Attention must always be paid to **confidentiality and patient protection**, as some information can put users in danger.

3.5.4 Equity

The principles of equality and non-discrimination are part of the foundations of the rule of law. As Member States noted in the [Declaration of the High-Level Meeting on the Rule of Law](#), “all persons, institutions and entities, public and private, including the State itself, are accountable to just, fair and equitable laws and are entitled without any discrimination to equal protection of the law” (132). The international human rights legal framework contains international instruments to combat specific form of discrimination, including discrimination against indigenous peoples, migrants, minorities, people with disabilities, discrimination against women, racial and religious discrimination, or discrimination based on sexual orientation and gender identity (133).

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.” (134) Targeting equity is paramount to reach the SDG agenda of “**leaving no one behind and reaching the furthest behind first.**” (1) The measurement of equity implies considering inequalities: observable health differences between subgroups within a population that can be measured and monitored (135). Focusing on inequities is critical to guide and focus action in a routine CHIS, knowing that inequalities are often multidimensional (136).

Tracer or composite indicators can be used to measure equity (an example is using a malnutrition indicator as part of multiple overlapping deprivation analysis [MODA] (137)) (135).

Disaggregation by equity stratifiers is another powerful tool to measure equity. The most basic type of disaggregation for equity can be **geographical** – which areas, districts or sub-districts are doing poorly, or by comparing **urban and rural areas**. Disaggregation by **gender or age** (as a stratifier) are other basic types of disaggregation that can offer critical information on inequities. From a health system perspective, it can also be particularly important to look at data from public versus private sectors – for instance, to observe whether lack of regulations impact equity and quality of services (138). However, as mentioned earlier, basic disaggregation cannot be enough if the main goal is to leave no one behind.

Advanced disaggregation should be considered when digital technologies can reduce the associated reporting burden by automatically reporting more granular data, as well as re-pooling the data accordingly and coupling these with data from annual or semi-annual household assessments. During these visits, the **education level** of the head of the household can be collected, with specific categories that reflect the country situation. **Refugee or migrant status and ethnic origin** can be very important factors to consider, as these may impact access to services or trigger stigma. **Religion or belief** can also be key to measure – for instance, when they impact the acceptance of services, such as immunization. Countries may add specific categories that apply to their own context to measure equity more specifically.

Other tools are available to assess barriers in accessing services and the impact on populations affected by such barriers. For instance, The StopTB Partnership has developed the [TB stigma assessment tool](#) (139), and the [Data for action for tuberculosis key, vulnerable and underserved populations](#) (140). The [Malaria Matchbox tool](#) from the RBM Partnership to End Malaria and Global Fund allows collection of qualitative data on inequities in malaria responses (141). The [HIV Stigma Index](#) (142) and the United Nations Development Programme ([UNDP](#)) [legal environment assessment tool](#) (143) are all useful tools to apply to contextualize the CHW reporting of inequities.

[Equitytool.org](#) is a free public tool developed by Metrics for Management, Marie Stopes International, Population Services International, Results for Development, USAID and Broadbranch (144). It has been used [in different countries](#) (145) and for different domains, such as [family planning](#) (146), [child health services](#) (147) and [nutrition](#) (148). It can help to evaluate **wealth quintiles** using a few questions during household assessments, and is available for 60 countries. This is a key disaggregation when considering equity at district or national level.

3.5.5 Gender considerations

Gender refers to a culturally defined intersectoral set of economic, social and political roles, responsibilities, rights, entitlements and obligations associated with being female, male, transgender, or gender non-conforming as well as the associated power relations of these gender identities. The definition and expectations of what it means to be a woman or girl, a man or boy – and sanctions for not adhering to those expectations – vary across cultures and over time, and often intersect with other factors such as ethnicity, social class, age and sexual orientation. Transgender individuals, whether they identify as men or women, are subject to the same set of expectations and sanctions (149).

Gender norms and roles make up the underlying context for health. Gender norms influence household decision-making and access to resources, which in turn influence access to and uptake of preventive behaviours and interventions, as well as if, when and how individuals seek care and treatment for themselves and their children. Gender disparities in health are well documented; for example, according to data from 51 countries, only 57% 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 (150). Travel – which is resource dependent and therefore in many contexts controlled by men who control household resources – is a gendered barrier to accessing care and treatment outside of the home or community.

Gender affects providers, including CHWs, as well. Gender influences perceptions and policies around CHW compensation (volunteer versus paid) and burden of care (expected CHW workload vis-à-vis compensation and together with gendered household, childcare and other labour). It is estimated that around 70% of CHWs are female and those who are unpaid are most likely to be female (151). In some contexts only female CHWs may be acceptable providers to meet privately with other women, or to address sensitive topics such as SRH, pregnancy, violence against women or HIV (152). Conversely, in other contexts, female CHWs may be subject to limits on their own mobility, affecting their ability to meet with community members privately or to maintain patient confidentiality.

Gender-responsive health policies, programmes, services and delivery models require considering power dynamics within communities and between individuals and the differential needs of men, women, boys, girls and gender-nonconforming people in all their diversity. Gender interacts with other socially constructed categories such as ethnicity, wealth, class and religion; this interaction (or intersection) of multiple identities can increase vulnerability. 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 for tracking key indicators by CHW gender (male, female, transgender, etc.), to note possible gendered patterns in workload, data quality, and so on.

3.5.6 Vulnerable populations

The right to the highest attainable standard of health is a human right recognized in international human rights law. **Discrimination** means any distinction, exclusion or restriction made on the basis of various grounds, which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise of human rights and fundamental freedoms. Discrimination is linked to the marginalization of specific population groups and is generally at the root of fundamental structural inequalities in society. This, in turn, may make these groups more vulnerable to poverty and ill health. Not surprisingly, traditionally discriminated and marginalized groups often bear a disproportionate share of health problems. Non-discrimination and equality are fundamental human rights principles and critical components of the right to health (153).

Nothing in this guidance should be interpreted as an invitation, encouragement or endorsement of any initiative or practice that seeks to discriminate against population groups and expose them to risks of serious human rights violations.

Following the principle of **self-identification**, all questions and disaggregation relative to personal identity should allow for free response as well as multiple identities (particularly those that may be sensitive, such as ethnicity, sexual orientation, gender identity, or religion). When it is necessary for logistical, political, or other reasons to use demographic characteristics to identify a given population or community (for example, people who live in France, who may or may not be French), instead of the self-identification of group members (for example, people who self-identify as French), the metadata should accurately describe the parameters that were used to identify the particular group ([Human Rights-based Approach to Data](#)).

Vulnerable populations are essential to consider for equity, as they have a heightened risk of poor health, reduced access to services, and can be criminalized or marginalized. Characteristics of **vulnerable populations need to be explicitly integrated in monitoring frameworks, so they are not left out of reporting**. For instance, when refugees or children live in the streets in urban settings, they will not be counted if only households are considered. Countries should include specific monitoring frameworks to address the needs of vulnerable and key populations. In line with community-led monitoring, vulnerable groups of populations should be active participants and exercise their agency within the CHIS. These different vulnerability groups can overlap, with people facing a number of different issues due to unequal power dynamics, gender norms and institutional biases (for example, in the case of women sex workers, women migrants, etc.). As is the case with gender, it may be important to monitor the proportion of CHWs from key population groups. Vulnerable groups include the following:

- **Children:** Children are easily exposed to individual and household circumstances that expose them to economic, social and health risks. They are particularly affected by multiple vulnerabilities, including poverty, poor health conditions, violence, trafficking, disabilities, orphanhood, early marriage and pregnancy.
- **Women and girls:** Women and girls face staggering levels of violence and inequity, yet they continue to be ignored in many types of data collection, and thus also in programme design. Subgroups can also be specifically at risk; for instance, adolescent girls, elderly women, women (and children) heads of households, girls and women who bear children of rape and their children born of rape (154).
- **Elderly people:** The elderly are one of several population groups historically more vulnerable in emergency situations, and in developing countries, older people consistently experience disproportionately high levels of poverty (155). Elderly people would benefit from a specific module on healthy ageing that may be developed in the future.
- **Refugees and migrants:** Adult, adolescent and child refugees and migrants can lack access to health care and other essential services, making them invisible to the CHIS. They are easily preyed upon and more vulnerable to violence and abuse. Disaggregation of certain indicators (e.g. for TB, violence, death notification) can be a good way to analyse their health status as a key population. Specific identification procedures may have to be adapted to consider their mobility (for example, electronic health records (156)).
- **Separated or unaccompanied children and orphans:** This group includes children associated with armed forces/groups, victims of sexual exploitation, those in detention and survivors of violence.

- **Ethnic minorities and indigenous people:** This population can be extremely vulnerable to violence and abuse, including mental health and suicide (157), or have less access to services (e.g. antenatal care (158)). Disaggregation of certain indicators (e.g. for TB, violence, death notification) can be a good way to analyse their health status as a key population and bridge the data gap on this key population to better target corrective interventions. [The Report of the 18th Session of the United Nations Permanent Forum on Indigenous Issues \(UNPFII\)](#) reiterated in 2019 “the importance of data collection and disaggregation for tracking progress in the implementation of the 2030 Agenda to ensure that indigenous peoples, who often trail the general population on development indicators, are not left behind.” (159) Data governance and ownership are critical. Engaging with the communities (160) and following the principles of Indigenous Data Sovereignty – defined as “the right of Indigenous peoples to govern the collection, ownership and application of data about Indigenous communities, peoples, lands, and resources” (161) – should be a priority (162).
- **Lesbian, gay, bisexual, transgender and intersex (LGBTI) persons:** The United Nations entities have called on States to act urgently to end violence and discrimination against LGBTI adults, adolescents and children: “Failure to uphold the human rights of LGBTI people and protect them against abuses such as violence and discriminatory laws and practices, constitute serious violations of international human rights law and have a far-reaching impact on society.” (163) However, stigma and criminalization of LGBTI people are still common in many countries. Homophobia and transphobia not only contribute to this violence but also significantly undermine LGBTI survivors’ ability to access support (154).
- **Persons with disability:** The [2006 Convention on the Rights of Persons with Disabilities](#) reaffirmed that States should provide persons with disabilities with the same range, quality and standard of free or affordable health care and programmes as provided to other persons, including in the area of SRH and population-based public health programmes (164). These health services should be as close as possible to people’s own communities, including in rural areas (165). The 2013 UNICEF publication [State of the world’s children](#) was dedicated to children with disabilities (166).
- **Sex workers** are often criminalized and/or stigmatized. According to WHO, “Modelling studies indicate that decriminalizing sex work could lead to a 46% reduction in new HIV infections in sex workers over 10 years; eliminating sexual violence against sex workers could lead to a 20% reduction in new HIV infections.” (167)
- **Persons who inject drugs:** This population is at higher risks of HIV, hepatitis C and substance use (168).
- **People in contact with criminal justice systems:** This population is more exposed to HIV, violence, substance abuse and tuberculosis.
- **People living with or affected by diseases:** This population can suffer from stigma (e.g. HIV-positive people) and incur catastrophic expenditures.
- **Programme-specific population:** A specific population may be particularly difficult to reach for a specific programme, or for several ones. For instance, for vaccination, “hard-to-reach populations” have been defined as “those facing more supply-side barriers (geography by distance or terrain, transient or nomadic movement, health-care provider discrimination, lack of health-care provider recommendations, inadequate vaccination systems, war and conflict, home births or other home-bound mobility limitations, or legal restrictions)” and “hard-to-vaccinate populations” as “those who are reachable but difficult to vaccinate (due to distrust, religious beliefs, lack of awareness of vaccine benefits/recommendations, poverty or low socioeconomic status, lack of time to access available vaccination services, or gender-based discrimination).”

KEY STEPS FOR ACTION WHEN REVIEWING DATA USE, EQUITY AND FEEDBACK LOOPS



COUNTRY LEADERS

- Aim for a rights-based strategy for data democratization.
- Review whether there are multicomponent interventions in place to improve data quality, access and use.
- Establish clear SOPs for each chosen indicator, including the ways it should be collected, calculated (with denominators if relevant), analysed and provided feedback on, as well as possible actions it could trigger.
- Ensure communities are included in the processes with feedback loops, convening participatory routine data reviews with community/civil society partners.
- Establish the monitoring approach for equity in general (including gender, age and geographic location), and vulnerable and key populations in particular.

IMPLEMENTING PARTNERS, NGOs and PRIVATE SECTOR

- Articulate different feedback loops between partners.
- Review and articulate equity strategies and their monitoring between implementing partners, including for vulnerable populations.

COMMUNITIES/CIVIL SOCIETY ORGANIZATIONS

- Put in place feedback monitoring with country leaders and implementing partners.
- Articulate CHW indicators with community-led monitoring.
- Participate in assessing inequities, underserved populations, human rights and gender-related barriers to services.
- Representatives of vulnerable populations should supervise equity monitoring strategy.

FUNDING PARTNERS

- Ensure good governance in terms of data use, feedback loops and equity strategy.

ACADEMIA

- Research on best ways to improve feedback loops, equity, articulation of different community monitoring systems, including community-led monitoring, and monitoring and participation of vulnerable populations.



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ANNEXES



ANNEX 1. COMPILED LIST OF COMMUNITY INDICATORS BY MODULE

Abbreviations used in the tables:

HH	Household Assessment	ADO	Adolescent health
CS	Individual consultation	EPI	Immunization
P	Priority	HIV	Human immunodeficiency virus
A	Additional	MAL	Malaria
Y	Yes	TB	Tuberculosis
N	No	NTD	Neglected tropical diseases
POP	Population composition	CP/IPV	Child protection and interpersonal violence
WASH	Water, sanitation and hygiene	CRVS	Civil registration and vital statistics
ENE	Clean energy	NCD	Noncommunicable diseases
SRH	Sexual and reproductive health	NUT	Nutrition
MAT	Maternal health	MEN	Mental health
NB	Newborn health	PCS	People-centred services.
CH	Child health	CBS	Community-based surveillance / early warning



Population composition

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTF	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
1	Number of households in the catchment area	Y	N	B	P																				
2	Number of live births	Y	N	A	P														P						
3	Number of infants in the catchment area (0 to less than 1 year old)	Y	N	B	P																				
4	Number of children in the catchment area (1 to less than 5 years old)	Y	N	B	P																				
5	Number of children in the catchment area (5 to less than 10 years old)	Y	N	B	P																				
6	Number of young adolescents in the catchment area (10–14 years old)	Y	N	B	P																				
7	Number of older adolescents in the catchment area (15–19 years old)	Y	N	B	P																				
8	Number of pregnant women in the catchment area	Y	N	B	A																				
9	Number of adults in the catchment area	Y	N	B	A																				

Water, sanitation and hygiene (WASH)

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
10	Main drinking-water source	Y	N	B	P																			
11	Time to collect drinking-water	Y	N	B	P																			
12	Location of drinking-water point	Y	N	B	A																			
13	Drinking-water quality at the source	Y	N	B	A																			
14	Availability of drinking-water when needed	Y	N	B	A																			
15	Access to handwashing facilities with water and soap available on premises (household level)	Y	N	B	P																			
16	Use of improved sanitation facilities	Y	N	B	P																			
17	Sharing of sanitation facilities	Y	N	B	A																			
18	Emptying of on-site sanitation facilities (septic tanks and pit latrines)	Y	N	B	A																			
19	Private place to wash and change during menstruation	Y	N	B	P																			
20	Use of hygiene materials during menstruation	Y	N	B	A																			

Clean energy

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
21	Proportion of households with primary reliance on clean fuels and technologies for cooking	Y	N	B			P													A				
22	Proportion of households with primary reliance on clean fuels and technologies for lighting	Y	N	B			P													A				
23	Proportion of households with primary reliance on clean fuels and technologies for heating	Y	N	B			P													A				

Sexual and reproductive health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
24	Number of condoms distributed	Y	Y	A				P						P										
25	Number of women and adolescent girls who initiate modern methods for family planning in the community	N	Y	B				P																
26	Number of women and adolescent girls who use modern methods for family planning	Y	N	B				P																
27	Proportion of adolescents and young people seeking contraception/family planning who received an HIV test	N	Y	C				P			P			P										
28	Number of HIV tests conducted (testing volume) and the proportion of HIV-positive results returned to people (positivity)	Y	Y	C				P	P		P	P		P										
29	Men and adolescent boys with urethral discharge	N	Y	A				A																
30	Proportion of antenatal care attendees tested for syphilis	N	Y	B				A	P					A										
31	Proportion of women who have been screened for cervical cancer	Y	N	B				P						P						P				
32	Number of women referred for any post-abortion complication	N	Y	A				P																
33	Number of women referred for safe abortion	N	Y	A				P																
34	Number/proportion of women aged 15–49 years old who have undergone female genital mutilation	Y	N	B				A										P						

Maternal health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
35	Proportion of pregnant women who have first antenatal care (ANC) contact with CHW in first trimester	N	Y	B					P															
36	Proportion of antenatal care contacts during which women received breastfeeding counselling	N	Y	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		B				A	P					A										
38	Proportion of people with raised blood pressure measured by CHW	Y	Y	C					P												P			
28	Number of HIV tests conducted (testing volume) and the proportion of HIV-positive results returned to people (positivity)	Y	Y	C				P	P		P	P		P										
39	Number of pregnant women referred for maternal complications	N	Y	A					A															
40	Proportion of women who gave birth in the community without skilled birth attendant and who were administered oral immediate postpartum uterotonic to prevent postpartum haemorrhage	N	Y	A					A															
41	Number/proportion of people assessed for mental, neurological and substance use (MNS) disorders	N	Y	B					P			P		A		P	A						P	

Maternal health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
42	Number/proportion of people with mental, neurologic and substance use (MNS) referred	N	Y	B					P			P		A		P	A						P		
43	Number/proportion of people with mental, neurologic and substance use (MNS) disorders receiving services	Y	N	B / C					A			P		A		P	A						P		
44	Number of pregnancy-related deaths	Y	N	A					P										P						

Newborn health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
45	Number of stillbirths (late fetal deaths)	Y	N	B / C						P									P					
46	Number of neonatal deaths (0–27 days)	Y	N	B / C						P									P					
47	Proportion of newborns delivered in the community who were put to breast within the first hour of birth	N	Y	B						A											P			
48	Proportion of newborns delivered in the community with documented birthweight	N	Y	B						A											P			
49	Prevalence of low birthweight among newborns delivered in the community	N	Y	B						A										A	P			
50	Number of preterm newborns discharged from facility that received follow-up on Kangaroo Mother Care (KMC) by CHW	N	Y	C						P														
51	Proportion of preterm newborns delivered in the community	N	Y	C						A														
52	Number/proportion of newborns and children referred for danger signs	N	Y	A						P	P													
53	Proportion of newborns delivered in the community initiated on skin-to-skin contact immediately after birth	N	Y	A						A														
54	Newborns delivered in the community whose cord was cut with clean instrument	N	Y	A						A														

Child health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
55	Number of infant deaths (0 to less than 1 year old)	Y	N	A							P								P					
56	Number of child deaths (1 to less than 5 years old)	Y	N	A							P								P					
57	Number of child deaths (5 to less than 10 years old)	Y	N	A							P								P					
58	Proportion of consultations for infants under 6 months providing counselling on appropriate infant and young child feeding	N	Y	A							P										P			
59	Proportion of consultations for children 6–23 months providing counselling on appropriate complementary feeding	N	Y	A							P										P			
60	Proportion of people receiving preventive chemotherapy for deworming	N	Y	B							P	A					P				A			
61	Percentage of children 6–59 months of age who received an age-appropriate dose of vitamin A through CHW contacts (routine contacts as well as contacts via events) in each semester	N	Y	B							P										P			
62	Number/proportion of children aged 6–59 months assessed for wasting in the reporting period	N	Y	B							P										P			
63	Proportion of children 6–59 months with mid-upper-arm circumference (MUAC) < 115 mm (severe acute malnutrition)	N	Y	B							P										P			

Child health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
64	Number/proportion of children under 5 years who had their weight assessed	N	Y	B							P										P				
65	Number/proportion of children under 5 years who are underweight	Y	Y	B							A										A				
66	Proportion of wasting among children aged 6–59 months	N	Y	B							A										A				
67	Number/proportion of children under 5 years who had their height/length measured	N	Y	B							A										A				
68	Proportion of overweight among children under 5 years of age	Y	Y	B							A										A	A			
69	Proportion of overweight and obesity in school-age children and adolescents 5–19 years	Y	Y	B							A	A									A	A			
70	Number/proportion of children who received treatment for diarrhoea	N	Y	A / B							P										P				
71	Proportion of children presenting fast breathing and/or chest indrawing	N	Y	B							P														
72	Proportion of children receiving antibiotic treatment for fast breathing and/or chest indrawing	N	Y	B							P														
73	Number/proportion of young infants, 0–59 days old who received pre-referral treatment for signs of possible serious bacterial infection	N	Y	A							A														

Child health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
74	Number/proportion of caregivers receiving information on early identification of danger signs	N	Y	B							P														
52	Number/proportion of newborns and children referred for danger signs	N	Y	A						P	P														
75	Proportion of children monitored for early signs of developmental delays	N	Y	B							A												A		
76	Proportion of children with suspected developmental disabilities referred	N	Y	B							A												P		
77	Proportion of caregivers being counselled on responsive caregiving and early learning activities	N	Y	B							A												A		
78	Proportion of children with suspected developmental disorders and disabilities whose caregivers receive parenting information	N	Y	B							A												P		
28	Number of HIV tests conducted (testing volume) and the proportion of HIV-positive results returned to people (positivity)	Y	Y	C				P	P		P	P		P											
79	Number of people referred for HIV testing	Y	Y	C							P			P											
80	Insufficient physical activity among children (0 to less than 5 years of age)	Y	N	B							A										P				
81	Insufficient physical activity among children (5 to less than 10 years of age)	Y	N	B							A										P				

Adolescent health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
82	Number of young adolescent deaths (10–14 years old)	Y	N	A								P							P					
83	Number of older adolescent deaths (15–19 years old)	Y	N	A								P							P					
27	Proportion of adolescents and young people seeking contraception/family planning who received an HIV test	N	Y	C				P				P		P										
28	Number of HIV tests conducted (testing volume) and the proportion of HIV-positive results returned to people (positivity)	Y	Y	C				P	P		P	P		P										
84	Supplementation with iron-containing supplements (and folic acid) to adolescent girls and women of reproductive age for anaemia prevention	Y	Y	A								P											A	
60	Proportion of people receiving preventive chemotherapy for deworming	N	Y	B							P	A					P						A	
85	Women and adolescent girls who are underweight	Y	Y	B								A											A	
69	Proportion of overweight and obesity in school-age children and adolescents 5–19 years	Y	Y	B							A	A									A	A		
86	Insufficient physical activity among adolescents	Y	N	B								P								P				
87	Proportion of adolescents currently using tobacco	Y	Y	B								A									A			
88	Proportion of alcohol consumers	Y	N	B								A											A	

Adolescent health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
89	Proportion of people with heavy episodic drinking	Y	N	B								A								P		P		
90	Proportion of people who use psychoactive drugs	Y	N	B								A										P		
91	Proportion of people who inject psychoactive drugs	Y	N	B								A										A		
41	Number/proportion of people assessed for mental, neurological and substance use (MNS) disorders	N	Y	B					P			P										P		
42	Number/proportion of people with mental, neurologic and substance use (MNS) referred	N	Y	B					P			P		A		P	A					P		
43	Number/proportion of people with mental, neurologic and substance use (MNS) disorders receiving services	Y	N	B / C					A			P		A		P	A					P		
92	Number of people with suicidal ideation or plan	N	Y	B								A		A		P	A					A		
93	Number of people with suicide attempts	N	Y	B								A										A		
94	Average time on weekdays and weekend days dedicated to screen time for leisure activities	Y	N	B								A										A		

Immunization

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
95	Number/proportion of persons who are not up to date with immunizations and are referred	Y	Y	B									P												
96	Number/proportion of children under 5 never vaccinated (zero-dose) and referred	Y	Y	B									P												
97	Detection and reporting of neonatal tetanus	N	Y	A									A												
98	Detection and reporting of acute flaccid paralysis	N	Y	A									A												
99	Detection and reporting of rash and fever for measles or measles/rubella	N	Y	A									A												
100	Polio vaccination with oral polio vaccination (OPV) (%)	N	Y	B									A												

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
24	Number of condoms distributed	Y	Y	A				P						P										
27	Proportion of adolescents and young people seeking contraception/family planning who received an HIV test	N	Y	C				P				P		P										
28	Number of HIV tests conducted (testing volume) and the proportion of HIV-positive results returned to people (positivity)	Y	Y	C				P	P		P	P		P										
79	Number of people referred for HIV testing	Y	Y	C							P			P										
101	Early infant referral	N	Y	D										P										
102	Number of individual HIV self-testing (HIVST) kits distributed	Y	Y	A										P										
103	Number of people who were identified and tested for HIV using HIV index testing services and received their results	Y	Y	D										P										
104	Proportion of people on pre-exposure prophylaxis (PrEP) supported and counselled by CHWs	N	Y	B										P										
105	Number and percentage of people living with HIV reported on antiretroviral therapy (ART) at the end of the last reporting period and/or newly initiating ART during the current reporting period who were not on ART at the end of the reporting period	Y	N	C										P										

HIV

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
106	Number of people living with HIV on ART	N	Y	C										P										
30	Proportion of antenatal care attendees tested for syphilis	N	Y	B				A	P					A										
31	Proportion of women who have been screened for cervical cancer	Y	N	B				P						P							P			
107	Avoidance of health care due to stigma and discrimination (key populations)	Y	N	C										P										
108	Avoidance of health care due to stigma and discrimination (people living with HIV)	Y	N	C										P										
109	Proportion of people eligible for any form of economic support referred by a CHW to apply for it	N	Y	B										A	P								P	
110	Proportion of people eligible for any form of economic support that receive(d) it	Y	Y	B										A	P								P	
111	Proportion of eligible people for legal services referred by a CHW to apply for them	N	Y	B										A	P								P	
112	Proportion of eligible people that receive(d) legal services	Y	Y	B										A	P								P	
41	Number/proportion of people assessed for mental, neurological and substance use (MNS) disorders	N	Y	B					P			P		A	P	A						P		
42	Number/proportion of people with mental, neurologic and substance use (MNS) referred	N	Y	B					P			P		A	P	A						P		

HIV

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
43	Number/proportion of people with mental, neurologic and substance use (MNS) disorders receiving services	Y	N	B / C					A			P		A		P	A						P		

References

1. Consolidated HIV strategic information guidelines: driving impact through programme monitoring and management. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/bitstream/handle/10665/331697/9789240000735-eng.pdf>, accessed 31 August 2020).

Malaria

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
113	Number/proportion of children under 5 who had fever in the last two weeks	Y	N	B											P									
114	Number/proportion of households with at least one insecticide-treated nets (ITN)	Y	N	B											P									
115	Number/proportion of households with at least one ITN for every two persons	Y	N	B											P									
116	Number/proportion of population who slept under an ITN the previous night	Y	N	B											P									
117	Number/proportion of population living in a house sprayed by IRS in the previous 12 months	Y	N	B											P									
118	Number of ITNs distributed by CHWs	Y	Y	A											A									
119	Number/proportion of febrile cases who received a rapid diagnostic test (RDT)	N	Y	B											P									
120	Number/proportion of suspected cases who received a RDT	N	Y	B											P									
121	Malaria RDT positivity rate	N	Y	A											P									
122	Number/proportion of patients with malaria who received first-line antimalarial treatment according to national policy	N	Y	A											P									
123	Number/proportion of children with confirmed malaria and danger signs who are referred	N	Y	A / C											P									

Malaria

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
124	Number/proportion of children with malaria danger signs referred after administration of rectal artesunate	N	Y	A / C											P										
125	Number of pregnant women who have received zero/one/two/three or more doses of intermittent preventive treatment of malaria in pregnancy (IPTp)	N	Y	B											A										
126	Number of children aged 3–59 months who received zero/one/two/three/four or more courses of seasonal malaria chemoprevention (SMC) in a transmission season	Y	Y	B											A										

Tuberculosis

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
127	Proportion of people confirmed with TB out of all people who were referred for diagnosis by CHW	N	Y	C												P								
128	Proportion of people notified with TB through CHW referrals out of all people notified with TB	N	Y	C												P								
129	Proportion of people to whom TB preventive treatment (TPT) support/ follow-up was provided by CHW	N	Y	C												P								
130	Proportion of people to whom TB disease treatment adherence support was provided	N	Y	C												P								
131	TB contact screening	N	Y	D												P								
132	Proportion of people who were successfully treated and who benefited from community-based TB treatment adherence support	N	Y	C												A								
133	Proportion of individuals who started TPT who complete the course	N	Y	C												A								
134	Proportion of people with TB referred by a CHW to a health facility to manage drug side effects	N	Y	C												A								
109	Proportion of people eligible for any form of economic support referred by a CHW to apply for it	N	Y	B										A		P							P	
110	Proportion of people eligible for any form of economic support that receive(d) it	Y	Y	B										A		P							P	

Tuberculosis

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
111	Proportion of eligible people for legal services referred by a CHW to apply for them	N	Y	B										A		P								P	
112	Proportion of eligible people that receive(d) legal services	Y	Y	B										A		P								P	
41	Number/proportion of people assessed for mental, neurological and substance use (MNS) disorders	N	Y	B					P			P		A		P	A						P		
42	Number/proportion of people with mental, neurologic and substance use (MNS) referred	N	Y	B					P			P		A		P	A						P		
43	Number/proportion of people with mental, neurologic and substance use (MNS) disorders receiving services	Y	N	B / C					A			P		A		P	A						P		

Neglected tropical diseases

In the context of an integrated approach, please note that we strongly recommend NTD programmes to monitor indicators recommended in the other modules. These indicators are in the other modules:

- WASH: 12, 14, 15, 16, 17 (consider also: 10, 11, 13, 18)
- Child health / Adolescent health / Nutrition: 60
- Malaria: 116, 117 (consider also: 114, 118, 125, 126)
- People-centred services: 109, 110, 111, 112
- Community-based surveillance / early warning: 173, 174, 175

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
60	Proportion of people receiving preventive chemotherapy for deworming	N	Y	B							P	A					P				A			
135	Number of suspected neglected tropical disease (NTD) cases reported	Y	Y	C													P							
136	Number of rumours of guinea worm disease/ dracunculiasis cases reported	Y	Y	C													P							
137	Number of rumoured yaws cases reported	Y	Y	C													P							
138	Number of people referred to health centre for diagnosis or treatment of NTDs	Y	Y	C													P							
139	Geographical coverage of preventive chemotherapy (PC) for targeted NTDs	Y	N	A													P							
140	Population coverage of PC for targeted NTDs	Y	N	A													P							
141	Proportion of households in the targeted communities that received social mobilization/awareness campaigns on NTDs	Y	N	A													P							
142	Number of people bitten by an animal (animal bite cases) in the community, by animal	Y	Y	C													P							
143	Number of deaths in the community occurring within three months after a snakebite or a dog bite	Y	N	C													A							

Neglected tropical diseases

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
144	Number of people screened for skin lesions consistent with NTDs (and population coverage)	Y	Y	A													A							
145	Number of NTD cases that received adequate/recommended wound care	Y	Y	C													A							
146	Number of people screened for signs and symptoms of visceral leishmaniasis (VL) and/or PKDL (and population coverage)	Y	Y	A													A							
147	Proportion of people presenting hematuria, either visible hematuria reported by the patient or micro-hematuria detected by a positive dipstick	Y	Y	B													A							
148	Proportion of people suffering from physical disability related to NTDs who receive rehabilitation support	Y	Y	C													A							
149	Number (and proportion) of cases who received instructions for self-care for relevant NTDs	Y	Y	B													A							
150	Proportion of targeted houses covered by domiciliary vector reduction measures	Y	N	A													P							
151	Number of surface water bodies enumerated and mapped	Y	N	A													P							
152	Proportion of households with all water storage containers covered and protected	Y	N	A													A							

Neglected tropical diseases

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
41	Number/proportion of people assessed for mental, neurological and substance use (MNS) disorders	N	Y	B					P			P		A		P	A						P		
42	Number/proportion of people with mental, neurologic and substance use (MNS) referred	N	Y	B					P			P		A		P	A						P		
43	Number/proportion of people with mental, neurologic and substance use (MNS) disorders receiving services	Y	N	B / C					A			P		A		P	A						P		

Child protection and interpersonal violence

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
153	Number/proportion of households reached with health promotion messages about the impacts of violence against women and where to seek help	Y	N	B														P						
154	Number of referrals made to health or other essential services for women and girls who disclose intimate partner violence or sexual violence	N	Y	A														P						
34	Number/proportion of women aged 15–49 years old who have undergone female genital mutilation	Y	N	B				A										P						
155	Number/proportion of girls under 15 years old who have undergone female genital mutilation (FGM) or are at risk of FGM	Y	N	B														P						
156	Number/proportion of households with children where CHW raised awareness of positive parenting	Y	N	B														P						
157	Number of households where CHW provided referrals to family services	N	Y	A														P						

Civil registration and vital statistics

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
2	Number of live births	Y	N	A	P														P					
45	Number of stillbirths (late fetal deaths)	Y	N	B / C						P									P					
46	Number of neonatal deaths (0–27 days)	Y	N	B / C						P									P					
55	Number of infant deaths (0 to less than 1 year old)	Y	N	A							P								P					
56	Number of child deaths (1 to less than 5 years old)	Y	N	A							P								P					
57	Number of child deaths (5 to less than 10 years old)	Y	N	A							P								P					
82	Number of young adolescent deaths (10–14 years old)	Y	N	A								P							P					
83	Number of older adolescent deaths (15–19 years old)	Y	N	A								P							P					
158	Number of adult deaths	Y	N	A															P					
44	Number of pregnancy-related deaths	Y	N	A					P										P					
159	Number of deaths due to road traffic crashes	Y	N	C															A					
160	Number of deaths due to drowning	Y	N	C															A					
161	Number/proportion of live births happening in reporting period that were not registered, for which notification was submitted by CHW to local authorities	N	Y	A															P					

Civil registration and vital statistics

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
162	Number/proportion of deaths happening in the reporting period that were not registered, for which notification was submitted by CHW to local authorities	N	Y	A															P					
163	Number/proportion of children under-five year old whose births are registered with the civil authority	Y	N	B															P					
164	Number/proportion of deaths that were registered in a timely manner over the reporting period	Y	N	B															P					

Noncommunicable diseases

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
87	Proportion of adolescents currently using tobacco	Y	Y	B								A								A				
165	Proportion of current tobacco users	Y	Y	B																P				
80	Insufficient physical activity among children (0 to less than 5 years of age)	Y	N	B							A									P				
81	Insufficient physical activity among children (5 to less than 10 years of age)	Y	N	B							A									P				
86	Insufficient physical activity among adolescents	Y	N	B								P								P				
166	Insufficient physical activity among adults	Y	N	B																P				
68	Proportion of overweight among children under 5 years of age	Y	Y	B							A									A	A			
69	Proportion of overweight and obesity in school-age children and adolescents 5–19 years	Y	Y	B							A	A								A	A			
167	Proportion of overweight and obesity in adults	Y	Y	B																P				
31	Proportion of women who have been screened for cervical cancer	Y	N	B				P						P						P				
38	Proportion of people with raised blood pressure measured by CHW	Y	Y	C					P											P				
168	Number/proportion of asymptomatic adults older than 40 with a BMI \geq 25 who have raised blood glucose/diabetes	Y	Y	C																P				

Noncommunicable diseases

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
89	Proportion of people with heavy episodic drinking	Y	N	B								A								P		P		
169	Number/proportion of people supported for drug therapy and counselled to prevent heart attacks and stroke	N	Y	C																P				
21	Proportion of households with primary reliance on clean fuels and technologies for cooking	Y	N	B			P													A				
22	Proportion of households with primary reliance on clean fuels and technologies for lighting	Y	N	B			P													A				
23	Proportion of households with primary reliance on clean fuels and technologies for heating	Y	N	B			P													A				
49	Prevalence of low birthweight among newborns delivered in the community	N	Y	B						A										A		P		

Nutrition

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
36	Proportion of antenatal care contacts during which women received breastfeeding counselling	N	Y	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			
47	Proportion of newborns delivered in the community who were put to breast within the first hour of birth	N	Y	B						A											P			
48	Proportion of newborns delivered in the community with documented birthweight	N	Y	B						A											P			
49	Prevalence of low birthweight among newborns delivered in the community	N	Y	B						A										A	P			
58	Proportion of consultations for infants under 6 months providing counselling on appropriate infant and young child feeding	N	Y	A							P										P			
59	Proportion of consultations for children 6–23 months providing counselling on appropriate complementary feeding	N	Y	A							P										P			
60	Proportion of people receiving preventive chemotherapy for deworming	N	Y	B							P	A					P				A			

Nutrition

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
61	Percentage of children 6–59 months of age who received an age-appropriate dose of vitamin A through CHW contacts (routine contacts as well as contacts via events) in each semester	N	Y	B							P										P			
62	Number/proportion of children aged 6–59 months assessed for wasting in the reporting period	N	Y	B							P										P			
63	Proportion of children 6–59 months with mid-upper-arm circumference (MUAC) < 115 mm (severe acute malnutrition)	N	Y	B							P										P			
64	Number/proportion of children under 5 years who had their weight assessed	N	Y	B							P										P			
65	Number/proportion of children under 5 years who are underweight	Y	Y	B							A										A			
66	Proportion of wasting among children aged 6–59 months	N	Y	B							A										A			
67	Number/proportion of children under 5 years who had their height/length measured	N	Y	B							A										A			
68	Proportion of overweight among children under 5 years of age	Y	Y	B							A										A	A		
69	Proportion of overweight and obesity in school-age children and adolescents 5–19 years	Y	Y	B							A	A									A	A		

Nutrition

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
70	Number/proportion of children who received treatment for diarrhoea	N	Y	A / B							P										P			
84	Supplementation with iron-containing supplements (and folic acid) to adolescent girls and women of reproductive age for anaemia prevention	Y	Y	A								P									A			
85	Women and adolescent girls who are underweight	Y	Y	B								A									A			

Mental health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS
41	Number/proportion of people assessed for mental, neurological and substance use (MNS) disorders	N	Y	B					P			P		A		P	A						P	
42	Number/proportion of people with mental, neurologic and substance use (MNS) referred	N	Y	B					P			P		A		P	A						P	
43	Number/proportion of people with mental, neurologic and substance use (MNS) disorders receiving services	Y	N	B / C					A			P		A		P	A						P	
92	Number of people with suicidal ideation or plan	N	Y	B								A											A	
93	Number of people with suicide attempts	N	Y	B								A											A	
94	Average time on weekdays and weekend days dedicated to screen time for leisure activities	Y	N	B								A											A	
75	Proportion of children monitored for early signs of developmental delays	N	Y	B							A												A	
76	Proportion of children with suspected developmental disabilities referred	N	Y	B							A												P	
77	Proportion of caregivers being counselled on responsive caregiving and early learning activities	N	Y	B							A												A	
78	Proportion of children with suspected developmental disorders and disabilities whose caregivers receive parenting information	N	Y	B							A												P	

Mental health

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
88	Proportion of alcohol consumers	Y	N	B								A											A		
89	Proportion of people with heavy episodic drinking	Y	N	B								A								P			P		
90	Proportion of people who use psychoactive drugs	Y	N	B								A											P		
91	Proportion of people who inject psychoactive drugs	Y	N	B								A											A		
170	Number/proportion of drug overdose deaths	Y	Y	C																			A		

People-centred services

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
109	Proportion of people eligible for any form of economic support referred by a CHW to apply for it	N	Y	B										A		P								P	
110	Proportion of people eligible for any form of economic support that receive(d) it	Y	Y	B										A		P								P	
111	Proportion of eligible people for legal services referred by a CHW to apply for them	N	Y	B										A		P								P	
112	Proportion of eligible people that receive(d) legal services	Y	Y	B										A		P								P	
171	Number of people who needed care and did not get it in the last month	Y	N	B																				P	
172	Proportion of people who refused care among those targeted by CHW	N	Y	B																				P	

Community-based surveillance /early warning

		HH	CS	MATURITY	POP	WASH	ENE	SRH	MAT	NB	CH	AOD	EPI	HIV	MAL	TB	NTD	CP/IPV	CRVS	NCD	NUT	MEN	PCS	CBS	
173	Event/alert case detected	N	Y	C																					P
174	Proportion of CBS alerts responded to within 24 hours or within specified time period from the CBS protocol	N	Y	C																					P
175	Proportion of communities in which action was taken following an alert (per month)	N	Y	C																					P

ANNEX 2. LIST OF COMMUNITY INDICATORS RELEVANT FOR INTEGRATED COMMUNITY CASE MANAGEMENT (ICCM)

Child health

- 52. Number/proportion of newborns and children referred for danger signs
- 63. Proportion of children 6–59 months with MUAC < 115 mm (severe acute malnutrition)
- 70. Number/proportion of children who received treatment for diarrhoea
- 71. Proportion of children presenting fast breathing and/or chest indrawing
- 72. Proportion of children receiving antibiotic treatment for fast breathing and/or chest indrawing

Malaria

- 119. Number/proportion of febrile cases who received a rapid diagnostic test (RDT)
- 120. Number/proportion of suspected cases who received a rapid diagnostic test (RDT)
- 121. Malaria rapid diagnostic test (RDT) positivity rate
- 122. Number/proportion of patients with malaria who received first-line anti-malarial treatment according to national policy
- 123. Number/proportion of children with malaria danger signs referred
- 124. Number/proportion of children with malaria danger signs referred after administration of rectal artesunate

Immunization

- 95. Number/proportion of persons who are not up to date with immunizations and are referred
- 96. Number/proportion of children under 5 never vaccinated (zero-dose) and referred
- 100. Polio vaccination with oral polio vaccination (OPV) (%)

HIV

- 28. Number of HIV tests conducted (testing volume) and the proportion of HIV-positive results returned to people (positivity)
- 79. Number of people referred for HIV testing





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