World Health Organization

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ISBN 978-92-4-155036-9

Suggested citation. WHO guideline on health policy and system support to optimize community health worker programmes. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Printed in Switzerland

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Foreword

The World Health Organization was founded on the principle that all people have the right to the highest attainable standard of health. You could say that “Health for all” is in our DNA.

While every country’s journey towards universal health coverage is unique, we know that having a competent, motivated and supported health workforce is the backbone of every health system. There is simply no health without health workers.

Community health workers have been acknowledged as a vital component of primary care since the Alma Ata Declaration in 1978. Forty years later, we now have compelling evidence demonstrating the valuable contribution of community health workers in delivering basic and essential life-saving health services.

Investing in community health workers represents good value for money. And yet, they are often operating at the margins of health systems, without being duly recognized, integrated, supported and rewarded for the crucial role they play.

This new WHO guideline has identified state-of-the-art evidence on what is required to facilitate the proper integration of community health workers in health systems and communities. It contains pragmatic recommendations on how to improve and strengthen their selection, education, deployment, management, supervision, career advancement, community embeddedness and system support.

I urge all policy-makers and managers in countries, as well as our international partners, to consider these recommendations and to put them into practice. By fully harnessing the potential of community health workers, including by dramatically improving their working and living conditions, we can make progress together towards universal health coverage and achieving the health targets of the Sustainable Development Goals.

Dr Tedros Adhanom Ghebreyesus

Contributors and acknowledgements

This guideline is part of the World Health Organization (WHO) programme of work on human resources for health. It represents a technical tool to facilitate the implementation of the WHO Global Strategy on Human Resources for Health: Workforce 2030, the recommendations of the United Nations High-Level Commission on Health Employment and Economic Growth and WHO's Thirteenth general programme of work 2019–2023.

The concept for the guideline was initiated by Giorgio Cometto, James Campbell and Marie-Paule Kieny of WHO. Further conceptual refinement of the guideline, its coordination and content was led by Giorgio Cometto (coordinator, human resources for health policies, norms and standards, Health Workforce Department, WHO) under the oversight of James Campbell (Director, Health Workforce Department, WHO). The WHO Health Workforce Department is part of the Universal Health Coverage and Health System Cluster led by the Assistant Director-General, Naoko Yamamoto.

The **Steering Group** led the development of the planning proposal of the guideline, identified members of the Guideline Development Group and External Review Group, facilitated the Guideline Development Group meetings, and contributed to the development of the first draft of the guideline document and to subsequent rounds of revisions. Its members included the following WHO staff members: Samira Aboubaker, Maternal, newborn, child and adolescent health; Islene Araujo De Carvalho, Ageing and life course; Mohammad Assai Ardakani, Regional Office for the Eastern Mediterranean; Shannon Barkley, Service delivery and safety; Giorgio Cometto (responsible technical officer), Health Workforce; Tarun Dua, Mental health and substance abuse; Jose Francisco Garcia Gutierrez, Regional Office for the Americas; Fethiye Gulin Gedik, Regional Office for the Eastern Mediterranean; Thomas Moran, Polio, emergencies and country collaboration; Eyerusalem Kebede Negussie and Nathan Ford, HIV; Jennifer Nyoni, Regional Office for Africa; Olufemi Taiwo Oladapo, Reproductive health research; Kunhee Park and Indrajit Hazarika, Regional Office for the Western Pacific; Galina Perfilieva, Regional Office for Europe; Denis Georges Porignon, Health governance and financing; Gunasena Sunil Senanayake, Regional Office for South-East Asia; Lana Syed, Global TB Programme; and Jerome Pfaffmann, Health Unit, Child Health, UNICEF.

The **Guideline Development Group** refined the scope of the guideline, reviewed the evidence summaries, and developed the recommendations. Its members included Elie Akl, American University of Beirut, Lebanon (methodologist and co-chair); Barbara McPake, University of Melbourne, Australia (co-chair); Uta Lehmann, University of Western Cape, South Africa (co-chair); Amel Abdalla, Ministry of Health, Sudan; Zulfiqar Bhutta, Aga Khan University, Pakistan; Howard Catton, International Council of Nurses, United Kingdom; Tesfaye Chala, Deputy Director PHC, Ministry of Health, Ethiopia; Yoswa Dambisya, Limpopo University, South Africa; Gilles Dussault, Instituto Hygiene e Medicina Tropical, Lisbon, Portugal; Miatta Gbanya, Ministry of Health, Liberia; Zhang Guangpeng, National Health Development Research Centre, China; Luis Huicho, Universidade Peruana, Peru; Nicolae Jelamschi, Ministry of Health, Moldova; Arthur Kauffman, University of New Mexico, United States of America; Arieta Latianara, Ministry of Health, Fiji; Leonard Mbiu, Ministry of Health, Kenya; Guadalupe Medina, Universidade Federal de Bahia, Brazil; Catherine Mugeni, Ministry of Health, Rwanda; Margaret Mungherera, World Medical Association, Uganda; Maxensia Nakibuuka, CHW, Uganda; Makhduma Nargis, Ministry of Health, Bangladesh; Shirley Ngwenya, University of the Witwatersrand, South Africa; Ram Shresta, Tufts, Nepal; Sandra Vermuyten and Aye Babatunde, Public Services International, Belgium; Polly Walker, World Vision, United Kingdom; and Jean White, Welsh Government – Health and Social Services Group Wales, United Kingdom. Nazo Qureshi, United States Agency for International Development, United States, participated in the Guideline Development Group meetings as observer.

The **External Review Group** provided a peer review of a draft of the guideline document and of the systematic reviews of the literature. Its members included Madeleine Ballard, Community Health Impact Coalition, Germany; Jennifer Breads, Jhpiego, United States; Camila Giugliani, Federal University of Rio Grande do Sul, Porto Alegre, Brazil; Stephen Hodgins, University of Alberta, Canada; Ochiawunma Ibe, ICF/Maternal and Child Survival Program, Nigeria; Sara Javanparast, Flinders University, Australia; Ari Johnson, University of California, San Francisco, Global Health Sciences Muso, United States; Karin Källander, Malaria Consortium, United Kingdom; Samson Kironde, University Research Co., LLC, Uganda; Maryse Kok, Royal Tropical Institute, the Netherlands; Maisam Najafizada, Memorial University of Newfoundland Health Sciences Centre, Newfoundland and Labrador, Canada; Peter Ngatia, Amref Health Africa, Kenya; Ruth Ngechu, Living Goods, Kenya; Abimbola Olaniran, Liverpool School of Tropical Medicine, United Kingdom; Rajesh Panjabi, Last Mile Health, United States; Bhanu Pratap, International Federation of Red Cross and Red Crescent Societies, Switzerland; Magali Romedenne, UNICEF, Senegal; Eric Sarriot, Save the Children, United States; and Sunita Singh, London School of Hygiene and Tropical Medicine, India.

Declarations of interest were collated from members of the Guideline Development Group and the External Review Group and assessed by the WHO Secretariat. The interests declared were not considered to hinder participation in the process to develop or review recommendations.

Other individuals provided selective inputs on methodological aspects of the literature reviews or peer review and inputs on specific sections of the guideline document: Susan Norris (Guideline Review Committee Secretariat, WHO); Dena Javadi (Alliance for Health Policy and Systems Research, WHO); Dermot Maher (Tropical Diseases Research, WHO); Tomas Allen (Library and Information Networks for Knowledge, WHO); Tomas Zapata (WHO Regional Office for South-East Asia); Elongo Lokombe (WHO Regional Office for Africa); and Christiane Wiskow (International Labour Organization).

The **systematic review team** coordinated by Bianca Albers, David Taylor (Centre for Evidence and Implementation) and Aron Shlonsky (University of Melbourne) led the development of the 15 systematic reviews assessing the evidence on the policy questions specifically examined in the guideline. The authors of each systematic review are also gratefully acknowledged, and their names are listed in the references of the reviews.

A group of researchers from Johns Hopkins University, comprising Kerry Scott, Sam Beckham, Margaret Gross, George Pariyo, Krishna Rao and Henry Perry, prepared the systematic review of literature reviews exploring the broader evidence base on community health workers.

A large number of individuals from a variety of institutions and constituencies provided anonymous inputs in the public hearing contributing to the scope of the guideline document, and in a stakeholder perception survey assessing the relative importance of outcomes and the feasibility and acceptability of the policy options under consideration in the guideline development.

Onyema Ajuebor (Health Workforce Department, WHO) coordinated the initial public hearing on the scope of the guideline and led the development and analysis of the stakeholder perception survey. Zahra Zeinali (intern, Health Workforce Department, WHO) collated and summarized existing WHO guidelines that refer to the role of community health workers in the delivery of specific health interventions. John Dawson copy-edited the document.

Funding

WHO's core resources supported the majority of the funding for the development of this guideline. In addition, financial support for development, dissemination and uptake of this guideline was received from the Global Fund to Fight AIDS, Tuberculosis and Malaria, the Federal Ministry of Health of Germany – BMG, the United States Agency for International Development, the Norwegian Agency for Development Cooperation, the Alliance for Health Policy and Systems Research and UNICEF. The financial support from these partners is gratefully acknowledged.

Abbreviations

AMSTAR	Assessment of Multiple Systematic Reviews
CHW	community health worker
ERG	External Review Group
GDG	Guideline Development Group
HIFA	Healthcare Information For All
ILO	International Labour Organization
ISCO	International Standard Classification of Occupations
PICO	population, intervention, control, outcome
PRISMA	Preferred Reporting Items of Systematic reviews and Meta-Analyses
RCT	randomized controlled trial
SDG	Sustainable Development Goal
SG	Steering Group
TB	tuberculosis
TT	tetanus toxoid
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Key messages

Addressing health workforce shortage, maldistribution and performance challenges is essential for progress towards all health-related goals, including universal health coverage. Further, the health sector has the potential to be a driver of economic growth through the creation of qualified employment opportunities, in particular for women.

Effective health workforce strategies include the education and deployment of a diverse and sustainable skills mix, harnessing in some contexts the potential of community health workers (CHWs) operating in interprofessional primary care teams. However, the support for CHWs and their integration into health systems and communities are uneven across and within countries; good-practice examples are not necessarily replicated and policy options for which there is greater evidence of effectiveness are not uniformly adopted. Conversely, successful delivery of services through CHWs requires evidence-based models for education, deployment and management of these health workers.

The starting point for an effective design of CHW programmes is a sound situation analysis of population needs, health system requirements and resource implications. The role of CHWs should be considered in relation to other health workers, in order to integrate CHW programmes into the general health system and into existing community structures in an appropriate manner.

This guideline was developed through a critical analysis of the available evidence and provides policy recommendations to optimize the design and performance of CHW programmes, including:

- selecting CHWs for pre-service education, considering minimum education levels appropriate to the tasks to be performed, membership of and acceptance by the local community, promotion of gender equity, and personal attributes and capacity of the candidates;
- determining duration of pre-service training in the local context based on competencies required according to role, pre-existing knowledge and skills, and expected conditions of practice;
- including, in the contents of pre-service training, promotive and preventive services, diagnostic and curative services where relevant, and interpersonal and community mobilization skills;
- balancing theoretical and practical pre-service training, and blending face-to-face and e-learning where feasible, with adequate attention to a positive training environment and faculty;
- using competency-based formal certification for CHWs who have successfully completed pre-service training to improve CHW quality of care, motivation and employment prospects;
- adopting supportive supervision strategies;
- providing practising CHWs with a financial package commensurate with the job demands, complexity, number of hours worked, training and roles that they undertake;
- providing paid CHWs with a written agreement specifying role and responsibilities, working conditions, remuneration and workers' rights;
- offering a career ladder to well performing CHWs;
- determining an appropriate target population size in relation to expected workloads, frequency, nature and time requirements of contacts required;
- collecting, collating and using health data by CHWs on routine activities, including through relevant mobile health solutions, while respecting data confidentiality and security;
- adopting service delivery models comprising CHWs with general tasks as part of integrated primary health care teams, in which CHWs with selective tasks can play a complementary role;
- adopting strategies for CHWs to engage communities and to harness community resources; and
- ensuring adequate availability of commodities and consumable supplies to CHWs.

Executive summary

Introduction

Addressing health workforce shortage, maldistribution and performance challenges is essential for progress towards all health-related goals, including universal health coverage. Further, as evidenced by the recommendations of the United Nations High-Level Commission on Health Employment and Economic Growth, there is increasing recognition of the potential of the health sector to create qualified employment opportunities, in particular for women, contributing to the job creation and economic development agenda. The education and deployment of interprofessional primary care teams of health workers should reflect a diverse and sustainable skills mix; in some contexts this may entail harnessing the potential of community health workers (CHWs) as part of broader efforts to strengthen primary health care and the health workforce more generally.

There is growing recognition that CHWs and other types of community-based health workers are effective in the delivery of a range of preventive, promotive and curative health services, and that they can contribute to reducing inequities in access to care.

Rationale

The support for CHWs and their integration into health systems and communities are uneven across and within countries; good-practice examples are not necessarily replicated and policy options for which there is greater evidence of effectiveness are not uniformly adopted. There is a need for evidence-based guidance on optimal health policy and system support to optimize the performance and impact of these health workers.

Target audience

The primary target audience for this guideline is policy-makers, planners and managers responsible for health workforce policy and planning at national and local levels. Secondary target audiences include development partners, funding agencies, global health initiatives, donor contractors, researchers, CHW organizations, CHWs themselves, civil society organizations and community stakeholders.

Objectives and scope

The overall goal of this guideline is to assist national governments and national and international partners to improve the design, implementation, performance and evaluation of CHW programmes, contributing to the progressive realization of universal health coverage.

This guideline is primarily focused on CHWs (as defined by the International Labour Organization through its International Standard Classification of Occupations), but its relevance and applicability include also other types of community-based health workers. The recommendations of this guideline are of relevance to health systems of countries at all levels of socioeconomic development.

The guideline follows a health system approach and specifically it identifies the policy and system enablers required to optimize design and performance of CHW initiatives. It does not appraise the body of evidence on which health services or interventions CHWs can deliver to quality standards, which are covered by other World Health Organization (WHO) guidelines.

Methodology

The development of this guideline followed the standard WHO approach: a critical appraisal of the evidence through the development of systematic reviews of the relevant literature and the assessment of the quality of the evidence through standardized methodologies, including the assessment of the certainty of the evidence. A Guideline Development Group, comprising a geographically and gender-balanced representation across different constituencies (including policy-makers, end-users of guidelines, experts, health professional associations, CHWs and labour union representatives) led the formulation of recommendations, with the support of a Steering Group, and benefiting from peer review by a competitively-selected External Review Group. One systematic review of published literature reviews, 15 systematic reviews (one for each policy question) of relevant primary studies, and a stakeholder perception survey were conducted for the specific purpose of identifying relevant evidence contributing to this guideline.

Results

The systematic review of published literature reviews identified 122 eligible reviews (75 systematic reviews, of which 34 were meta-analyses, and 47 non-systematic reviews). The systematic reviews for the studies for the 15 questions considered by the guideline screened almost 88 000 records, resulting eventually in the identification of 137 studies eligible for inclusion and analysis in the reviews. The stakeholder perception survey obtained inputs from 96 respondents (largely policy-makers, planners, managers and researchers involved in the design, implementation, monitoring and evaluation of CHW programmes) on the acceptability and feasibility of the interventions under consideration in the guideline.

Recommendations

1. Selection

Recommendation 1A

WHO **suggests** using the following criteria for selecting CHWs for pre-service training:

- minimum educational level that is appropriate to the task(s) under consideration;
- membership of and acceptance by the target community;
- gender equity appropriate to the context (considering affirmative action to preferentially select women to empower them and, where culturally relevant, to ensure acceptability of services by the population or target group);
- personal attributes, capacities, values, and life and professional experiences of the candidates (e.g. cognitive abilities, integrity, motivation, interpersonal skills, demonstrated commitment to community service, and a public service ethos).

Certainty of the evidence – very low. Strength of the recommendation – conditional.

Recommendation 1B

WHO **suggests** not using the following criterion for selecting CHWs for pre-service training:

- age (except in relation to requirements of national education and labour policies).

Certainty of the evidence – very low. Strength of the recommendation – conditional.

Recommendation 1C

WHO **recommends not** using the following criterion for selecting CHWs for pre-service training:

- marital status.

Certainty of the evidence – very low. Strength of the recommendation – strong.

2. Duration of pre-service training

Recommendation 2

WHO **suggests** using the following criteria for determining the length of pre-service training for CHWs:

- scope of work, and anticipated responsibilities and role;
- competencies required to ensure high-quality service delivery;
- pre-existing knowledge and skills (whether acquired through prior training or relevant experience);
- social, economic and geographical circumstances of trainees;
- institutional capacity to provide the training;
- expected conditions of practice.

Certainty of the evidence – low. Strength of the recommendation – conditional.

3. Competencies in curriculum for pre-service training

Recommendation 3

WHO **suggests** including the following competency domains for the curriculum for pre-service training of CHWs, if their expected role includes such functions.

Core:

- promotive and preventive services, identification of family health and social needs and risk;
- integration within the wider health care system in relation to the range of tasks to be performed in accordance with CHW role, including referral, collaborative relation with other health workers in primary care teams, patient tracing, community disease surveillance, monitoring, and data collection, analysis and use;
- social and environmental determinants of health;
- providing psychosocial support;
- interpersonal skills related to confidentiality, communication, community engagement and mobilization;
- personal safety.

Additional:

- diagnostic, treatment and care in alignment with expected role(s) and applicable regulations on scope of practice.

Certainty of the evidence – moderate. Strength of the recommendation – conditional.

4. Modalities of pre-service training

Recommendation 4

WHO **suggests** using the following modalities for delivering pre-service training to CHWs:

- balance of theory-focused knowledge and practice-focused skills, with priority emphasis on supervised practical experience;
- balance of face-to-face and e-learning, with priority emphasis on face-to-face learning, supplemented by e-learning on aspects on which it is relevant;
- prioritization of training in or near the community wherever possible;
- delivery of training and provision of learning materials in language that can optimize the trainees' acquisition of expertise and skills;
- ensuring a positive training environment;
- consideration of interprofessional training approaches where relevant and feasible.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

5. Competency-based certification

Recommendation 5

WHO **suggests** using competency-based formal certification for CHWs who have successfully completed pre-service training.[1]

Certainty of the evidence – very low. Strength of the recommendation – conditional.

6. Supportive supervision

Recommendation 6

WHO **suggests** using the following supportive supervision strategies in the context of CHW programmes:

- appropriate supervisor–supervisee ratio allowing meaningful and regular support;
- ensuring supervisors receive adequate training;
- coaching and mentoring of CHWs;
- use of observation of service delivery, performance data and community feedback;
- prioritization of improving the quality of supervision.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7. Remuneration

Recommendation 7A

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.

Certainty of the evidence – very low. Strength of the recommendation – strong.

Recommendation 7B

WHO **suggests** not paying CHWs exclusively or predominantly according to performance-based incentives.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

8. Contracting agreements

Recommendation 8

WHO **recommends** providing paid CHWs with a written agreement specifying role and responsibilities, working conditions, remuneration and workers' rights.

Certainty of the evidence – very low. Strength of the recommendation – strong.

9. Career ladder

Recommendation 9

WHO **suggests** that a career ladder should be offered to practising CHWs, recognizing that further education and career development are linked to selection criteria, duration and contents of pre-service education, competency-based certification, duration of service and performance review.

Certainty of the evidence – low. Strength of the recommendation – conditional.

[1] Certification is defined in this context as a formal recognition awarded by relevant authorities to health workers who have successfully completed pre-service education and who have demonstrated meeting predetermined competency standards.

10. Target population size

Recommendation 10

WHO **suggests** using the following criteria in determining a target population size in the context of CHW programmes.

Criteria to be adopted in most settings:

- expected workload based on epidemiology and anticipated demand for services;
- frequency of contact required;
- nature and time requirements of the services provided;
- expected weekly time commitment of CHWs (factoring in time away from service provision for training, administrative duties, and other requirements);
- local geography (including proximity of households, distance to clinic and population density).

Criteria that might be of relevance in some settings:

- weather and climate;
- transport availability and cost;
- health worker safety;
- mobility of population;
- available human and financial resources.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

11. Data collection and use

Recommendation 11

WHO **suggests** that practising CHWs document the services they are providing and that they collect, collate and use health data on routine activities, including through relevant mobile health solutions. Enablers for success include minimizing the reporting burden and harmonizing data requirements; ensuring data confidentiality and security; equipping CHWs with the required competencies through training; and providing them with feedback on performance based on data collected.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

12. Types of CHWs

Recommendation 12

WHO **suggests** adopting service delivery models comprising CHWs with general tasks as part of integrated primary health care teams. CHWs with more selective and specific tasks can play a complementary role when required on the basis of population health needs, cultural context and workforce configuration.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

13. Community engagement

Recommendation 13

WHO **recommends** the adoption of the following community engagement strategies in the context of practising CHW programmes:

- pre-programme consultation with community leaders;
- community participation in CHW selection;
- monitoring of CHWs;
- selection and priority setting of CHW activities;
- support to community-based structures;
- involvement of community representatives in decision-making, problem solving, planning and budgeting processes.

Certainty of the evidence – moderate. Strength of the recommendation – strong.

14. Mobilization of community resources

Recommendation 14

WHO **suggests** that CHWs contribute to mobilizing wider community resources for health by:

- identifying priority health and social problems and developing and implementing corresponding action plans with the communities;
- mobilizing and helping coordinate relevant local resources representing different stakeholders, sectors and civil society organizations to address priority health problems;
- facilitating community participation in transparent evaluation and dissemination of routine community data and outcomes of interventions;
- strengthening linkages between the community and health facilities.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

15. Availability of supplies

Recommendation 15

WHO **suggests** using the following strategies for ensuring adequate availability of commodities and consumable supplies, quality assurance, and appropriate storage, stocking and waste management in the context of CHW programmes:

- integration in the overall health supply chain;
- adequate reporting, supervision, compensation, work environment management, appropriate training and feedback, and team quality improvement meetings;
- availability of mHealth to support different supply chain functions.

Certainty of the evidence – low. Strength of the recommendation – conditional.

Research priorities

Evidence was identified to provide policy recommendations for most areas under consideration in the guideline. However, in several instances important gaps in both scope and certainty of evidence emerged from the systematic reviews, providing an opportunity to outline priorities for a future research agenda on CHWs.

The research activities undertaken in support of this guideline found a near-absolute absence of evidence in some areas (for example, on certification or contracting and career ladders for CHWs, appropriate typology, and population target size). Across most policy areas considered there is some evidence – often substantial – that broad strategies (for example, competency-based education, supportive supervision, and payment) are effective. However, this evidence may not be sufficiently granular to recommend specific interventions, such as which education approaches, which supervision strategies, or which bundles of financial and non-financial incentives are most effective or more effective than others. Other cross-cutting considerations include the absence of economic evaluations of the various interventions under consideration, and the importance of tracking policy effectiveness over time through longer-term longitudinal studies.

As most of the evidence retrieved for this guideline originated in low- and middle-income countries, additional research should be considered in advanced economies to better identify any differences in contextual factors and effectiveness of approaches that would impact the applicability and generalizability of policy options and recommendations in this guideline.

Implementation considerations

The starting point for an effective design of CHW initiatives and programmes is a sound situation analysis of population needs and health system requirements. Planners should adopt a whole-of-system approach, taking into consideration health system capacities and population needs, and framing the role of CHWs vis-à-vis other health workers, in order to integrate CHW programmes into the health system in an appropriate manner.

CHW initiatives and programmes should therefore be aligned to and be part of broader national health and health workforce policies. As relevant, they should also be linked with national education, labour and community development sectoral or subsectoral policies and frameworks.

Countries should use a combination of CHW policies selected based on the objectives, context and architecture of each health system. This guideline is not a blueprint that can be immediately adopted. It should be read as an analytical overview of available evidence that informs a menu of interrelated policy options and recommendations. The options and recommendations subsequently need to be adapted and contextualized to the reality of a specific health system. Further, the recommendations should not be considered in isolation from one another. There is a need for internal coherence and consistency among different policies, as they represent related and interlocking elements that complement and can reinforce one another.

The deployment of CHWs has been identified as a cost-effective approach. The policy options recommended in this guideline have, in the aggregate, considerable cost implications, and these require long-term dedicated financing. Countries at all levels of socioeconomic development, including low-income ones, have demonstrated that it is possible to prioritize investments in large-scale CHW initiatives. In contexts where this is relevant, development partners and external funders should strive to harmonize their support to CHW programmes, and align it with public policy and national health systems.

1

Introduction

Health workforce shortages, maldistribution, imbalances and quality and performance challenges represent some of the main obstacles to the scale-up of essential health interventions and services *(1)*. Addressing these bottlenecks is essential for progress towards all health-related goals, including universal health coverage and Sustainable Development Goal 3 to "Ensure healthy lives and promote well-being for all at all ages".

The health workforce underpins the health goal, with a target *(3c)* to "substantially increase health financing, and the recruitment, development and training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States" *(2)*. Further, as evidenced by the recommendations of the United Nations High-Level Commission on Health Employment and Economic Growth, there is increasing recognition of the potential of the health sector to create qualified employment opportunities, in particular for women, contributing to the job creation and economic development agenda *(3)*.

Following decades of ebbing and flowing interest, in the last few years there has been growing attention to the potential of community health workers (CHWs) and other types of community-based health workers in reducing inequities in access to essential health services. The World Health Organization (WHO) Global Strategy on Human Resources for Health: Workforce 2030, adopted by the World Health Assembly in 2016, encourages countries to adopt a diverse, sustainable skills mix, harnessing the potential of community-based and mid-level health workers in interprofessional primary care teams.

Several systematic reviews and other studies demonstrate the effectiveness of various types of CHWs in delivering a range of preventive, promotive and curative services related to reproductive, maternal, newborn and child health *(4–8)*, infectious diseases *(9)*, noncommunicable diseases *(10, 11)*, and neglected tropical diseases *(12)*. However, successful delivery of services requires evidence-based models for educating, deploying, remunerating and managing CHWs to optimize their performance and contribution to the health system across various health service areas. Other systematic reviews have identified the most effective policy approaches for successful integration of health workers into health systems and the communities they serve. These include providing CHWs with predictable financial and non-financial incentives, frequent supportive supervision, continuous training, and embedding CHWs in health systems and in the communities where they work, with clear roles and communication channels for CHWs *(13–17)*. There is also substantial evidence that delivering essential health services through CHWs may represent a cost-effective approach in a diversity of contexts *(18–20)*. Empowering CHWs also offers a critical opening for change towards achieving greater gender equity within communities.

2

Rationale

The support for CHWs and their integration into the health system and in the communities they serve are uneven across and within countries; good-practice examples are not necessarily replicated and policy options for which there is greater evidence of effectiveness are not uniformly adopted.

Although they should be considered as an integral part of primary health care strategies and of the health system, CHW programmes are often fraught with challenges, including poor planning; unclear roles, education and career pathways; lack of certification hindering credibility and transferability; multiple competing actors with little coordination; fragmented, disease-specific training; donor-driven management and funding; tenuous linkage with the health system; poor coordination, supervision, quality control and support; and lack of recognition of the contribution of CHWs *(21)*. These challenges can contribute to wastage of both human capital and financial resources: many well intentioned and performing CHW initiatives fail to be properly integrated into health systems, and remain pilot projects or small-scale initiatives that are excessively reliant on donor funding; or, conversely, uneven management and support for these health workers in many contexts can result in substandard capacities and performance of CHWs. Accordingly, the performance of community-based health worker programmes is highly variable, hindering the full realization of their potential contribution to the implementation of primary health care policies.

Whereas standard human resource management functions such as formalized training, certification, and payment are taken as a given for professional health workers (such as doctors, midwives and nurses), policies and practices vary enormously across countries in relation to the application of these same functions to CHWs. As CHWs typically undergo shorter training than health professionals, have a more restricted scope of practice, and in many cases are not paid, they often exist and operate at the margins of or outside public policy, with varying (and often informal) policy arrangements around their inclusion in and support by the health systems. The added value of this guideline, therefore, rests in identifying whether management support systems and strategies similar to those offered to other occupational groups should also be applied to CHWs and other community-based health workers, and if so how and under what circumstances.

Governments, development partners, civil society organizations, and research and academic institutions have expressed a clear demand for scaling up CHW programmes *(22)*, and are committed to integrating CHW programmes into health systems and harmonizing their actions accordingly *(23)*. Optimizing the design and performance of CHW programmes requires clarity on the competencies and roles of CHWs, and agreed criteria for sustainable support by and integration into local and national health systems and plans *(20)*. The guidance should be based on evidence to better define factors such as the education, regulation, remuneration, performance, quality and career advancement prospects of these cadres. The development of this new guideline on health policy and system support to optimize CHW programmes addresses this normative gap.

3

Target audience

3.1 End-users of the guideline

The primary target audience for this guideline is policy-makers, planners and managers responsible for health workforce policy and planning at national and local levels. Throughout this document, policy and actions at "country" or "national" level should be understood as relevant in each country in accordance with subnational and national responsibilities.

Secondary target audiences include development partners, funding agencies, global health initiatives, donor contractors, researchers, CHW organizations, CHWs themselves, civil society organizations, community stakeholders and activists who fund, support, implement, conduct research into, and advocate greater and more efficient involvement of CHWs in the delivery of health services.

3.2 Persons affected by the recommendations

The most direct beneficiaries of this guideline are the CHWs themselves. It is hoped and envisioned that the guideline will contribute to increased recognition, adequate and harmonized training, better integration into the health system and community, and improved employment and working conditions for these occupational groups.

The scope and penetration of CHW programmes is extremely variable across and within countries. While reliable and comprehensive data for these health workers do not exist for the majority of WHO Member States, these occupational groups are most commonly employed in the context of primary health care services, particularly in expanding access to essential health services in underserved areas, including rural and remote areas, marginalized populations, pastoral and nomadic communities, and urban slums.

The largest beneficiary group of this guideline, beyond CHWs themselves, are the individuals and communities living in these contexts, who often lack equitable access to primary health care and other services and consequently lag behind in terms of health service coverage and health outcomes, as well as development outcomes more broadly. The guideline, therefore, has a potential to contribute to the reduction of inequities among these populations by strengthening the competencies, motivation, performance and management of CHWs and enhancing programme sustainability, which in turn can improve effective coverage of essential health interventions.

4

Objectives and scope of the guideline

4.1 Goal and objectives

The overall goal of this guideline is to assist national governments and national and international partners to improve the design, implementation, performance and evaluation of CHW programmes, contributing to the progressive realization of universal health coverage.

The specific objectives of this guideline are to:

- provide gender-sensitive recommendations in the areas of CHW selection, education, continuing training, linkage with other health workers, management, supervision, performance enhancement, incentives, remuneration, governance, health system integration and community embeddedness;
- identify relevant contextual elements and implementation and evaluation considerations at the policy and system levels;
- suggest tools to support the uptake of the recommendations at the country level in the context of the planning and implementation of CHW programmes;
- identify priority evidence gaps to be addressed through further research.

4.2 Types of health workers covered by this guideline

Unclear nomenclature and classification complicate the policy discourse on CHWs: the term “community health workers” is often used in a non-specific way, referring to a diverse typology of lay and educated, formal and informal, paid and unpaid health workers.

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

Box 1. ILO definition of community health workers (ISCO 3253)

Lead statement
Community health workers provide health education and referrals for a wide range of services, and provide support and assistance to communities, families and individuals with preventive health measures and gaining access to appropriate curative health and social services. They create a bridge between providers of health, social and community services and communities that may have difficulty in accessing these services.

Task statement
Tasks include: (a) providing education to communities and families on a range of health issues including family planning, control and treatment of infectious diseases, poisoning prevention, HIV risk factors and measures to prevent transmission, risk factors associated with substance abuse, domestic violence, breastfeeding and other topics; (b) assisting families to develop the necessary skills and resources to improve their health status, family functioning and self-sufficiency; (c) conducting outreach efforts to pregnant women, including those who are not involved in prenatal, health or other community services, and other high risk populations living to help them with access to prenatal and other health care services; (d) ensuring parents understand the need for children to receive immunizations and regular health care; (e) working with parents in their homes to improve parent-child interaction and to promote their understanding of normal child development; (f) providing advice and education on sanitation and hygiene to limit the spread of infectious diseases; (g) storing and distributing medical supplies for the prevention and cure of endemic diseases such as malaria and tuberculosis and instructing members of the community in the use of these products; (h) assisting families in gaining access to medical and other health services *(24)*.

The generic definition and the blurred boundaries among these health workers, the existence of overlapping terminology in the literature (such as "lay health workers", "front-line health workers", "close-to-community providers"), as well as widely differing policies relating to their scope of practice, education, and relation with health systems, have contributed to undermining efforts to strengthen service delivery systems at community level *(13)*.

Classification according to the ISCO occupational groups and official job titles in a jurisdiction do not always cohere: in some contexts, the term "community health worker" or a similar term is used to refer to health workers that, according to the ILO ISCO classification, might more appropriately be referred to as nursing and midwifery associate professionals (ISCO 3221 and 3222), paramedical practitioners (ISCO 2240), traditional and complementary medicine associate professionals (ISCO 3230), and others. Conversely, health workers who have a role and profile consistent with ILO ISCO category 3253 for community health workers may be classified and termed differently in a country or jurisdiction (for example, community health officer, promoter, aide, educator or volunteer).

Recognizing the ambiguity surrounding the use of the term "community health worker", and the blurred boundaries with other types of community-based health workers, this guideline and the corresponding methodology for the search strategies informing the literature reviews were developed adopting a broad search strategy that, in addition to the term "community health worker", included a wide range of search terms capturing both CHWs (according to the ILO ISCO definition) and other types of community-based health workers. This guideline therefore is primarily focused on CHWs but its relevance and applicability include other types of community-based health workers, defined in the context of this document as "health workers based in communities (i.e. conducting outreach beyond primary health care 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" *(25)*. The full search strategy for the scoping review of the literature **(Chapter 5 and Annex 1)**, and the detailed methodology, including inclusion and exclusion criteria, provide additional details on the evidence base that was considered in the development of this guideline. Additional methodological detail is provided in the methods section of the accompanying systematic reviews.

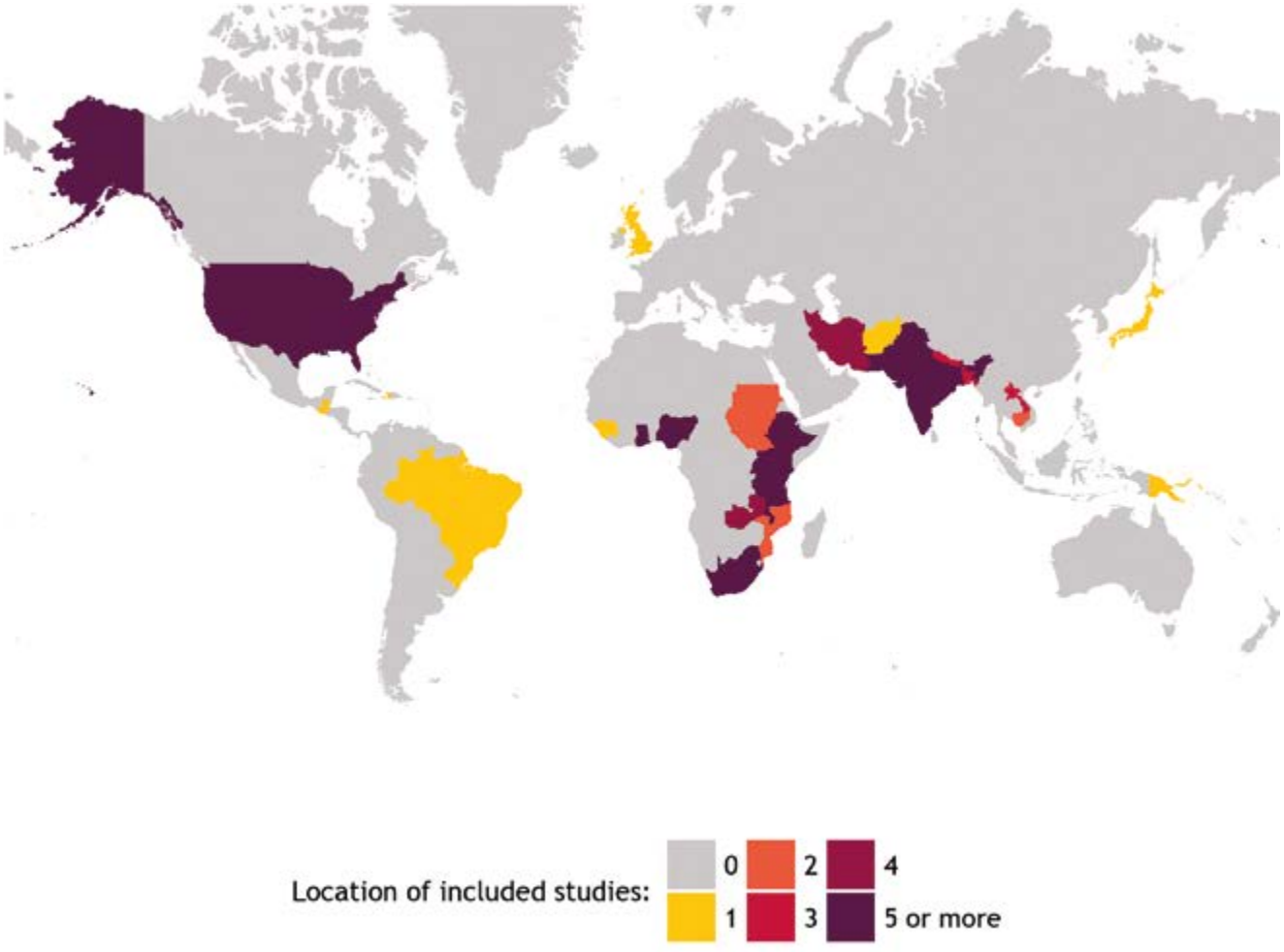
4.3 Geographical areas covered

This is a global WHO guideline, and as such no restrictions were posed in terms of geographical focus of the recommendations, nor in the search strategies of the literature reviews that were commissioned.

It should be noted, however, that the majority of studies included in the 15 systematic reviews for the policy questions referred to CHW experiences in sub-Saharan Africa and South Asia, with evidence from other regions less well represented, and a more limited availability of studies from high-income countries (with the notable exception of the United States of America, where several included studies were conducted) **(Figure 1)**. This has ramifications for the generalizability of the evidence found and its applicability to contexts different from those to which the primary evidence refers. These aspects are discussed in more detail under the interpretation and implementation considerations of each recommendation.

Each review was structured according to the standard population, intervention, control, outcome (PICO) approach. The setting for the questions was identified as underserved communities, noting the particularly important role that CHWs can play in these contexts – while recognizing also that underserved communities may exist in countries at all levels of socioeconomic development. Many recommendations however refer to actions and policies at the health system level, making them of broader relevance and applicable to an entire country or jurisdiction.

Figure 1: Geographical distribution of included studies across the 15 systematic reviews on the PICO questions



4.4 Categories of interventions covered

The guideline follows a health system approach. Specifically, it identifies the policy and system enablers required to optimize design and performance of CHW initiatives; within this overall structure, a gender and decent work lens was adopted, in particular in relation to recommendations where those aspects were most relevant. The 15 policy questions that guided the research and informed the recommendations can be structured into three broad categories:

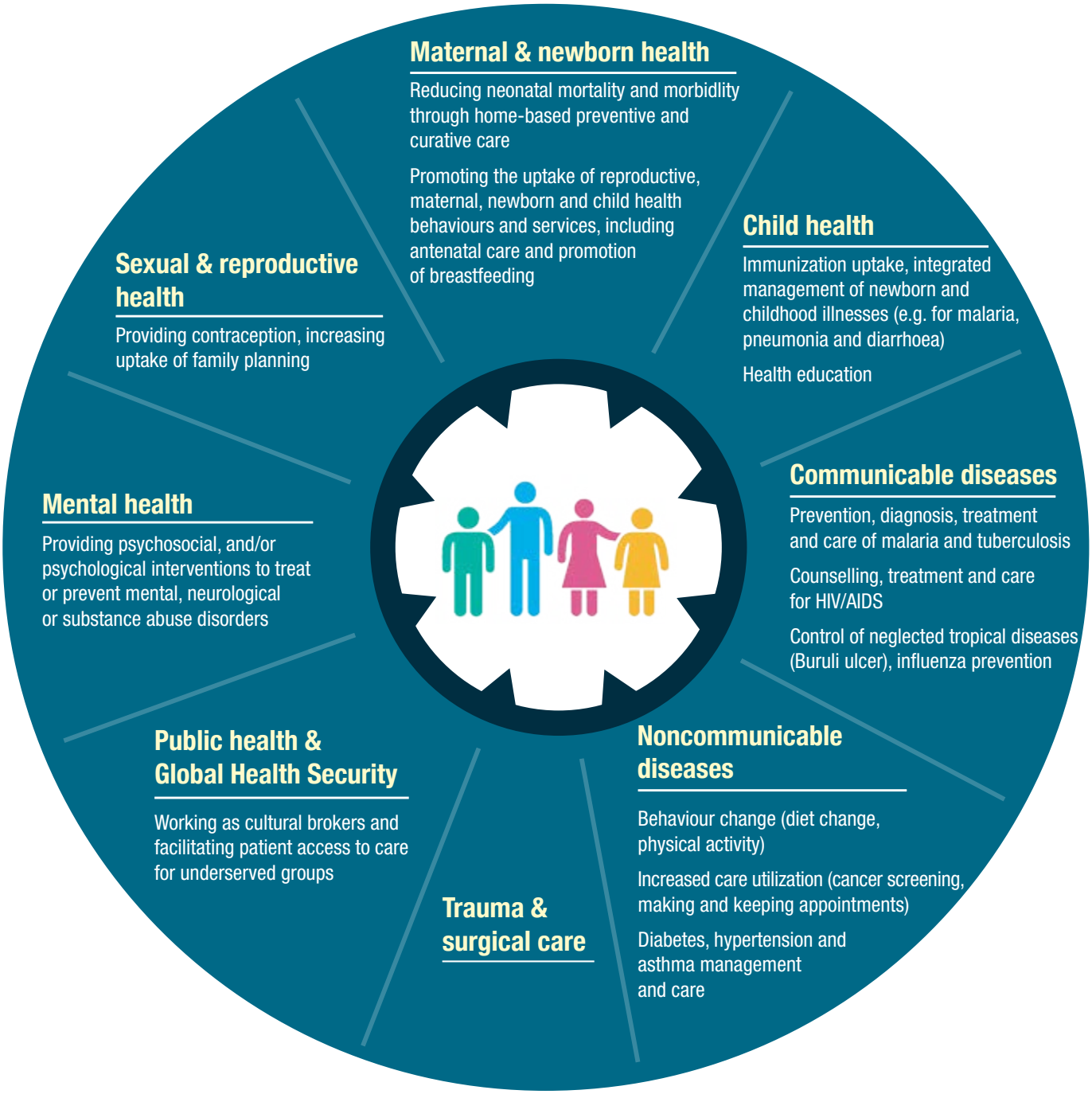
1. **Selection, education and certification**
    1. For CHWs being selected for pre-service training, what strategies for selection of applications for CHWs should be adopted over what other strategies?
    2. For CHWs receiving pre-service training, should the duration of training be shorter versus longer?
    3. For CHWs receiving pre-service training, should the curriculum address specific versus non-specific competencies?
    4. For CHWs receiving pre-service training, should the curriculum use specific delivery modalities versus not?
    5. For CHWs who have received pre-service training, should competency-based formal certification be used versus not used?
2. **Management and supervision**
    6. In the context of CHW programmes, what strategies of supportive supervision should be adopted over what other strategies?
    7. In the context of CHW programmes, should practising CHWs be paid for their work versus not?
    8. In the context of CHW programmes, should practising CHWs have a formal contract versus not?
    9. In the context of CHW programmes, should practising CHWs have a career ladder opportunity or framework versus not?
3. **Integration into and support by health system and communities**
    10. In the context of CHW programmes, should there be a target population size versus not?
    11. In the context of CHW programmes, should practising CHWs collect, collate, and use health data versus not?
    12. In the context of CHW programmes, should practising CHWs work in a multi-cadre team versus in a single-cadre CHW system?
    13. In the context of CHW programmes, are community engagement strategies effective in improving CHW programme performance and utilization?
    14. In the context of CHW programmes, should practising CHWs mobilize wider community resources for health versus not?
    15. In the context of practising CHW programmes, what strategies should be used for ensuring adequate availability of commodities and consumable supplies over what other strategies?

These questions have not been addressed through previous WHO guidelines and represent the core focus of this guideline.

This guideline did not appraise critically the body of evidence on which specific health services CHWs can deliver to quality standards, and thus it contains no recommendations regarding these aspects. Published evidence and existing WHO guidelines encourage the delegation of certain tasks relating to prevention, diagnosis, treatment and care, for example for HIV, tuberculosis (TB), malaria, other communicable and noncommunicable diseases, a range of reproductive, maternal, newborn and child health services, hygiene and sanitation, ensuring clients' adherence to treatment, rehabilitation and services for people affected by disabilities, and advocating and facilitating underserved groups' access to services **(Figure 2** and **Annex 2)**. Current (and future) disease-specific WHO guidelines remain the primary source of normative guidance on which specific preventive, promotive, diagnostic, curative and care services CHWs are effective in providing **(Annex 3)**.

In addition to the delivery of interventions at the individual and family levels, there is long-standing recognition of the potential for CHWs to play a social and political role at the community level, related to the action on social determinants of health for the transformation of living conditions and community organization. This dimension includes participatory identification with the community of health problems and a reorientation of the concept and the model of health care *(26, 27)*.

Figure 2: Primary health care services for which there is some evidence of CHW effectiveness



5

How this guideline was developed

The Health Workforce Department at WHO headquarters led the development of this guideline in conformity with the process and requirements outlined in the WHO handbook for guideline development *(28)*.

5.1 Steering Group, Guideline Development Group and External Review Group

A WHO Steering Group (SG) was established to oversee and manage the guideline development process, with representation from all six regions of WHO and several departments; the United Nations Children's Fund (UNICEF) was also directly represented in the SG **(Annex 4, Table A4.1)**. The SG led the initial conceptualization and developed the planning proposal of the guideline, identified members of the Guideline Development Group (GDG) and External Review Group (ERG), facilitated the GDG meetings, developed the first draft of the guideline document and made subsequent rounds of revisions following the inputs and comments from the GDG and ERG.

The GDG, whose members were directly identified by the SG on the basis of the selection criteria of the *WHO handbook for guideline development*, was convened to refine the scope of the guideline, review the evidence summaries, and develop the recommendations. Panel members included content experts, academic researchers, potential end-users such as planners and policy-makers from governments, CHWs, health sector trade unions and professional association representatives, and experts skilled in guideline development **(Annex 4, Table A4.2)**.

The ERG was formed through an open call for expressions of interest and a competitive selection process, which assessed the technical capacity to contribute to the guideline peer review **(Annex 4, Table A4.3)**. The role of the ERG was to provide a peer review of a draft of the guideline document developed by the SG and the GDG.

Declarations of interest were collected from GDG and ERG members and managed according to WHO requirements. The interests declared were not considered to hinder participation in the process to develop or review recommendations (more details are provided in **Annex 4, Table A4.4**). All three bodies (SG, GDG, ERG) had a balanced geographical, constituency and gender representation.

The GDG held a two-day meeting in October 2016 in Geneva, Switzerland, to define the scope of the guideline through the identification of the population, intervention, control, outcome (PICO) questions that would guide the retrieval of evidence, and provide guidance to inform the methodology of the systematic reviews of the literature.

A public hearing was held in advance of the first GDG meeting on the scope of the guideline, as a result of which over 60 contributions were made. The GDG considered the inputs from the public hearing in its deliberations, and broadened the scope of the guideline from the initial list of 10 PICO questions to a final total of 15. The second meeting

of the GDG took place over three days in December 2017 in Addis Ababa, Ethiopia, to review the evidence summaries and formulate the guideline recommendations.

In developing the evidence to decision tables, the GDG considered the evidence and other elements under consideration, including the magnitude of effects, balance of benefits and harms, costs and cost-effectiveness, implications for health equity, acceptability and feasibility.

In relation to the direction and strength of recommendations, the GDG always attempted to make decisions through discussion leading to a consensus. In most cases it was possible to achieve a unanimous decision through discussion, and no explicit voting was required for the majority of recommendations under consideration. For most recommendations a low or very low certainty of the evidence translated into conditional recommendations. For a few recommendations, the GDG made a strong recommendation despite the low or very low certainty of the evidence, taking into account other factors, including health workers' rights and equity and gender considerations. In the cases where strong recommendations were proposed despite a low or very low certainty of the evidence, the GDG took an explicit vote, the outcome of which is reported in the sections referring to the specific recommendations. In the cases when voting took place, a majority was defined as 80% or above of the voting members in attendance at the GDG meeting.

Following the second meeting of the GDG, the SG prepared a draft of the guideline document, which was reviewed subsequently by the GDG and ERG, revising and improving the draft through an iterative process, before formal submission to the WHO Guidelines Review Committee, which approved the guideline document on 20 June 2018.

5.2 Sources of evidence for guideline

Three main sources of evidence were specifically commissioned in support of the development of this guideline and were considered as the main information basis:

- An overview of the relevant literature was developed through a systematic review of published literature reviews *(29)*; 11 databases were searched for review articles published between 1 January 2005 and 15 June 2017. Review articles on CHWs with no more than two years of training were included. The review team assessed the methodological quality of the reviews according to AMSTAR criteria and reported findings based on PRISMA standards.[2]
- Dedicated systematic literature reviews were conducted for each of the 15 PICO questions. Eight electronic databases were searched for relevant studies: Medline, Embase, the Cochrane library, CINAHL, PsycINFO, LILACS, Global Index Medicus and POPLINE. In addition, three databases (OpenGrey, TROVE, and Google Scholar) were searched for grey literature. All 15 systematic reviews referring to the 15 PICO questions were underpinned by an initial search to broadly identify all possible studies involving CHWs across all countries **(Table 1)**; the results were then further searched for studies of specific relevance to the 15 PICO questions. In addition, a 16th review was conducted consolidating common factors relating to feasibility, acceptability and implementation considerations. Specific inclusion and exclusion criteria were developed antd applied consistently throughout the reviews **(Table 2)**. The methodology of the reviews included an attempt to stratify evidence according to a set of criteria differentiating CHWs according to such characteristics as their role, level of training, status and remuneration. The reviews adopted a common methodology, including reviewing the certainty of the evidence through GRADE evidence profiles, the Cochrane Risk of Bias tool, the Newcastle-Ottawa Scale and the GRADE Confidence in the Evidence from Reviews of Qualitative research (CERQual).

[2] AMSTAR = Assessment of Multiple Systematic Reviews; PRISMA = Preferred Reporting Items of Systematic reviews and Meta-Analyses.

A stakeholder perception survey was carried out to assess the relative importance of different outcomes, and the feasibility and acceptability of the interventions under consideration in the emerging guideline *(30)*.

A self-administered online survey was disseminated in English and French languages to stakeholders through three major channels: the WHO human resources for health contact list; the Healthcare Information For All (HIFA) online platform; and participants at the 2017 Institutionalizing Community Health Conference held in South Africa in 2017. Eligible participants included stakeholders who were involved directly or indirectly in the implementation of CHW programmes in countries. Responses were graded using a 9-point Likert scale (with 9 being the highest level of importance, acceptability or feasibility, and 1 the lowest).

Table 1: Overarching search strategy for the 15 PICO questions

PICO category	Approach
Population	Studies that focus on CHWs as defined through specific inclusion criteria were included in the project. This overarching search was applied to all PICOs that were part of this project.
Intervention	PICO-specific search strings were developed to capture the different interventions included in each of the 15 systematic reviews. Each of these specific search strategies was combined with the overarching search to form the final search strategy for each systematic review topic.
Control	No further search terms were utilized to limit the output to specific comparison conditions. All studies were included irrespective of the comparisons reported.
Outcome(s)	No further search terms were utilized to limit the output to specific outcomes. Instead, all publications were retrieved irrespective of the outcomes reported.
Study design	Any study design was included in the 15 systematic reviews.

Table 2: Inclusion and exclusion criteria

Included	Excluded
Publications that report a study	Publications that do not report a study, e.g. opinion pieces, editorials, conference abstracts; single case studies; letters; advocacy materials
Studies focused on practising community health workers: • CHWs who carry out population-based, health-related activities in their community • these activities take place in a community they are directly connected to (they live in the community; are accountable to the community) • CHWs who have received no or only basic formal training; this training may be recognized by health services or a certification authority, but it is not a part of a formal tertiary education programme or qualification (e.g. degree, diploma, title, certificate course)	Studies focused on non-CHWs such as nurses, doctors, formally trained nurse aids; medical assistants, physician assistants; paramedical workers in emergency and fire services; others who are auxiliaries, e.g. mid-level workers and self-defined health professionals or health paraprofessionals; traditional, faith and complementary healers and traditional birth attendants Studies focused on non-practising (i.e. retired or unemployed) CHWs
Studies conducted in high-income countries, and in low- and middle-income countries	
Studies conducted in underserved community settings (as identified by the authors of the primary studies)	Studies conducted in well-served community settings
Studies conducted in general population settings	Studies conducted in specific population settings (e.g. refugee camps, nomadic populations)
Studies published in English	Non-English studies
Studies published in 1990 or later	Studies published before 1990

6

Results

6.1 Systematic review of reviews

An international team based in Johns Hopkins University was selected through a competitive procurement process to conduct the systematic review of reviews.

The objective of this analysis was to synthesize current understanding of how CHW programmes can best be designed and operated in health systems. The review team identified 122 reviews (75 systematic reviews, of which 34 were meta-analyses, and 47 non-systematic reviews). CHW programmes included in these reviews were diverse in the interventions provided, selection and training of CHWs, supervision, remuneration and integration into the health system. Features that appeared to enable positive CHW programme outcomes included community embeddedness (whereby community members have a sense of ownership of the programme and positive relationships with the CHWs), supportive supervision, continuous education, adequate logistical support and supplies, and integration with the health system. The review team found gaps in the evidence, including on the rights and needs of CHWs, on effective approaches to training and supervision, on CHWs as community change agents, and on the influence of health system decentralization, social accountability, and governance. While the findings of the systematic review of reviews, having captured evidence from independently commissioned reviews, were typically not specific to the focus of the PICO questions, in several cases they provided useful complementary evidence and contextual information on some of the PICO questions.

6.2 Systematic reviews on the 15 PICO questions

The Centre for Evidence and Implementation, in consortium with the University of Melbourne, Campbell Collaboration, International Initiative for Impact Evaluation (3ie), University of Toronto, University of Newcastle, University of Sydney, University of Adelaide, University of Iowa, American Institutes for Research and Aga Khan University, was selected through a competitive bidding process to develop the systematic reviews for each of the 15 PICO questions selected by the GDG.

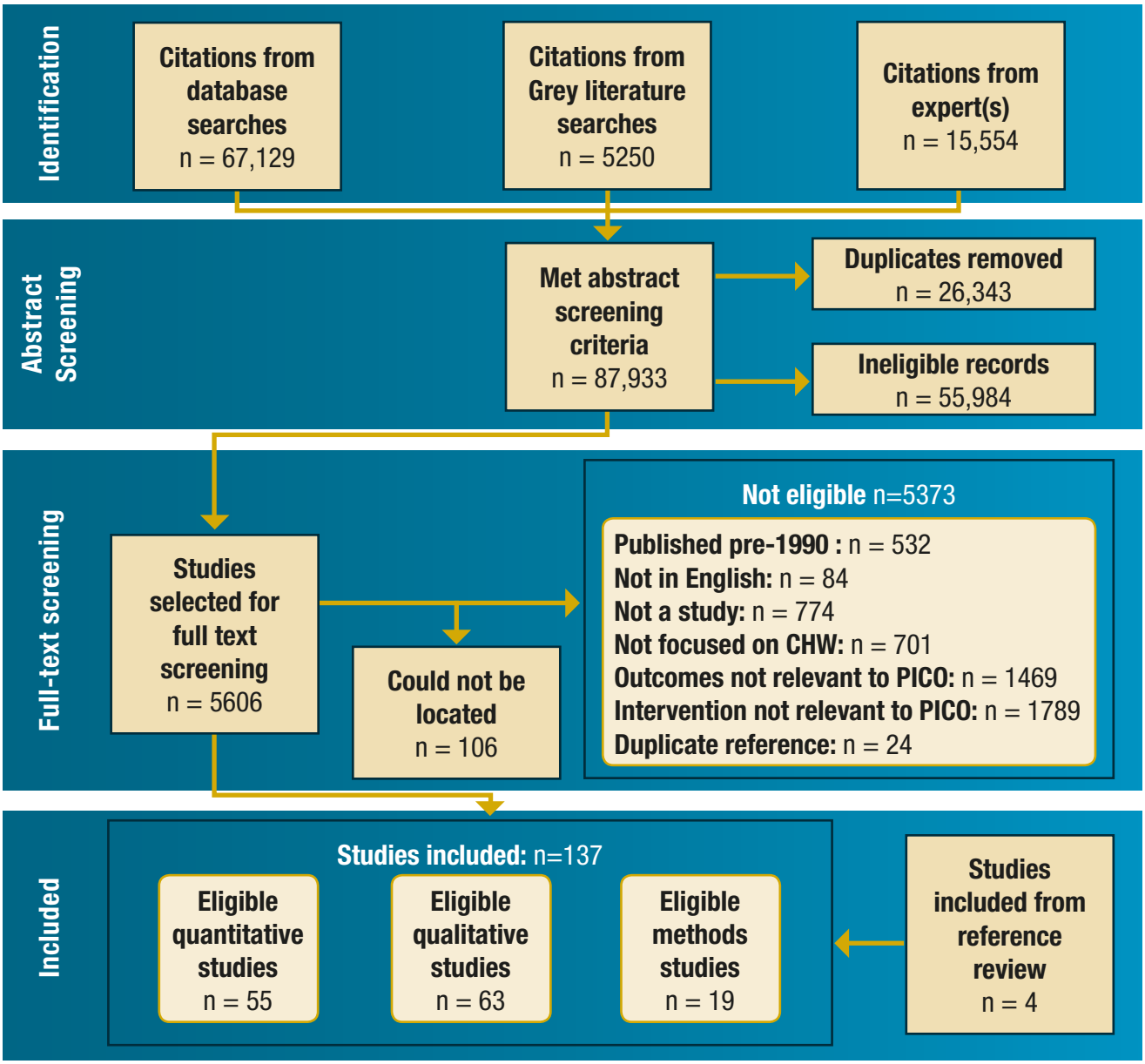
In the aggregate, a total of 137 studies were included in the 15 PICO reviews, out of a total of 87 933 abstracts meeting the initial screening criteria **(Figure 3)**. Some reviews found several dozen articles to be eligible for inclusion, while others did not result in the inclusion of any study. Despite a deliberate attempt to do so, most of the identified studies did not provide sufficient information on the characteristics of CHWs to allow a stratification of the findings and the resulting recommendations

according to the characteristics of CHWs, such as their role, level of training and payment status. An important limitation of the PICO-specific systematic reviews was that only English language studies were included. The broader evidence on CHWs published in languages other than English was however captured by the review of reviews, whose search strategy had no language restrictions, and which included also four reviews published in Portuguese. The review of reviews also captured – indirectly through the reviews identified – the evidence from primary studies published in multiple languages.

Detailed findings on evidence and policy implications are categorized based on the PICO questions and discussed in more depth in the next section on the guideline recommendations. The full text of the draft literature reviews is available on the WHO website.[3] In addition, the evidence gaps identified through the systematic reviews have been consolidated in the section on research gaps.

Validation and quality assurance of the systematic reviews was provided through peer review by the commissioning department (WHO Health Workforce Department), other members of the SG, and selected members of the GDG and ERG.

Figure 3: PRISMA diagram of studies assessed by the systematic reviews



[3] The drafts of the literature reviews are available for consultation and reference to contextualize the contents of this guideline. The systematic reviews will also be submitted for consideration by peer-reviewed journals, and might undergo some additional modifications as a result of the peer review and editorial process.

6.3 Stakeholder perception survey

A survey was conducted to assess the acceptability and feasibility of the policy options under consideration in the guideline by stakeholders, with a view to increasing uptake and use of the emerging recommendations.

A total of 96 submissions were obtained, with representation largely from policy-makers, planners, managers and researchers involved in the design, implementation, monitoring and evaluation of CHW programmes. The majority of the respondents were from the African Region; a limitation was that CHWs themselves were not adequately represented in this group. All outcomes of the CHW interventions were deemed to be at least important and several were rated as critical. The most critical outcomes were increased health service coverage and improved quality of health services provided by CHWs. Most of the health policy and system interventions under consideration in the guideline were also deemed to be acceptable and feasible for implementation. Acceptability and feasibility were uncertain for a few interventions considered, such as the use of essential and desirable attributes to select CHWs for pre-service training; these included, for example, selecting CHWs on the basis of age and completion of a minimum secondary level of education. The findings of the survey – presented in Annex 5 – informed the development of evidence to decision tables and ultimately the recommendations by the GDG.

7

Recommendations

Recommendation 1: Selection for pre-service training

Recommendation 1A

WHO *suggests* using the following criteria for selecting CHWs for pre-service training:

- minimum educational level that is appropriate to the task(s) under consideration;
- membership of and acceptance by the target community;
- gender equity appropriate to the context (considering affirmative action to preferentially select women to empower them and, where culturally relevant, to ensure acceptability of services by the population or target group);
- personal attributes, capacities, values, and life and professional experiences of the candidates (e.g. cognitive abilities, integrity, motivation, interpersonal skills, demonstrated commitment to community service, and a public service ethos).

Certainty of the evidence – very low. Strength of the recommendation – conditional.

Recommendation 1B

WHO *suggests not* using the following criterion for selecting CHWs for pre-service training:

- age (except in relation to requirements of national education and labour policies).

Certainty of the evidence – very low. Strength of the recommendation – conditional.

Recommendation 1C

WHO *recommends not* using the following criterion for selecting CHWs for pre-service training:

- marital status.

Certainty of the evidence – very low. Strength of the recommendation – strong.

7.1.1 Background to the recommendation

Effective CHW recruitment and selection for pre-service training may improve CHW performance and the quality of services delivered. Selection criteria may vary depending on which sociodemographic characteristics are most relevant to the community or to the intervention being delivered. For large-scale CHW programmes, criteria considered typically include age, gender, literacy level, educational attainment, marital status and geographical location *(31)*. The active involvement of the community being served in the recruitment of CHWs is typically assumed to ensure that the CHW is trusted and accepted into the community.

7.1.2 Rationale for recommendation

The GDG considered the benefits and harms of having selection criteria for enrolment of candidates in pre-service education to become CHWs. The GDG consensus view was that selection of the most appropriate people as CHWs is crucial to the success of a community health intervention. The choice of criteria to be adopted, however, depends on the evidence of effectiveness, as well as broader policy considerations related to values and preferences, which may vary considerably across different contexts.

Furthermore, the GDG noted that this recommendation touches on a human rights dimension, the fundamental right of equality of opportunity and treatment in employment or occupation *(32)*.

On balance, based on an assessment of the available evidence, the GDG experience, and a rights-based perspective, the GDG concluded that the potential benefits outweigh the harms when CHWs are selected for pre-service training based on personal attributes and capacities, such as motivation, integrity, interpersonal skills, memberships of and acceptability by the community, through community engagement in the selection process, and appropriate minimum education level. Conversely, the potential risks, particularly in relation to unfair discrimination, probably outweigh the potential advantages with regard to criteria such as age and, in particular, marital status. Given multiple barriers that women face to workforce participation and the resultant gender stratification inequities in the global health workforce, proactive policies are encouraged to promote gender equity *(33)* and maximize women's participation in selection and recruitment. And in some circumstances – where the role and cultural norms of CHWs dictate – it may be appropriate to restrict selection to women, for instance where the delivery of reproductive and maternal health services is accepted by the communities only if the providers are female.

The certainty of the evidence was found to be very low (see below). Because of this, the GDG made a conditional recommendation in favour of adopting as selection criteria personal attributes, membership of and acceptance by the community, and appropriate minimum education levels, while recognizing that good practices outside the minimum education levels recommended in this document exist.

No evidence was found on the adoption of age as a selection criterion. Recognizing the risk for misuse resulting in potentially discriminatory policies, the GDG decided on a conditional recommendation against this criterion. As no evidence was found supporting the use of marital status as a selection criterion, but recognizing that it is applied in some settings, the GDG made unanimously a strong recommendation not to use marital status as a selection criterion in order to avoid the risk of discriminatory practices. Using marital status as a criterion would encroach on human rights relating to access to education and employment opportunities, with the risk of unfair and unnecessary discrimination. The GDG was also concerned that selection based on marital status might perpetuate and exacerbate existing gender disempowerment dynamics.

7.1.3 Summary of evidence

The systematic review **(Annex 6.1)**[4] addressing the following question – *"In community health workers being selected for pre-service training, what strategies for selection of applications for CHWs should be adopted over what other strategies?" (34)* – identified 16 eligible studies, of which three were quantitative *(35–37)* and 13 were qualitative *(38–50)*. Ten of them referred to CHW programmes in sub-Saharan Africa, with three studies from South-East Asia and two from the Region of the Americas. All studies referred to experience from low- and lower middle-income countries, except one from the United States of America. The review identified some evidence that higher levels of education may improve productivity and health knowledge, two essential elements for the provision of efficient and effective services. This may be related to higher levels of literacy enabling quicker and more accurate completion of certain tasks. The findings from quantitative studies were supported by additional insights from qualitative studies that highlighted that more highly educated CHWs were viewed more positively than less educated CHWs when performing potentially difficult tasks. One practice that has been perceived in qualitative studies as probably leading to more positive results is involvement of community members in the CHW selection process. Results seem to indicate that communities may play an important role in determining the success of CHWs. Overall, the certainty of the evidence was rated as very low.

The systematic review of reviews found that CHWs are accepted by communities when community members trust and respect them and feel a sense of ownership over the programme, which can be achieved by giving communities a role in CHW selection and definition of CHW activities *(51)*. The community's acceptance of CHWs and their sense that the CHW programme is locally appropriate and "owned" is probably associated with increased CHW retention, motivation, performance, accountability and support.

The stakeholder perception survey identified a high acceptability and feasibility of selecting CHWs on the basis of their personal attributes (for example, cognitive abilities and prior relevant experience) and membership of the target communities, but variable and uncertain feasibility and acceptability of selection based on level of education and, especially, age.

[4] Annex 6 summarizes the main evidence elements emerging from each of the 15 reviews which were considered in the formulation of the guideline recommendations. Due to size it is available only as a web annex.

7.1.4 Interpretation of the evidence and other considerations by the GDG

Level of education. The most appropriate level of primary or secondary education prior to CHW training may depend on the complexity of the tasks undertaken by CHWs. While a higher level of prior education may be associated with improved knowledge and performance, attrition (due to better and more diverse work opportunities) might be higher among more educated CHWs. A requirement for relatively higher levels of education may restrict excessively the pool of potential candidates, risks excluding women in particular in many contexts, and would be difficult to implement in contexts with low levels of educational attainment. The minimum level of education considered to be appropriate will depend on the tasks to be delivered, the context of the services and the training support available. Testing for certain competencies during selection (for example, literacy and numeracy) may be considered as an alternative approach in contexts where employing strict education attainment requirements would imply restricting excessively the applicant pool, for women in particular.

Membership of target community. The GDG considered that membership of and acceptance by the target community (whether defined in geographical terms or in relation to population group, such as nomadic communities, people living with HIV, caste, religion or cultural beliefs) may represent an important criterion in the selection process.

Age. No evidence was found to justify age as a selection criterion (beyond adherence to the minimum legal working age). Age can be an important factor in some contexts, but it is not necessarily clear in which way it can or should be used: educating younger CHWs may theoretically contribute to a longer working lifespan, but at the same time there are reports of higher turnover among younger CHWs. Individual values and capacities gained through previous life experience may be more important than age. The GDG considered that from an equity and rights-based perspective, the potential harms of discriminating based on age would probably outweigh potential benefits under most circumstances. Age should therefore not be a restricting factor; personnel responsible for selection should prioritize other criteria, such as relevant life experience, acceptability, caring attitude, commitment and other relevant individual attributes.

Gender. No evidence was found supporting gender as a selection criterion. The GDG considered that from an equity and rights perspective, it is necessary to avoid unfair discrimination based on gender. Considering the existing gender inequities, particularly in low-resource settings, the GDG noted the importance of adopting in the selection process criteria that would be instrumental in improving gender equity. Recruitment and selection procedures that maximize women's participation and promote women's empowerment should be encouraged. The GDG also recognized that in certain cultural contexts it is necessary for certain services – particularly reproductive, maternal, newborn and child health – to be rendered by female providers. The choice on the use of gender as a selection criterion under certain circumstances and for certain services should be made on the basis of the local sociocultural context and the specific role expected of the CHWs.

Marital status. Marital status is used as a selection criterion in some contexts. However, no evidence was found to support the use of marital status as a selection criterion. In contrast to other selection criteria, the GDG considered that there are no circumstances under which any theoretical (and unproven) benefits of the use of marital status can plausibly outweigh its negative implications. The use of this criterion therefore can limit the potential for recruitment of effective CHWs and could represent an unjustifiable discrimination and violate human and labour rights. With the aims to improve equity and the potential pool of effective CHWs, the GDG therefore adopted a strong recommendation against the use of marital status as a selection criterion.

7.1.5 Implementation considerations

Successful pre-service selection is likely to involve more than screening formal qualifications of candidates, such as their level of education. Individual attributes and values to consider in the selection process may include relevant cognitive skills, prior relevant work experience, a demonstrated commitment and attitude to community service, leadership skills, being proactive, cooperative and adaptable, and the capacity and willingness to progressively develop an understanding of the local context and community. It may be important to complement screening and selection with community involvement; the selection of an eligible CHW from within the community may also facilitate the delivery

of more linguistically and culturally appropriate services. Where a CHW from outside the community must be selected (for example, because no one from the community wants to perform the task or meets the minimum requirements to serve in that role), ensuring that the community members still have a voice may improve the chances that the CHW will be integrated and that they can more meaningfully help the health organization tailor services to local needs. In addition, community participation in CHW recruitment and selection enables a dialogue between community members and health organizations, helping them understand local issues. The selection process should take into account the values of the inherent community structures. Potential for bias and discrimination should be avoided. In some contexts, preferential selection of female CHWs for the delivery of reproductive, maternal, newborn and child health services may be necessary to ensure acceptability by communities. Community and end-users may need to take into consideration as selection criteria core values and attributes of the candidates.

The selection criteria should take into consideration acceptability and feasibility, as well as suitability in the local context and in relation to the needs of the end-users of services.

Recommendation 2: Duration of pre-service training

Recommendation 2

WHO *suggests* using the following criteria for determining the length of pre-service training for CHWs:

- scope of work, and anticipated responsibilities and role;
- competencies required to ensure high-quality service delivery;
- pre-existing knowledge and skills (whether acquired through prior training or relevant experience);
- social, economic and geographical circumstances of trainees;
- institutional capacity to provide the training;
- expected conditions of practice.

Certainty of the evidence – low. Strength of the recommendation – conditional.

7.2.1 Background to the recommendation

The effectiveness of CHWs may be affected by the pre-service training they receive *(52)*. Inadequate training may leave CHWs ill equipped to manage health issues and can adversely affect their motivation and commitment *(53)*. Currently the length of CHW training is not standardized, with its duration ranging from a few hours to several years *(54, 55)*. Longer training periods are typically assumed to allow greater exposure to training content designed to enhance knowledge, skills and competence; more comprehensive training, however, may be cost prohibitive, impractical and in some cases unnecessary *(56)*.

7.2.2 Rationale for recommendation

The GDG approached this question from the perspective of exploring whether an ideal or desirable duration for pre-service training of CHWs could be identified. Evidence gathered through the systematic review process was limited, and was largely concerned with comparing models with relatively short training durations (a few hours versus a few days), whereas programmes where CHWs play a polyvalent role across different areas of primary health care typically have a pre-service duration of several months. The GDG also noted the heterogeneity of CHW roles and responsibilities, and in the baseline capacity and conditions, as well as the wide variability of duration of training across countries. In light of these factors, the prevailing view of the GDG was that, while duration of training is an important determinant of the expertise and capacity of CHWs to provide services, the appropriate duration of training should be determined at the national level or in a specific jurisdiction according to the local context and requirements. Therefore, the GDG focused on the identification of the criteria that should inform the domestic policy dialogue on the determination of an appropriate duration of pre-service training.

7.2.3 Summary of evidence

The systematic review **(Annex 6.2)** conducted for this question – *"For community health workers (CHWs) receiving pre-service training, should the duration of training be shorter*

versus longer?" (57) – identified eight eligible studies (six quantitative, two qualitative). Four of the included studies were conducted in three countries in Africa (Uganda, United Republic of Tanzania, Zambia), two in the United States, and one each in Haiti and Lao People's Democratic Republic. All the studies comparing different training durations referred to intervention and control groups of very short duration (days or hours of training). Two trials comparing training duration suggested that training of greater duration or frequency (for example, half a day versus half an hour, or three hours versus no training) may be positively correlated with improved measures of CHW competency in screening and diagnostic test performance *(58, 59)*. Findings from three cross-sectional studies regarding associations between measures of CHW competency and pre-service training duration were however equivocal, with one study showing an association of greater competency with longer initial training duration *(60),* one study showing mixed effects for extended training *(61)*, and another showing an inverse relationship between training duration and competency *(62)*. One cluster randomized controlled trial (RCT) did not find a difference in CHW skill advancement with regard to the number of attempts required to pass the course examination between groups of CHWs undergoing pre-service education of different duration *(63)*. Two qualitative studies reported a preference by CHWs for longer training *(64, 65)*. The systematic review team rated the overall certainty of the evidence as low.

The systematic review of reviews found that CHW training resulted in improvements in CHW knowledge or skills, but that training duration had no consistent effect on the effectiveness of the intervention *(16, 66)*. The optimal amount and type of training required by CHWs must be understood in relation to the health system context, the CHWs' pre-existing skills and experience, the status of CHWs, and the roles that they are expected to play *(17)*.

The stakeholder perception survey identified a generic longer duration of training to be acceptable and feasible (without mentioning a specific cut-off point to define longer training).

7.2.4 Interpretation of the evidence and other considerations by the GDG

The scope and roles of CHWs are varied, hence it is not appropriate to define in quantitative terms at global level a minimum duration of pre-service training. Training duration may be related to required competencies, which may be basic or advanced depending on expected roles (promotive and preventive versus also curative), as well as pre-existing literacy and numeracy. Factors such as scope of work, anticipated role, overall workforce composition and service delivery model may determine the content of training and as a reflection also the length of the training.

Factors influencing the most appropriate length of the training can include status after training (for example, contracted or paid full-time employee versus part-time volunteer); scope, responsibilities and roles; baseline knowledge and skills (for example, in some contexts it may be necessary to provide some initial bridging basic literacy and numeracy training to compensate for a limited level of prior educational attainment); prior relevant professional and life experience (for instance, some trainees may have meaningful pre-existing capacity through membership of patient support groups or similar); institutional capacity to provide the trainings (including availability of training infrastructure, faculty and workplace supervisors); social and geographical circumstances of trainees (for instance, for CHWs coming from or operating in isolated geographical locations, a limited access to supportive supervision may require a longer initial duration of training).

7.2.5 Implementation considerations

The most appropriate duration of training should be established in a national or subnational context on the basis of local needs and circumstances, including the need to maintain a clear delineation of roles and responsibilities with other types of health workers working in the context of integrated primary health care teams. Training duration should be feasible, acceptable and affordable in the context of a specific jurisdiction, while long enough to ensure that the desired level of competencies and expertise is achieved. As these vary substantially based on the role that CHWs play, it is expected that CHWs with a polyvalent role and working on a full-time or regular basis (that is, those delivering more complex interventions or a wide range of primary health care services) would require longer training than those providing a single focused service on a more occasional basis. Table 3 provides selected examples of pre-service education that is considered by national policy-makers to be of appropriate duration (typically several months) in relation to the learning objectives of CHWs with a polyvalent role. CHWs with a more

limited set of responsibilities have a shorter pre-service education (for example, 23 days for accredited social health activists in India) *(67)*.

In determining the most appropriate length of training, the role and importance of cross-cutting skills (for example, patient communication, community engagement) should be factored in, avoiding too narrow a focus on the transfer of only diagnostic and clinical skills.

The length of the training might also need to reflect the need for and appropriateness of phased training based on different modules delivered after some intervals of practice. Besides length of training, the adoption of relevant adult learning practices and the appropriate design of the training programme may be equally or even more important in determining the effectiveness of pre-service education. The education approach should be seen holistically as part of a broader set of strategies that include also appropriate quality, frequency and relevance of supportive supervision and opportunities for periodic retraining and continuous professional development.

Table 3: Duration of training for CHWs with a polyvalent role

Country	Local name of CHWs	Role	Duration of pre-service training
Ethiopia	Community health extension workers	Promotive and preventive activities; diagnosis, basic treatment and referral services for most prevalent conditions; essential behaviour change communication; administrative duties, including health record keeping, organization of services at community level, management of essential medical supplies	12 months (30% theoretical, 70% practical)
Mozambique	*Agentes polivalentes elementares*	Illness prevention and health promotion activities; nutritional and vaccination surveillance; diagnosis, treatment and referral of common conditions; family planning, pregnancy and newborn follow-up; HIV and TB adherence; health data reporting	4 months (approximately 50% theoretical, 50% practical)
Pakistan	Lady health workers	Provide primary health care services, with special emphasis on reproductive, maternal, newborn, child and adolescent health, and organize communities by developing women's groups and health committees in the catchment areas	15 months (20% theoretical, 80% practical)

Source: Adapted from Bhutta et al. *(13)*.

Recommendation 3: Competencies in curriculum for pre-service training

Recommendation 3
WHO *suggests* including the following competency domains for the curriculum for pre-service training of CHWs, if their expected role includes such functions.

Core:

- promotive and preventive services, identification of family health and social needs and risk;
- integration within the wider health care system in relation to the range of tasks to be performed in accordance with CHW role, including referral, collaborative relation with other health workers in primary care teams, patient tracing, community disease surveillance, monitoring, and data collection, analysis and use;
- social and environmental determinants of health;
- providing psychosocial support;
- interpersonal skills related to confidentiality, communication, community engagement and mobilization;
- personal safety.

Additional:

- diagnostic, treatment and care in alignment with expected role(s) and applicable regulations on scope of practice.

Certainty of the evidence – moderate. Strength of the recommendation – conditional.

7.3.1 Background to the recommendation

Ensuring CHWs have the necessary skills to fulfil their role within the community is essential to making sure they have a positive effect on population health outcomes. However, currently there are no standards as to how CHWs should be trained or how the adequacy of their skills should be assessed *(54)*. Consequently, there is wide variation in the content of training programmes and the assessment of CHWs *(52)*.

Despite the importance of the competence of CHWs, the relative benefit of more broad or specific competencies as part of CHW training is unclear. A broad set of core competencies may ensure that all CHWs have the basic skills necessary to adequately carry out their role. However, keeping training and assessment flexible and based on the specific needs of the target community may help to tailor the skills of CHWs to their context *(68)*.

7.3.2 Rationale for recommendation

The GDG recognized that the heterogeneity of roles played by CHWs requires and benefits from considerable flexibility in determining the contents of curricula for pre-service education. The logic underpinning the recommendation was that while roles – and thus competencies required – may vary, the general principle, supported by some limited evidence, is that the addition of specific competencies and skills to the curriculum improves the capacity and performance of CHWs to perform the corresponding task(s). The recommendation was framed as a conditional one, recognizing both the importance of adapting it to national and local context and the moderate certainty and very limited scope of the underpinning evidence.

7.3.3 Summary of evidence

The systematic review **(Annex 6.3)** conducted on the question – *"For community health workers (CHWs) receiving pre-service training, should the curriculum address specific versus non-specific competencies?" (69)* – identified two eligible studies, namely a pilot quasi-experimental (non-randomized) trial *(70)* and a larger cluster RCT *(71)* conducted in rural villages in Pakistan in 2008 (pilot) and 2011 (full trial). The study included lady health workers (pilot $N = 96$, full trial $N = 288$) providing basic antenatal care services. In both trials, training in the intervention communities consisted of the standard curriculum plus additional specific curriculum topics within community mobilization, basic newborn care and group counselling. Consistent findings were reported across the included trials: the addition of training with specific curricula components improved CHW provision of several postnatal care practices (proportion of births) in line with evidence-based recommendations, and reduced stillbirth and neonatal mortality rates. The findings provide some evidence to support the inclusion of additional specific curricula as part of CHW training, at least in the community contexts in which these studies were undertaken. The overall certainty of the evidence was rated as moderate.

The systematic review of reviews found that training should seek to impart both technical competencies and socially oriented capacities, such as skills in communication and counselling, as well as awareness of the importance of confidentiality *(5, 17, 53)*. Awareness of the social and political determinants of health *(72)* and problem-solving skills were also identified as being important *(51)*.

The stakeholder perception survey identified high levels of acceptability and feasibility of different components of CHW training, such as preventive and promotive behaviours, community engagement, and integration into health systems, but variable and uncertain levels of the acceptability and feasibility of including a medical orientation to some elements of the curriculum through the inclusion of diagnostic and curative competencies.

7.3.4 Interpretation of the evidence and other considerations by the GDG

The scope and roles of CHWs vary substantially across countries and CHWs, hence it is not possible to standardize the scope of pre-service education and contents of curricula. This is already reflected by the wide variations in the content of training curricula across countries **(Table 4)**, with some countries emphasizing predominantly competencies relating to reproductive, maternal, newborn and child health and others taking a broader approach. Some curricula, for example, focused exclusively on preventive and promotive interventions, while others also included diagnostic and curative competencies. The evidence identified through the systematic review, while of moderate certainty, refers to a single type of CHW in a single country, hence it is of limited generalizability

and applicability. The inclusion of competencies in curricula should therefore be guided by requirements in the national context, while also reflecting international best practices, as also reflected in other WHO guidelines.

7.3.5 Implementation considerations

The most appropriate contents of CHW training should be established at the country level (either in a national or subnational context) on the basis of local needs and circumstances. CHWs, in addition to the specific technical competencies listed in the recommendation, should also acquire, as a result of their training, an understanding of the importance of working within the scope of their role and competencies. Specific circumstances, such as emergencies, may trigger the need to add further competencies in addition to the core ones. In addition to determining the most appropriate contents of training, due attention should be given to factors such as the availability of quality faculty, training materials and appropriate training infrastructure.

Table 4: Variations in contents of pre-service training curriculum for CHWs

	Clinical, diagnostic and curative services	Disease prevention, health promotion and rehabilitation	Counselling, motivation and referral skills	Community mobilization	Management and administration
Bangladesh	Treatment for 10 essential diseases: anaemia, cold, diarrhoea, dysentery, fever, goitre, intestinal worms, ringworm, scabies and stomatitis. Treatment of tuberculosis through Directly Observed Therapy (DOT). Delivery services and newborn resuscitation. Take obstetric history, observe the process of labour, examine neonates, and record findings. Visual training for neonatal signs. Case management of pneumonia in children, including neonates	Family planning and prevention of arsenic poisoning, tetanus toxoid (TT) immunization for women, child growth monitoring, family planning, breastfeeding, caring practices, personal hygiene and use of iodized salt	Counsel mothers and caregivers for newborn care management. Counselling skills for encouragement of breastfeeding. Prenatal and postpartum counselling. Verbal referral skills	Encourage people to seek care, home visits	
Bhutan	First aid treatment for emergencies and minor illness	Outbreak notification, health education for family planning	Referral services	Immunization outreach, community development activities	
Brazil	Use of oral rehydration salts for diarrhoea, management of pneumonia and growth monitoring. Prenatal care including laboratory tests, clinical exams, breastfeeding counselling and iron supplementation	Promotion of breastfeeding, healthy family practices		Home visits, social mobilization, linking families to health services	Data collection including demographic, epidemiological and socioeconomic information of families
Burkina Faso	Child delivery, asepsis and simple obstetrical manipulations				
China	Prenatal maternal care services to mothers at grass-roots level, prescription of antibiotics and minor surgical interventions				

(continued)

Table 4: Variations in contents of pre-service training curriculum for CHWs *(continued)*

	Clinical, diagnostic and curative services	Disease prevention, health promotion and rehabilitation	Counselling, motivation and referral skills	Community mobilization	Management and administration
The Gambia	Home births, antenatal and postnatal care	Malaria chemoprophylaxis	Referrals to health facility		
Ghana	Care during antepartum, intrapartum and postpartum period				
Guatemala	Detection of obstetric complications	Teaching women to recognize danger signs in pregnancy	Referral for obstetric complications, encourage women to go for antenatal care		
India	Provide antenatal, natal and postnatal care, provide maternity kits. Provide tetanus toxoid (TT) immunization, primary health care services	Family planning services	Nutrition counselling, assessment and referrals of sick newborns to hospital, identification of high-risk pregnancies	Community mobilization, home visits and household registration	Registration and follow-up of pregnant women
Islamic Republic of Iran	Maternal and child health care	Family planning, case finding, environmental health and occupational health	Follow-up of diseases		
Kenya	Using simplified integrated management of childhood illness guidelines to classify and treat malaria, pneumonia and diarrhoea/dehydration concurrently, and use flowsheets to assist in the application of these algorithms	Promotion of family planning, immunization and HIV prevention			
Malaysia		Simple hygienic procedures, cleanliness and basic nutrition education			
Mali	Antimalarial treatment for patients of all ages, zinc and oral rehydration therapy for diarrhoea (children), amoxicillin for treatment of pneumonia (children), treatment of acute malnutrition without complication, provision of contraception	Counselling on disease prevention, health promotion, and family planning	Referral services for acute severe symptoms such as difficulty in breathing and convulsions, as well as prenatal, postnatal, and neonatal monitoring and referral	Community mobilization, liaison with community volunteers, support for mass distribution campaigns (bednets, deworming)	,
Nepal	Interventions including iron and folate supplementation, deworming and TT vaccination, recognition of danger signs, skilled birth attendance, emergency obstetrical care and essential newborn care	Health education			
Pakistan		Safe motherhood, education on danger signs of pregnancy		Raising awareness regarding primary health care, including reproductive health	

(continued)

Table 4: Variations in contents of pre-service training curriculum for CHWs *(continued)*

	Clinical, diagnostic and curative services	Disease prevention, health promotion and rehabilitation	Counselling, motivation and referral skills	Community mobilization	Management and administration
Peru	Case management of diarrhoea and pneumonia		Refer cases needing care to higher facilities	Map out population, identify and track households with young children and pregnant women	
Uganda	Antimalarial treatment for malaria, zinc and oral rehydration therapy treatment for diarrhoea, amoxicillin for treatment of pneumonia, screening of newborns and for acute malnutrition	Counselling on disease prevention, health promotion, and family planning	Referral services for acute severe symptoms, such as difficulty in breathing and convulsions, as well as prenatal, postnatal, and neonatal monitoring and referral	Community mobilization, support for mass distribution campaigns (bednets, deworming)	Registration of households in their catchment area. Support and engagement with village health committees
West Bank, Gaza Strip and Palestine	Pap smears and breast examination	Health promotion of contraception and breast and cervical cancer awareness and prevention	Counselling and services tailored to the needs of low-parity women	Postpartum home visits	

Source: Adapted from Bhutta et al. *(13)*.

Recommendation 4: Modalities of pre-service training

Recommendation 4

WHO *suggests* using the following modalities for delivering pre-service training to CHWs:

- balance of theory-focused knowledge and practice-focused skills, with priority emphasis on supervised practical experience;
- balance of face-to-face and e-learning, with priority emphasis on face-to-face learning, supplemented by e-learning on aspects on which it is relevant;
- prioritization of training in or near the community wherever possible;
- delivery of training and provision of learning materials in language that can optimize the trainees' acquisition of expertise and skills;
- ensuring a positive training environment;
- consideration of interprofessional training approaches where relevant and feasible.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.4.1 Background to the recommendation

Meeting the various needs of a community entails CHWs having the required core competencies in relation to their role *(73)*. Such competencies and attributes can be built and honed through proper and adequate training *(74)*. In some cases, access to training has been an important factor in CHW retention *(75)*.

There are several approaches for the training of CHWs, including short-term courses, long-term certificate programmes and distance learning, all of which use different delivery modalities, from didactic face-to-face classroom teaching to web-based online courses for self-guided learning.

While face-to-face didactic classroom teaching was the dominant training modality until the early 1990s, web-based learning is increasingly used for training purposes *(76)*. Although e-learning is still restricted to geographical settings with higher connectivity to web-based portals, increased access to the Internet and rapid growth in technology are providing enhanced opportunities to develop health care worker training programmes, upgrade health care services and strengthen health care systems *(77)*.

The broader policy discourse on education of other health workers in recent years has identified a number of issues contributing indirect evidence that can be considered

also in the education of CHWs, including the potential for broadening the focus of health education to enable health workers to be change agents in the communities they serve *(78)*; the opportunities opened by interprofessional education approaches *(79)*; and the link between locating education institutions and training in underserved areas and the retention of health workers in these settings *(80)*.

7.4.2 Rationale for recommendation

The GDG intended to provide guidance to inform decisions on appropriate delivery modalities for pre-service education. The findings of the systematic review were limited in scope, and did not directly compare alternative modalities for the delivery of pre-service education. Therefore, the GDG considered as a basis for the recommendation also the broader evidence emerging from the review of reviews and indirect evidence on health worker education, recognizing the limitations and caveats of applying it to CHWs as well.

7.4.3 Summary of evidence

The systematic review **(Annex 6.4)** addressing the question – *"For CHWs receiving pre-service training, should the curriculum use specific delivery modalities versus not?" (81)* – identified five eligible studies (one quantitative, four qualitative). Two studies were located in South Africa, two in the United States, and one in the Islamic Republic of Iran. The quantitative study was an RCT comparing the benefits of training CHWs in person or through web-based methods with a training approach based on mailing training materials to CHWs, finding no differences in outcomes *(82)*.

The remaining four studies *(75, 83–85)* included were qualitative and utilized a pre-post evaluation design examining whether a particular training intervention could enhance the knowledge and competencies of community health workers.

The modalities in which trainings were delivered varied across studies. They included:

- in-person and web-based training for brief intervention methods;
- face-to-face classroom-based didactic teaching;
- interactive teaching elements such as practice demonstration and role play;
- experiential teaching elements such as on-the-job training, expert feedback and supervision.

These studies point to training leading to indirect and developmental outputs for CHWs in the form of increased knowledge, advancement, self-efficacy and esteem, confidence and morale. However, the material contains no clear indications of specific training modalities being more effective than others.

Moreover, CHW perceptions of the value and relevance of different training modalities vary. While CHWs valued the flexibility of web-based training, they also highlighted in-person and classroom-based training as helpful and meaningful. The systematic review team rated the overall certainty of the evidence as very low.

The systematic review of reviews found that CHW training should include a mix of approaches (knowledge and skills based) *(17, 86, 87)*.

7.4.4 Interpretation of the evidence and other considerations by the GDG

The broader literature on effective training approaches published in other sectors points to one-off theory and discussion-based trainings as being only moderately helpful in increasing the knowledge of practitioners, and they are generally ineffective in practical skill building that is of measurable benefit in real-world practice settings *(88)*. Substantial changes in practice behaviour could first be observed when on-the-job coaching and continuous feedback was used to support practitioners. This broader literature may be of value when considering the development of practice guidelines for CHWs in this area *(89, 90)*. The GDG considered that the evidence base from other health occupational groups – showing that a balance between theoretical and practical training is associated with positive outcomes – can be assumed to apply also to CHWs. Similar considerations apply to the evidence supporting a "rural pipeline" approach, with health education institutions established preferentially in rural areas and opportunities for practical training in rural areas *(91)*. Efforts should also be made to ensure that digital health education approaches complement, rather that replace, traditional face-to-face instructional modalities *(92)*.

7.4.5 Implementation considerations

Countries will need to identify the appropriate balance in their context between theoretical and practical training, taking into account a variety of factors, including the pre-existing literacy and educational attainment of trainees. The use of dynamic teaching methodologies, as well as the use of multimedia resources, have the potential to make the training more attractive and effective. The role of simulated practice may be considered for skills development and in areas where exposure to practical training in communities or health facilities may present logistical or operational challenges.

Rather than prescribing a specific formula for allocation of time for pre-service training, it is important that trainees are required to demonstrate, as part of the testing or certification process, to have acquired the practical skills required for their role and to be competent to practice. It is equally important to reinforce the skills acquired through pre-service education and through appropriate links with subsequent mentoring and supportive supervision.

Most typically, the initial main pre-service training for CHWs takes place through face-to-face instructional modalities. Online-based training is increasingly being considered for follow-up and refresher training, based on the availability of the required technology infrastructure. E-learning methodologies should be coupled with and followed by subsequent practical training to ensure that the theoretical knowledge has been internalized and can be successfully applied in the work setting.

In relation to the location of training, in many contexts the initial theoretical training may be most conveniently offered in a central location, which should nevertheless be as close as possible to the intended catchment area. For practical parts of the curriculum efforts should be made, where logistically feasible, to offer the training within the communities and facilities where CHWs are expected to eventually serve.

The faculty for the training of CHWs should ideally include other health workers so as to facilitate subsequent integration of CHWs as members of multidisciplinary primary health care teams. It should also include the health workers who have the responsibility for supervising CHWs.

The importance of a positive and conducive learning environment cannot be overemphasized. Some of its elements include the safety of and respect for trainees; a positive and supportive attitude by faculty; attention to the specific requirements of women and trainees from minorities or vulnerable groups; availability of adequate infrastructure and trainers; development of training materials; and the delivery of training reflecting the linguistic abilities and requirements of trainees.

Recommendation 5: Competency-based certification

Recommendation 5
WHO *suggests* using competency-based formal certification for CHWs who have successfully completed pre-service training.[5]

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.5.1 Background to the recommendation

A key component of quality health care delivery is workforce standards. This implies defining professional roles, scope of work, responsibilities and tasks, along with educational standards and minimum competency requirements for different health service positions. Credentialing provides a formal recognition awarded to those meeting predetermined standards *(93)*. The availability of and requirements for CHW certification vary across countries. In many cases, CHWs have been identified as "community volunteers" and are casually trained to provide services in the community without any clear mechanism for certification. In some countries, however, standards and procedures for CHW certification exist.

For CHWs, certification programmes might have some theoretical benefits: certification may increase their motivation, sense of self-esteem and respect from other health workers. Certification that describes the learning

[5] Certification is defined in this context as a formal recognition awarded by relevant authorities to health workers who have successfully completed pre-service education and who have demonstrated meeting predetermined competency standards.

achieved enables transferability to other settings, thus reducing the need to repeat training if the worker moves location; or it can be used as evidence as part of admission criteria for further education. In some countries, certification can legitimize the work of CHWs and provide opportunities for the reimbursement of CHW services *(94)*. From the perspective of citizens and communities, formal certification may protect the public from harm resulting from the provision of inappropriate care rendered by providers lacking any training but purporting to be qualified *(95)*.

To reduce CHW drop-out rates and to ensure a sense of commitment to service, an earlier review suggested that CHW programmes should set up clear appointment and deployment strategies for CHWs who pass the final exam at the end of a training and receive a certificate of course completion *(13)*. However, there is little formal evidence that suggests that certification improves outcomes. In this section, the guideline explores the evidence and provides policy guidance on competency-based, formal certification for CHWs who have successfully completed pre-service training.

7.5.2 Rationale for recommendation

The GDG noted that the very limited evidence points to a positive, though largely untested, potential of formal credentialing of CHWs. While credentialing may in theory negatively impact equity (by limiting the number of CHWs authorized to practise to those awarded a formal licence, thereby restricting access to services), in many contexts it can be a pathway to greater competency of CHWs (and hence improved patient safety through better quality of care). Further, it can enhance credibility, recognition and employability of CHWs. On this basis, the GDG supported a conditional recommendation in favour of formal certification.

7.5.3 Summary of evidence

The systematic review **(Annex 6.5)** addressing the question – *"For community health workers who have received pre-service training, should competency-based formal certification be used versus not?" (96)* – identified four eligible qualitative studies that reported on how certification processes were perceived by small, non-representative samples of CHWs. Two studies were conducted in the United States, one of which reported on state-based credentialing of CHWs occurring in four states *(68)*, while the other summarized certification experience from New York City *(97)*. A national view on certification was also included in a study from the Islamic Republic of Iran, where certification is the norm and is required to achieve employment as a CHW *(75)*. In a fourth study, from Ethiopia, certification was one among many topics discussed with interviewees who represented a scoped community mobilization project *(98)*.

The evidence included in these studies points to potential, but untested, benefits from certification processes related to the motivation, morale and self-esteem of CHWs, as well as their retention, professional development and advancement. The process of credentialing was perceived by CHWs as offering opportunities to gain increased knowledge, credibility and recognition, potentially improving the collaboration between CHWs and their communities.

The literature also points to possible barriers to the implementation of credentialing, in that certification requirements may impose direct and indirect costs and resource demands on CHWs, as well as legal and administrative barriers, limiting the accessibility of community health service positions for volunteers who are interested in working in the sector but are not eligible or suited for certification. This paucity of quality research linking credentialing to outcomes is aligned with a previous review that examined such linkages across a broad range of public health, health care and teacher education literature *(99)*. The systematic review team rated the overall certainty of the evidence as very low.

The systematic review of reviews found no evidence of direct relevance to accreditation and certification.

The stakeholder perception survey identified certification of CHWs as both acceptable and feasible.

7.5.4 Interpretation of the evidence and other considerations by the GDG

Despite the paucity of evidence, the GDG considered that a form of credentialing of CHWs could be an important element for the progressive formal acceptance of these health workers. In some countries this could also be a requisite for authorization of practice, and the pathway to formal contracting, remuneration, and the availability of

opportunities for career progression, which are the subject of some of the recommendations in the subsequent sections of this guideline. The recommendation on certification therefore has important ramifications for the broader aspect of social mobility of CHWs.

The GDG recognized that alternative terminology might apply in different contexts, including certification, licensing, credentialing and recognition, with varying levels of legal recognition and different institutional arrangements regarding the certifying bodies. In the context of this recommendation, the GDG recommended formal certification based on attainment of certain predetermined competencies following successful completion of pre-service training.

7.5.5 Implementation considerations

Certification is of particular relevance to CHWs undergoing a longer period of pre-service education. Efforts should be made to standardize within a jurisdiction quality and content of training through formal accreditation of education institutions and training courses, so as to improve and align the competencies of CHWs, which can be instrumental in rendering better quality of care to the population, as well as facilitating the career mobility and advancement opportunities of CHWs.

Depending on the context, certification could range from a certificate provided by the training institution to jurisdiction-level certification by an independent third party.

The certification process should entail verifying and attesting that the CHWs have not only successfully completed their pre-service education, but have also demonstrated possessing the technical and soft skills required to practise according to their role. Attention should be devoted to ensuring that the introduction of a formal certification process does not result in unintended adverse equity effects. The certification requirements, process and institutional arrangements should explicitly and deliberately include a focus on mitigating potential adverse equity effects.

Adequate resources should be invested in ensuring appropriate capacity for quality certification processes, including sufficient human resources and materials to test key CHW skills and competencies in practice.

Recommendation 6: Supportive supervision

Recommendation 6

WHO *suggests* using the following supportive supervision strategies in the context of CHW programmes:

- appropriate supervisor–supervisee ratio allowing meaningful and regular support;
- ensuring supervisors receive adequate training;
- coaching and mentoring of CHWs;
- use of observation of service delivery, performance data and community feedback;
- prioritization of improving the quality of supervision.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.6.1 Background to the recommendation

The importance of adequate supervision of CHWs is well recognized. International evidence suggests that regular and systematic supervision, with clearly defined objectives, can improve the performance of CHWs involved in primary health care *(100–102)*. Supportive supervision that targets and measures knowledge and skills, motivation, and adherence to correct practices provides incentives that positively impact performance *(103)*. There is also emerging evidence suggesting that employing mobile phones, including for better supervision, can improve health care delivery in resource-limited settings *(104)*.

A typical challenge however is a lack of resources to provide a supportive supervision and environment to optimize the capacity of CHWs *(21, 105, 106)*. It is essential to streamline the supervision process by identifying effective strategies and including them in the implementation of interventions.

7.6.2 Rationale for recommendation

The evidence retrieved and analysed for the purpose of this guideline reiterated the importance of supportive supervision and identified a number of supervision strategies in the context of different programmes and initiatives. However, the studies typically did not compare specific supervision

strategies against others in terms of effectiveness, costs, acceptability, feasibility or other outcomes. The GDG therefore provided indications on core approaches (reflected in the recommendations) and additional strategies (mentioned under the implementation considerations) based on their expertise, and taking into account the models that emerged from the review of the evidence. In light of the very low certainty of the evidence and the need to adapt supervisory strategies to the requirements of different contexts, this recommendation was a conditional one.

7.6.3 Summary of evidence

The systematic review (Annex 6.6) on the question – *"In the context of community health worker programmes, what strategies of supportive supervision should be adopted over what other strategies?" (107)* – identified 13 eligible studies: nine quantitative, of which five were RCTs, and four qualitative. The studies came from India (three studies), Ethiopia, Kenya, and Uganda (two studies each), and Lao People's Democratic Republic, Malawi, Pakistan, and the United Republic of Tanzania (one study each). Various approaches and modalities of supervision were found to be effective in improving various aspects of CHW programme performance *(108–114)*, in some cases also showing a dose–gradient response *(115)*, while on limited occasions there was no measurable difference on some outcomes between the study arm receiving the supervision intervention and the study arm that did not (*116, 117)*. The qualitative studies found evidence that different supportive supervision strategies were deemed helpful and reinforced motivation by the CHWs themselves *(116, 118–120)*.

The systematic review team rated the overall certainty of the evidence as very low.

The systematic review of reviews found several studies confirming the critical importance of supportive supervision to enhance CHW quality, motivation and performance *(13, 51, 121–125)*. However, it similarly found very limited evidence on which supervisory approaches work best. Supervision that focuses on supportive approaches, quality assurance and problem solving may be most effective at improving CHW performance (as opposed to more bureaucratic and punitive approaches) *(17, 105, 126)*.

Improving supervision quality has a greater impact than increasing frequency of supervision alone *(105)*.

The stakeholder perception survey identified most supportive supervision strategies (including coaching, observation at community and facility, community feedback, and supervision by trained health workers) to be acceptable and feasible, but lower levels of acceptability and especially of feasibility were identified for direct supervision of service delivery and supervision conducted by other CHWs.

7.6.4 Interpretation of the evidence and other considerations by the GDG

Supportive supervision was consistently found to be effective in improving the performance of CHW programmes, and was appreciated by CHWs. At the same time, very limited information was available to compare specific supervision strategies. In light of the lack of specific evidence and the low certainty of the available evidence, the GDG opted for a conditional recommendation in favour of different supervisory strategies.

Supervision should be supportive, striking the right balance between its function to ensure monitoring and accountability and the aim of accompanying the CHW in a path of progressive professional growth and development through a mentorship approach. Supervision may be carried out by both dedicated supervisors and other health workers as part of a broader set of responsibilities. The application of different approaches will depend on context.

7.6.5 Implementation considerations

In addition to the supportive supervision approaches mentioned in the recommendation, additional options, to be considered as relevant to the local context, might include:

- use of supervision tools such as task checklists as part of a coaching process, while ensuring they also allow qualitative monitoring and interpersonal engagement;
- peer support and supervision by senior, experienced CHWs;
- expert support and supervision conducted by a multidisciplinary team, incorporating as relevant mechanisms for community feedback.

Supervision content and approach are related to the complexity of roles and tasks; the optimal supervision mechanisms would also differ based on whether the CHWs are full-time and formally employed by the health system or, conversely, part-time volunteers. Supervision should be seen in an integrated way with other functions, including broader peer support, in-service training and continuous professional development, and take into account the standards and expectations of other

health workers and health professionals in relation to their supervisory responsibilities. Integration at service delivery level will help ensure systematic engagement of both the facility staff and the CHWs. In the design and operationalization of appropriate supervisory strategies, adequate investment and attention should be dedicated to building the capacity of supervisors. Supervision may be carried out by both dedicated supervisors and other health workers as part of a broader set of responsibilities; irrespective of the set-up, supervisors should be familiar with both the technical content of care delivery and more general aspects regarding quality of care improvement and methodologies for exerting a positive influence on the behaviour of practising CHWs. Gender factors should be considered in selecting supervisors: for instance, having mostly male supervisors for mostly female CHWs may be inappropriate, reinforce gender barriers, and limit acceptability and effectiveness of supervision. The quality and results of the supervision should be themselves regularly assessed.

Recommendation 7: Remuneration

Recommendation 7A
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.

Certainty of the evidence – very low. Strength of the recommendation – strong.

Recommendation 7B
WHO *suggests* not paying CHWs exclusively or predominantly according to performance-based incentives.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.7.1 Background to the recommendation

The use of incentives for CHWs has been proposed as a means of improving health outcomes, and varying combinations of monetary and non-monetary incentives have been explored in different settings with varying degrees of success *(127)*.

The provision of incentives has a direct impact on the effectiveness and sustainability of a health programme. It is normally assumed that it improves service delivery through enhanced employee motivation and reduced attrition *(127)*. Choosing effective incentives for CHWs represents a long-standing policy issue within the field of primary health care; incentives can vary from providing a salary or other financial remuneration, such as performance-based incentives, to provision of non-financial incentives *(87)*. To determine the best approach, it is important to understand both CHW and supervisor perspectives about the factors, financial or otherwise, that best motivate CHWs, as well as broader aspects, including duration and scope of CHW training, and level of effort in their role. Decisions on provision of incentives have to be consistent with broader employment and labour legislation and principles. However, there appears to be no clear agreement on which strategies would best support CHW payment in ways that are beneficial *(128)*, and policies and practices vary considerably in this respect across and within countries.

7.7.2 Rationale for recommendation

The GDG approached this question from the perspective of exploring whether practising CHWs should be offered a financial package for their work and, if so, of which type.

Despite the overall assessment of very low certainty of the evidence, the majority of reviewed studies were supportive of providing CHWs with a financial package. The GDG considered in its decision-making process also broader criteria, including best practice in relation to labour rights and legislation. This is crucial to align health policy to the broader international agenda on decent work, which entails opportunities for work that is productive and delivers a fair income; security in the workplace and social protection for families; better prospects for personal development and social integration; freedom for people to express their concerns, organize and participate in the decisions that affect their lives; and equality of opportunity and treatment for all women and men *(129)*. The GDG was particularly

concerned that models that rely on voluntary CHW work are inconsistent with the international agenda on decent work, and particularly with Sustainable Development Goal (SDG) 8, promoting decent work and economic growth. As most CHWs globally are female, the GDG was also concerned that continued reliance on voluntary work could perpetuate gender disparities in access to employment and income opportunities, and be inconsistent also with SDG 5 – "Achieve gender equality and empower all women and girls" *(130)*. On this basis, the GDG voted by an overwhelming majority (18 to 1) in favour of a strong recommendation to provide a financial package to practising CHWs, despite the recognition of the very low certainty of the evidence.

The GDG did not recommend a specific form of remuneration (see sections below), but since evidence regarding a specific form of financial package (performance-based incentives) identified some evidence of potential harm, it also made a conditional recommendation against adopting financial packages based exclusively or predominantly on this particular form of incentive.

7.7.3 Summary of evidence

The systematic review **(Annex 6.7)** addressing the question – "*In the context of CHW programmes, should practising community health workers be paid for their work versus not?" (131)* – identified 14 eligible studies (five quantitative, nine qualitative), conducted in India (five studies), Ethiopia, Kenya and Nepal (two studies each), and Bangladesh, Ghana, the Islamic Republic of Iran, Mozambique, Nigeria, Pakistan, Rwanda and Uganda (some studies included evidence from more than one country). Quantitative studies provided some evidence that financial incentives may lead to improved CHW performance *(117, 132–134)*, although in the case of performance-based incentives a concern was raised related to neglecting tasks that are not incentivized *(135)*.

Qualitative studies were included to provide insights with respect to the perceived consequences of various payment and remuneration approaches. Most qualitative studies described positive attitudes towards financial payments *(136–142)*. Financial incentives in general appear to be well accepted, provide motivation and recognition, and may bring a sense of financial independence and self-confidence to CHWs. CHWs can incur out-of-pocket expenditures for communication and transport; ensuring timely and complete payment of incentives to compensate for this was reported to be most important. The reputation of the CHW, as based on trust and respect from the community, can be negatively impacted by performance-based incentive schemes, which were described as at times being too narrowly focused on pre-identified indicators, leading to activities and efforts not linked to these indicators being ignored and unacknowledged. Performance-based incentives encouraged uneven focus on certain activities due to their association with higher incentives, especially when CHWs had no basic remuneration, leading to the neglect of other important activities or responsibilities. Other CHWs expressed dissatisfaction with performance-based incentive models in relation to amounts paid and inconsistent and incomplete payment of incentives *(45, 143)*. The systematic review team rated the overall certainty of the evidence as very low.

The systematic review of reviews found that monetary remuneration (such as salaries, financial incentives, or income from selling commodities) and non-monetary incentives (such as respect, trust, recognition, and opportunities for personal growth, learning, and career advancement) are important motivators for CHWs and can reduce attrition *(17, 51, 121, 123, 144, 145)*. CHW rights and the need of CHWs for reliable financial remuneration was discussed in only one review, which highlighted the consistent (and unmet) demand of CHWs for salaried positions *(146)*.

The stakeholder perception survey identified a good level of feasibility and acceptability of providing CHWs with both financial and non-financial incentives, but the assessment of the feasibility of paying CHWs a minimum wage bordered between feasible and uncertain.

7.7.4 Interpretation of the evidence and other considerations by the GDG

CHWs are in some contexts essential service providers at the forefront of the health system. Their integration into formal health systems may mean that they need to be recognized and paid. Payment mechanisms and compensation measures may differ depending on whether they are full-time or part-time, polyvalent or monovalent.

The GDG noted that the recommendation to provide a financial package to practising CHWs applies to CHWs of different types and capacities, but that it should not rule out a priori the continued existence of dedicated volunteers that

willingly perform their roles on a pro bono basis, in addition to having as individuals a different, main source of livelihood. It may sometimes be difficult to draw a clear line between volunteers who wish to remain volunteers (for instance because they have a different full-time job, and only dedicate a few hours per month to voluntary community service), and the CHWs without an alternative source of livelihood who are currently not receiving any financial package for their work. Recognizing the sometimes blurred boundaries between these different situations, the GDG framed the recommendation as a financial package commensurate with the role, capacity, level of effort and hours of work of CHWs. Delineating more specifically this distinction should remain the prerogative of authorities within specific jurisdictions.

The GDG noted that, irrespective of direct provision of a financial package for their work, all CHWs and volunteers should be compensated to cover expenses incurred in delivering services according to their roles.

The GDG noted the importance of non-monetary incentives, but noted also that they should not be seen as a substitute for the provision of a financial package, and, conversely, that the provision of a financial package should not be seen as a substitute for non-financial incentives, such as a conducive and respectful work environment, and opportunities for professional development and career advancement.

As most of the concerns emerging from the literature regarding payment of CHWs referred in reality to one particular form of payment (performance-based incentives), the GDG opted for isolating this particular form of payment from the overall recommendation and having a dedicated recommendation focused on it.

7.7.5 Implementation considerations

The provision of a financial package to CHWs could take different forms (salary, stipend, honorarium, monetary incentives), in accordance with the employment status and applicable laws and regulations in the jurisdiction.

Countries should consider the financial package to remunerate CHWs as a part of the overall health system planning, and adequate resources should be made available to implement this recommendation through the mobilization and prioritization of the required resources.

In addition to the financial package, the provision of non-monetary incentives should also be considered to improve the performance of CHW programmes.

While the GDG cautioned on the adoption of performance-based incentives as the only or predominant mechanism of payment for CHWs, its continued application in contexts where it is well established and found to be effective could be accompanied by dedicated efforts to mitigate the known and potential shortcomings of these mechanisms.

Recommendation 8: Contracting agreements

Recommendation 8
WHO *recommends* providing paid CHWs with a written agreement specifying role and responsibilities, working conditions, remuneration and workers' rights.

Certainty of the evidence – very low. Strength of the recommendation – strong.

7.8.1 Background to the recommendation

Because CHWs work at the interface of community and formal health care systems, their role and identity within the health care structure has historically lacked clarity *(21)*. The importance and impact of CHWs with regard to health care delivery are generally well recognized and acknowledged within the sector. However, contracts and agreements have the potential to explicitly and formally determine the responsibilities that CHWs should fulfil, as well as the rights and benefits they are entitled to, and they could represent a tool to more formally integrate CHWs into the health care system. Formal contracts in this context are defined as written agreements specifying CHW working conditions and rights, job responsibilities, duration of employment and remuneration terms.

It is assumed that contracts can serve as an incentive and contribute to job stability and security, and enhance occupational protection and safety. Furthermore, formal contracts set the groundwork for professional development, as they typically require or encourage employers to support professional development opportunities and supervise workers *(147)*. The advantage for the health system is provision of a basis for CHW accountability.

7.8.2 Rationale for recommendation

The GDG noted the limited evidence supporting the effectiveness of formal contracts in improving the performance of CHW programmes. While the evidence was of very low quality, the GDG considered that some form of written agreement is essential in upholding workers' rights and is a key component of the Decent Work Agenda. On this basis the GDG voted by an overwhelming majority (17 to 1; one did not participate in the voting) to adopt a strong recommendation despite the very low-quality evidence.

The GDG only applied this recommendation to paid CHWs, as applying it to volunteers would entail an obligatory nature (by virtue of the contract) of the relation between the health system and the volunteer. This would possibly represent a violation of basic labour rights, and would be inconsistent with the principle of volunteer work, which is by definition of non-compulsory nature *(148)*.

7.8.3 Summary of evidence

The systematic review **(Annex 6.8)** on the question – *"In the context of community health worker (CHW) programmes, should practising CHWs have a formal contract versus not?" (149)* – identified two quantitative eligible studies: a cross-sectional study exploring the factors that influence the performance of CHWs delivering a malaria programme in Uganda *(150)*, and an RCT assessing the impact of different types of contracts for CHWs on provision of immunization services in Pakistan *(135)*. The existence of a contract or the receipt of an appointment letter were among the factors associated with higher performance (measured in terms of service delivery outputs). The systematic review team rated the certainty of the evidence as low.

The systematic review of reviews found no evidence of direct relevance to the policy option under consideration in this question.

The stakeholder perception survey found that formal contracting of CHWs by the health system was both acceptable and feasible.

7.8.4 Interpretation of the evidence and other considerations by the GDG

The GDG interpreted the limited evidence supporting the effectiveness of contractual arrangements to formalize the role of practising paid CHWs in the broader context of the significance and implications of formal agreements for labour relations and workers' rights. The GDG also concluded that formal contracts for paid CHWs could be instrumental in improving motivation and retention.

The GDG also noted the importance of consistency of the guideline, externally with broader labour rights frameworks, and internally among different recommendations; in particular, the formalization of rights, responsibilities and working conditions covered by this recommendation reinforces and is complementary to the recommendations on certification (recommendation 5), remuneration (recommendation 7) and career advancement (recommendation 9).

7.8.5 Implementation considerations

This recommendation only applies to paid practising CHWs. Formal contracts or any type of binding agreements should not be adopted in the case of volunteer CHWs.

The contractual arrangements, which may apply to both public sector and private employers, should reflect applicable regulatory and legislative frameworks in the jurisdiction. In particular, the precise terminology may need adaptation, considering that the term "contract" entails specific obligations in some contexts that could inadvertently hinder or deter the institutionalization of CHWs. Ultimately the application of the recommendation will be beneficial as long as a binding written agreement specifies roles, responsibilities, rights and working conditions, including remuneration, of CHWs.

Recommendation 9: Career ladder

Recommendation 9
WHO *suggests* that a career ladder should be offered to practising CHWs, recognizing that further education and career development are linked to selection criteria, duration and contents of pre-service education, competency-based certification, duration of service and performance review.

Certainty of the evidence – low. Strength of the recommendation – conditional.

7.9.1 Background to the recommendation

Providing health workers with a career ladder (that is, opportunities for progressive advancement to higher-level positions in a health system, or upgrading skills and expanding roles) is universally seen as a good practice to reinforce both motivation and retention. This policy issue is particularly relevant for CHWs *(151)*, as retention of these workers is problematic due to a variety of factors *(152, 153)*. The policy question revolves around whether providing career opportunities for CHWs to retrain or upskill can enable them to more effectively meet community health needs and can positively influence job satisfaction and retention.

7.9.2 Rationale for recommendation

The GDG, despite the minimal evidence directly addressing this question, provided a recommendation based primarily on its members' expertise and on broader good practice in human resources and health workforce management.

The GDG was of the view that the benefits of offering CHWs a career ladder after some years of satisfactory service can potentially include improved motivation and job satisfaction, contributing to increased retention and reduced attrition. The GDG concluded that these benefits outweigh potential shortcomings linked to depleting the pool of practising CHWs, and, on the contrary, that career ladder schemes and frameworks can contribute in a positive way to upward social mobility aligned to the Decent Work Agenda.

On this basis, while considering the minimal supporting evidence, the GDG adopted a conditional recommendation in favour of providing CHWs with a career ladder framework.

7.9.3 Summary of evidence

The systematic review **(Annex 6.9)** addressing the question – *"In the context of community health worker (CHW) programmes should practising CHWs have a career ladder opportunity/ framework versus not?" (154)* – identified one eligible study, an RCT conducted in Zambia, which compared the impact of exposure to different recruitment posters that emphasized career opportunities to those attracted by posters that emphasized civil service and social identity as incentives *(151)*. The results demonstrated that providing career progression as an incentive for recruitment of CHWs increased the recruitment of higher-calibre and more ambitious CHWs, who had a statistically significant better performance in terms of clinic utilization, home visits, household behaviours and child health outcomes. There was no difference in retention at 18 months between the two groups.

The systematic review of reviews found that opportunities for career advancement are one of several important non-financial incentives that can improve CHW motivation, although this was most often a conclusion of the authors of the reviews rather than a statement based on evidence of effectiveness *(17, 51, 121, 123, 144, 145)*.

The stakeholder perception survey found that offering CHWs a career ladder opportunity is acceptable, but its feasibility might be variable across different contexts.

7.9.4 Interpretation of the evidence and other considerations by the GDG

The GDG interpreted the lack of evidence on this aspect as a reflection of the limited availability of career ladder opportunities for CHWs in most settings, resulting, correspondingly, in the absence of formal evaluation of such (non-existing) schemes. The broader evidence from the systematic review of reviews, and the high level of acceptability according to the stakeholder perception survey, should be interpreted as a strong interest by policy-makers and CHWs to better align CHW policies with best practices in human resources management, including through the provision of career advancement opportunities.

The different educational attainment levels, qualifications, certification status and roles of CHWs imply, however, varying levels of feasibility of adoption of this policy option.

7.9.5 Implementation considerations

The availability and definition of career ladder opportunities should be embedded in CHW programme design from the outset. The prerequisites for eligibility for further education and career development may need to be linked with selection criteria for entry into pre-service education (see recommendation 1), duration and content of pre-service education (recommendations 2 and 3) and formal competency-based certification (recommendation 5).

If compatible with the pre-existing education level, offering CHWs a career ladder might entail a route to progress to other health qualifications, subject to completion of required additional training. In the case of lower level of educational attainment than the minimum required for training for other health professions, alternative modalities of career ladder might entail progressing to CHW managerial posts (for example, senior and well performing CHWs advancing to roles that entail contribution to education, supervision and management of less experienced CHWs).

Regulatory and legal barriers to CHW career ladders should be considered when designing an appropriate scheme, which should be compatible with the applicable normative environment in a given jurisdiction.

Recommendation 10: Target population size

Recommendation 10
WHO *suggests* using the following criteria in determining a target population size in the context of CHW programmes.
Criteria to be adopted in most settings:
- expected workload based on epidemiology and anticipated demand for services;
- frequency of contact required;
- nature and time requirements of the services provided;
- expected weekly time commitment of CHWs (factoring in time away from service provision for training, administrative duties, and other requirements);
- local geography (including proximity of households, distance to clinic and population density).

Criteria that might be of relevance in some settings:
- weather and climate;
- transport availability and cost;
- health worker safety;
- mobility of population;
- available human and financial resources.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.10.1 Background to the recommendation

Prominent among the many challenges that may result in poor CHW performance is an excessive workload, often indirectly linked to an increased population size served by each CHW *(155, 156)*. The factors in question are the optimal population size or caseload that maximizes the effectiveness of community health workers. While many factors have been highlighted as influencing CHW performance, few studies have actually tested which intervention works best to manage CHW workload and improve CHW performance, and how such interventions should be implemented. Closely related to this interest in understanding how to balance the workload of community health service staff is the interest in determining whether CHWs should be assigned a targeted population size and how this population size might impact CHW productivity, coverage and health outcomes.

7.10.2 Rationale for recommendation

The GDG recognized the importance of determining an appropriate target population size to maintain a realistic workload and optimize CHW performance. Given the wide variance in CHW roles, the GDG felt the recommendation should focus on the factors that should be taken into account at the national level in setting the optimal target population size. The certainty of the evidence was very low, hence the conditional recommendation.

7.10.3 Summary of evidence

The systematic review (Annex 6.10) on the question – *"In the context of practising community health worker (CHW) programmes, should there be a target population size versus not?" (157)* – identified five eligible quantitative studies, conducted in Bangladesh, India, South Africa and Uganda (two studies). The included studies suggest that CHW performance is influenced by the population size or workload that is assigned to them. However, the evidence on optimal population size for CHWs was ambiguous. On the one hand an excessive workload could result in decreased motivation and ultimately lower performance by CHWs *(158)*, with the CHW–population ratio identified as an influence on CHW performance, and with some evidence suggesting that a small population coverage was preferable *(159, 160)*; on the other hand, other evidence suggests that an additional workload could be integrated into existing CHW duties without significantly impacting performance, and at times may improve health outcomes *(161)*. Furthermore, increasing the workload of CHWs was found to be cost-effective if coupled with sufficient support and supervision *(162)*. Limited evidence in the included studies pointed to the acceptability and feasibility of setting a target population size for practising CHWs. The systematic review team rated the overall certainty of the evidence as very low.

The systematic review of reviews found that decisions about catchment area population should be based on a variety of considerations: frequency of contact required; nature of the services provided; expected weekly time commitment from the CHW; and local geography (including proximity of households), weather and transport availability *(16, 17, 124)*. One review found that for interventions consisting of home visits only, there was no consistent effect of the size of the catchment population on neonatal mortality. However, when the interventions involved community mobilization as well, the reduction in neonatal mortality was greater when the catchment population per CHW was smaller *(66)*. Another related finding was that a high workload could lead to CHW demotivation *(121)*.

7.10.4 Interpretation of the evidence and other considerations by the GDG

The variability of the evidence points to widely differing practices in determining the target population size and workload of CHWs, resulting in some programmes already stretching CHW capacities to their limits, while in other settings an additional workload can be accommodated without compromising quality and, conversely, improving cost-effectiveness. This variability in baseline situations, as well as in roles, responsibilities and levels of effort of CHWs, prevents setting global benchmarks on workload or appropriate population targets. Rather, the evidence points to the need to identify realistic and context-specific benchmarks.

In doing so, some criteria will be universally relevant (such as expected caseload based on local epidemiology, frequency of contacts required, level of time commitment by CHWs) *(163)*, while others will be particularly relevant only or mostly in certain contexts (such as factors relating to geographical accessibility of the catchment area, availability of transport, distance to clinic, and population density).

7.10.5 Implementation considerations

Planning for catchment areas for CHWs, including the optimal size and geographical distribution of their target population, should occur as part of an approach considering the health workforce as a whole, and in alignment with overarching national health strategies *(1)*. Adaptations to routine staffing standards and structures may become necessary in the situations or context of acute onset or protracted emergencies, as these may influence both population demand and need for services, as well as the capacity of other health workers to provide them.

Recommendation 11: Data collection and use

Recommendation 11
WHO *suggests* that practising CHWs document the services they are providing and that they collect, collate and use health data on routine activities, including through relevant mobile health solutions. Enablers for success include minimizing the reporting burden and harmonizing data requirements; ensuring data confidentiality and security; equipping CHWs with the required competencies through training; and providing them with feedback on performance based on data collected.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.11.1 Background to the recommendation

While the collection of data by CHWs can serve a variety of purposes – for example, surveillance or research – a key objective of routine data collection is service delivery improvement. Data collection and use is an integral part of continuous quality improvement approaches that have proven effective in improving outcomes across a range of settings *(164–167)*. Within practice improvement, data generated through CHW practice are collected for several purposes, including:

- for monitoring service delivery to enable adjustments and identify programme requirements (for example, stock-outs, epidemiological trends, human resource needs) so that the service meets the needs of recipients;
- for engaging communities in finding local solutions to identified problems;
- for supervising and supporting CHWs to build their knowledge, competencies and skills for the benefit of service recipients.

For the latter purpose, the inherent assumption is that enhanced expertise and skills will translate into improved service delivery, thereby improving the outcomes of community health interventions. Data collection by CHWs is a potentially meaningful yet still underresearched pathway towards improving community health services *(14)*. This potential should be balanced with data ownership, access and individual patient confidentiality issues.

7.11.2 Rationale for recommendation

The GDG noted that most published evidence supports a role for CHWs in data collection and use, and this finding is consistent with the broader literature on health information systems and quality improvement. As the evidence base is characterized by a low level of certainty and considering that the most appropriate strategies may vary by context, the GDG adopted a conditional recommendation in favour of the policy option under consideration. Recognizing the potential pitfalls of overburdening CHWs with data collection tasks, the GDG focused on identifying enablers for successful CHW contributions to data collection, collation and use.

7.11.3 Summary of evidence

The systematic review **(Annex 6.11)** on the question – *"In the context of community health worker (CHW) programmes, should practising CHWs collect, collate, and use health data versus not?" (168)* – identified as eligible for inclusion eight quantitative, four qualitative and two mixed methods studies, conducted in seven sub-Saharan African countries and Brazil, Cambodia and the United States.

Across these studies, findings associated with CHWs involved in data collection processes were shown to contribute to improvements in CHW programme performance across several outcome measures: reduced absenteeism *(169)* and attrition *(170)*, service delivery improvements *(150, 171–173)*, changes in health system functioning, changes in the knowledge, self-efficacy and esteem of CHWs, and improved productivity *(173, 174)*. Some studies highlighted the burden of data collection in terms of greater CHW workload.

In addition, changes in community health *(175)* and credibility were explored, together with data collection processes that potentially influenced decreased mortality *(172)* and morbidity *(176)*.

Many of the included studies examined the role of data collection through a mobile health (mHealth) application. In these studies, mobile technologies were generally found to improve CHW programmes *(169, 171–174, 177)* with some exceptions: for example, no differences in CHW job satisfaction between groups could be measured in an RCT conducted in Sierra Leone to evaluate the impact of an mHealth-based data collection programme *(178)*.

Little information was provided on how data collection processes were integrated into supervision, coaching and comparable activities aiming to support CHWs in their work.

Interviews with international experts and stakeholders concluded that retention and attrition of CHWs could potentially improve if they more meaningfully engaged with the data they collect. The researchers suggest that this could involve CHWs collecting and analysing data and applying it to their work environment, CHW supervisors providing more support for the data collected by CHWs to be actively used in professional development, and letting the data collection feed into tools for use by the community *(170)*.

The systematic review team rated the overall certainty of the evidence as very low.

The systematic review of reviews identified one review suggesting that there were cost savings of 24% when CHWs collected data using personal digital assistants compared to when they used traditional manual methods of data collection and transmission *(104)*.

The stakeholder perception survey found involvement of CHWs in data collection and use to be both acceptable and feasible.

7.11.4 Interpretation of the evidence and other considerations by the GDG

Taken together, the findings of these studies point to potential community health service benefits – across a broad range of outputs and outcomes – associated with data collection by CHWs.

The GDG was aware of potential drawbacks not highlighted by the literature, including distracting CHWs from their service delivery, illness prevention and health promotion tasks; generating data collection fatigue if collected data are not utilized and understood; risks to confidentiality and data security; and the risk of moral hazard and misreporting or overreporting when data production and provision are linked to performance-based incentives and other income-generating activities.

Overall, the GDG concluded that there may be more benefits than harms in strengthening and systematizing the role of CHWs in data collection, and the policy focus should be on creating the right conditions and enablers for the success of such initiatives, including prioritizing a standardized set of data requirements and indicators that CHWs in a programme or jurisdiction should focus on, and ensuring appropriate data use and feedback loop mechanisms. As the certainty of the evidence was very low, and recognizing the need to adapt to different contexts, the GDG adopted the recommendation as conditional.

7.11.5 Implementation considerations

The health management information systems in most countries include very little or no information collected by CHWs, although their potential to contribute substantially to data collection has already been proven: for instance, in WHO's 2017 round of global TB data collection, 53 countries reported data about the contribution of CHWs to TB notifications or treatment support. This represents a more than threefold increase in reporting since 2013, when data were first collected *(179)*. But there may not always be quality assurance systems to support expanding the data collection process. Factors that should be considered when designing and operationalizing policies for the contribution of CHWs to health data collection and utilization include having in place the appropriate quality control mechanisms, channels of processing the information upstream, interoperability of data mechanisms fed by CHWs with the broader health management information system, and mechanisms to provide feedback loops, so that CHWs also benefit from the data they collect and collate.

At the same time, it is important to recognize that reliable data collection requires both specific skills and time. The required competencies should inform the development of the curriculum for pre-service education of CHWs and subsequent in-service training activities. In addition, the requirements for data collection should be standardized and harmonized across different types of providers for the same services, and kept minimal to ensure that the workload of CHWs stays at reasonable levels and maintains an appropriate balance between service delivery, illness prevention and health promotion activities on the one hand, and the administrative and clerical tasks (including record keeping) on the other hand. Collecting data about citizens' satisfaction with services rendered by CHWs themselves may require the involvement of a neutral, objective third party, such as the supervisors of the CHWs.

Harnessing the promising potential of mHealth applications requires considering factors such as sustainable access to mobile phones and mobile network coverage, locally tailored software development, continuous CHW training, and the consideration of patient privacy and safety concerns.

Recommendation 12: Types of CHWs

Recommendation 12
WHO *suggests* adopting service delivery models comprising CHWs with general tasks as part of integrated primary health care teams. CHWs with more selective and specific tasks can play a complementary role when required on the basis of population health needs, cultural context and workforce configuration.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.12.1 Background to the recommendation

The effective delivery of primary health care services can benefit from multidisciplinary and interdisciplinary teamwork, making it necessary for health care professionals to work in well functioning teams and according to an optimal distribution of roles and tasks in relation to skills *(1, 180).*

CHWs are often trained unimodally to specialize in the care of a single patient condition, such as diabetes or HIV *(181, 182).* There are examples where CHWs have been integrated, using various approaches and with varying levels of success, in primary care teams to deliver a broader range of services, though often with a predominant focus on reproductive, maternal, newborn, child and adolescent health services *(183–186).*

7.12.2 Rationale for recommendation

This policy question stood out for the lack of eligible evidence in both the specific systematic review addressing this question and in the systematic review of reviews. The GDG had therefore to rely exclusively on indirect evidence emerging from other reviews and the broader literature, and the expertise and capacity within the GDG.

The GDG noted the availability of evidence demonstrating the effectiveness of both models – one in which polyvalent CHWs perform a relatively broad range of functions, and another where CHWs have been trained to deliver a single service or a set of preventive, promotive, treatment or care services related to a single disease or cluster of diseases.

Adopting an integrated and person-centred approach to primary health care *(187)*, however, requires a health workforce configuration whereby health workers operating as first point of contact of the health system possess a relatively broad set of skills to enable them to better respond to population needs and demands for services, or refer them to the appropriate level of care when they are unable to do so directly. On this basis, the GDG recommended that, in settings where the health workers operating at the front line of service delivery are CHWs, they should possess a polyvalent profile, enabling them to deliver a range of priority primary health care services. Recognizing that some settings may present particular epidemiology situations, cultural contexts or health system requirements, the addition of more specialized CHWs, with clear division of roles vis-à-vis polyvalent CHWs, should be considered when aligned with public policy objectives and instrumental to the attainment of population health goals.

The lack of underlying evidence on types of CHWs and the need for adapting related measures to country contexts led the GDG to the adoption of a conditional recommendation.

7.12.3 Summary of evidence

Neither the specific systematic review **(Annex 6.12)** addressing this question – *"In the context of community health worker (CHW) programmes, should practising CHWs work in a multi cadre team versus in a single cadre CHW system?" (188)* – nor the systematic review of reviews, found any studies eligible for inclusion of direct relevance to this question.

7.12.4 Interpretation of the evidence and other considerations by the GDG

The GDG noted that the lack of evidence on this policy question can be understood in the context of studies typically focusing on analysing the experience of a CHW programme or initiative (be this national in scope or a small pilot), but rarely comparing different initiatives as alternative models against one another.

Evidence of effectiveness exists on both monovalent CHWs and polyvalent CHWs delivering a broader range of primary health care services. The GDG was also aware that overburdening CHWs with an unrealistic set of expectations might lead to deteriorating quality of services and attrition due to burnout.

With the objective of supporting an integrated service delivery model responsive to population expectations, the GDG was of the view that the default option for policy-makers in settings where CHWs are expected to play a significant role in service provision is to adopt a model of polyvalent CHWs, who can understand community needs and provide services according to a holistic perspective and a well defined set of roles and tasks. Conversely, a model based exclusively on specialized CHWs might carry risks of fragmentation of care, resulting in gaps in service provision and inefficiency.

CHWs specialized in the delivery of a single task or narrower set of functions should be considered as an addition to a primary health care team comprising polyvalent CHWs in settings where the epidemiology and local service delivery and workforce configuration make such a policy choice appropriate.

CHWs operating on a volunteer basis or those drawn from patient groups to provide services to people affected by the same condition may more commonly serve as CHWs focusing on a single or few service area(s).

7.12.5 Implementation considerations

The definition of the role and typology of CHWs should be part of a broader public policy perspective considering the health system and health workforce planning as a whole. The entry point for exploring policy options around which typologies of CHWs may be more appropriate in a given context should be a population and health workforce needs assessment. The process to define the need and opportunity for CHWs as part of the primary health care team should also take into account acceptability by communities that will be served, as well as by other professional and associate professional health workers.

The definition of the roles and typology of CHWs is an essential planning function, which should in turn inform other elements covered by recommendations in this guideline, including population target size, selection criteria, education and accreditation requirements.

Recommendation 13: Community engagement

Recommendation 13

WHO *recommends* the adoption of the following community engagement strategies in the context of practising CHW programmes:

- pre-programme consultation with community leaders;
- community participation in CHW selection;
- monitoring of CHWs;
- selection and priority setting of CHW activities;
- support to community-based structures;
- involvement of community representatives in decision-making, problem solving, planning and budgeting processes.

Certainty of the evidence – moderate. Strength of the recommendation – strong.

7.13.1 Background to the recommendation

Community engagement is increasingly recognized and supported by policy-makers as a valued component of health programmes. The term "community" may refer to the general population living in a defined geographical area (whether rural or urban), or to a specific population subgroup requiring targeted support (for example, people with a certain health condition or breastfeeding mothers). Community engagement interventions have been deemed effective in achieving a range of health-related goals, with a positive impact on health behaviours, health literacy, self-efficacy and perceived social support for vulnerable populations *(189–191)*.

However, the lack of a standard and agreed-upon definition (including of what constitutes a community in urban settings), and the wide spectrum of activities that constitute community engagement, create challenges for operationalizing and assessing the effectiveness of community engagement more

broadly *(189, 192, 193)*. This in turn creates substantial challenges for comparing community engagement and its effectiveness across different health outcomes and contexts; particular forms and mechanisms of community engagement may be more or less effective depending on the focal outcome to be achieved, the population, and the sociostructural context. In addition, there are known risks that the voice of a community, however defined, is captured by some interest groups or individuals pursuing personal interests.

7.13.2 Rationale for recommendation

The GDG considered the benefits and harms of having community engagement activities as part of CHW programmes. Based on evidence available and its own expertise, the GDG consensus view was that community engagement is a key community health intervention that should be part of CHW practicum and activities.

The certainty of the evidence was found to be moderate by the systematic review team, but the potential impact, including on reduction in inequalities, was considered very important. Moreover, the GDG could not identify any meaningful risk or drawback of community engagement activities. Therefore, the GDG adopted unanimously a strong recommendation in favour of adopting community engagement in CHW programmes.

7.13.3 Summary of evidence

The systematic review **(Annex 6.13)** on the question – *"In the context of practising community health worker (CHW) programmes, are community engagement strategies effective in improving CHW programme performance and utilisation?" (194)* – identified 43 eligible studies (12 quantitative, 25 qualitative and six with mixed methods) from all six WHO regions, but with a predominance of studies from the African and South-East Asia Regions, and only one study each from the Region of the Americas and the European Region.

A variety of community engagement strategies were employed across studies, with many studies using more than one strategy. Table 5 presents a categorization of strategies identified in the literature.

Table 5: Categories of community engagement strategies

Community engagement strategies
Pre-intervention consultation
Pre-programme consultation with community leaders
Meetings to sensitize community to an impending intervention, led by community leaders or community members
CHW selection
Engaging community in developing CHW hiring criteria
Engaging community in nominating community members for CHW positions
Community leaders involved in selecting and hiring CHW
CHW training
Involving selected community members or organizations in developing CHW training
CHW programme implementation
Enrolling community as members in organization/collaboration associated with CHW intervention
Engaging community members in retaining CHW
Involving community leaders in CHW activities
Engaging community members in intervention implementation
CHW project evaluation and oversight
Involving community members in decision-making, quality improvement and evaluation, e.g. participatory evaluation meetings
Establishment of a village health committee for project and CHW oversight

Evidence shows that community engagement strategies may be effective in improving CHW performance and utilization. Most quantitative, qualitative and mixed methods studies indicated that a range of community engagement strategies have beneficial impacts on CHW performance outputs, including CHW motivation, commitment, satisfaction and retention *(39, 134, 195–206)*. Community engagement strategies were also found to have beneficial impacts on CHW performance outcomes, including community trust of CHWs and community awareness, support and sense of ownership of CHW programmes. Three RCTs indicated that community engagement strategies are effective in increasing CHW programme impact at the population level, all in the domain of maternal and child health outcomes among rural communities in low- and middle-income countries *(70, 71, 207)*.

Some community engagement strategies employed were implemented before programme development and roll-out, including pre-programme consultation with community leaders *(43, 208–212)* and meetings to sensitize the community about an impending intervention, led by community leaders or members *(213–215)*. Other strategies were implemented throughout the programme in engagement of community members in implementation *(216–221)* or represented an ongoing evaluation and oversight of the CHW programme *(222–225)*.

Across all studies, the single most prevalent community engagement strategy described was community participation in nomination or selection of CHWs (see also recommendation 1), which emerged across multiple studies as a factor in improving CHW performance and utilization *(46, 133, 226–230)*.

The community engagement strategies also emerged as reflecting different levels of power afforded to community members, though it was difficult to assess this dimension from the descriptions provided in the majority of studies. Limited evidence suggests that addressing existing social and gender hierarchies, and taking into account health care system limitations, may support the effectiveness of community engagement strategies in CHW programmes. Social and structural obstacles that may impede or undermine the effectiveness of community engagement in improving CHW programme performance include stigma, poverty, marginalization of women, lack of access to health care, and programme funding limitations. Several qualitative studies specifically indicated the negative impact of barriers to fair and equitable CHW selection processes on CHW performance and utilization; these appear to operate both internally through undermining CHW commitment and satisfaction, and externally through undermining community trust in CHWs and CHW programmes. Thus while 10 studies involved community leaders in selecting and hiring CHWs, this should probably be interpreted as a different intervention than involvement of community members in the CHW selection process (11 studies) – though some studies report both. Cautionary evidence emerged with respect to the potential for this mechanism of community engagement to create tension with and within local authorities and other stakeholders.

Finally, the systematic review identified evidence suggesting that community engagement strategies support increased health equity, with improved child and maternal health outcomes among vulnerable populations in low-income settings, and beneficial effects of community engagement strategies in CHW programmes specifically designed for vulnerable populations (for example, ethnic minorities, immigrants, poor and rural communities) that experience health disparities.

The systematic review of reviews showed that community embeddedness is an important enabler of CHW retention, motivation, performance, accountability and support, and ultimately of the acceptability and uptake of the health-related work of CHWs. It identified four reviews documenting specific approaches to foster community embeddedness *(17, 51, 87, 124)*:

- community members being involved in CHW selection and selecting a locally admired and trusted person;
- community having a clear understanding of and reasonable expectations for their CHW;
- community monitoring of CHWs;
- community ownership of the CHW programme;
- community involvement in selection of activities and priority setting of CHW work;
- health system back-up of the CHWs with supervision, supplies and support, which in turn helps to maintain community trust in CHWs.

The systematic review of reviews also identified one review suggesting that CHW embeddedness can lead to CHWs being caught in tensions between the community and the health system *(231).*

The stakeholder perception survey found that community engagement strategies had both high acceptability and feasibility.

7.13.4 Interpretation of the evidence and other considerations by the GDG

The GDG was of the view that community engagement is a priority in CHW programmes. However, the GDG considered that the diversity of community engagement strategies means that programme planners and policy-makers should pay specific attention to the variety of options available. Policy-makers and planners should select the ones that are most relevant in relation to the scope and nature of the CHW programme under consideration. Different community engagement strategies that had supporting evidence bases were discussed by the GDG and included in the final recommendation.

7.13.5 Implementation considerations

The systematic review found a broad range in the type, intensity and scale of community engagement strategies, suggesting these interventions are feasible to implement. However, it also identified qualitative studies pointing to possible challenges that warrant specific mitigation strategies.

- Attempts to implement community engagement strategies may be subverted by local stakeholders during the CHW nomination and selection process, thereby reinforcing inequitable power relations and alienating local communities. Proactively seeking large participation, inclusive of all components of the community, with specific activities targeting disadvantaged groups, should therefore be considered.
- In the case of highly stigmatized diseases (such as HIV), community engagement interventions may pose perceived threats of inadvertent status disclosure in local communities (for example, calling attention to HIV in the household). Community engagements strategies need to be adapted to ensure non-discrimination of the target group as a result of the activity. In order to avoid discrimination, mainstreaming key community engagement strategies as part of regular CHW work might be required in some situations.
- Community engagement strategies may increase CHW programme utilization and perceived benefits beyond what available health system infrastructures can support. Investments in CHW programmes that comprise community engagement strategies need to be planned as part of a comprehensive and participative health system strengthening approach at community level.

These challenges underscore the importance of adapting policies on community engagement in CHW programmes as a particular form of health intervention; and, secondly, the importance of assessing possible variability in the effectiveness of community engagement in CHW programmes as a function of the focal health conditions, populations and contexts of these programmes.

Recommendation 14. Mobilization of community resources

Recommendation 14

WHO *suggests* that CHWs contribute to mobilizing wider community resources for health by:

- identifying priority health and social problems and developing and implementing corresponding action plans with the communities;
- mobilizing and helping coordinate relevant local resources representing different stakeholders, sectors and civil society organizations to address priority health problems;
- facilitating community participation in transparent evaluation and dissemination of routine community data and outcomes of interventions;
- strengthening linkages between the community and health facilities.

Certainty of the evidence – very low. Strength of the recommendation – conditional.

7.14.1 Background to the recommendation

CHWs are most frequently members of the communities they serve, and therefore have deep knowledge and experience of their community cultures and languages *(232)*. Given their in-depth knowledge of local systems, CHWs are in a unique position to act as agents of change by mobilizing communities and additional resources for action to address health issues. Previous authors have conceptualized the CHW role as that of "change agents, empowering individuals, their community, and themselves" *(233)*.

Community mobilization is a process of raising a community's awareness of an issue and involvement in identifying and activating resources and leadership to address it. Community mobilization has long been recognized as a critical strategy for improving health outcomes, and there exists a rich body of literature evidencing successful mobilization on a range of health issues *(234–237)*. CHWs are uniquely suited to engage communities and lead community mobilization efforts by identifying and recruiting additional resources for health, working with communities to identify health priorities, and mobilizing key stakeholders. However, previous reviews of literature examining the tasks that CHWs perform provide little evidence of CHWs being conceptualized as community mobilizers *(17)*.

7.14.2 Rationale for recommendation

The GDG noted that the evidence found on this question suggests, but does not provide conclusive evidence of, a positive potential for a role for CHWs in mobilizing community resources for health. No known or theoretical risks arising from such activities were identified through the review of the evidence and the GDG discussions. As the evidence was extremely limited in volume and scope, and characterized by a very low level of certainty on the effects, the GDG adopted a conditional recommendation in favour of the policy option under consideration.

7.14.3 Summary of evidence

The systematic review **(Annex 6.14)** on the question – *"In the context of community health worker (CHW) programmes, should practising CHWs mobilize wider community resources for health versus not?" (238)* – identified as eligible for inclusion two studies (one quantitative, one qualitative), conducted in India and the United States.

One study *(239)* reported on the quantity of mobilization activities delivered among CHWs who received a health leadership training intervention, finding that CHWs who participated in the training self-reported that they engaged in a "change agent role" at a significantly higher level across multiple mobilization activities than non-trained CHWs in a national sample. For example, trained CHWs were more likely than non-trained CHWs to report that:

- CHWs engaged community members to identify people who influence change;
- community-engaged interventions had an impact on local health and social parameters;
- CHWs and the community engaged in sustainability efforts.

However, trained CHWs were no more likely that non-trained CHWs to report that they engaged the community in initial problem identification efforts.

The other study *(240)* used ethnographic data to compare a CHW programme at two points in time: first, when it was initially implemented by a nongovernmental organization through CHWs who had a role in community mobilization; and second, after intervention management was transitioned to government, and the role of CHWs was reframed as peer educators. The loss of the community mobilization role led to diminished credibility with the community and loss of motivation by CHWs.

The systematic review team rated the overall certainty of the evidence as very low.

The systematic review of reviews found no reviews of direct relevance to this policy question.

The stakeholder perception survey found CHW activities in mobilization of community resources to be both acceptable and feasible.

7.14.4 Interpretation of the evidence and other considerations by the GDG

The general lack of specificity regarding the role of CHWs in mobilizing communities poses difficulties in determining which activities are considered as "mobilization". For the purposes of this guideline, "mobilization" is interpreted as a two-way process of empowering communities to take

action for health, and community involvement is therefore seen as a key criterion *(241, 242)*. The resulting paucity of specific evidence limited the conclusions that could be drawn. Therefore, this recommendation is based, to a large extent, on the GDG's view on the potential benefits of CHW involvement in community mobilization efforts.

7.14.5 Implementation considerations

Evidence from the two studies indicates that community mobilization activities require a unique skill set that is substantively different from that of providing health promotion and clinical services. For CHWs to proactively design and implement community mobilization tasks, they must evidence leadership skills and the ability to strategically champion cooperation between communities and stakeholders. Most typically, CHWs would perform these functions by contributing to wider efforts by multidisciplinary primary care teams.

Successful implementation of community mobilization activities requires forging collaborative relations with local leaders and authorities and recognition by other health workers of the role of CHWs in these tasks.

Recommendation 15. Availability of supplies

Recommendation 15
WHO *suggests* using the following strategies for ensuring adequate availability of commodities and consumable supplies, quality assurance, and appropriate storage, stocking and waste management in the context of CHW programmes:

- integration in the overall health supply chain;
- adequate reporting, supervision, compensation, work environment management, appropriate training and feedback, and team quality improvement meetings;
- availability of mHealth to support different supply chain functions.

Certainty of the evidence – low. Strength of the recommendation – conditional.

7.15.1 Background to the recommendation

Supply chain bottlenecks affect the access of CHWs to essential supplies and medications, placing vulnerable client populations at further risk. Poor supply chain management, including limited or non-existent stock control and forecasting, means that even though drugs may be available centrally, there can be frequent stock-outs at the community level. Various strategies have been adopted to better train and equip CHWs to ensure availability of supplies. However, despite various strategies to improve stock supply, there are many challenges, such as community remoteness and erratic data management.

7.15.2 Rationale for recommendation

The GDG noted that the included studies identified several strategies likely to be associated with improved supply chain management processes and outputs. As the certainty of the evidence was low, the GDG adopted a conditional recommendation in favour of these strategies.

7.15.3 Summary of evidence

The systematic review **(Annex 6.15)** conducted for the question – *"In the context of practising community health worker (CHW) programmes, what strategies should be used for ensuring adequate availability of commodities and consumable supplies over what other strategies?" (243)* – identified as eligible for inclusion two quantitative and seven mixed methods studies, all conducted in six sub-Saharan African countries.

Factors associated with improved supply systems according to the included studies were as follows.

- **Adequate supervision**. Supervisors were noted to have additional duties involving the review of CHW registers and cross-checking of drug inventories in order to make sure supplies are routinely and adequately replenished. This helps reinforce CHW competencies regarding drug use *(244)*.
- **Correct prescriptions**. Having appropriate prescriptions leads to a more accurate and reliable drug resupply for CHWs *(244)*.

- **Regular reporting**. CHWs received a more regular replenishment of drugs when they submitted monthly drug reports on time compared to those who did not submit reports on time or at all *(245, 246)*.
- **Diagnostic tool availability**. Availability of diagnostic tools for CHWs also improved drug resupply *(247)*.

Broader strategies identified across these studies as enablers to improve the availability of commodities and supplies included adequate compensation, appropriate training and feedback, team quality improvement meetings and an enabling work environment.

Evidence from several mixed methods studies showed that mHealth was well supported and effectively used by CHWs. Phone-based systems improved communication, enhanced supply chain management, and enabled sharing of medicines between CHWs *(248, 249)*. MHealth was also found to contribute to more timely and complete reports and to aid supervision of CHWs *(155, 177, 250)*. The systematic review team rated the overall certainty of the evidence as low.

The systematic review of reviews found evidence suggesting that regular provision of logistical support and supplies (such as drugs and educational materials) is essential to maintain CHW programme effectiveness, productivity, and respect for CHWs by the community. In addition, mHealth was found to be a potentially valuable job aide for noting drug adverse effects, confirming dosage amounts and improving medical knowledge *(13, 17, 124, 251–253)*.

The stakeholder perception survey found various strategies for strengthening the supply chain for CHWs to be both acceptable and feasible, with the exception of the use of social media distribution aid, for which the acceptability and feasibility were rated as more uncertain.

7.15.4 Interpretation of the evidence and other considerations by the GDG

The GDG recognized that an effective supply chain for CHWs is one of the critical factors that represent a precondition for effective service delivery. It also noted the absence of waste management from the literature identified. The GDG was of the view that extending to CHW programmes the national supply chain (as opposed to setting up a separate independent one) represents a key element of health system integration and sustainability.

7.15.5 Implementation considerations

To ensure appropriate implementation of the identified strategies, and to avoid fragmentation into parallel competing supply chains, relevant CHW commodities should be included in the national pharmaceutical supply plan or equivalent national supply chain plan. Mechanisms to replenish and replace the equipment and supplies of CHWs vary, but any national distribution systems of commodities should address the needs of CHWs on the ground, based on reliable data and forecasting.

Simplified stock management tools and visual job aides for CHWs that accommodate low literacy with minimum data points may be instrumental to facilitate recording of data, adequate storage (including keeping perishable supplies at the right temperature), mapping and monitoring for early warning and resupply.

The pre-service education curriculum for CHWs should include, beyond diagnostic and clinical competencies for correct prescriptions, capacity for basic storage, stocking, quality assurance and waste management for essential medicines and supplies, including basic elements of personal safety when handling hazardous supplies (for example, to prevent needle-stick injury).

8

Research priorities and guideline update

Every effort has been made to ensure that the policy recommendations contained in this guideline are informed by an up-to-date appraisal of the published evidence, complemented by assessments of feasibility and acceptability. Overall, evidence was identified to provide policy recommendations for most areas. However, in several instances important gaps in both the scope and certainty of evidence emerged from the systematic reviews, which provides an opportunity to outline priorities for a future research agenda on CHWs.

The research priorities outlined in this document have been extracted mainly from the systematic reviews and review of systematic reviews conducted for the intervention areas of the CHW guideline. The prioritization of the CHW research needs is organized as much as possible to align thematically with the intervention areas of the CHW guideline whilst considering relevance and context. Like the guideline, the research priorities identified relate only to the cross-cutting policy and system enablers to optimize design and performance of CHW programmes, and they do not refer to the evidence base on the effectiveness of CHWs in the delivery of specific preventive, promotive, curative or care interventions.

In general terms, in some areas the research activities undertaken in support of this guideline found a near-absolute absence of evidence (for example, on certification or contracting and career ladders for CHWs, appropriate typology and population target size); in most policy areas considered, however, there is some evidence (in some cases substantial) that broad strategies (such as competency-based education, supportive supervision and payment) are effective. However, this evidence is typically not sufficiently granular to allow recommendation of specific forms of these interventions, for example which education approaches, which supervision strategies, or which bundle of financial and non-financial incentives are most effective or more effective than others. Other cross-cutting considerations include the absence of economic evaluations of the various interventions under consideration, and the dearth of evidence tracking policy effectiveness over time through longer-term longitudinal studies.

8.1 Selection, education and certification

To improve CHW selection strategies, more research is needed that specifically assesses which recruitment criteria are most effective for producing improved outputs and outcomes. Rigorously testing of whether and how community selection improves outputs and outcomes is also required.

Given the variability in the quantity, quality and duration of CHW training across different settings, further research is required to assess optimal levels of education required to effectively perform CHW tasks. There is a need for mixed methods research, including the use of factorial designs that

can test the relative impact of a variety of training doses and durations. Outcomes should be assessed on CHW competence and effectiveness.

Regarding CHW pre-service training curricula, studies should be conducted assessing the impact that different levels (specific versus broad) and methods of competency-based training have on CHW expertise and performance, as well as on population- and patient-level outcomes. There is a need for qualitative research that directly measures the comparative experiences of CHWs receiving specific and broad competency-based training. Studies should also be conducted on the effectiveness of non-didactic, on-the-job training that combines practice demonstration with expert observation, feedback and supervision.

Further research is required to assess the effect of formal certification for pre-service training of CHWs on critical outcomes. Such studies should include a qualitative component that aims to understand potential downsides of formal certification, such as the costs and administrative burdens. Studies testing the effectiveness of monovalent versus polyvalent CHWs are also needed.

8.2 Management and supervision

Further research is needed on different combinations of supportive supervision strategies for CHWs. Such studies should include identifying optimal monitoring mechanisms to track the performance of CHWs. Studies should also examine the role of population size on CHW performance, and evaluate the optimal frequency of supervision of CHWs.

Regarding the payment of CHWs, high-quality studies are required to compare the various incentive models across different contexts and activities, and to determine which bundles of financial and non-financial incentives optimize CHW performance and resource use. Research studies on formal contracts for CHWs should include the contribution of formal agreements and contracts to optimal community health working conditions and performance. For CHW career ladder opportunities, more scoping studies are needed to facilitate a basic understanding in preparation for advanced studies and data mining efforts.

8.3 Integration into and support by health systems and communities

Scoping reviews of CHW literature describing community mobilization efforts, and examining CHW tasks in the context of mobilization, are needed. Conceptual models of CHW roles as agents in community mobilization should also be developed. Comparative analyses or other study designs that allow for causal attribution of different strategies for data collection and use, and supply chain management, would be beneficial to expand and strengthen the current evidence base. Within this context, further research is needed on CHW workflow for community engagement and care, including to measure the effect of home visits and in-home care by CHWs on access to care and mortality. A cross-cutting aspect is to explore across different research priorities the role of gender factors, stigma, poverty, and consideration of special population groups in order to examine the health equity implications of different policy options.

Finally, policy and system research should evaluate strategies on scalability, sustainability and cost-effectiveness of the various components of CHW integration into health systems.

8.4 Implications for non-health development outcomes

The research identified was entirely focused on various health-related outcomes. As some of the recommendations highlight, however, policy and investment decisions on health workers have broader implications on several other targets of the SDGs, including job creation, economic growth, gender empowerment and education. There are untapped opportunities for future research to expand the evidence base on some of these aspects, including whether expectations of employment and social protection through CHW programmes are being met; what unintended consequences, if any, selection, education, licensing and employment policies might entail from a gender perspective; and how labour laws around informal work and CHW formal associations and unions may enable the development of a better policy implementation environment for CHW programme integration.

8.5 Future research and guideline update

Recognizing the potential for additional research to modify and strengthen the evidence base that informed the development of this guideline, the need and opportunity for a potential update will be considered five years after publication.

In calling for additional research on the topic, it is important to recognize that, while more methodologically robust evidence is needed, it is probably unrealistic to envisage that there would be large-scale RCTs to address from a pure effectiveness perspective all the persisting evidence gaps. Furthermore, RCT design is relatively unhelpful in providing insights into the dynamics of complex programmes. More useful would be comprehensive, critical programme case studies.

It is necessary to avoid too narrow a focus on intervention-specific CHW effectiveness. There is a need to investigate not only what works, but also the contextual factors and enablers (how, for whom, under what circumstances), and the broader health system requirements and implications of supporting the implementation of several interventions simultaneously. Getting an answer to such policy questions requires health policy and systems research methodologies *(254)*, such as implementation research, systems thinking tools, agent-based modelling, complex adaptive systems, heuristics guidance, process monitoring, and rapid synthesis of available research.

As most of the evidence retrieved for this guideline originated in low- and middle-income countries, additional research should be considered in advanced economies to better identify any differences in contextual factors and effectiveness of approaches that would impact policy options and recommendations.

9

Guideline use

9.1 Plans for guideline dissemination

WHO will coordinate a range of activities to support the dissemination, uptake and implementation of the guideline. Recognizing the important role that other stakeholders play, WHO has convened a CHW hub of the Global Health Workforce Network, a collaborative mechanism facilitated by the WHO Secretariat through its Health Workforce Department. The CHW hub comprises advocates, funders and implementers of CHW programmes from developed, emerging and developing countries, and will collaborate with WHO in the roll-out of the guideline.

WHO has started developing, in consultation with and with inputs from the CHW hub, a communications, advocacy and engagement strategy, whose overarching purpose is to support uptake and implementation of the guideline at country level. The advocacy and engagement strategy is built as a multipronged approach based on a four-phase uptake model:

- Phase 1: Generate awareness and understanding
- Phase 2: Foster commitment
- Phase 3: Ensure uptake and transformation
- Phase 4: Monitor and evaluate advocacy and uptake.

To ensure that the most relevant and appropriate entry points are identified and guidance on uptake and implementation are effective, the messaging will be tailored to groups of countries as follows:

- countries that already have CHW policies that are aligned with the new guideline;
- countries that already have CHW policies that are not necessarily aligned with the new guideline;
- countries that do not have policies regarding CHWs.

Advocacy, communications and engagement activities will target three groups of stakeholders.

- **Primary target audience.** The primary target audience of this strategy includes (a) national policy-makers (ministry of health, ministry of finance); (b) planners and managers responsible for health workforce policy, planning and management at national and district or provincial levels that include CHWs in the delivery of health services; and (c) health workforce educators.
- **Secondary target audience.** The secondary target audience of this strategy includes development partners, funding agencies, global health initiatives, donor contractors, nongovernmental organizations and activists (at global, regional and national levels) who fund, support, implement, or advocate greater and more efficient involvement of CHWs in the delivery of health services.
- **Influencers.** The engagement strategy will also leverage relevant influencers and champions at the global, regional and national levels to support advocacy and engagement of primary and secondary audiences.

Overarching principles of the communication and advocacy strategy include the following.

- Country ownership is key to successful implementation of the guideline; a range of activities will therefore ensure involvement of ministries of health, ministries of finance and other relevant stakeholders and actors at various levels of the national health systems.
- Partner support should be harmonized at global, regional and country levels to ensure all messages, products and support activities are aligned.

- Clearly articulating and communicating the benefits of adopting the recommendations and the return on investment are essential, as is the focus on building lasting relationships with key stakeholders instead of one-off activities and events.
- Existing event opportunities should be tapped into to maximize efficiencies and increase visibility and awareness at all levels (global, regional, national). While global awareness is important to keep momentum going after the launch, more intense promotion of the guideline and uptake support is needed in the countries where it would have the most impact.
- Concrete mapping suggestions should be developed on how to most effectively implement the guideline recommendations at the country level, as per segmentation of countries, including action plan templates.

9.2 Plans for guideline adaptation, implementation and evaluation

In order to maximize the opportunities for the guideline to be implemented, it will need to be adapted and contextualized, including through a number of derivative products made available in relevant languages to promote uptake at country level.

Beyond the adaptation, simplification and development of user-friendly summaries of messages, a range of accompanying activities will be considered and implemented, subject to resource availability. Some of these activities might be directly implemented and supported by WHO, others by or in collaboration with other agencies and partners involved in the Global Health Workforce Network CHW hub, or other institutions. A non-exhaustive and non-binding list of activities that will be considered includes:

- development of a dedicated online portal;
- a one-stop shop suite of derivative products, including toolkits, to ensure the guideline is easily comprehensible and is taken up by stakeholders (this will include translation of the guideline into the WHO official languages), with the assets filtered through different lenses by audience (such as funders, implementers);
- a launch event with substantive global visibility (potential candidates: 40th Alma Ata anniversary events, WHO regional committees);
- a series of webinars;
- regional workshops bringing together regional and country champions and stakeholders involved with CHWs to assess which countries would most benefit from the guideline and are in a position to take up some of the recommendations;
- selection of a few countries in which to prioritize policy dialogue and capacity-building activities, supported by drafting a regional and country implementation map;
- meetings of country stakeholders involved with CHWs to present the guideline and design a partner support plan (agree on roles and responsibilities and contributions);
- a workshop with government stakeholders (ministry of health, ministry of finance, development partners) for awareness raising and country mapping of existing CHW situation and policies, to create a baseline and, potentially, a roadmap for uptake of the recommendations, and to support the ministry of health in advocacy with the ministry of finance;
- a self-assessment tool based on the recommendations of the guideline that supports countries in developing baseline information related to CHWs, and that can be used to monitor and evaluate implementation of policies and programmes aligned with the recommendations.

Potential toolkit components include:

- technical summary of the guideline and the implications by audience (for example, what the guideline means for implementers, funders, or other stakeholders);
- policy briefs on specific subtopics (such as management and supervision, training and education, contracting, remuneration and career advancement);
- key messages, narrative;
- infographic or video derivative products;
- return on investment – the business case for implementing the guideline;
- practical guidance on how to map the implementation of the guideline, according to baseline conditions of countries in relation to the CHW policy environment;
- repository of partners and how they can help.

Evaluating the effectiveness of the guideline uptake and implementation will be focused on tracking over time policy process indicators, such as a self-reported assessment on the adoption of the guideline policy recommendations in national policies and mechanisms. Over time, tracking of CHW-specific indicators through relevant health workforce data collection mechanisms, such as the regular implementation and reporting of National Health Workforce Accounts *(255)*, will enable establishing baseline data and tracking progress regarding CHW education capacity, availability, distribution, and other attributes.

All efforts will be made to avoid the need for dedicated surveys and ad hoc data collection processes, with priority given to evidence generation through existing mechanisms, such as the National Health Workforce Accounts or piggy-backing on other existing surveys or meetings that could provide an opportunity to gather relevant evidence and information.

After a few years of implementation, and subject to resource availability, commissioning dedicated country case studies on the experience in specific countries in implementation of the guideline will enable more light to be shed on concrete experiences, including enablers and hindering factors, in uptake of the guideline recommendations. This will inform both subsequent efforts at supporting guideline implementation and eventual updates and revisions of the guideline document itself.

10

General implementation considerations

In addition to the detailed recommendations specifically developed to address the policy questions examined in the preceding sections, planners, policy-makers, managers and their international partners should consider the following key principles and cross-cutting aspects for the design and successful implementation of CHW policies.

10.1 Key principles

- Countries should use a combination of CHW policies selected based on the objectives, context and architecture of each health system. This guideline is not a blueprint that can be uncritically adopted; it should rather be seen as a critical overview of evidence and a menu of interrelated policy options and recommendations, which need nevertheless to be adapted and contextualized to the reality of a specific health system.
- CHW programmes and policies will need to be monitored and evaluated over time, and adapted and amended through a dynamic process informed by context-specific evidence. In order to promote learning and innovation it is important that policy-makers and managers have a willingness to transparently share data on the characteristics of CHWs and their performance, and information on programme implementation and effectiveness.
- CHWs should not be regarded as a way to save costs or as substitutes for health care professionals, but as an element of integrated primary health care teams. The role of CHWs should be defined and supported with the overarching objective of constantly improving equity, quality of care and patient safety.
- In the design and organization of health care, CHWs should be contributing to the provision of integrated, people-centred health services.
- When considering and setting policies that affect CHWs, their voices and perspective should be represented in the policy dialogue.
- Health services do not naturally gravitate towards equitable outcomes. CHWs, by working at the front line of service provision in underserved communities, have the potential to contribute to a reduction in inequality in access to health services and health outcomes; but in order for this potential to be fully realized, equity considerations should be embedded at the outset in programme design, as well as in monitoring and evaluation of implementation and effectiveness.
- In identifying the optimal features of a CHW programme, consideration should be given not only to the traditional performance measures focused on health service outputs, outcomes and impact, but also to the labour rights of CHWs themselves, including safe and decent working conditions, and freedom from all kinds of discrimination, coercion and violence. Some of these aspects are of particular concern and relevance in conflict-affected settings and chronic complex emergencies.

10.2 Operational aspects of CHW programme design and implementation

The starting point for an effective design of CHW initiatives and programmes is a sound situation analysis of population needs and health system requirements. Planners should adopt a whole-of-system approach, taking into consideration health system capacities and population needs and framing the role of CHWs vis-à-vis other health workers, in order to integrate appropriately CHW programmes into the general health system.

10.2.1 Programme design

- When designing a CHW programme, consideration should be given to its social, cultural, political and financial feasibility.
- The objectives of a CHW programme and the roles of CHWs should be defined within a holistic approach that considers optimal service delivery modalities in a country or jurisdiction, and the corresponding workforce implications. Within those, the roles and objectives of CHWs should be considered vis-à-vis those of other occupational groups.
- Accordingly, this guideline reiterates and reinforces the principle underscored by the WHO Global Strategy on Human Resources for Health: Workforce 2030, namely that countries should plan for their health workforce as a whole, rather than segmenting planning and corresponding programming and financing efforts by single occupational groups, which carries a risk of fragmentation, inefficiency and policy inconsistency.

10.2.2 Policy coherence

- CHW initiatives and programmes should therefore be aligned to and be part of broader national health and health workforce policies. As relevant, they should also be linked with national education, labour and community development sectoral or subsectoral policies and frameworks.
- The policies recommended within this guideline should not be considered in isolation from one another. There is a need for internal coherence and consistency among different policies, as they represent related and interlocking elements that complement and can reinforce one another.
- The role of CHWs should be considered in a long-term perspective. Beyond addressing the immediate and pressing needs of health systems, it should be envisaged that the role of CHWs might need to evolve over time in parallel with changes in the epidemiological profile of the population and health system requirements. The education, certification and career ladder elements of CHW programmes should consider these factors and future scenarios, with a view to ensuring employability of these health workers in a long-term perspective, or an exit strategy that considers CHWs as citizens and workers with rights, and treats them with dignity.

10.2.3 Health system support

- The recommendations in this guideline are rooted in an overarching logic of formalization of CHW roles and their integration into the health system. In order for such formalization to be effective, it is necessary to have clarity on which level of the system (for example, national or local) and programmatic area (for example, human resources for health or community health or others) represents the institutional “anchor” in the health system for the CHW programme.
- Related to the requirement for overarching health system support, it is necessary to have an understanding of the underlying health system capacity to effectively support the CHW programme. The recommendations in the preceding sections implicitly assume that the health system would have the capacity to effectively carry out a range of supporting functions, including to train and supervise, provide competency-based certification, effectively manage, protect from malpractice risks, remunerate in a timely and adequately manner, create the appropriate channels for linkages and referrals, and procure commodities and essential supplies. However, the actual capacity of the health system to perform these functions might vary considerably across different contexts and may fall short.
- Where the CHW programme depends on the health system adequately performing some of its enabling functions as described above, the CHW programme might represent an occasion to put the spotlight on needs and opportunities for support and strengthening of the system.

10.2.4 Financing implications

- Little evidence was found on resource requirements in the context of the evidence reviews. However, the policy options recommended in this guideline have, in the aggregate, considerable cost implications, and these require long-term dedicated financing: attempting to set up and run a large-scale CHW initiative on a shoestring budget is likely to yield disappointing outcomes.
- The financial feasibility of implementing the policy recommendations contained in this guideline (especially the ones on education and remuneration) might be questioned by some stakeholders. However, it is important to note that even low-income countries have put in place and funded, mostly out of domestic resources, large-scale CHW initiatives *(20)*, and that the deployment of CHWs has been identified as a cost-effective approach *(19)*.
- The key determinant of success in securing adequate levels of investment is the political will to prioritize approaches and strategies that are most likely to lead to improved population health outcomes.
- In some low-income countries where the domestic resource envelope is unlikely to allow self-reliance in the short term, aligning external support to domestic policy needs and health system mechanisms may contribute to the impact and long-term sustainability of CHW programmes.

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Annex 1

Search terms to identify CHWs and other relevant community-based health workers

"Community Health Workers"[Mesh] OR "Community Health Nursing"[Mesh] OR "health auxiliary"[tw] OR "frontline health workers"[tw] OR "frontline health worker"[tw] OR "midwife"[tw] OR "Midwifery"[tiab] OR "midwives"[tw] OR "Birth Attendant"[tw] OR "Midwives"[tw] OR "outreach worker"[tw] OR "outreach workers"[tw] OR "lay health worker"[tw] OR "lay health workers"[tw] OR "promotora"[tw] OR "promotoras"[tw] OR "village health worker" OR "village health workers"[tw] OR "volunteer health worker"[tw] OR "volunteer health workers"[tw] OR "voluntary health workers"[tw] OR "voluntary health worker"[tw] OR "community health agent"[tw] OR "community health agents"[tw] OR "health promoter"[tw] OR "health promoters"[tw] OR "community health worker"[tw] OR "community health workers"[tw] OR "community health aide"[tw] OR "community health aides"[tw] OR "community health nursing"[tw] OR "community health nurses"[tw] OR "community health nurse"[tw] OR "community health officers"[tw] OR "community health officer"[tw] OR "community health volunteer"[tw] OR "community health volunteers"[tw] OR "community health distributors"[tw] OR "community health distributor"[tw] OR "community health surveyors"[tw] OR "community health surveyor"[tw] OR "community health assistants"[tw] OR "community health assistant"[tw] OR "community health promoters"[tw] OR "community health promoters"[tw] OR "community IMCI"[tw] OR "community volunteer"[tw] OR "community volunteers"[tw] OR "health extension workers"[tw] OR "health extension worker"[tw] OR "village health volunteer"[tw] OR "village health volunteers"[tw] OR "close-to-community provider"[tw] OR "close-to-community providers"[tw] OR "community-based practitioner"[tw] OR "community-based practitioners"[tw] OR "lady Health worker"[tw] OR "lady Health workers"[tw] OR "barefoot doctor"[tw] OR "Community Practitioners"[tw] OR "Community Practitioner"[tw] OR "community-based practitioners"[tw] OR "community-based practitioner"[tw] OR "promotoras de salud"[tw] OR "agentes de saúde"[tw] OR "rural health auxiliaries"[tw] OR "traditional birth attendants"[tw] OR "traditional birth attendant"[tw] OR "Activista"[tw] OR "Agente comunitario de salud"[tw] OR "Agente comunitário de saúde"[tw] OR "Anganwadi"[tw] OR "Animatrice"[tw] OR "Barangay health worker"[tw] OR "Barangay health workers"[tw] OR "Basic health worker"[tw] OR "Basic health workers"[tw] OR "Brigadista"[tw] OR "Colaborador voluntario"[tw] OR "Community drug distributor"[tw] OR "Community drug distributors"[tw] OR "Community health agent"[tw] OR "Community health agents"[tw] OR "Community health promoter"[tw] OR "Community health promoters"[tw] OR "Community health representative"[tw] OR "Community health representatives"[tw] OR "Community health volunteer"[tw] OR "Community health volunteers"[tw] OR "Community resource person"[tw] OR "Female multipurpose health worker"[tw] OR "Female multipurpose health worker"[tw] OR "Health promoter"[tw] OR "Health promoters"[tw] OR "Kader"[tw] OR "Monitora"[tw] OR "Mother coordinator"[tw] OR "Outreach educator"[tw] OR "Outreach educators"[tw] OR "Promotora"[tw] OR "Shastho shebika"[tw] OR "Shastho karmis"[tw] OR "Sevika"[tw] OR "Village health helper"[tw] OR "Village drug-kit manager"[tw] OR "Accompagnateur"[tw] OR "Accredited Social Health Activist"[tw] OR "Animator"[tw] OR "ASHA"[tw] OR "Auxiliary Nurse"[tw] OR "Auxiliary Nurse-midwife"[tw] OR "Bridge-to-Health Team"[tw] OR "Behvarz"[tw] OR "Care Group"[tw] OR "Care Groups"[tw] OR "Care Group Volunteer"[tw]

OR “Care Group Volunteers”[tw] OR “Community Case Management Worker”[tw] OR “Community Case Management Workers”[tw] OR “Community Health Agent”[tw] OR “Community Health Agents”[tw] OR “Community Health Care Provider”[tw] OR “Community Health Care Providers”[tw] OR “Community HealthCare Provider”[tw] OR “Community HealthCare Providers”[tw] OR “Community Health Extension Worker”[tw] OR “Community Health Extension Workers”[tw] OR “Community Health Officer”[tw] OR “Community Health Officers”[tw] OR “Community Surveillance Volunteer”[tw] OR “Community Surveillance Volunteers”[tw] OR “Family Health Worker”[tw] OR “Family Health Workers”[tw] OR “Family Planning Agent”[tw] OR “Family Planning Agents”[tw] OR “Family Welfare Assistant”[tw] OR “Family Welfare Assistants”[tw] OR “Female Community Health Volunteer”[tw] OR “Female Community Health Volunteers”[tw] OR “Health Agent”[tw] OR “Health Agents”[tw] OR “Health Assistant”[tw] OR “Health Assistants”[tw] OR “Health Extension Worker”[tw] OR “Health Extension Workers”[tw] OR “Health Surveillance Assistant”[tw] OR “Health Surveillance Assistants”[tw] OR “Kader”[tw] OR “Lead Mother”[tw] OR “Malaria Agent”[tw] OR “Malaria Agents”[tw] OR “Maternal and Child Health Worker”[tw] OR “Maternal and Child Health Workers”[tw] OR “Mobile Clinic Team”[tw] OR “Mobile Clinic Teams”[tw] OR “Nutrition Agent”[tw] OR “Nutrition Agents”[tw] OR “Nutrition Counselor”[tw] OR “Nutrition Counselors”[tw] OR “Peer Educator”[tw] OR “Peer Educators”[tw] OR “Shasthya Shebika”[tw] OR “Socorrista”[tw]

Annex 2

Service delivery areas on which there is published evidence of CHW effectiveness

Health issue	Setting	
	High-income countries	Low- and middle-income countries
Multiple primary health care interventions	Most CHW programmes focused on underserved populations in high-income countries (such as ethnic or racial minorities, the economically marginalized, rural populations or immigrant groups) *(1–7)*. CHW interventions, such as through peer support telephone calls *(8)* or home visits *(9)*, can be effective for a wide range of health issues, including increasing knowledge about parenting *(9)*, disease prevention (moderate strength of evidence) *(1)*, influenza prevention *(9)*, promotion of home safety *(9)*, increasing parenting self-efficacy *(9)*, patient enrolment in research *(10)*, uptake of early intervention services *(10)*, increasing access to primary health care for screening *(2)*, improving workplace safety (low strength of evidence) *(1)* and disease prevention (mixed evidence) *(1)*, and reducing urgent care visits *(9)*. CHWs can reduce obesity among postpartum teens *(9)*, improve nutritional eating habits *(10)*, and increase physical activity *(11)*.	CHW programmes can promote equity of health care access and utilization by reducing inequities relating to place of residence, gender, education and socioeconomic position, and supporting more equitable uptake of referrals *(12)*. There is low-quality evidence from Brazil *(13)*. Deploying lay refugees or internally displaced persons as CHWs to provide basic health services to women, children and families in camps can increase service coverage, knowledge about disease symptoms and prevention, uptake of treatment and protective behaviours, and access to reproductive health information (some evidence, weak quality) *(14)*. There was no clear evidence for equitable quality of services provided by CHWs, and there was limited information regarding the role of CHWs in generating community empowerment to respond to social determinants of health *(12)*. There is some evidence (moderate quality) that CHWs are effective in providing health education *(15)* and psychosocial support *(15)*. There is an absence of evidence on the potential of CHWs to support community-based palliative care *(16)*.
Reproductive, maternal, neonatal and child health		
Neonatal and child health	CHW interventions can be effective in increasing infant-stimulating home environment scores *(9)*, reducing psychiatric diagnoses among children *(9)*, improving child development *(10)*, and improving child well-being (mixed evidence) *(1)*.	CHWs providing community-based care for infants and children in resource-limited settings can reduce neonatal, infant and child mortality and morbidity (for example, from malaria, pneumonia and diarrhoea) *(17–27)*. While there is high-quality evidence that home-based neonatal care reduces neonatal and perinatal mortality in South Asian settings with high neonatal mortality rates and poor access to health facility-based care *(22, 23)*, other reviews reported mixed results, with some individual empirical studies included in reviews not showing improvements in CHW intervention areas *(18)*. Evidence of the impact of CHW interventions on neonatal outcomes is promising but of moderate quality *(21)* and on CHW capacity to provide skilled birth care is of low quality *(21)*. Antenatal and neonatal practice indicators also significantly improved *(23)*. Compared to physicians, trained CHWs may screen for possible bacterial infection in young infants with relatively high sensitivity but somewhat lower specificity *(28)*. There is some evidence of moderate quality that CHWs are effective in the promotion of essential newborn care *(15)*, including skin-to-skin care for newborns *(15)*. CHWs can perform effective case management of child pneumonia *(29)*, although pneumonia management performance is mixed when pneumonia management is integrated with malaria diagnosis and treatment *(30)*.

(continued)

Service delivery areas on which there is published evidence of CHW effectiveness *(continued)*

Health issue	Setting	
	High-income countries	Low- and middle-income countries
Reproductive, maternal, neonatal and child health		
Neonatal and child health (continued)		The use of CHWs, compared to usual health care services, may increase the number of parents who seek help for their sick child *(27)*. Women's groups (facilitated by CHWs) practising participatory learning and action, compared with usual care, have a positive impact on reducing neonatal mortality in low-resource settings (but no evidence of impact on reducing stillbirths) *(31)*. Trained traditional birth attendants compared to untrained traditional birth attendants showed significant increases in safe delivery practices and appropriate referral knowledge and practice *(32)* and are associated with small but significant decreases in perinatal mortality and neonatal mortality due to birth asphyxia and pneumonia *(32)*. However, another review *(33)* concludes that there is insufficient evidence to establish the potential of training of traditional birth attendants to improve perinatal and neonatal mortality. CHWs in Brazil have demonstrated effectiveness in increasing the frequency of child weighings *(13)*.
Maternal health	Peer support can be effective for reducing depressive symptoms in mothers with postnatal depression *(8)* and can positively impact women's perinatal mental health *(34)*. One study on addressing stress and mental health among pregnant women on Medicaid found that adding a CHW to a nurse home visit programme increased the number of at-risk women reached *(6)*.	Almost all of the intervention studies involving CHWs showed a significant impact on reducing maternal mortality and on improving perinatal and postpartum service utilization indicators *(26)*. Community-based intervention packages, which almost always involved CHWs, may have a possible effect on reducing maternal mortality, although the pooled result just crossed the line of no effect *(24)*. Women's groups (facilitated by CHWs) practising participatory learning and action, compared with usual care, have a positive impact on reducing maternal mortality in low-resource settings *(31)*. In settings characterized by high mortality and weak health systems, trained traditional birth attendants can contribute to reducing mortality through participation in key evidence-based interventions *(32)*. There is some evidence of moderate quality that CHWs are effective in providing psychosocial support *(15)*. CHWs were effective in delivering psychosocial and educational interventions to reduce maternal depression *(35)*. Non-specialist providers (a classification that includes CHWs) may be effective in reducing perinatal depression *(36)*.
Immunization	CHW programmes increased the number of children whose vaccinations were up to date (moderate quality) *(37)*.	There is evidence, but low quality or inconsistent, that CHWs can increase immunization coverage through promoting vaccination *(27, 32, 37, 38)* and providing vaccination themselves *(37)*. There is low-quality evidence that health professionals are confident that CHWs can deliver vaccines or other medicines using compact prefilled autodisposal devices *(39)*.
Contraception	CHW interventions have been found to reduce unplanned repeat births among adolescents *(9, 40)* but there was no significant association detected in terms of repeated pregnancies *(40)*.	CHWs were able to deliver injectable contraception safely and effectively, with high quality and with high levels of patient satisfaction *(41, 42)*, and initiate their use (which involves screening women and counselling them on side-effects), with no difference in the quality of counselling on side-effects between CHWs and clinic-based providers *(42)*. Most (93%) studies indicated that CHW family planning programmes increased the use of modern contraception and most (83%) reported an improvement in knowledge and attitudes concerning contraceptives *(43)*. CHWs can provide counselling on contraceptives, provide contraceptives, and refer to health facilities for more specialized care *(43)*.
Breastfeeding	CHW interventions can be effective for increasing breastfeeding continuation *(8, 44)*, attempts and duration *(9)*, initiation, duration, and exclusivity *(45)*.	The use of lay health workers, compared to usual health care services, probably increases breastfeeding *(27)*, and there is some evidence of moderate quality that CHWs are effective in exclusive breastfeeding promotion *(15)*. CHWs in Brazil have demonstrated effectiveness in increasing the prevalence of breastfeeding *(13)* and delaying the introduction of bottle-feeding *(13)*.

(continued)

Service delivery areas on which there is published evidence of CHW effectiveness *(continued)*

Health issue	Setting	
	High-income countries	Low- and middle-income countries
Noncommunicable diseases		
Diabetes	There is weak evidence that CHW interventions improve knowledge of medication label reading among diabetics *(1)*; improve self-management *(46)* (low strength of evidence) *(1)*; decrease glycaemia *(46)* (mixed evidence) *(5)* (modest reduction) *(47)*. There is no evidence that telephone interventions provided by lay and peer support workers improve mental health or quality of life among diabetics *(46)*. For children with type 1 diabetes, CHWs improved glycaemic control and decreased hospitalizations *(48)*.	CHW capacity in addressing diabetes in low- and middle-income countries was not reported in the systematic review literature.
Cancer	CHW interventions – peer support phone calls *(8)*, home visits *(9)* – can be effective in increasing cancer screening rates *(2, 8–10, 49)*; knowledge about prostate cancer (but not screening) *(9)*; cancer screening (moderate evidence) *(1)*; planned use of cancer screening tests (mixed evidence) *(1)*; breast self-examination (mixed evidence) *(1)*.	Only one non-systematic review *(50)* discussed the potential of CHWs to address cancer in low- and middle-income countries, and did not provide evidence of CHW capacity.
Mental health	CHW interventions can reduce depression *(9)* and stigma toward depression treatment (one study) *(6)*, improve depression knowledge and efficacy to seek treatment *(6)*, and produce beneficial changes in health status measures in many, but not all, studies *(51)*. CHW interventions in children with chronic conditions may lead to modest improvements in parental psychosocial outcomes *(48)* and parental quality of life *(48)*.	CHW-led interventions can reduce the burden of mental, neurological and substance use disorders, including depression and post-traumatic stress disorder among adults (evidence from three studies) *(52)*, and can also improve child mental health outcomes (evidence from four studies) *(52)*. Non-specialist providers, usually CHWs, are more effective than usual care or delayed treatment (wait-listed) groups in the provision of mental health treatments, generally for depression or post-traumatic stress *(53)*. Non-specialist health workers, which in this review *(36)* included both professionals (for example, doctors, nurses and social workers) and CHWs (22 of the 38 studies), compared with usual health care services, have some promising benefits in improving outcomes for general and perinatal depression, post-traumatic stress disorder and alcohol use disorders, and outcome for patients with dementia and their caretakers (evidence mostly of low or very low quality) *(36)*.
Asthma	Peer support telephone calls can be effective for increasing the number of asthma-free days *(9)* as well as the use of bedding encasements for asthma patients (moderate strength of evidence) *(1)*. While some CHW interventions for children with asthma decreased rapid breathing episodes, activity limitation, and asthma exacerbations, and increased the number of symptom-free days, results were inconsistent and risk of bias was often unclear *(48)*. Lay and peer interventions for adolescents with asthma could lead to small improvements in asthma-related quality of life (weak evidence) but there was insufficient evidence on asthma control, exacerbations and medication adherence *(54)*.	CHW capacity in addressing asthma in low- and middle-income countries was not reported in the systematic review literature.
Noncommunicable diseases		
Other noncommunicable diseases (chronic diseases, hypertension)	Peer support telephone calls can be effective for diet change in post-myocardial infarction patients *(8)*. CHW interventions may improve chronic disease management among children – including modest improvements in reduced urgent care use *(48)*, decreased symptoms *(48)*, and fewer missed work and school days *(48)* – and in adults *(2)*, including improvements in blood pressure among adults with hypertension *(10, 55)*, in self-management behaviours, including appointment keeping and adherence to antihypertensive medications *(55)*, and in health care utilization (for example, fewer emergency visits and an increased proportion of patients having a nurse or physician) *(55)*.	CHW capacity in addressing other noncommunicable diseases in low- and middle-income countries was not reported in the systematic review literature.

(continued)

Service delivery areas on which there is published evidence of CHW effectiveness *(continued)*

Health issue	Setting	
	High-income countries	Low- and middle-income countries
Infectious diseases		
HIV	Task shifting to CHWs may enhance emotional support and increase retention in care, and better link people with HIV to care (one qualitative study) *(56–58)*.	Task shifting from higher-level providers and clinic-based care to CHWs was generally acceptable to individuals living with HIV *(56, 57)*. This may enhance dignity and quality of life *(59)* and increase retention in care *(56, 59)*, without decreasing the quality of care *(60)* or patient outcomes (such as virologic failure and mortality) *(59, 61, 62)*. Task shifting and community-based outreach involving CHWs effectively links people living with HIV to care *(58)*.
Malaria	CHW capacity in addressing malaria in high-income countries was not reported in the systematic review literature.	There is some evidence of moderate quality that CHWs are effective in malaria prevention *(15, 26)*. CHWs can perform rapid diagnostic tests with high sensitivity and specificity, and display high levels of adherence to treatment guidelines *(29, 30, 63–65)*. There was insufficient research to enable an effect on morbidity or mortality to be estimated *(63)*.
Tuberculosis		CHW interventions have helped decrease the incidence of TB *(26)*. CHWs probably increase the number of people with TB who are cured, though they do not appear to affect the number of people who complete preventive therapy *(27)*. Community initiatives were highly effective in stigma reduction, treatment support, referral of persons with suspected TB and reducing defaulting *(66–68)*. Psychosocial support, referral of persons with TB symptoms and household contact tracing in the context of multidrug-resistant TB have been effective in Peru *(69)*.
Other infections	Home visits from CHWs can be effective in increasing hepatitis B testing *(9)* and increasing hepatitis B virus testing uptake (moderate quality evidence) *(7)*.	CHW interventions have contributed to the control of neglected tropical diseases *(70)*. They can support the control of Buruli ulcer in sub-Saharan Africa *(71)*.

References: Annex 2

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Annex 3

Existing WHO guidelines that identify specific roles and services rendered by CHWs

Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection (WHO HIV, 2016); and Optimizing health workers' roles for maternal and newborn health (WHO RHR, 2012)

The guidelines for task sharing and delegation provide countries with the guidance on how to most efficiently and rationally use a more diverse skills mix for the delivery of essential HIV/AIDS and maternal and newborn health services. http://www.who.int/hiv/pub/arv/arv-2016/en/ and http://www.optimizemnh.org/

Engage-TB approach: integrating community-based tuberculosis activities into the work of nongovernmental and other civil society organizations (WHO TB, 2012)

The document guides the integration of TB activities into the work of CHWs and community volunteers working on other health and development themes through close collaboration between the public sector and nongovernmental organizations and with standardized indicators for the national monitoring and evaluation systems. http://apps.who.int/iris/bitstream/10665/75997/1/9789241504508_eng.pdf

The community health worker: working guide, guidelines for training, guidelines for adaptation (WHO, 1987)

These guidelines date back to 1987 and provide a comprehensive overview of the possible breadth of responsibilities of community health workers in primary health care in developing countries. The document however d oes not reflect contemporary evidence, and it is not clear what evidence was used to inform the service delivery and training recommendations. It is therefore a document of mostly historical relevance. http://apps.who.int/iris/handle/10665/38101

Additional guidelines that refer to scope of work of CHWs from the perspective of their roles in selected programme and service delivery areas

Guidelines for training community health workers in nutrition

http://apps.who.int/iris/handle/10665/37922

WHO/WFP/SCN and UNICEF joint statement on community-based management of severe acute malnutrition

http://www.unicef.org/publications/index_39468.html

Malaria: a manual for community health workers

http://apps.who.int/iris/bitstream/10665/41875/1/9241544910_eng.pdf

Training of community health workers and community volunteers

http://apps.who.int/iris/bitstream/10665/178160/1/9789241509176_eng.pdf

Caring for newborns and children in the community (joint WHO/UNICEF)

http://apps.who.int/iris/bitstream/10665/204273/2/9789241549295_FacilitatorNotes_eng.pdf?ua=1

Caring for the newborn at home (joint WHO/UNICEF)

http://www.who.int/maternal_child_adolescent/documents/caring-for-the-newborn-at-home/en/

Caring for the child's health: growth and development (joint WHO/UNICEF)

http://www.who.int/maternal_child_adolescent/documents/care_child_development/en/

Caring for the sick child in the community (joint WHO/UNICEF)

http://www.who.int/maternal_child_adolescent/documents/caring-for-the-sick-child/en/

WHO/UNICEF joint statement on iCCM

http://www.unicef.org/health/files/iCCM_Joint_Statement_2012(1).pdf

Revised WHO classification and treatment of childhood pneumonia at health facilities

http://www.who.int/maternal_child_adolescent/documents/child-pneumonia-treatment/en/

Community case management during an influenza outbreak: a training package for community health workers

http://www.who.int/influenza/resources/documents/community_case_management_flipbook/en/

Caring for newborns and children in the community: planning handbook for programme managers and planners

http://apps.who.int/iris/bitstream/10665/204457/1/9789241508599_eng.pdf

Community health workers: what do we know about them?

http://www.who.int/hrh/documents/community_health_workers.pdf

WHO/ GHWA/UNICEF/IFRC/UNHCR joint statement: scaling up the community-based health workforce for emergencies

http://www.unicef.org/media/files/Scaling-up_community-based_health.pdf

Age-friendly primary health care centres toolkit

http://apps.who.int/iris/bitstream/10665/43860/1/9789241596480_eng.pdf?ua=1

Baby-friendly hospital initiative

http://apps.who.int/iris/bitstream/10665/43593/5/9789241594981_eng.pdf

Clinical guidelines for withdrawal management and treatment of drug dependence in closed settings

http://www.wpro.who.int/publications/docs/ClinicalGuidelines_forweb.pdf?ua=1

Comprehensive cervical cancer control: a guide to essential practice

http://apps.who.int/iris/bitstream/10665/144785/1/9789241548953_eng.pdf?ua=1

HIV prevention, diagnosis, treatment and care for key populations

http://apps.who.int/iris/bitstream/10665/128048/1/9789241507431_eng.pdf?ua=1&ua=1

The use of antiretroviral drugs for treating and preventing HIV infection

http://apps.who.int/iris/bitstream/10665/85321/1/9789241505727_eng.pdf?ua=1

Guidelines on the treatment of skin and oral HIV-associated conditions in children and adults

http://apps.who.int/iris/bitstream/10665/136863/1/9789241548915_eng.pdf?ua=1&ua=1

HIV and adolescents: guidance for HIV testing and counselling and care for adolescents living with HIV

http://apps.who.int/iris/bitstream/10665/94334/1/9789241506168_eng.pdf?ua=1

Home visits for the newborn child: a strategy to improve survival (joint WHO/UNICEF)

http://apps.who.int/iris/bitstream/10665/70002/1/WHO_FCH_CAH_09.02_eng.pdf?ua=1&ua=1

Infant and young child feeding

http://apps.who.int/iris/bitstream/10665/44117/1/9789241597494_eng.pdf?ua=1&ua=1

Guideline: managing possible serious bacterial infection in young infants when referral is not feasible

http://apps.who.int/iris/bitstream/10665/181426/1/9789241509268_eng.pdf?ua=1

Operations manual for delivery of HIV prevention, care and treatment at primary health centres in high-prevalence, resource-constrained settings

http://www.who.int/hiv/pub/imai/om.pdf?ua=1

Optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting

http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf?ua=1

Responding to intimate partner violence and sexual violence against women: WHO clinical and policy guidelines

http://apps.who.int/iris/bitstream/10665/85240/1/9789241548595_eng.pdf?ua=1

Treatment of tuberculosis guidelines: fourth edition

http://apps.who.int/iris/bitstream/10665/44165/1/9789241547833_eng.pdf?ua=1&ua=1

Guideline: updates on the management of severe acute malnutrition in infants and children

http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf?ua=1

Guidelines for the management of conditions specifically related to stress

http://apps.who.int/iris/bitstream/10665/85119/1/9789241505406_eng.pdf?ua=1

WHO recommendations on health promotion interventions for maternal and newborn health, 2015

http://apps.who.int//iris/bitstream/10665/172427/1/9789241508742_report_eng.pdf?ua=1

Annex 4

List of members of Steering Group, Guideline Development Group and External Review Group

Table A4.1: Steering Group members

Name and affiliation	Gender
WHO headquarters	
COMETTO, Giorgio (RTO) – WHO Health Workforce	M
NEGUSSIE, Eyerusalem Kebede / FORD, Nathan – WHO HIV	F, M
ABOUBAKER, Samira – WHO Maternal, newborn, child and adolescent health	F
SYED, Lana – WHO Global TB Programme	F
OLADAPO, Olufemi Taiwo – WHO Reproductive health research	M
BARKLEY, Shannon – WHO Service delivery and safety	F
MORAN, Thomas – WHO Polio, emergencies and country collaboration	M
PORIGNON, Denis Georges – WHO Health governance and financing	M
ARAUJO DE CARVALHO, Islene – WHO Ageing and life course	F
DUA, Tarun – WHO Mental health and substance abuse	F
WHO regional offices	
NYONI, Jennifer – WHO Regional Office for Africa	F
ASSAI ARDAKANI, Mohammad – WHO Regional Office for the Eastern Mediterranean	M
GEDIK, Fethiye Gulin – WHO Regional Office for the Eastern Mediterranean	F
SENANAYAKE, Gunasena Sunil – WHO Regional Office for South-East Asia	M
GARCIA GUTIERREZ, Jose Francisco – WHO Regional Office for the Americas	M
PARK, Kunhee / HAZARIKA, Indrajit – WHO Regional Office for the Western Pacific	M, M
PERFILIEVA, Galina – WHO Regional Office for Europe	F
Other United Nations agencies	
PFAFFMANN, Jerome – (UNICEF) Health unit, child health	M

Table A4.2: Guideline Development Group members

Constituency/role	Last name	First name	Gender	Region	Country	Institution
Methodologist and co-chair	Akl	Elie	M	Eastern Mediterranean	Lebanon	American University of Beirut
Academia	Huicho	Luis	M	Americas	Peru	Universidade Peruana Cayetano Pereira
	Dambisya	Yoswa	M	Africa	South Africa	Limpopo University
	Guangpeng	Zhang	M	Western Pacific	China	National Health Development Research Centre
Co-chair	McPake	Barbara	F	Western Pacific	Australia	University of Melbourne
	Bhutta	Zulfiqar	M	Eastern Mediterranean	Pakistan	Aga Khan University
	Dussault	Gilles	M	Europe	Portugal	Instituto Hygiene e Medicina Tropical, Lisbon, Portugal
Co-chair	Lehmann	Uta	F	Africa	South Africa	University of Western Cape
Policy-makers from government	Ngwenya	Shirley	F	Africa	South Africa	University of the Witwatersrand
	Chala	Tesfaye	M	Africa	Ethiopia	Deputy Director PHC, Ministry of Health
	Abdalla	Amel	F	Eastern Mediterranean	Sudan	Deputy Director HRD, Ministry of Health
	Kauffman	Arthur	M	Americas	United States of America	University of New Mexico
	White	Jean	F	Europe	Wales (United Kingdom)	Welsh Government, Health and Social Services Group
	Gbanya	Miatta	F	Africa	Liberia	Ministry of Health
	Mugeni	Catherine	F	Africa	Rwanda	Ministry of Health
	Medina	Guadalupe	F	Americas	Brazil	Universidade Federal de Bahia / Ministry of Health
	Nargis	Makhduma	F	South-East Asia	Bangladesh	Ministry of Health
	Jelamschi	Nicolae	M	Europe	Republic of Moldova	Ministry of Health
	Latianara	Arieta	F	Western Pacific	Fiji	Ministry of Health
Professional associations, labour unions, civil society	Mungherera	Margaret	F	Africa	Uganda	World Medical Association
	Catton	Howard	M	Europe	United Kingdom	International Council of Nurses
	Walker	Polly	F	Europe	United Kingdom	World Vision
	Shresta	Ram	M	South-East Asia	Nepal	Tufts
	Vermuyten/ Aye	Sandra/ Babatunde	F, M	Europe	Belgium	Public Services International
Community health worker	Nakibuuka	Maxensia	F	Africa	Uganda	Ministry of Health
Community health worker	Leonard Sharia	Mbiu	M	Africa	Kenya	Ministry of Health
Observer (funder)	Qureshi	Nazo	F	Americas	United States of America	United States Agency for International Development

Table A4.3: External Review Group members

Full names	Institution	Country	WHO region	Gender
Abimbola Olaniran	Liverpool School of Tropical Medicine	United Kingdom	Europe	M
Ari Johnson	University of California, San Francisco, Global Health Sciences Muso	United States of America	Americas	M
Bhanu Pratap	International Federation of Red Cross and Red Crescent Societies	Switzerland	Europe	M
Camila Giugliani	Federal University of Rio Grande do Sul, Porto Alegre, Brazil	Brazil	Americas	F
Jennifer Breads	Jhpiego	United States of America	Americas	F
Karin Källander	Malaria Consortium	United Kingdom	Europe	F
Madeleine Ballard	Community Health Impact Coalition	Germany	Europe	F
Magali Romedenne	UNICEF	Senegal	Africa	F
Maisam Najafizada	Memorial University of Newfoundland Health Sciences Centre, Newfoundland and Labrador	Canada	Americas	M
Maryse Kok	Royal Tropical Institute	Netherlands	Europe	F
Ochiawunma Ibe	ICF/Maternal and Child Survival Program, United States of America	Nigeria	Africa / Americas	F
Peter Ngatia	Amref Health Africa	Kenya	Africa	M
Rajesh Panjabi	Last Mile Health	United States of America	Americas	M
Ruth Ngechu	Living Goods	Kenya	Africa	F
Samson Kironde	University Research Co., LLC	Uganda	Africa	M
Sara Javanparast	Flinders University	Australia	Western Pacific	F
Eric Sarriot	Save the Children	United States of America	Americas	M
Stephen Hodgins	University of Alberta	Canada	Americas	M
Sunita Singh	London School of Hygiene and Tropical Medicine	India	South-East Asia	F

Table A4.4: GDG conflict of interest management

Name	Designation	Interests	Decision
Elie Akl	American University of Beirut Beirut, Lebanon	No interests declared	No further action required
Babatunde Aiyelabola	Health and Social Sector Public Services International, France	No interests declared	No further action required
Zulfiqar Bhutta	Aga Khan University Karachi, Pakistan	No interests declared	No further action required
Howard Catton	Director, Nursing and Health Policy Consultant International Council of Nurses, Geneva, Switzerland	No interests declared	No further action required
Yoswa Dambisya	East, Central and Southern Africa Health Community Arusha, United Republic of Tanzania	No interests declared	No further action required
Gilles Dussault	International Public Health and Biostatistics Unit Instituto de Higiene e Medicina Tropical, Lisbon, Portugal	No interests declared	No further action required
Miatta Zenabu Gbanya	Manager, Health Sector Pool Fund Ministry of Health, Liberia	No interests declared	No further action required
Amel Abdalla Gesmalla	Deputy Director HRD Federal Ministry of Health, Khartoum, Sudan	No interests declared	No further action required
Louis Huicho	Universidad Peruana Cayetano Pereira Av. Honorio Delgado 430, Urb. Ingeniería, S.M.P., Lima, Peru	No interests declared	No further action required
Zhang Guangpeng	China National Health Development Research Centre, Beijing, China	No interests declared	No further action required
Nicolae Jelamschi	Coordination, Implementation and Monitoring Unit of Health System Projects Ministry of Health of the Republic of Moldova Chisinau, Moldova	No interests declared	No further action required
Arieta Latianara	Public Health Fiji Ministry of Health, Suva, Fiji	Employment and consulting on the topic of CHWs as part of job responsibilities with Government of Republic of Fiji	No further action required
Uta Lehmann	Director, School of Public Health University of the Western Cape, Cape Town, South Africa	Research support: development of regional technical paper on CHWs for WHO Regional Office for Africa	No further action required
Arthur Kaufman	University of New Mexico Albuquerque, United States of America	No interests declared	No further action required
Isabela Cardoso de Matos Pinto	Instituto de Saude Coletiva, Brazil	Financial support, to the research unit, Ministry of Health	No further action required
Leonard Mbiu	Ministry of Health and Sanitation Kitui County, Kenya	No interests declared	No further action required

(continued)

Table A4.4: GDG conflict of interest management *(continued)*

Name	Designation	Interests	Decision
Barbara McPake	Director, Nossal Institute for Global Health School of Population and Global Health, University of Melbourne, Australia	Funded research support on CHWs and HRH policy and research activities in the context of numerous grants and initiatives. Subsequently, a consortium including academics from the same institution (University of Melbourne) was selected through a competitive selection process to conduct the systematic reviews.	Professor McPake's declared interests were not deemed to require any further action. The subsequent selection of a consortium including researchers from the same institution for the development of the systematic reviews led to a decision to request Professor McPake not to entertain direct communications on the CHW guideline with the systematic review team.
Maria Guadalupe Medina	Researcher, Public Health Department Institute of Collective Health, Federal University of Bahia, Salvador, Brazil	Received financial support for research on community health workers in Brazil	No further action required
Catherine Mugeni	Director, Community Health Unit IHDPC/Maternal Child and Community Health Division, Rwanda Biomedical Centre Ministry of Health, Rwanda	No interests declared	No further action required
Maxensia Nakibuuka	Community Health Worker Kampala, Uganda	Employed in care provision, policy dialogue, research and advocacy on CHWs	No further action required
Makhduma Nargis	Former Chief Coordinator, Community Based Health Care House 4, Road 14, Sector 7 Uttara, Dhaka 1230, Bangladesh	No interests declared	No further action required
Shirley Ngwenya	University of the Witwatersrand Richard Ward, 1 Jan Smuts Ave Braamfontein, Johannesburg 2000, South Africa	No interests declaredrequired	No further action required
Ram Shrestha	Senior Quality Improvement Advisor University Research Co, LLC Bethesda MD, United States of America	No interests declared	No further action required
Chala Tesfaye	Federal Ministry of Health Addis Ababa, Ethiopia	No interests declared	No further action required
Sandra Vermuyten	Public Services International Rome, Italy	No interests declared	No further action required
Polly Walker	Community Health Worker Programming Advisor World Vision International, Middlesex, United Kingdom	No interests declared	No further action required
Jean White	Health and Social Services Group Welsh Government, Wales, United Kingdom	No interests declared	No further action required

Table A4.5: ERG conflict of interest management

Name	Designation	Interests	Decision
Abimbola Olaniran	Liverpool School of Tropical Medicine Liverpool, United Kingdom	Consulting and research support on CHW-focused policy and academic activities	No further action required
Ari Johnson	Muso University of California, San Francisco	Employment and research financial support: research on, support implementation of, and provision of paid technical assistance related to community health worker programme implementation	No further action required
Bhanu Pratap	International Federation of Red Cross and Red Crescent Societies Geneva, Switzerland	No interests declared	No further action required
Camila Giugliani	Federal University of Rio Grande do Sul Porto Alegre, Brazil	No interests declared	No further action required
Jennifer Breads	Jhpiego 1615 Thames Street Baltimore, United States of America	Paid consultancy on CHW training	No further action required
Karin Källander	Malaria Consortium London, United Kingdom	No interests declared	No further action required
Madeleine Ballard	Community Health Impact Coalition Berlin, Germany	No interests declared	No further action required
Magali Romedenne	UNICEF Regional Office for West and Central Africa Yoff Dakar, Senegal	No interests declared	No further action required
Maisam Najafizada	Memorial University of Newfoundland Health Sciences Centre, Newfoundland and Labrador	No interests declared	No further action required
Maryse Kok	KIT Royal Tropical Institute Netherlands	No interests declared	No further action required
Ochiawunma Ibe	ICF/Maternal and Child Survival Program USAID Grantee Washington, DC, United States of America	Serves as paid Senior Community Health Advisor on a USAID-funded MNCH project working for an organization that receives contracts and grants for work in strengthening community health systems within primary health care (paid; current position) Served as Technical Advisor with USAID (2006–2017)	No further action required
Peter Ngatia	Amref Health Africa Headquarters Nairobi, Kenya	No relevant interests declared	No further action required
Rajesh Panjabi	Last Mile Health Boston, United States of America	No interests declared	No further action required
Ruth Ngechu	Living Goods Nairobi, Kenya	No interests declared	No further action required
Samson Kironde	University Research Co., LLC, Uganda	No interests declared	No further action required
Sara Javanparast	Flinders University, Health Sciences Building Sturt Rd, Bedford Park Adelaide, Australia	No interests declared	No further action required
Eric Sarriot	Department of Global Health Save the Children United States of America	No interests declared	No further action required
Stephen Hodgins	University of Alberta Edmonton, Canada	No interests declared	No further action required
Sunita Singh	London School of Hygiene and Tropical Medicine London and Delhi	Paid consultancy on issue relevant to guideline topic	No further action required

Annex 5

Selected findings of stakeholder perception survey

Stakeholder perceptions of health systems support for CHW programmes: a survey study.

CHWs are an important component of the health workforce in many countries. This semi-quantitative cross-sectional study was conducted to assess the acceptability and feasibility of the policy options under consideration in the guideline by stakeholders.

A self-administered online survey was disseminated in English and French languages to stakeholders through three major channels: WHO human resources for health contact list, the Health Information For All (HIFA) online platform, and participants at the 2017 Institutionalizing Community Health Conference held in South Africa in 2017. Eligible participants included stakeholders who were involved directly or indirectly in the implementation of CHW programmes in countries.

A total of 96 submissions were obtained. Responses were graded using a 9-point Likert scale to rate the outcome measures and the level of acceptability and feasibility of the interventions. The outcomes value scale had the following anchors: 1 = not important; 5 = important; 9 = critical. The acceptability scale had the following anchors: 1 = definitely not acceptable; 5 = uncertain whether acceptable or not; 9 = definitely acceptable. The feasibility scale had the following anchors: 1 = definitely not feasible; 5 = uncertain whether feasible or not; 9 = definitely feasible.

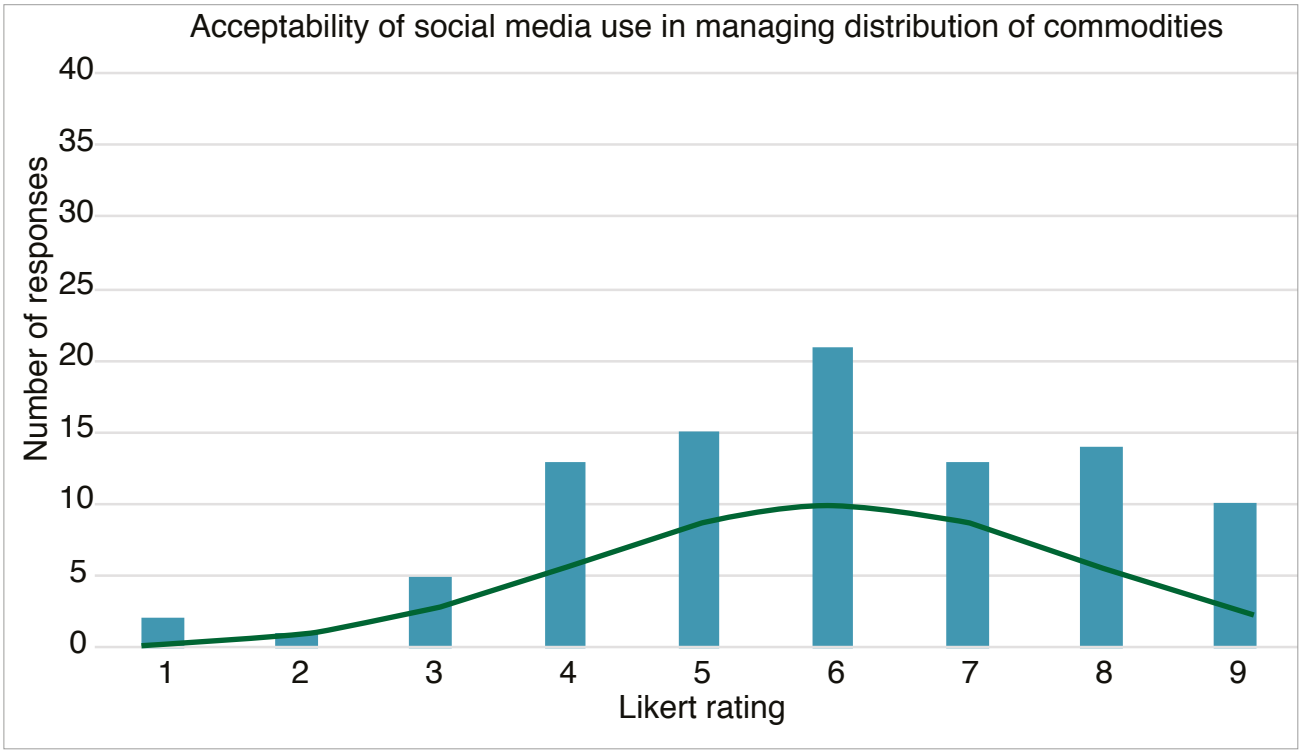
Applying this scale to the retrieved data, most of the outcome measures of the CHW policy options were deemed to be close to the "critical" end of the spectrum of the Likert scale rating, though the highest-ranking outcomes were as follows: improved quality of CHW health services, increased health services coverage, and increased access to care for patients. Most of the policy options under consideration in the guideline were also deemed to be acceptable and feasible for implementation by stakeholders (Table A5.1). Very few interventions were rated as uncertain in terms of acceptability or feasibility, for instance the selection of CHWs for pre-service education on the basis of age and a minimum secondary level of education. No outcome measure was rated as "not important", nor were any interventions deemed to be "definitely unacceptable" or "definitely unfeasible".

Table A5.1: Acceptability and feasibility of CHW interventions

Average Likert scale ranking for CHW interventions (1 = lowest; 9 = highest)	Acceptability (N = 95)	Feasibility (N = 92)
1) Compared to other methods or no assessment at all, how acceptable is the use of this questionnaire to rate the acceptability by stakeholders of implementing CHW policy interventions?	6.3	6.2
2) Using essential and desirable attributes to select CHWs for pre-service training	7.3	7.2
a) Adopting only CHWs who have completed a minimum of secondary education (relative to lower levels of literacy)	5.2	5.5
b) Selecting older candidates on the basis of age (relative to random age selection)	4.5	5.2
c) Selecting members of the target community (relative to selecting non-members)	6.9	7.0
3) Training of CHWs for a short period (could range from a number of days to one month relative to training for a longer period of 6 months to 3 years)	6.4	7.0
4) Having standardized educational curricula	6.8	7.0
a) Curricula should address biological/medical (determinants, basic notions of human physiology, pharmacology, and diagnosis and treatment)	5.6	5.8
b) Curricula addressing household-level preventative behaviours in relation to priority health conditions	7.9	7.8
c) Curricula addressing education about social determinants of health	7.6	7.6
d) Curricula addressing counselling and motivation skills (including communication skills)	8.0	7.8
e) Curricula addressing scope of practice (attitude, when to refer patients, range of tasks, power relationships with the client, personal safety)	7.9	7.8
f) Curricula addressing CHW integration within the wider system (access to resources)	7.7	7.5
5) Issuing a formal certification for CHWs who have undergone competency-based pre-service training	7.6	7.6
6) Strategic supervision support for CHWs	8.2	7.8
a) Coaching of CHWs	8.0	7.5
b) Use of task checklists	7.9	7.8
c) Observation of CHWs at facility	7.1	7.2
d) Observation of CHWs at community and facility	7.8	7.6
e) CHWs supervising CHWs	6.1	6.3
f) Higher cadre health workers supervising CHWs	7.7	7.5
g) Trained supervisor	7.9	7.8
h) Assessing CHWs by service delivery supervision only	5.2	6.3
i) Assessing CHWs by service delivery supervision and community feedback	7.6	7.4
7) Rewarding CHWs for their work	7.9	7.6
a) Monetary incentives	7.2	6.7
b) Non-monetary incentives	7.2	7.1
c) Benchmarking full-time CHW salary to the government minimum wage of the locality	6.7	6.2
8) CHWs having a career ladder opportunity/framework within the health and education systems	7.3	6.4
9) CHWs having a formal contract within the health system	7.0	6.7
10) CHWs collecting and submitting data on their routine activities	8.0	7.7
11) Community engagement strategies to support practising CHWs (including village committees and community health action planning activities)	7.9	7.6
12) Proactive community mobilization by CHWs (identifying priority health and social problems, mobilizing local resources, engaging communities in participation of health service organization and delivery)	8.0	7.5
13) Providing strategies to ensure adequate availability of commodities and consumable supplies in the context of practising CHW programmes	7.9	7.4
a) Ensuring inclusion of relevant commodities in the national pharmaceutical supply plan or equivalent national supply chain plan	7.9	7.3
b) Simplified stock management tools and visual job aids for CHWs that accommodate low literacy with minimum data points to facilitate recording of data and resupply	8.0	7.6
c) Use of mobile phone applications (mHealth) for reporting stock and other data	7.4	7.0
d) Coordination, supervision and standardization of resupply procedures, checklists and incentives	7.8	7.3
e) Products specifically designed for use by CHWs (presentation, strength, form and packaging)	7.3	7.0
f) Use of social media to manage redistribution	6.0	6.0

Beyond the average rating values, it is important to note that for several of the interventions under consideration the values showed a wide distribution of responses, indicating substantial variance in the perceived acceptability and feasibility among respondents **(Figures A5.1 and A5.2)**.

Figure A5.1: Acceptability and feasibility of social media use in redistribution of commodities and supplies



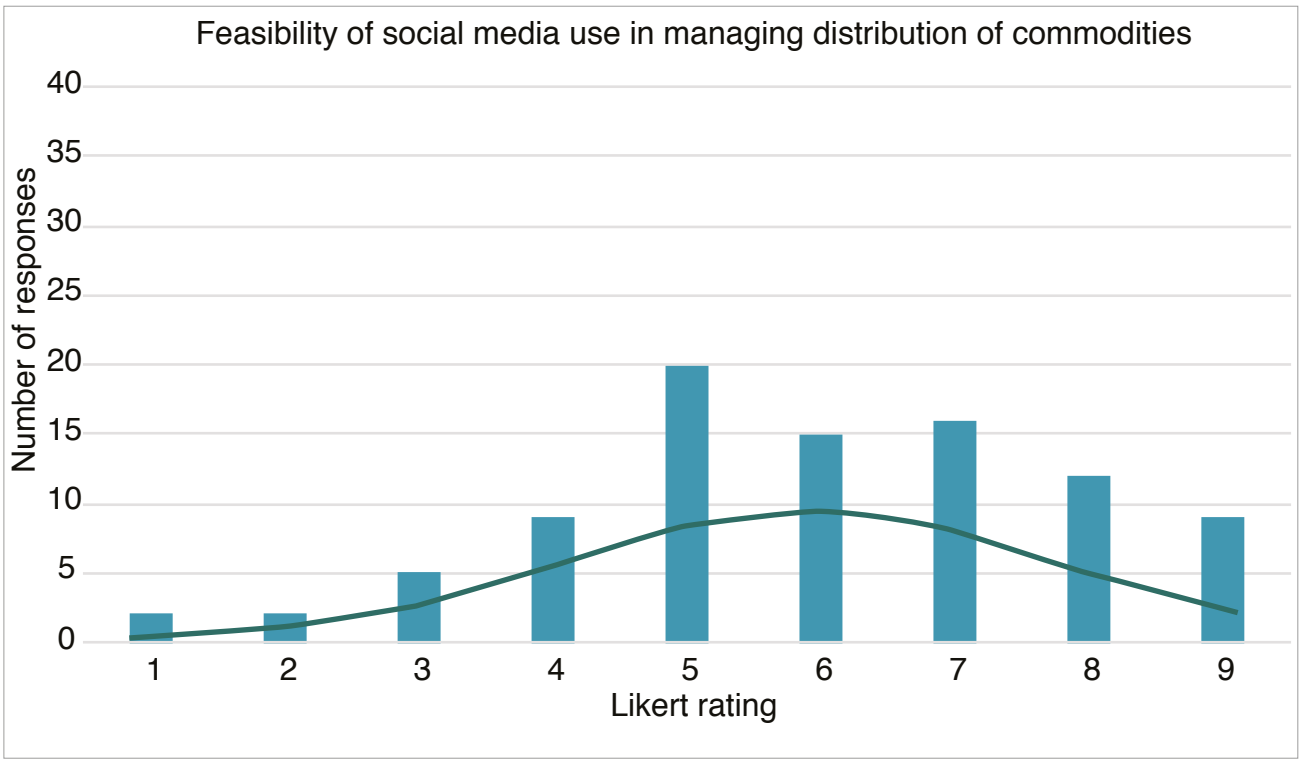
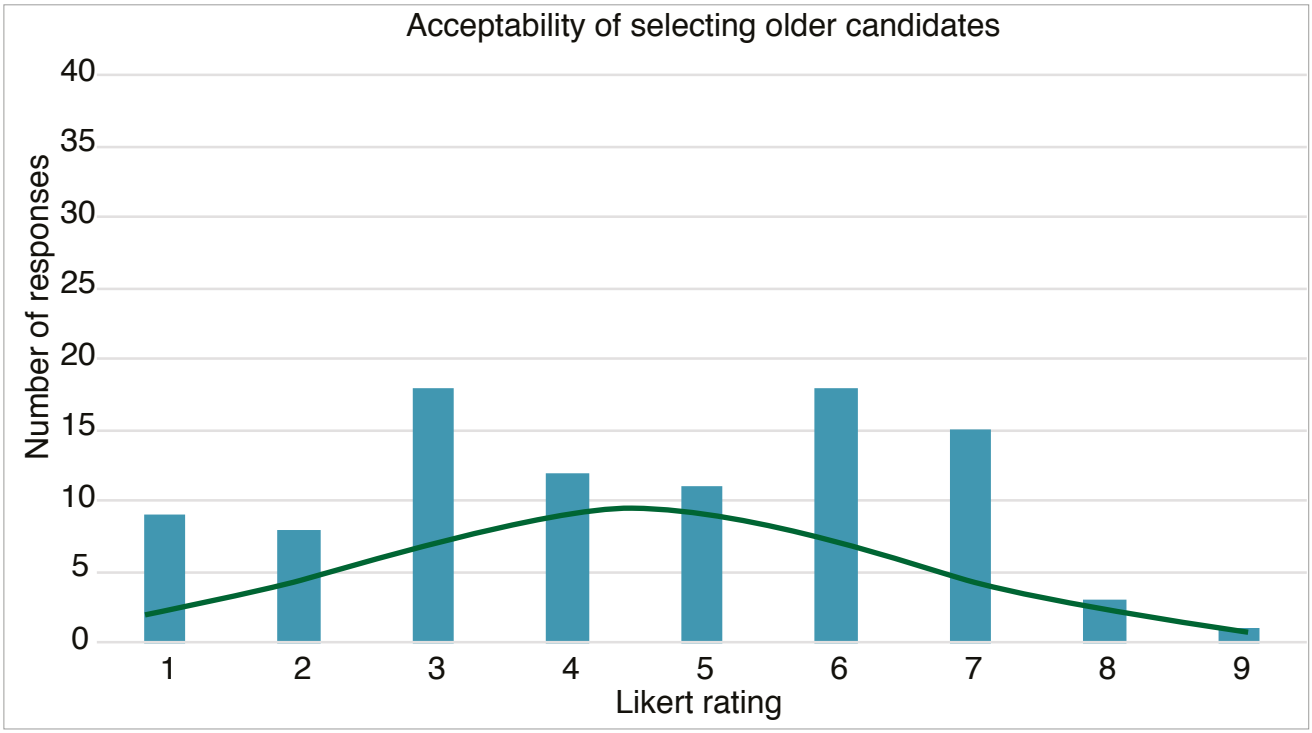
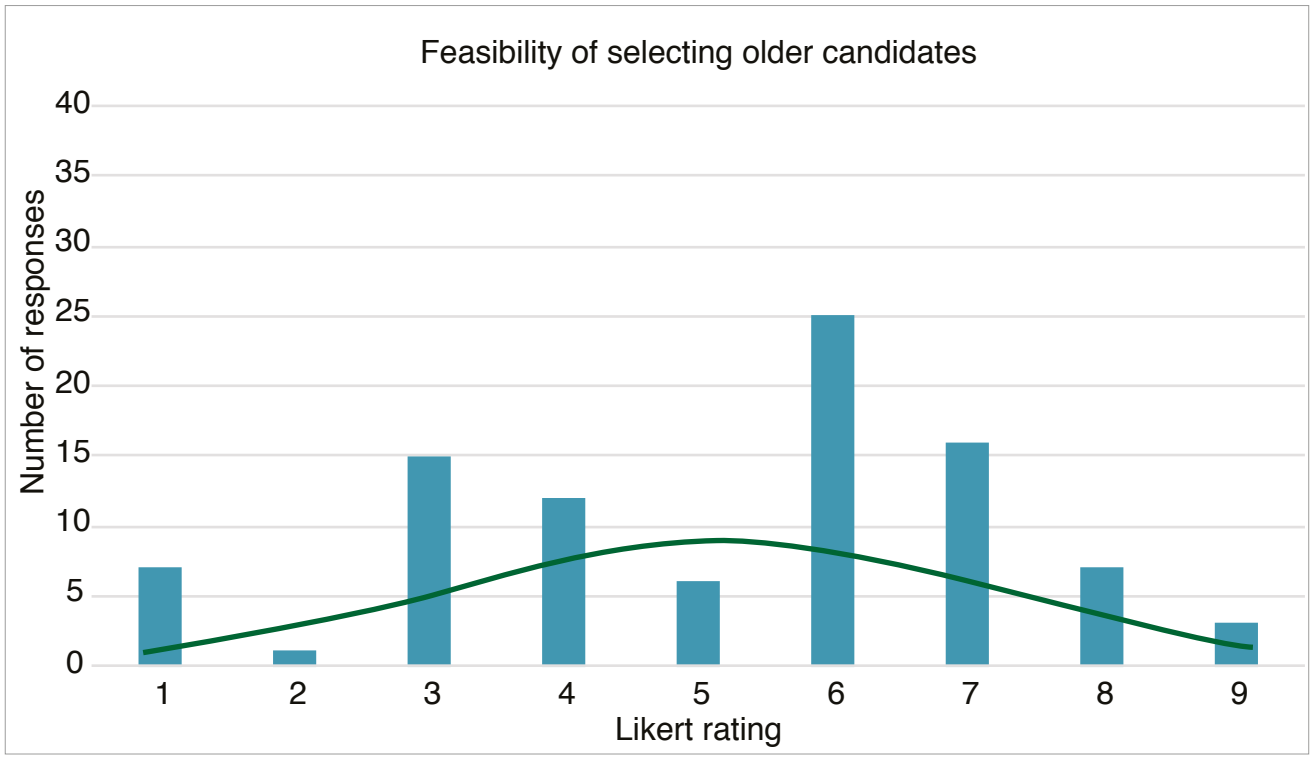


Figure A5.2: Acceptability and feasibility of selecting older candidates





National health policies, strategies, and plans are more likely to be implemented effectively if their negotiation and development is inclusive of all stakeholders and reflective of their perceptions and value preferences.

This stakeholder perception survey adds a complementary perspective to the decision-making framework utilized by the Guideline Development Group in formulating the recommendations of the guideline. In addition to synthesis of the scientific evidence through the systematic reviews, the results of the survey add confidence to the applicability of most recommendations in practice settings.

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ISBN 978-92-4-155036-9