Factors influencing the implementation of remote delivery strategies for non-communicable disease care in low- and middle-income countries: A narrative review

WHAT IS THE ISSUE?

People living with non-communicable diseases (NCDs) are particularly vulnerable in humanitarian crisis settings where access to basic services is often limited and care interrupted. Effective remote delivery approaches such as those supporting continuity of care outside of facility settings namely e-health or community-based care, may be helpful in any setting of service disruption. However, little research on remote delivery approaches in low- and middle-income countries (LMICs), or humanitarian settings, exists.

WHAT WE DID

We worked with an advisory committee of humanitarian actors to identify and define four key approaches to remote care delivery and conducted a narrative review of 28 primary research studies that identified barriers and facilitators to implementing these approaches for people living with hypertension and/or diabetes (DM/HTN) in LMICs. We used the Consolidated Framework for Implementation Research (CIFR) with a hermeneutic and purposive approach to understand what implementation factors were important in the delivery of the selected remote NCD care strategies.

OVERALL FINDING

Our research highlights the complexity of implementation processes, which are dynamically influenced by multiple interdependent factors. We found that the internal organisational context of the healthcare setting and the sociodemographic characteristics of users, such as age, strongly influence the implementation of e-health and community-level remote services. Intervention design and implementation strategies should, therefore, be adapted to the needs and characteristics of patients, organisations, and broader context.

RECOMMENDATIONS FOR ACTION

We recommend designing and evaluating context-specific interventions to support remote care for DM/HTN that are supported by analyses of patients' socioeconomic and cultural circumstances, the health system, and the relevant technological and policy context. Evaluating interventions using a pragmatic implementation framework, such as the CIFR framework, would further our understanding of the factors essential for successful implementation.

KEY MESSAGES

Ensuring continuity of care is vital for people living with NCDs. Remote delivery of care can be instrumental in dealing with emergencies or in any setting where facility-based services are disrupted or inaccessible. Interventions that minimise patients' contact with health facilities, while ensuring continuity of care, will have important implications for "the new normal" after the COVID-19 pandemic response, for future health care disruptions, and for other settings where access to care is difficult for people, for example, due to poverty or disability.

Scan the QR code **or click here** to access the article.

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Summary of factors influencing implementation success of e-health and community-based remote care delivery* interventions

We examined the 28 studies on e-health (14) and community-based (14) remote delivery approaches. Other approaches were initially considered, including task-sharing; adaption of medicines provision; and simplification of protocols to minimise facility contact. These were excluded as limited or no literature was found on them. Our findings provide guidance for policymakers and humanitarian actors tailoring implementation strategies to support remote, non-facility based NCD care in crisis settings.

They may also be relevant to a wider audience in LMICs and other contexts where access to facilities is challenging.

Research gaps
More research is needed:

- To examine the influence of the broader external contextual factors, such as community-health policies or the technological environment.

- On implementation research around the adaptation of medicine provision and simplification of clinical protocols to reduce facility-based contact.

- To facilitate and optimise the implementation of remote services in LMICs and humanitarian settings.

Summary
Our review revealed the importance of organisational and sociodemographic factors in the success or failure of remote service implementation. However, research and evidence remain limited, particularly from LMICs and humanitarian settings.

Key: (+) facilitator; (−) barrier; (+/−) either facilitator or barrier depending on context

*Based on the CFIR conceptual framework by Damschroder LJ, Aron DC, Keith RE *et al.* (2009).
Access article **here**.

Inner setting
Organisational features

E-health relevant factors
Implementation climate and readiness: Perceived disruption of workflow and increased workload (-)

Participative management style, provision of training, support and supervision (+)

Community-based approaches relevant factors
Networks and communication: Poor coordination and lack of communication policies or poorly defined roles, responsibilities and internal processes (-)

Structural characteristics: High turnover rate of health care workers (-)

Characteristics of individuals
Individuals beliefs, perception, knowledge, behaviour and personal attributes

E-health relevant factors
Knowledge and attitudes: Patients' knowledge about self-management and their attitude towards remote care (+/-)

Self-efficacy: Patients' confidence in using technologies and/or self-manage their condition (+/-)

Community-based approaches relevant factors
Knowledge and attitudes: Patients' attitudes towards referrals to community-health workers (+/-) Self-efficacy: Health workers' confidence in performing the tasks (+/-)

E-health and **community-based approaches**
Individual state of change: The willingness of users and providers to learn new skills is a key driver of successful implementation for both e-health and community-based approaches (+/-)

Personal attributes: Uptake varies with age, education, and employment status

Outer setting
Economic, political and social context

E-health relevant factors
Patient needs and resources: Access to technical support, training and guidance (+)

Socio-economic context:
Socio-economic insecurity (-)

Technological environment:
The condition of the local phone and internet market is critical.

Community-based approaches relevant factors
External policy: Remuneration and status of healthcare workers influences service implementation and affordability influences their uptake (+/-)

E-health and **community-based approaches**
Patient needs and resources: Remote-delivery approaches should be designed to integrate into patients' daily lives with minimal effort and should be adapted to the local context, including through the use of local languages (+)
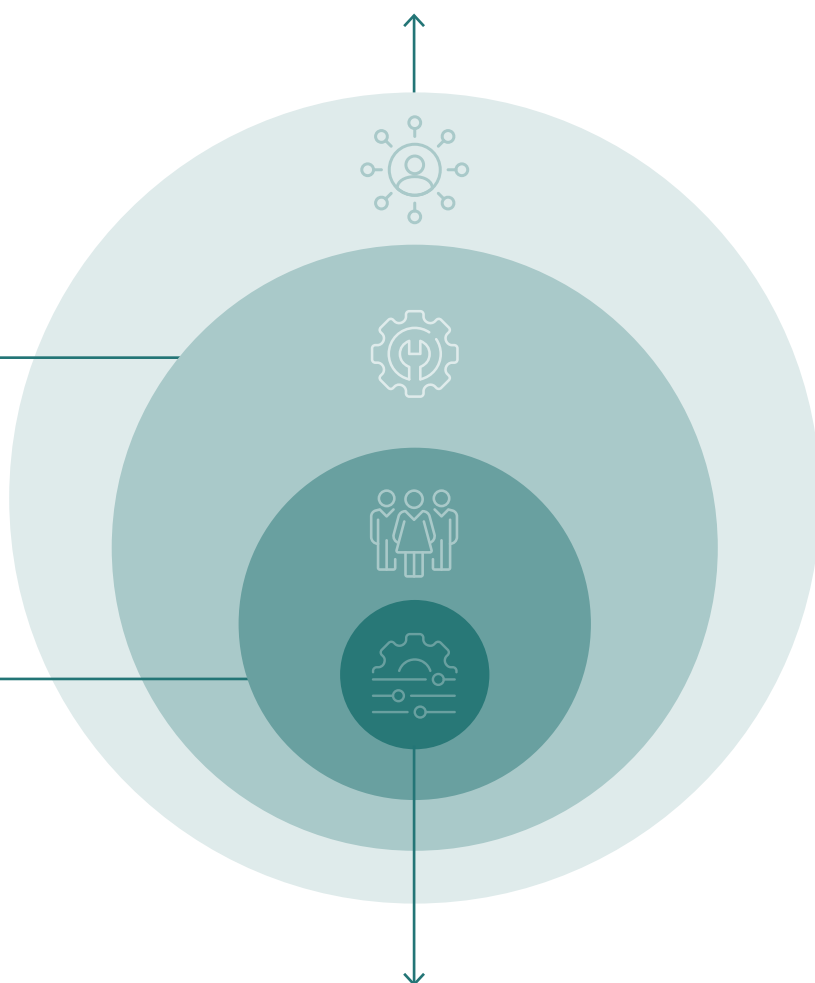
Process
Planning, engaging

E-health relevant factors
Support provided to e-health service users (+)

Community-based approaches relevant factors
Involvement of external change agents like community health professionals, community and/ or religious leaders (+)
Health workers' professionalism and confidentiality (-)

E-health and **community-based approaches**
Stakeholder engagement at all stages of design, planning and implementation of remote care intervention (+)

Intervention characteristics
Key attributes of interventions

E-health relevant factors
Ease of access: e-health services should be accessible from anywhere and flexible to use at any time (+)

Design quality and packaging: Health interventions: timing, frequency and framing of messages (+/-)

Web-based interventions: ease of use, navigability and incorporation of personalised features (+)

Perceived complexity: increased complexity of e-health services constitutes a barrier to use (-)

Community-based approaches relevant factors
Relative advantage: Reduction of patient load at health facility (+)

Design quality and packaging: provision of support materials (+) and timing, frequency, flexibility and modality of contact (+/-)

Non-communicable diseases in humanitarian crises

Worldwide, close to a billion people live in fragile and conflict-affected contexts, and this number is expected to grow.[1] Among those impacted globally, it is estimated that 274 million people need humanitarian assistance and protection.[2] Many of these individuals live with NCDs such as diabetes and hypertension.

Partnering for Change

In 2018 the International Committee of the Red Cross, the Danish Red Cross and Novo Nordisk formed a partnership to tackle the growing issue of NCDs affecting millions of people in humanitarian crises worldwide. The collective vision of the partnership is that all people affected by humanitarian crises should have access to the NCD care they need, no matter where they are. The partnership is supported by the London School of Hygiene & Tropical Medicine (LSHTM), the lead academic partner.

To realise the vision of the partnership, we conduct research and needs assessments, develop patient materials, and carry out field projects and joint advocacy initiatives. We are currently working in Lebanon and Iraq, implementing and adapting innovative models of care.

For more information about Partnering for Change, visit www.humanitarianNCDaction.org

1. World Bank. Data: Population, total − Fragile and conflict affected situations. https://data.worldbank.org **2.** UNOCHA. Global Humanitarian Overview 2022. UNOCHA. https://gho.unocha.org

London School of Hygiene & Tropical Medicine (LSHTM)

The Centre for Global Chronic Conditions at the London School of Hygiene and Tropical Medicine (LSHTM) aims to improve the understanding of and responses to chronic conditions in order to improve the health and health equity of people worldwide. The Centre is made up of a group of researchers from multiple disciplines (including epidemiology, economics, social-political sciences and health systems). We work in low-, middle- and high-income country settings, including with vulnerable populations during humanitarian crises and with migrant populations. The Centre includes a **Special Interest Group on NCDs in Humanitarian Settings**, which hosts a knowledge hub on the topic.

More information about the hub can be found **here**

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