

Community Health Worker Assessment and Improvement Matrix (CHW AIM)

Updated Program Functionality Matrix for Optimizing Community Health Programs

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This toolkit builds on the original work (“Community Health Worker Assessment and Improvement Matrix (CHW AIM): A Toolkit for Improving CHW Programs and Services”) prepared by Initiatives Inc. and University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID). It was authored by Lauren Crigler, Initiatives Inc. Kathleen Hill, University Research Co., LLC, Rebecca Furth, Initiatives Inc., and Donna Bjerregaard, Initiatives Inc. CHW AIM was originally developed under the USAID Health Care Improvement Project, made possible by the generous support of the American people.

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Background and Opportunity

As the global community aims to fulfill its commitments to the UN Sustainable Development Goals, and the achievement of universal health coverage, dozens of countries have committed to the expansion of community health workers (CHWs) as the front line of their healthcare systems [1, 2]. Robust research demonstrates CHWs improve access to care, reduce maternal, newborn, and child mortality, improve clinical outcomes for chronic diseases, and prevent disease outbreaks [3].

But there remains an important opportunity to improve the status quo approach to implementing national-scale CHW programs. While ample, high-quality evidence exists that small-scale CHW programs can reduce morbidity and mortality [4], three studies of CHW scale-up conducted in Burkina Faso, Ethiopia, and Malawi in 2016 documented limited access, quality, and mortality impact [5-7]. The impact of these programs, and those of the dozens of other countries currently revamping their own national CHW programs, could be optimized if the most recent evidence and global best practices were incorporated into design and implementation [8-11].

To support the operationalization of quality CHW program design and implementation, USAID, UNICEF, the Community Health Impact Coalition, and Initiatives Inc. have updated and adapted the Community Health Worker Assessment and Improvement Matrix (CHW AIM) Program Functionality Matrix [12]. This tool can be used to identify design and implementation gaps in both small- and national-scale CHW programs, and close gaps in policy and practice.

CHW AIM

The USAID Health Care Improvement (HCI) Project developed the CHW AIM Toolkit in 2011 to help organizations assess community health program functionality and improve program performance. Built around a core of 15 components, the original CHW AIM toolkit was framed around two key resources: a Program Functionality Matrix to assess the effectiveness of a CHW program's design and a Service Intervention Matrix to determine how CHW service delivery aligns with program and national guidelines [13]. A Facilitator's Guide was also included to support utilization of the toolkit by practitioners.

Since 2011, investment in CHW-led health delivery has continued to grow and the body of evidence related to CHW effectiveness has also expanded considerably. Therefore, this update of the CHW AIM Functionality Matrix was undertaken to incorporate current evidence on CHW program efficacy and effectiveness [14-19], the latest syntheses of practitioner expertise [20-22], and to improve the usability of the tool. This updated version of the CHW AIM Functionality Matrix is intended to complement the 2018 *WHO guideline on health policy and system support to optimize community-based health worker programmes* and integrate with existing domain-specific tools for optimizing CHW programs (e.g. UNICEF/MSH's Community Health Planning and Costing Tool). [23, 24, 25] As with the original AIM tool, this updated version is intended to capacitate the processes of programmatic design, planning, assessment, and improvement, for stakeholders ranging from local NGOs, to national policymakers and planners, to global stakeholders (Figure 1).



Figure 1: adapted from CHW AIM, 2013 edition [13]

Methods

In 2018, USAID, UNICEF, the Community Health Impact Coalition, and Initiatives Inc. undertook a review and updating process of the CHW AIM Tool. This process entailed updating the CHW AIM Program Functionality Matrix, however, did not include revisions to the original CHW AIM Intervention Matrices or Facilitator's Guide which can be found at <http://www.who.int/workforcealliance/knowledge/toolkit/54/en/>.

Prior to updating the Program Functionality Matrix, a systematic search for other tools intended to aid policymakers and/or practitioners in community health worker program and policy design and implementation was carried out; see Appendix I for search strategy and databases searched. Over 200 documents were close-read for inclusion. Relevant tools identified were linked in the appropriate sections of the revised Functionality Matrix. To enhance the usability of the tool, efforts to streamline the program components reduced the previous fifteen components to ten (see next page). To update the criteria for each of the components, the latest reviews on CHW program efficacy and effectiveness [14-17] and syntheses of practitioner expertise [20] were consulted, and revisions were vetted across multiple stakeholders for accuracy and usability (including funders, program implementers who applied previous versions of the toolkit, and policymakers).

CHW AIM 2018: Revised Programmatic Components

1. **Role and Recruitment:** How the community, CHW, and health system design and achieve clarity on the CHW role and from where the CHW is identified and selected.
2. **Training:** How pre-service training is provided to the CHW to prepare for his/her role and ensure s/he has the necessary skills to provide safe and quality care; and, how ongoing training is provided to reinforce initial training, teach CHWs new skills, and to help ensure quality.
3. **Accreditation:** How health knowledge and competencies are assessed and certified prior to practicing and recertified at regular intervals while practicing.
4. **Equipment and Supplies:** How the requisite equipment and supplies are made available when needed to deliver expected services.
5. **Supervision:** How supportive supervision is carried out such that regular skill development, problem solving, performance review, and data auditing are provided.
6. **Incentives:** How a balanced incentive package reflecting job expectations, including financial compensation in the form of a salary, and non-financial incentives, is provided.
7. **Community Involvement:** How a community supports the creation and maintenance of the CHW program.
8. **Opportunity for Advancement:** How CHWs are provided career pathways.
9. **Data:** How community-level data flow to the health system and back to the community and how they are used for quality improvement.
10. **Linkages to the National Health System:** The extent to which the Ministry of Health has policies in place that integrate and include CHWs in health system planning and budgeting and provides logistical support to sustain district, regional and/or national CHW programs.

Program Functionality Matrix Process

To utilize the CHW AIM tool in assessing CHW programs, a detailed facilitation process has been described previously [13]. We here provide a summary of the process and recommend implementers and policymakers utilizing the CHW AIM tool consult the full facilitator's guide for further detail (<http://www.who.int/workforcealliance/knowledge/toolkit/54/en/>).

Facilitation: Although participatory in nature, the process should be led by a trained facilitator.

Participants: The assessment is typically carried out during a workshop with multiple stakeholders knowledgeable about how the program is managed or supported and the regions within which it functions. Participants are encouraged to include field managers, district managers, national-level community health policymakers, CHWs, CHW supervisors, and community members/patients.

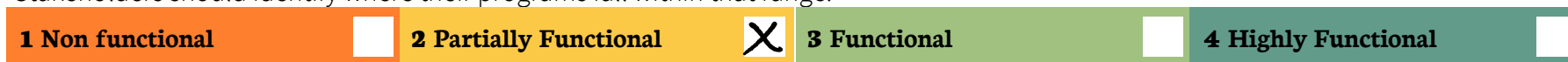
Approach: The assessment approach allows host governments to quickly and efficiently map and assess programs using a rating scale based on best practices. Ideally, the process encourages discussions on actual versus intended implementation of community-based programs (i.e. fidelity).

Limitations: The methodology relies on secondary evidence and self-reports for assessment and so can only provide an indication of the program's potential based on current best evidence and practitioner expertise. It is not an outcome assessment.

Scoring of Programmatic Components

Each of the 10 components in the CHW Program Functionality Matrix is subdivided into four levels of functionality, ranging from non-functional (level 1) to highly functional as defined by suggested best practices (level 4).

Stakeholders should identify where their programs fall within that range.



1

Role & Recruitment

How the community, CHW, and health system design and achieve clarity on the CHW role and from where the CHW is identified and selected.

- No formal CHW role is defined or documented (no policies in place).
- Attitudes, expertise, and availability deemed essential for the job are not clearly delineated prior to recruitment.
- CHW not from community.
- The community plays no role in recruitment.

- CHW and community do not always agree on role/ expectations.
- Attitudes, expertise, and availability deemed essential for the job are not clearly delineated prior to recruitment.
- CHW is recruited from community.
- The community is involved in screening of candidates.

- CHW:population ratio reflects CHW role expectation, population density, geographic constraints, and travel requirements.
- CHW role is clearly defined and documented. General agreement on role among CHW, community, and health system.
- Attitudes, expertise, and availability deemed essential for the job are clearly delineated prior to recruitment and linked to specific interview questions.
- CHW is recruited from the community and the community is consulted on the final selection, or if due to special circumstances the CHW must be recruited from outside the community, the community is consulted on the final selection.

- CHW role is clearly defined and documented. Agreement on role among CHW, community, and health system.
- CHW:population ratio reflects CHW role expectation, population density, geographic constraints, and travel requirements.
- Recruitment methods and selection criteria designed to maximize women's participation in the workforce and overcome gender inequities.
- CHW is recruited from community with community participation, or if due to special circumstance the CHW is recruited from outside the community, the community participates in and agrees with the recruitment process and is consulted on the final selection.
- Attitudes, expertise, and availability deemed essential for the job are clearly delineated prior to recruitment and linked to specific interview questions/ competency demonstrations (e.g. literacy test).
- Role of CHWs includes proactively searching for patients door-to-door, care for patients in their homes, and provide training to families on how to identify danger signs.
- Train-then-select: recruit more CHWs to the first module of pre-service training than are ultimately needed and select the best performer from each community to continue training and ultimately serve as that community's CHW.

1 Non functional

2 Partially Functional

3 Functional

4 Highly Functional

2 Training

How pre-service training is provided to the CHW to prepare for his/her role and ensure s/he has the necessary skills to provide safe and quality care; and, how ongoing training is provided to reinforce initial training, teach CHWs new skills, and to help ensure quality.

- No or minimal initial training is provided.
- Minimal initial training is provided (e.g., one workshop) that is not based on global guidelines.
- No participation from community or government health service during initial training.
- No ongoing training is provided.
- Some coaching is provided in occasional, ad hoc visits by supervisors.

1 Non functional

- Initial training is provided to all CHWs within six months of recruitment, but training does not meet global guidelines.
- No participation from community or government health service during initial training.
- No ongoing training is provided.
- Refresher training is provided but is irregular or occurs less frequently than every 12 months.
- Partner organizations/NGOs provide ad hoc workshops on specific vertical health topics. These are not integrated into the national plan.

2 Partially Functional

- Initial training meeting global guidelines is provided to all CHWs within six months of recruitment.
- Little participation from community or government health service during initial training.
- Refresher training is provided for all CHWs at least annually.
- Any workshops on vertical health topics are integrated into the national plan for ongoing training.

3 Functional

- Initial training meeting global guidelines is provided to all CHWs within six months of recruitment.
- CHW training includes practicum time in government health facilities and in the community.
- Continuous capacity development (e.g. fortnightly or quarterly through mentorship or on-the-job training) is provided to reinforce initial training, teach CHWs new skills, and to help ensure quality.

4 Highly Functional

3 Accreditation

How health knowledge and competencies are assessed and certified prior to practicing and recertified at regular intervals while practicing.

- Health knowledge and competencies are not tested prior to practicing.

- CHWs do pre-/post-tests but no minimum standard of achievement has been set.

- Health knowledge and competencies are tested and CHWs must meet a minimum standard prior to practicing
- Provisions for CHWs to re-test are in place.

- Health knowledge and competencies are tested and CHWs must meet a minimum standard prior to practicing.
- Provisions for CHWs to re-test are in place in the case of failure.
- CHWs are accredited by a national body based on clear documented standards.

1 Non functional

2 Partially Functional

3 Functional

4 Highly Functional

4

Equipment and Supplies

How the requisite equipment and supplies are made available to CHWs when needed to deliver expected services.

- No or incomplete equipment, supplies, and job aids provided.
- No regular process for ordering supplies exists; CHWs order when they run out.

1 Non functional

- Equipment, supplies, and job aids are provided, though stockouts of essential supplies occur regularly and last more than one month.
- Supplies are ordered on a regular basis, though procurement can be irregular.

2 Partially Functional

- Equipment, supplies, and job aids are provided. Stockouts are rare.
- Supplies are ordered and available for resupply on a regular basis.
- Supplies are checked or updated regularly to verify expiration dates, quality, and inventory.

3 Functional

- All necessary supplies, including job aids, are available with no substantial stockout periods.
- Supplies are ordered and available for resupply on a regular basis and buffer stock is available. At all levels, a standard tool is used for supply forecasting (e.g. UNICEF/MSH's Community Health Planning and Costing Tool) [23].
- Supplies are checked and updated regularly to verify expiration dates, quality, and inventory.
- CHW inventory is monitored, whether through manual or digital systems.

4 Highly Functional

5

Supervision

How supportive supervision is carried out such that regular skill development, problem solving, performance review, and data auditing are provided.

- No supervision or regular evaluation occurs outside of occasional visits to CHWs by nurses or supervisors when possible (once a year or less frequently).

1 Non functional

- Supervision visits or group meetings at the health facility occur between 2 and 3 times per year for data collection.
- Supervisors are not assigned to CHWs or communities or are unknown to CHWs and communities.
- Supervisors are not trained.
- No individual performance support is offered (e.g. problem-solving, coaching).

2 Partially Functional

- A dedicated supervisor conducts supervision visits at least every 3 months that include reviewing reports and providing problem- solving support to the CHW.
- Supervisors are trained and have basic supervision tools (checklists) to aid them.
- The supervisor provides summary statistics of CHW performance to CHW to identify areas for improved service delivery.
- The supervisor does not consistently meet with the community and does not make home visits with the CHW or provide on-the-job skill building.

3 Functional

- A dedicated supervisor conducts monthly supervision visits that include reviewing reports and providing problem- solving support to the CHW.
- Supervisors are trained, have the technical skills to do service delivery observations, and have basic supervision tools checklists to aid them.
- The supervisor provides summary statistics of CHW performance (e.g. number of home visits, number of protocol errors) to CHW to identify areas for improved service delivery.
- The supervisor directly observes CHW practice with patients and provides targeted feedback after patient encounter on areas for continued improvement.
- The supervisor audits data/assesses patient experience (without the CHW present).
- Program directors have considered how else supervisors can serve CHWs and the community (e.g., restocking supplies, referral support, higher level care, etc.) and have implemented services as applicable.

4 Highly Functional

6 Incentives

How a balanced incentive package reflecting job expectations, including financial compensation in the form of a salary and non-financial incentives, is provided.

- No financial or non- financial incentives are provided.
- Recognition from community is considered a reward and the CHW is sometimes given small tokens.

1 Non functional

- Some limited financial incentives are provided—such as transport to training, stipends below minimum wage—but there is no salary or bonus. Or the majority of salary payments are not paid on time.
- Some non-financial incentives are offered.

2 Partially Functional

- Full-time CHWs are compensated financially at a competitive rate relative to the respective market (at least minimum wage, if not more competitive). Salaries are paid on time the vast majority of the time.
- Incentives are balanced, with both financial and non-financial incentives provided, commensurate with expectations of CHW role (e.g., number and duration of visits to patients, workload, and services provided).
- The possibility for negative unintended consequences has been examined prior to integrating performance incentives for specific tasks. They have been put in place only if the possibility that CHWs devote less attention to non-incentivized tasks can be prevented.

3 Functional

- Full-time CHWs are compensated financially at a competitive rate relative to the respective market (at least minimum wage, if not more competitive), and salaries are consistently paid on-time.
- Incentives are balanced, with both financial and non-financial incentives provided, and are commensurate with expectations of CHW role, role (e.g., number and duration of visits to patients, workload, and services provided).
- The possibility for negative unintended consequences has been examined prior to integrating performance incentives for specific tasks. They have been put in place only if the possibility that CHWs devote less attention to non-incentivized tasks can be prevented.
- Health workers receive employee benefits (e.g. housing, vacation etc.).

4 Highly Functional

7 Community Involvement

How a community supports the creation and maintenance of the CHW program.

- Community plays no role in ongoing support to CHWs.

1 Non functional

- Community is sometimes involved (campaigns, education) with the CHW and some people in the community recognize the CHW as a resource.
- Community is only represented by “elites” and leaves out key demographic groups (i.e. women, minorities, youth, people with disabilities, etc.).

2 Partially Functional

- Community plays significant role in supporting the CHW (i.e. discusses role or objectives, provides regular feedback).
- CHW is widely recognized and appreciated by the community for providing service to the community.
- CHW engages existing community structures (e.g. health committees, community meetings).
- Community has little or no interaction with CHW supervisor.
- Community is not engaged in planning CHW programs or evaluating the health system.

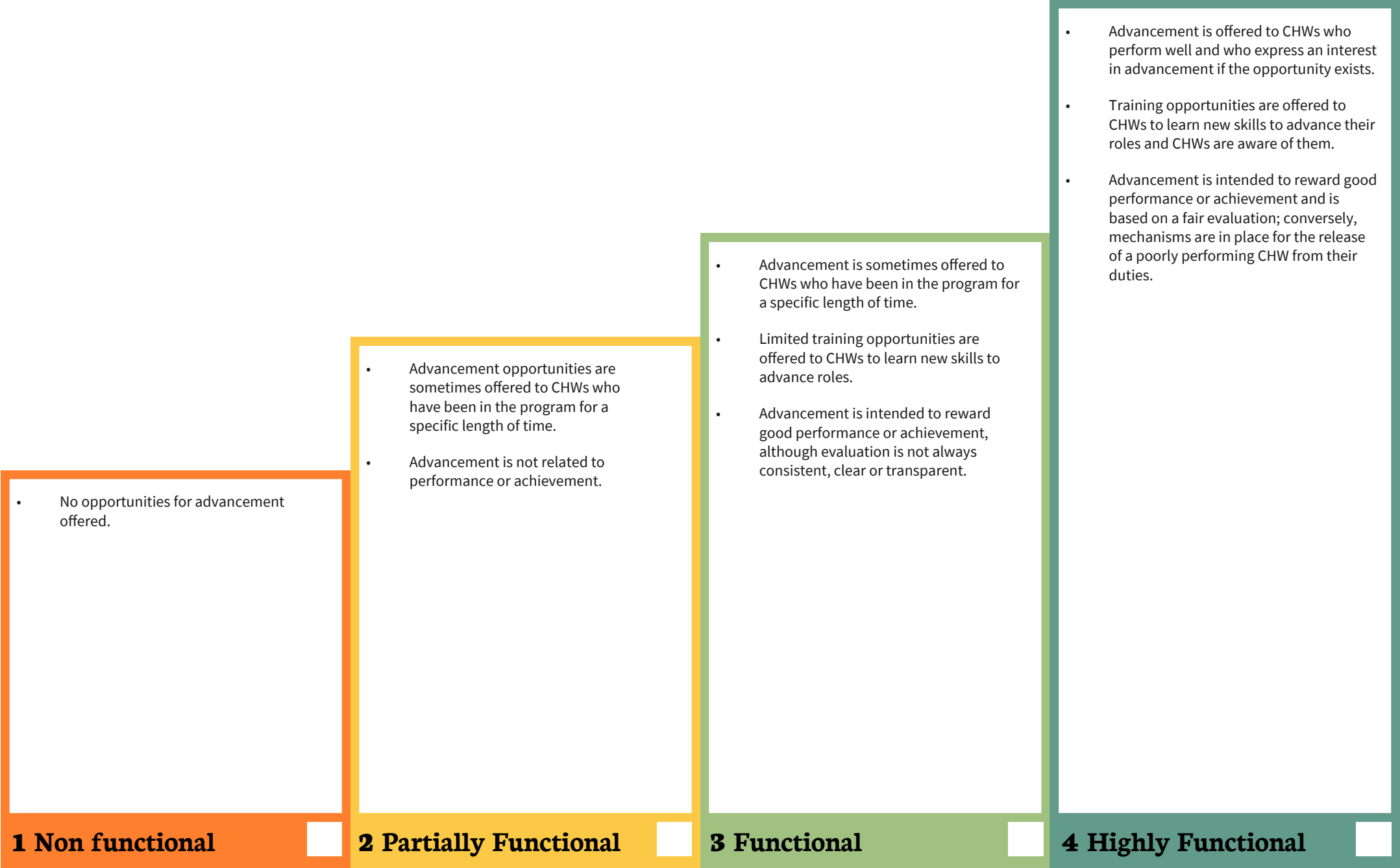
3 Functional

- Community plays significant role in supporting the CHW (i.e. discusses role or objectives, provides regular feedback) and helps to establish the CHW as a leader in community.
- CHW is widely recognized and appreciated for providing service to community.
- Community leaders have ongoing dialogue with CHW regarding health issues using data gathered by the CHW.
- CHW engages existing multisectoral community structures (e.g. health committees, community meetings).
- Community interacts with supervisor during visits to provide feedback and solve problems.
- A broad cross-section of the community plays a role in planning the CHW program and providing feedback to the health system.

4 Highly Functional

8 Opportunity for Advancement

How CHWs are provided career pathways.



9 Data

How community-level data flow to the health system and back to the community and how they are used for quality improvement

- No defined process for documentation or information management is in place.
- Information is sometimes collected from CHWs (e.g. annually).

1 Non functional

- Some CHWs document their visits in notebooks which they take with them to the facility for review, but a standardized record format does not exist.
- CHWs do not have discussions with supervisors regarding data collected.
- CHWs/communities do not receive analyzed data and no effort to use data in problem solving in the community is made.

2 Partially Functional

- CHWs document their visits and provide data in a standardized format.
- Supervisors monitor quality of data, discuss them with CHWs, and provide.
- Data is reported to public-sector monitoring and evaluation systems.
- CHWs/communities work with supervisor to use data in problem solving at the community level.

3 Functional

- CHWs document their visits consistently in a standardized format.
- Supervisors monitor quality of data, discuss data with CHWs, and provide help when needed.
- Data is reported to public-sector monitoring and evaluation systems.
- CHWs/communities work with supervisor to use data in problem solving at the community level.
- Supervisors use data to provide feedback on CHW performance and inform programmatic improvement.
- Digital technologies are employed to make data systems more efficient, useable, or scalable and/or leverage data to improve the quality, speed, or equity of services.

4 Highly Functional

10 Linkages to Health System

The extent to which the Ministry of Health has policies in place that integrate and include CHWs in health system planning and budgeting and provides logistical support to sustain CHW programs at district, regional and national levels.

- Links to health system are weak or non-existent; CHW program works in isolation from health system.
- No referral system in place.
- User fees.

1 Non functional

- CHWs are recognized as helpful in communities but their role is not formalized within the health sector.
- CHWs that exist are fully supported by external funding.
- CHW and community know where referral facility is but have no formal referral process, logistics, or forms.
- Minimal user fees for commodities only.

2 Partially Functional

- CHWs are recognized as part of the formal health system (policies are in place that define their roles, tasks, relationship to health system).
- The national health budget has appropriate provisions for CHWs (e.g. salary, equipment, supervision, etc).
- CHW and community know where referral facility is and typically have the means to transport patients.
- Patient is referred with a form and informally tracked by CHW (checking in with family, follow-up visit), but information does not flow back to CHW from referral site.
- User fees for service provision are not charged.

3 Functional

- CHWs are recognized as part of the formal health system (policies are in place that define their roles, tasks, relationship to health system).
- The national health budget has appropriate provisions for CHWs (e.g. salary, equipment, supervision, etc).
- Health system accompanies CHW deployment with investments to increase the capacity, accessibility, and quality of the primary care facilities and providers to which CHWs link.
- CHWs always have means for transport and have a functional logistics plan for emergencies (transport, funds).
- Patient is referred with a standardized form and information flows back to CHW with a returned referral form.
- Point-of-care user fees are not charged for services or for care commodities.
- There is multisectoral engagement (e.g. Ministry of Finance, Ministry of Public Service, Ministry of Education, civil society) in the design, implementation and management of the CHW program.

4 Highly Functional

Score overview

	1. Non Functional	2. Partially Functional	3. Functional	4. Highly Functional
1. Role & Recruitment	☐	☐	☐	☐
2. Training	☐	☐	☐	☐
3. Accreditation	☐	☐	☐	☐
4. Equipment & Supplies	☐	☐	☐	☐
5. Supervision	☐	☐	☐	☐
6. Incentives	☐	☐	☐	☐
7. Community Involvement	☐	☐	☐	☐
8. Opportunity for Advancement	☐	☐	☐	☐
9. Data	☐	☐	☐	☐
10. Linkages to the National Health System	☐	☐	☐	☐

APPENDIX

Search strategy

Pubmed:

((("Community health agent" or "Community Health Aides" or "Community health promoter" or "Community mobilizer" or "Community drug distributor" or "community health worker" or "Village health worker"[Title/Abstract])) OR ("Rural Health Worker" or "Lay Health Worker" or "Lady health worker" or "nutrition worker" or "frontline health worker" or "Barangay health worker" or "basic health worker" or "Auxiliary health worker" or "health extension worker" or "community health volunteer" or "village health volunteer"[Title/Abstract])) OR (acompanier* OR accompagnateur* OR activista* OR animatrice* OR brigadista* OR kader* OR promotora* OR monitora* OR sevika* OR fhw* OR chw* OR lhw* OR vhw* OR chv* OR "shastho shebika" OR "shasto karmis" OR anganwadi* OR "barefoot doctor" OR "agente comunitario de salud" OR "agente comunitario de saude"[Title/Abstract]))

Keywords for other databases:

(community health worker) OR (CHW) AND (tool) OR (toolkit) OR (manual) OR (technical) OR (guide) OR (strategy) OR (handbook)

Databases/Grey Literature Repositories

1. CHW Central
2. CoreGroup
3. PubMed
4. USAID
5. World Health Organization
6. Rural Health Information Hub
7. Frontline Health Workers Coalition
8. One Million Community Health Workers Campaign
9. mPowering Frontline Health Workers
10. Community Case Management Central
11. Global Health Workforce Alliance (WHO)
12. Clinton Foundation

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