FROM SILOES TO SYNERGIES:

Integrating noncommunicable disease prevention and care into global health initiatives and universal health coverage

Policy Research Report

The George Institute for Global Health

NCD Alliance

ACKNOWLEDGEMENTS

This policy research report was commissioned to The George Institute for Global Health by the NCD Alliance, with support from the Leona M. and Harry B. Helmsley Charitable Trust.

We would like to thank Kent Buse, David Peiris, Emma Feeny from The George Institute and Estefania Palomino and James Reid from the Leona M. and Harry B. Helmsley Charitable Trust for their support and guidance.

Suggested citation: Schierhout G, Palagyi A, Gadsen T, Dubois G, Renshaw N, Dodd R. Leveraging Global Health Wins for Sustainable, Person-Centered Healthcare Systems. NCD Alliance / The Helmsley Charitable Trust Policy Research Report 2021

The report emphasises the importance of ensuring that the experiences and voices of those most affected by multiple health conditions, particularly those in the poorest nations of the world, are front and centre in all of these efforts.

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EXECUTIVE SUMMARY

The global health focus on particular health conditions, such as HIV/AIDs, malaria, tuberculosis and maternal, neonatal and child health, has been pivotal in achieving substantial health gains in many low-and-middle income countries (LMICs) over the past decade. These health gains are under threat, not only from the health effects of COVID-19, but also from the rising prevalence of noncommunicable diseases (NCDs) and the underlying weaknesses in public health systems that the pandemic has exposed.

While there is growing recognition and increasing high-level political commitment to person-centred integrated care by the major global health funding mechanisms, there is an urgent need to better understand how integrated services can be supported in practice, and what has worked, or failed to work from the perspective of programme implementers and target populations. This policy research report focuses on the integration of services for non-communicable diseases (NCDs) in global health financed programmes. This is important because NCD service provision is woefully inadequate in most LMICs, with many countries far behind on progress towards Universal Health Coverage (UHC) as a result of poor performance in NCDs, compared to their performance in communicable diseases and reproductive, maternal, and child health. Further, one in three diseases among the poorest billion people in the world are NCDs, with half affecting children and young adults.

Through analyses of data from an online survey, interviews, and a targeted literature review, this report brokers knowledge by showcasing examples of where global health financing mechanisms have supported provision of cost-effective NCD prevention and care services, and in so doing, supported progress towards UHC. It demonstrates that there are ways to effectively support NCD service provision through global health programming, and that these will differ in different contexts.

There is strong support from in-country stakeholders to pursue greater integration of NCD services and services for priority populations as part of UHC, with a growing body of experience showing how, in what contexts, and with what results this can be pursued. Even incremental changes in service delivery models towards better addressing NCD care needs of priority populations can have very promising results on health outcomes, equity of access, and user satisfaction and trust in programs, increasing retention in care.

The report distilled learnings into three critical cross-cutting strategies for better integration of NCD services through global health programs: (1) engage in deliberate efforts to strengthen relationships across health priorities and communities, essential to overcome historical siloed ways of working, and to bring greater attention to social and environmental determinants of health (2) identify how any particular integration effort can work with and strengthen local health systems, helping to overcome health system capacity constraints; and (3) embed person-centred care in programme design at all levels, including in funding guidance and monitoring and evaluation requirements.

The report also emphasises the importance of ensuring that the experiences and voices of those most affected by multiple health conditions, particularly those in the poorest nations of the world, are front and centre in all of these efforts.

Recommendations for multilateral funding agencies and other development partners:

- Strongly encourage participation of primary health care stakeholders in development of funding proposals and programme management.
- Build flexibility and adaptability into programme design.
- Invest in robust programme evaluation that considers impacts on local health systems, and on whole-of-person care.
- Support leveraging of systems and platforms developed by disease-specific programmes into country health systems where appropriate and requested by countries.
- Identify what aspects of UHC, including NCD services, can be included in funding proposals and communicate these opportunities to potential recipients.

Recommendations for LMIC national governments:

- Ensure that the priorities, experiences and capacities of local health service providers, communities, and people living with chronic conditions are taken into account in programme design and adaptation.
- Actively seek funding for system improvements that will benefit more than one disease area.
- Provide leadership on integration and encourage coordination among a diverse range of stakeholders working across disease areas.
- Take a phased and context-specific approach to promoting the transition to UHC,considering the state of development of individual health systems, their priorities, disease burden, and availability and affordability of proven interventions.

Recommendations for NCD advocates and researchers:

- Amplify the voices of people living with NCDs and multimorbidities by giving them a platform to share their experiences and ensure their meaningful involvement in integration design processes.
- Identify and disseminate successes and lessons learned from national efforts to harness global health funding for better integration of services towards UHC. In so doing, include the scope of NCDIs that affect populations in LMICs.
- Join forces with advocates and researchers from other areas with shared agendas (e.g. environmental health, UHC advocates etc), noting the imperative to better address social and environmental determinants, not only for NCD prevention, but as an integral part of a commitment to human rights.

THE CASE FOR INTEGRATION OF NONCOMMUNICABLE DISEASES

THE CASE FOR INTEGRATION OF NONCOMMUNICABLE DISEASES

Introduction

Addressing particular health conditions, such as HIV/AIDs, malaria, tuberculosis and maternal, neonatal and child health, through global health initiatives has been pivotal in achieving substantial health gains in many countries over the past decade. However, without resilient, equitable and integrated public health systems, the sustainability of these gains is at risk, due to the rising prevalence of NCDs in LMICs.[1]

It has been more than a decade since resolution WHA62.12, which urges Member States "to encourage the development, integration and implementation of vertical programmes, including disease-specific programmes, in the context of integrated primary health care".[2] Although progress in this area has been patchy at best, and limited by inter-related historical and political factors, there are now signs that the landscape is changing.

COVID-19 has brought about a greater recognition that the long-held distinctions between communicable and noncommunicable diseases are not as clear cut as once thought – with those with chronic conditions significantly more susceptible to severe illness and death following infection with the virus.

Health systems too need to adapt to a clearer focus on the person and their state of health through the life course, not only the single health crisis or condition that leads them to seek care at a particular moment.

The disease burden in LMICs has also been changing, with noncommunicable diseases (NCDs) and injuries, coming to the fore as leading courses of death and disability worldwide. The Lancet NCDI Poverty Commission notes that **1 in 3 diseases among the poorest billion people in the world are NCDs, with half affecting children and young adults.**[3] The cohort of people affected by NCDs includes in some cases fairly significant proportions of people living with HIV/AIDS, and other priority population groups that are the targets of current global health initiatives.

As part of a Universal Health Coverage (UHC) and primary health care (PHC) focus, extending affordable NCD services to all who need them is essential, and has received increasing political attention over the past decade. Significantly, a formal commitment to invest in publicly funded, equitable health systems providing integrated care in respect to HIV/AIDs services was made in the recent Political Declaration on HIV/AIDS adopted at the UN General Assembly in June 2021.[4] The commitment recognises the central role of integration of services and whole of person care, and in para. 67(b) sets a goal for contextually appropriate integration of services, including for NCDs, for 90% of people living with, at risk of, or affected by HIV by 2025:

> **"Investing in robust, resilient, equitable and publicly funded systems for health and social protection systems that provide 90 percent of people living with, at risk of and affected by HIV with people-centred and context-specific integrated services for HIV and other communicable diseases, non-communicable diseases, sexual and reproductive health care and gender-based violence, mental health, palliative care, treatment of alcohol dependence and drug use, legal services and other services they need for their overall health and well-being by 2025."**
>
> UN High-Level Meeting on AIDS political declaration, 2021

This formal commitment endorsed by Heads of State obliges both funders, and country governments to support delivery on this goal. While other priority population programmes also have committed to greater integration, the question of what can be feasibly achieved in the current context, is currently being debated. It is timely to consider the needs and priorities of people living with NCDs in LMICs, and to draw on what has been learnt from past efforts at integration of NCD services in order to support evidence-informed policy action in this area.

Focusing on priority populations addressed by global health initiative programming, this policy research review draws attention to the scale and nature of unmet need for NCD services, and identifies what has been learnt from past efforts at expanding or integrating service offerings. It draws on a literature review, stakeholder consultation, and an on-line survey including views of stakeholders from around the world, presenting their views on barriers and priority actions for greater whole-of-person care.

The World Health Organization defines UHC as:

1. Good-quality essential health services across the continuum of care are available, according to need.
2. There is equity in access to health services, whereby the entire population is covered, not only those who can afford services.
3. Financial-risk protection mechanisms are in place to ensure the cost of using care does not put people at risk of financial hardship.

Key global policy statements and resolutions relevant to NCD service integration

2011 The Political Declaration at the High-Level Meeting on NCDs at the UN (clause 26) recognises the pivotal role of **maternal, neonatal and child health programmes** in NCD prevention and care.[5]

2013 The Grand Challenges in Global Mental Health Initiative[6] and the UNAIDS Strategy **2016-2021**[7] call for a stronger commitment towards **integration of HIV and NCDs, including mental illness and drug dependency.**

2015 Sustainable Development Goal 3.4 is developed, aiming by 2030 to: "reduce by one-third **premature mortality from noncommunicable diseases** through prevention and treatment and promote mental health and well-being".

2018 The United Nations High-Level Meeting on Tuberculosis 2018 [8](para 29) commits to coordination and collaboration between **tuberculosis and HIV programmes,** as well as with other health programmes and sectors, to ensure universal access to integrated prevention, diagnosis, treatment and care services', and (para 31), commits to systematic screening, as appropriate, of relevant risk groups… for active and latent tuberculosis, to ensure **early detection and prompt treatment in groups disproportionately affected by tuberculosis, such as people living with diabetes and people living with HIV.'**

The United Nations High-Level Meeting on Tuberculosis 2018 (para 28) commits to address tuberculosis prevention, diagnosis, treatment and care in the context of **child health and survival,** as an important cause of preventable childhood illness and death, including among children with HIV and as a co-morbidity of other common childhood illnesses.

2019 UHC is a long-standing foundation of global health and is Target 3.8 of the Sustainable Development Goals (SDGs). In 2019, world political leaders recommitted to realising UHC by 2030 by adopting the first **Political Declaration on Universal Health Coverage at the United Nation's first High-level Meeting (HLM) on Universal Health Coverage.**

2021 **The United Nations High-Level Meeting on HIV/AIDS** commits to provision of 90% of people living with, at risk of and affected by HIV with people-centred and context-specific integrated services for HIV, other communicable diseases, NCDs, mental health and other services by 2025.

Methodology

Online survey:

Researchers developed an online survey based on an initial literature review and distributed it in May-June 2021 using REDCap (Research Electronic Data Capture) among the networks of NCDA and The George Institute for Global Health, as well as through snowball sampling. We aimed to reach people with knowledge and experience of NCD service integration in LMICs.

The survey was designed to elicit knowledge and experience with NCD integration initiatives in disease-specific programmes in LMICs, barriers and enablers, and perceptions about the priority actions needed for more impactful global health initiatives for NCD prevention and care.

182 people with work focused in six regions and globally completed the survey.

Follow up consultations and interviews:

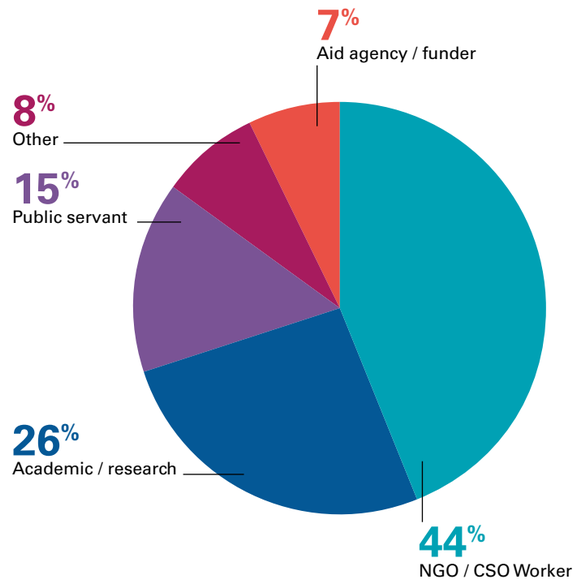
Two mini case studies were developed through a review of published literature. To aid interpretation of the literature and of the online survey, the researchers iteratively followed up with select individuals via email correspondence and interview.

Rapid literature review:

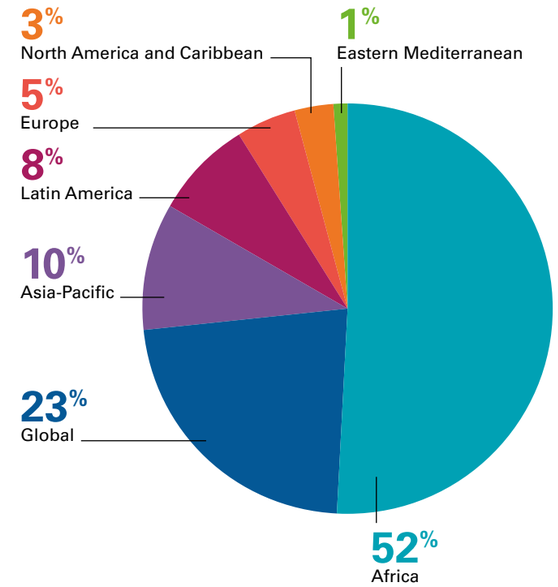
Evidence on NCD needs of priority populations in LMICs were identified using an 'evidence hierarchy' approach (we first looked for systematic reviews, then for robust, multi-country studies with representative sampling methods, then for focused studies).

A review of recent previous systematic reviews was conducted to identify the barriers and enablers to NCD service integration into priority population programmes.

Current position/s held by survey respondents



Survey respondents' geographic focus of



*Some respondents held more than 1 position



NCDs in global health priority areas

Priority populations in LMICs targeted by global health initiatives are generally at increased risk for NCDs, when compared to the general population

People living with HIV

People living with HIV have nearly a two-fold increased risk of cardiovascular disease (CVD), compared to their HIV negative counterparts, and women living with HIV have nearly a six-fold increased risk for cervical cancer.

Globally, as many as one in four people living with HIV are estimated to have moderate to severe depression,[9] [10] and one in five have one or more modifiable risk factor for developing cardiovascular disease.[9] Global estimates of Type 2 diabetes prevalence amongst people living with HIV range from 1.3% to 18%, depending on the setting, with little robust population-wide data available from LMICs. The ageing cohort of people living with HIV has heightened the scale and impacts of chronic health conditions among these populations, and rates are thus expected to increase further – for example, the global burden of cardiovascular disease among people living with HIV has tripled over the past two decades, with the majority of this increase taking place in sub-Saharan Africa and the Asia Pacific region.[11] There are open questions about whether some of the critically important major HIV treatments may also contribute to abnormal weight gain and increased NCD risk.

The high prevalence of depression in people living with HIV has implications for a wide range of HIV initiatives including the 95-95-95 initiative, which aims to have 95% of the population tested, 95% of those who test positive being on treatment, and 95% of those on treatment achieving viral suppression by 2025.

Untreated depression amongst people living with HIV poses a threat to the achievement of these targets, with studies showing that depression is consistently associated with poorer antiretroviral therapy adherence and poorer HIV outcomes.[12] It is also linked with lower rates of exclusive breastfeeding, which – together with treatment adherence – is a cornerstone of the strategy for the prevention of mother-to-child transmission (PMTCT).

There is also a growing body of evidence from LMICs showing that mental health conditions affect progress toward HIV prevention targets as well, particularly amongst key populations who are at high risk of acquiring HIV. For example, a study in Zimbabwe and South Africa found that young women at high risk of HIV who have depressive symptoms are significantly less likely to adhere to pre-exposure prophylaxis (PrEP) than those without depressive symptoms.[13]

People living with tuberculosis

People diagnosed with tuberculosis (TB) are about twice as likely as those without TB to be affected by diabetes, and about twice as likely to develop certain cancers.[14] [15]

The average global prevalence of diabetes amongst people who are being actively treated for TB stands at 16%, although there is wide variation between different areas.[16] The link between these two conditions is bi-directional. The dual burden of TB and mental health, often intersecting with poverty, is well established. This is particularly important, as adherence to TB treatment is strongly influenced by a person's mental health. A study in Ethiopia demonstrated that people living with TB and with untreated depression were approximately nine times more likely to default on their tuberculosis treatment than those not living with depression.[17]

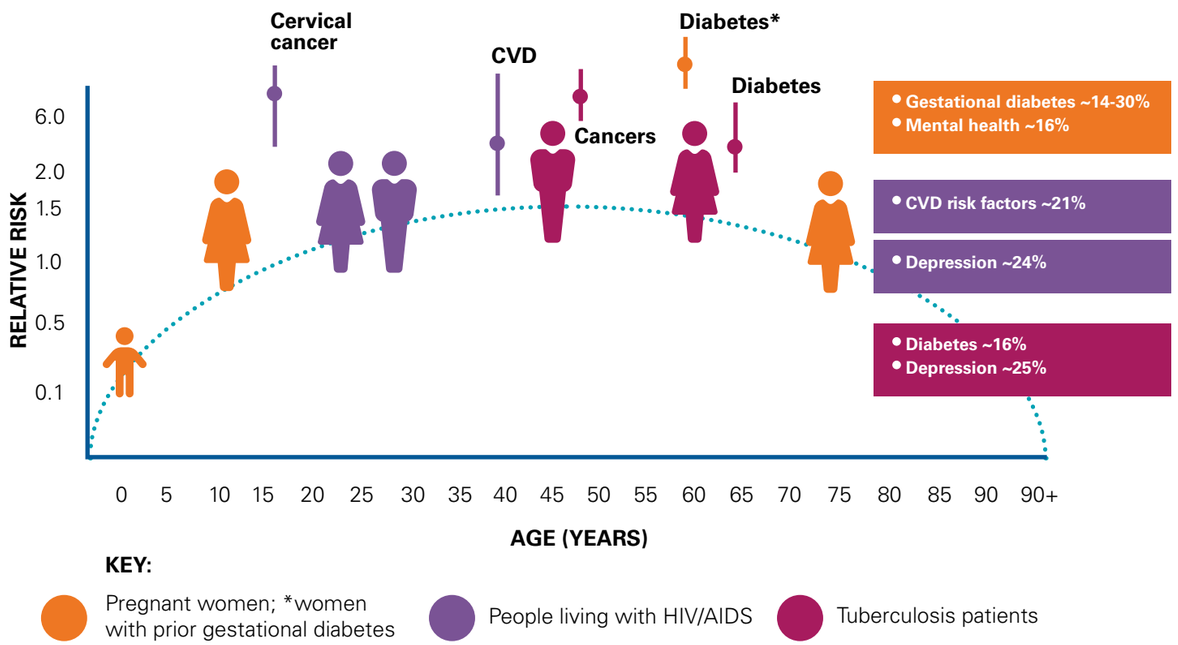
Maternal, neonatal and child health populations

Hypertensive pregnancy disorders account for between 10% and 15% of maternal deaths in LMICs.

Worldwide, one in six pregnancies may be associated with hyperglycaemia, 84% of which involve Gestational Diabetes Mellitus (GDM). However, as most women receiving care during pregnancy in LMICs are not systematically screened or treated for these conditions, the extent to which pregnant women globally are affected remains unknown.

The occurrence of NCDs significantly affects the health of pregnant women and their unborn children. The development of either GDM or preeclampsia during pregnancy identifies women who are at an increased lifetime risk of Type 2 diabetes and CVD.[18] Untreated maternal NCDs not only endanger the health of the mother, through for example heightened risk of postpartum haemorrhage and labour difficulties, but can also lead to poor growth of the developing foetus and premature delivery, and thus contribute to preventable infant deaths.[19] Untreated maternal NCDs are also believed to contribute to ongoing inter-generational transmission, with children born to mothers with uncontrolled NCDs, at higher risk for developing hypertension, diabetes, chronic renal impairment, heart disease and other conditions later in life, potentially due to genetic programming in-utero.[20] .

Figure 1: NCD prevalence and risk at different stages of life
provide windows of opportunity to help address the NCD epidemic



Unmet NCD care needs in priority populations

People living with NCDs often live with multiple conditions, and not just those which are most frequently studied (for example, mental health conditions, diabetes, CVD, etc.). For priority population groups, there is almost no robust information about the burden of disease across the scope of NCDs – most empirical studies and reviews focus on one or two co-morbid conditions, largely echoing the '4x4' approach to NCD framing that was previously developed for high-income countries

In regions with high proportions of people living in poverty, a wider diversity of NCDs are identified as important. The Brazzaville Declaration, adopted by the WHO African Regional Office in advance of the 2011 UN High-Level Meeting, emphasised the importance of "haemoglobinopathies (in particular sickle cell disease), mental disorders, violence and injuries, oral and eye diseases in the WHO African Region", and the WHO South East Asia Regional Office noted the existence of numerous other chronic conditions, also highlighting the importance of infectious and environmental factors as causes of chronic conditions.

The Lancet NCDI Commission identified a range of interventions across a diverse range of chronic conditions, some considered to be as cost-effective as many of the current global prioritised interventions in Maternal and Child Health.[21] These include for example, low-cost medical interventions for conditions arising in childhood (e.g. Type 1 diabetes, epilepsy, rheumatic heart disease, sickle cell disease); interventions to address sudden manifestations of chronic conditions (e.g. acute heart failure); and some surgical interventions (e.g. life threatening conditions, fractures, appendectomies, laparotomies, early stage breast cancer). The NCDI Commission noted poor access to these services worldwide, even where the means to deliver them (e.g. community health workers, primary care, and district hospitals) are available. Greater investment in re-design of services in LMICs was one of their key recommendations, more specifically **"organising health services at the right level of the health system and by the right providers, so they can be delivered at high quality".**

Along with the service re-design that is needed, LMICs have many gaps in availability and affordability of services for particular NCDs.

The points below highlight examples of unmet needs in this regard. However, no study was found that identified unmet care needs across the full scope of chronic conditions in LMICs. Therefore, it is important to note that this list of unmet needs is not comprehensive.

- Worldwide, there are significant unmet needs for diabetes services. A recent study found that less than one in 10 people with **type 2 diabetes** in 55 LMICs received the full suite of diabetes interventions recommended by the 2020 WHO Package of Essential Noncommunicable Disease Interventions (WHO PEN).[22] Of the 60 million people worldwide who require insulin to control their diabetes, only about half of them have access to it, and just half of those people are able to obtain insulin through public health services. Access to test strips, glucometers, and other essential supplies for both **type 1 diabetes** and **type 2 diabetes** is very limited in many settings, as is the capacity of frontline health workers for basic management of diabetes.[23]

- The lowest coverage of WHO PEN interventions was in low-income countries, and the lowest coverage service component was for cholesterol-lowering medication amongst younger men.[22]

- Unmet needs for **hypertension detection and control** in LMICs were documented in a recent analysis of nationally representative sample data of 1.1 million adults from 44 LMICs. The study found that among those with hypertension, 26% had never before had their blood pressure tested.[24] Further, while 39% of individuals had been previously diagnosed with hypertension, just 30% of these had been treated and only 10% had achieved target levels of blood pressure control. A 2017 study estimates that the proportion of communities with four classes of anti-hypertensive drugs available is around 13% in low-income countries.[25]

- With regards to NCD prevention, **cervical cancer screening** (followed by adequate management) and **HPV vaccination,** are two prevention interventions recommended by WHO that are highly effective in preventing cervical cancer in women, with cost-effectiveness placing them among global "best buys" for NCD prevention. The World Health Assembly has endorsed a global strategy for cervical cancer elimination, with 90-70-90 targets for elimination. [26] However, only a third of women and girls globally live in countries that have introduced the HPV vaccine, and most live in countries with no systematic screening for cervical cancer. Voluntary male circumcision, in addition to a role in HIV prevention, has the potential to prevent a substantial number of cervical cancers and deaths, even in the absence of high HPV vaccination coverage.[27]

- Where HIV prevalence is high, much of the burden of cervical cancer is associated with HIV. Of the 10 countries with the highest burden of cervical cancer associated with HIV, in 2019 only four had ongoing population-based screening for cervical cancer, and all covered less than 70% of the target population. Encouragingly, seven of these countries had rolled out national HPV immunisation programmes, but full-dose coverage varied from 25% to 80%.

- While these discrete services are critically important, the 2020 Joint Statement of the World Heart Federation and the World Stroke Organization urges governments to move towards investment in primary prevention at a population level, addressing the **shared causes of multiple NCDs,** higher in the prevention timeline. This includes attention to the basic building blocks of good health – including clean water, clean air, and good nutrition.

† The 4x4 approach is focused on four modifiable risk factors – tobacco use, physical inactivity, harmful use of alcohol, unhealthy diets – and four major NCDs – cardiovascular disease (CVD), cancer, diabetes, and chronic respiratory disease.

Barriers to integration of cost-effective NCD services with global health initiatives

In the online survey conducted as part of the research process for this report, we asked respondents for examples of NCD service integration efforts, their perceptions regarding the success of such initiatives, and if unsuccessful, their perceived barriers to success.

Our thematic analysis of the stakeholder responses identified three sets of issues impacting on the success of past efforts: resistance to new ways of working; problems in health system organisation and capacity; and limitations in design for equity, scale and sustainability of integration efforts.

Figure 2: Why some NCD integration efforts have been unsuccessful

Examples of survey respondents' perceptions

'The health system [in my country] has systematically neglected NCDs at all levels.... powerful groups have received donor funding for the longest time and resist any change ... right now the 'left behind' stay exactly where they are'

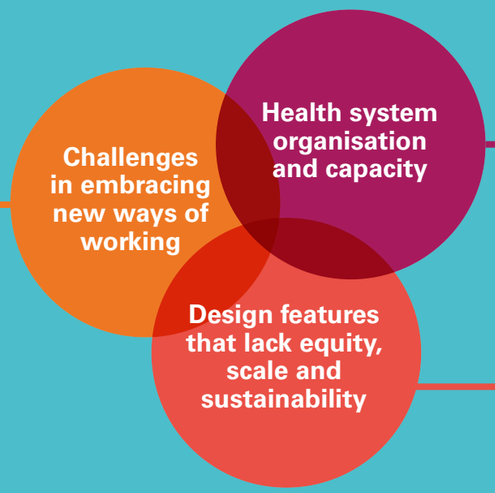
- Africa region

'Poor commitment on the part of the decision maker on one side and inability of the agency to follow through'

- Africa region

'Lack of demand by the country co-ordinating mechanisms [global fund].. it likely stems from two decades of being told to focus only on three diseases (HIV, TB, malaria).'

- Global



'The initiative is good, the problem is caused by the health system. The problem is the organization of the system'

- Columbia

'What is difficult is when there are limited referral pathways'

- Pacific

'Lack of consistent access to NCD medicines'

- Global

'... not well designed to reach the underserved communities...'

- Africa region

'..equity issue where focus has been on HIV patients rather than general population'

- Africa region

Challenges in embracing new ways of working

Survey respondents reported that past integration efforts have failed in some cases due to the strong disease-specific focus of existing programmes and ways of working. While the strong calls to action around the priority disease areas of HIV/ AIDS, TB, malaria, and Maternal and Child Health were very impactful in galvanising support and resulted in impressive global health wins during the Millennium Development Goals era and beyond, the structures and ways of working that have developed make it challenging to implement integrated programmes – despite high-level advice and guidance to do so.

Survey respondents identified that there were particular challenges posed by staffing siloes, and organisational ambivalence around the integration effort, which often lead to failure.

Staffing siloes

Specialist managers of global health initiatives are sometimes well versed in disease-focused areas, but not as well versed in whole-of-person care or primary health care. Therefore, programmes often struggle to gain the necessary management support. Similarly, 'old' disease-specific/programmatic ways of organising teams, has made it challenging to work differently to implement new models of care that include NCD services.

"Poor commitment on the part of the decision maker on one side and inability of the agency to follow through on the initiative."

Government worker, Nigeria

"Each specific programme was under the care of an assigned team. Each team has no connection [to the others]."

NGO/CSO worker, Thailand

Political or organisational ambivalence

Survey respondents noted that even with the best of intentions, it is very hard to change established patterns. They identified this as a very real barrier to getting support for integration efforts in the first place, and also to the success of such efforts once implemented.

"Lack of demand from country coordinating mechanisms is a significant barrier - but it likely stems from two decades of being told to focus only on three diseases (HIV, TB, malaria). If resourced to do so, national health systems could integrate NCD services into other areas without problem."

Survey respondent, global, UN agency

"The health system [in my country] has systematically neglected NCDs at all levels. There are powerful groups that have received donor funding for the longest time and resist any change to the status quo. […] right now, those 'left behind' stay exactly where they are."

Survey respondent, South Africa

While there have been efforts to extend the use of global health funding to greater whole-of-person care, respondents perceive that ways of working are still siloed. In the online survey, 76% of respondents (n=85/112) stated that 'Lack of flexibility in donor funding/resource allocation' was either a 'Big' or 'Very Big' barrier to effective NCD service integration in their context of work. 73% of respondents (n=85/116) identified 'Fragmented planning, reporting and performance management' as a 'Big' or 'Very Big' barrier.

76%

Lack of flexibility in donor funding/resource allocation

73%

Fragmented planning, reporting and performance management

Health system organisation and capacity

The way in which many LMIC health systems are organised, and limitations in capacity to deliver services, was identified as a key barrier to success of some integration efforts.

Fragmented health systems

Fragmented health systems with weak referral systems, inability to follow up patients, and a lack of clinical guidelines (no clinical guidelines for integrated management in some places) were cited by respondents as impeding integration efforts. Respondents identified the critical need to strengthen connections 'horizontally' (at same level of care), and 'vertically' (e.g. between community and facility and between facility and hospital/ specialist). It was noted that agreed upon clinical guidelines for integrated care could help to overcome fragmentation.

> **The initiative is good, but the problem is caused by the health system. The problem is the organization of the system.**
> NGO/CSO worker, Columbia

Lack of longitudinal tracking and follow-up systems.
Academic, Africa region

The referral system, particularly from community to facility, is suboptimal.
Government, Eswatini

Poor support of frontline health workers

Poor support of frontline health workers was identified as a key barrier to integration efforts, with challenges in motivating staff, in the context of high workloads, and lack of overarching national guidance or directives for integrated care.

> **Health care workers complained of staff shortages and high workload.**
> Clinician/Academic, Kenya

…difficulties of Ministry of Health motivating staff, especially in absence of clear national guidance.
NGO/CSO worker, Africa region

Healthcare workers were overwhelmed and not happy about increasing their workload.
NGO/CSO worker, Africa region

Medication and supplies

Inadequate or unaffordable medications and supplies were noted as hindering the success of some integration efforts, particularly for poorer populations. Importantly, as illustrated in the first quote below, some drugs being out of stock may result in a person not travelling to the clinic, and hence missing out on other components of their care.

> **Drug stock-outs (whether NCD or infectious disease drugs) can mean a person won't travel to the clinic that month so they don't get any of their drugs.**
> Primary care health worker, Pacific

The lack of adequate access to medicines for the poor, who are the majority in our country, is a big issue.
NGO/CSO worker, Uganda

Shortage of NCD medication especially at primary health care levels
Clinician, Eswatini

Primary issue relates to sustainability of Ministry of Health drug supply."
NGO/CSO worker, Africa region

Lack of equity, scale and sustainability

Survey respondents identified that past integration efforts have suffered when they have not had a strong commitment to provision equity, a clear view towards sustainability, and a focus on prevention.

Inequitable provision of services

Inequitable provision of services was a key concern for survey respondents, who noted that people living with NCDs – if unable to access public health clinics – were left out of NCD services and had to pay out-of-pocket at private facilities. Some integration initiatives had not been successful, in the views of respondents, because they only served particular groups such as people living with HIV or pregnant women, or they failed to reach the poorest who were most in need.

> **Due to the limited resources of NGOs operating in the sector, they fail to scale up their activities…**
> Consumer Advocate, Burundi

It was not guaranteed and withdrawn due to funding issues.
Physician, South Africa

> **The initiative only caters to pregnant women that are registered at Public Health Facilities. The population that receives services in private sector has to pay out of pocket for the service and the drugs.**
> Government worker, Zimbabwe

… equity issue where focus has been on HIV patients rather than general population.
NGO/CSO worker, Africa region

Community health programmes were not well designed to reach the underserved communities, being the majority.
NGO/CSO and Academic, Tanzania

Lack of scale and sustainability

Lack of scale and sustainability was raised by both advocates and implementers as contributing to lack of success of some efforts. While many innovations in care start as pilot initiatives with research funding attached to them, the cessation of services after funding runs out led some to regard certain integration efforts as somewhat or highly unsuccessful.

> **These services were only available in select project sites or target communities, so they have not yet covered the majority of NCD patients in the country.**
> NGO/CSO worker, Philippines

Limitation in the accessibility and access to NCD services for marginalised groups; very limited central approached used.
NGO/CSO worker, Middle East and North Africa

Lack of focus

Lack of focus on prevention and social and environmental determinants - Some respondents said that a failure of past and current integration responses was the lack of focus on upstream prevention needs, and broader system issues such as counterfeit medications.

> **The role of prevention is not well articulated by the system, so much focuses on treatment. People are using a lot of indigenous therapeutics and remedies which are not well researched. There is also an issue of counterfeit products on the market; the aspect of social determinants of health (environmental health), e.g. the role of chemicals, housing, nutrition, etc, in promoting NCDs"**
> NGO manager, Central Africa

FROM SILOES TO SYNERGIES

FROM SILOES TO SYNERGIES

UHC provides the framework for countries to develop an NCD response that is appropriate to the state of development of their health systems, while also aiming to provide person-centred care to the whole population. Many studies describe the integration of NCDs into disease-specific programmes, but far fewer robustly examine the health outcomes and contribution to UHC of these integration efforts. Below, we lay out some evidence from previous systematic reviews, and select other studies addressing this topic.

Overall, the most frequently studied integration model was the integration (or bundling) of one or more NCD interventions into existing 'vertical' programmes - that is, programmes exclusively focused on single diseases or priority population groups, which stand in the way of integrated, whole-of-person care. This more limited approach likely reflects the feasibility of incremental, rather than radical, changes to existing service delivery models. While outcomes achieved in such programmes may not reflect the outcomes that could be achieved under more radical redesign, they do indicate some positive results.

Improved population health outcomes

Most of the documentation about examples of where NCD services have been incorporated into disease-specific programmes focuses on process and implementation outcomes, rather than clinical and population health endpoints.[28] However, findings from some studies demonstrate the potential impact on health outcomes, as described below.

Where **NCD services are integrated with HIV services at the point of delivery**, studies across different LMICs have shown that this can increase retention in care and effectiveness for both HIV and NCD care 'streams'. A systematic review of different models of NCD-HIV integrated service delivery notes that not having to attend multiple appointments reduces the disease burden for populations. This also influences adherence to recommended care, and thus programme effectiveness, particularly in areas with lower access to services.[29]

While many of the studies identified in the literature were from Africa, an example identified from Cambodia piloted integrated **HIV, hypertension and diabetes care** using a patient-centred case management approach, in the setting of chronic disease clinics.[30] The programme reported high retention rates, with improved CD4 counts, better blood pressure control, and a decrease in median HbA1c.

A long-standing initiative in Zambia, **leveraging national HIV services to develop a cervical cancer screening programme**, found in a modelling and outcome cohort study that **for every 46 HIV positive women screened for cervical cancer, a woman's life was saved who otherwise would likely have died of undetected cervical cancer.**[31] This programme was subsequently scaled out to include HIV negative women, and to cover different geographic areas in the country, furthering population level impact (see box for lessons identified from this initiative).

In settings with high HIV prevalence, integration of cervical cancer screening, treatment, and referral systems within HIV services can prevent a large proportion of cervical cancers.[32]

Improved equity of access

The degree to which NCD service integration helps to further health equity goals in LMICs is largely dependent on the features of the system in which service integration is taking place, including the ability of that system to reach the underserved.[34] The potential for COVID-19 to exacerbate existing inequities in health underscores the need for heightened attention to efforts to reduce inequities at all levels.

Evidence from high-income countries, shows that the most striking equity outcome of integration efforts is increased access to specialist care for underserved groups. Data on impacts of integration on equity of access are lacking for LMICs. Promising equity outcomes in LMICs have been reported for integration of services for sexually transmissible infections and HIV with family planning.[33 34]

Cost-effectiveness

Data that are able to help countries identify the optimal and most cost-effective way of preventing and managing NCDs and other chronic conditions as part of UHC are scant. Even fewer data consider this issue within the national context of existing priority populations or disease-specific programmes.

A systematic review of **cost and cost-effectiveness studies of HIV and NCD care** found a wide range of methods and results.[35] The authors concluded that while integrated HIV/NCD care has many benefits, the economic justification is not yet well demonstrated. For such programmes, the additional cost of **integrating NCD screening with HIV care represented a 6% to 30% increase in the total cost of the programmes.** This estimate did not include cervical cancer screening, where the additional cost differed widely, depending on the screening strategy. The authors emphasise that countries need to choose the chronic care model that is best suited to their particular health system delivery platform/s, and that cost-effectiveness and affordability will be sensitive to context.

There were few studies investigating cost-effectiveness of integration of NCD services within other priority population programmes. One study showed that in both Indian and Israeli settings, the **screening, diagnosis and treatment of gestational diabetes (GDM) in Maternal and Child Health programmes** was a highly cost-effective intervention, by World Health Organization standards. Noting large differences between these countries in GDM prevalence and costs, the study authors concluded that GDM interventions may be cost-effective in diverse settings.[36]

User satisfaction and trust in health services

Integrated services have been found to increase user satisfaction with health services across diverse contexts. [32 34 37 38] Where diseases are potentially stigmatising (such as HIV or leprosy), integration into general health services has been widely accepted by unaffected clients and welcomed by those affected by these conditions.

Learnings from incorporation of cervical cancer screening into HIV/AIDs and Maternal and Child Health services in LMICs show that in-clinic integration of these services generally results in high uptake of screening, and screen-and-treat models can successfully provide treatment to more than 85% of women who need it. A recent systematic review found 11 such studies where new cervical cancer screening (and in some cases 'screen and treat') services were offered through **HIV clinics**, and through **reproductive and child health clinics.** Over two-thirds of women across the studies (range 67%-87%) took advantage of the cervical cancer screening offered and 1 in 6 (16%) to 1 in 12 (8%) of those screened had abnormal cervical lesions requiring treatment.

The expansion of previously disease-specific services to people without those diseases has generally been acceptable to communities. However, acceptability may vary in different local areas, which is influenced by how local populations view the diseases and by their degree of trust in health services. It is essential, for this reason, that integrated services are designed in consultation with the intended beneficiaries and those affected by the changes.

In the online survey,

over 60%

of respondents identified improved population access to NCD services and responsiveness of services to the needs of people with multiple chronic conditions as benefits of the integration initiative. Additional benefits afforded by initiatives where NCD services were integrated with existing health programmes included increased community health literacy, stigma reduction, and improved retention in care for people living with NCDs.

POSSIBILITIES FOR INTEGRATION – WAYS FORWARD

POSSIBILITIES FOR INTEGRATION – WAYS FORWARD

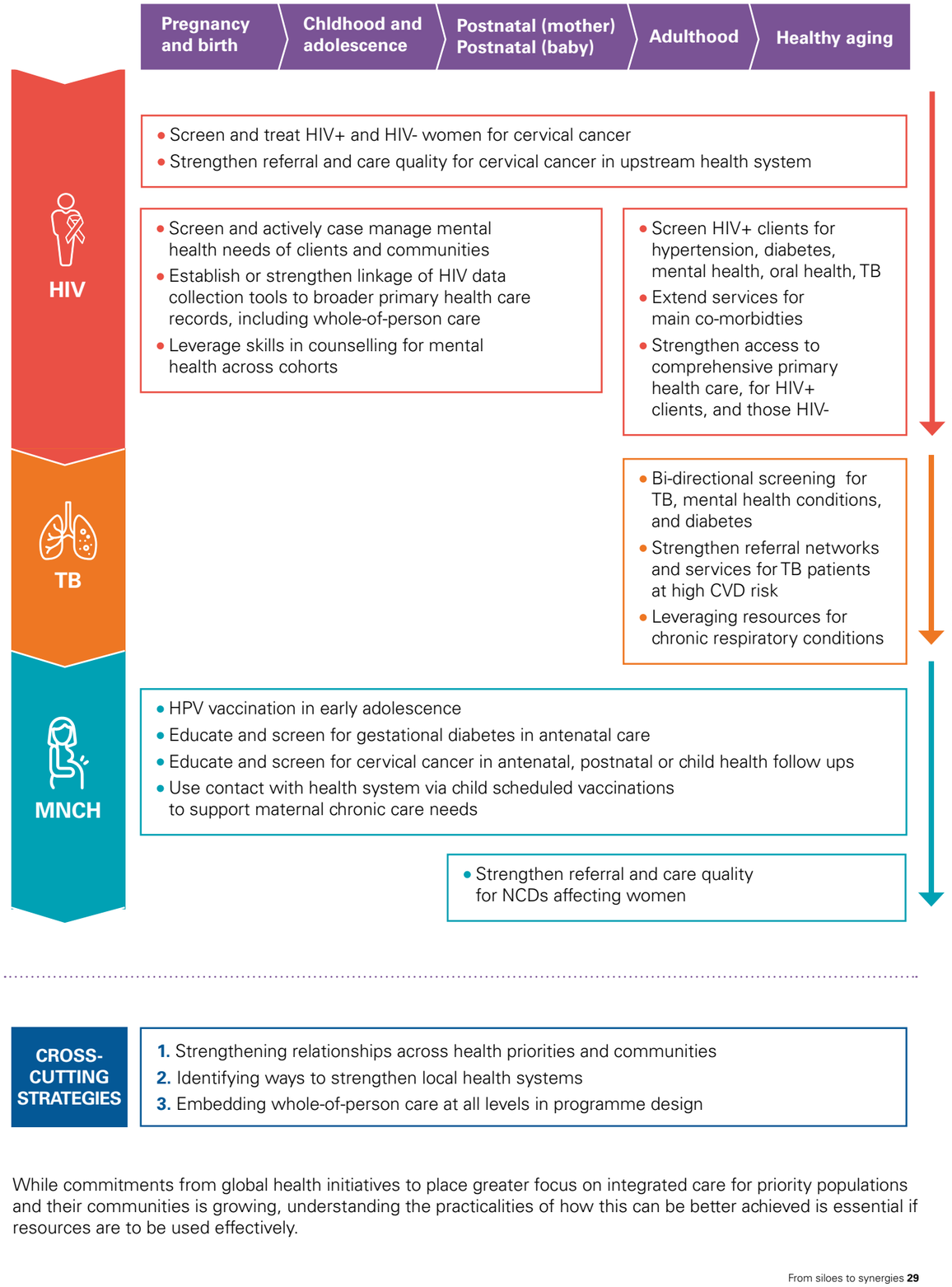
The literature review and stakeholder consultation underpinning this report identified examples of HIV programmes, tuberculosis programmes, maternal and child health programmes, and other disease-specific programmes that have successfully and effectively integrated one or more NCD service into their care packages, or into primary health care, with specific attention paid to NCD services. Mini-case studies of NCD service integration through HIV programmes are provided as examples and inspiration. Refer to case studies further down in this report

Figure 3 aims to illustrate that it is possible to take a context-specific and phased approach towards promoting the transition to UHC, leveraging global health gains and systems of the past.

Recognising that each country has its own unique disease burden, health system context, and priorities for action, the focus of the following summary is on key enablers for more effective integration through global health initiatives. The enablers are grouped by the three strategies shown in the bottom of Figure 3.

The challenge is to harness what has been learnt from both successes and failures, thereby ensuring that future actions are more effective and impactful.

Figure 3 Strategies for integration of NCDs into whole-of-person care



While commitments from global health initiatives to place greater focus on integrated care for priority populations and their communities is growing, understanding the practicalities of how this can be better achieved is essential if resources are to be used effectively.

Strengthening relationships across health priorities and communities

Overcoming entrenched ways of working, particularly where these have met with success in galvanising support in the past, requires a concerted effort. The case studies [see page 33], illustrate that strong relationships across different communities are essential to the success of integration efforts.

The following inter-related factors were identified from the survey, and the case studies as being important enablers for stronger relationships:

- **Draw on evidence to help frame discussions between different specialities and provide a basis for programme design decisions**
- **Support formal structures and co-ordinating mechanisms** and other opportunities for disease specialities to be brought together
- **Allow for adaptability and innovation**

Data and evidence as a tool to support integrated services - and specifically as a tool to help overcome disease 'siloes' - was mentioned frequently by survey respondents. The nature of evidence, and how it is presented, is also key. Some noted that if evidence is to be successfully used to support integration, it will not position one disease against another ('my disease burden is worse than yours') but will keep a strong focus on whole-of-person care. Other types of data, in addition to disease burden data, particularly the voices of people living with multiple conditions, was also mentioned by survey respondents as potentially useful to help bring different groups together.

Amplifying the voices of people living with more than one chronic condition in LMICs holds promise as a source of critical 'disease agnostic' evidence to help bridge the divide between siloed programmes. While community groups may feel that attention to their issues will be diluted if other services are added, and managers of disease-specific programmes may lack a broad understanding of the gaps in care that people and communities served by their programmes encounter, hearing the lived experiences of people who navigate multiple fragmented services is a potentially powerful way to unite diverse groups. It was also noted by others that while 'lived experience data' are essential, these data need to be coupled with clear information on the burden of disease, scale of unmet need, and affordability of key NCDI interventions for realistic service design and planning.

From the case studies, efforts to integrate NCD services with global health initiatives, will need to include buy-in from multiple stakeholders. Fostering stakeholder relationships through investing in co-ordination structures and opportunities for engagement means that when inevitable constraints to implementation and sustainability arise, there are more resources to address them. For example, faced with needs for expansion that exceeded human resources, the Ministry-led adaptation of the initial cervical cancer prevention programme in Zambia incorporated traditional healers and traditional marriage counsellors as advocates and facilitators. Sufficient flexibility in programme design, and allowing for adaptability and innovation, were factors identified by programme staff as key to helping this programme achieve its goals.

Identifying ways to strengthen local health system

Health systems worldwide are not well designed to deal effectively and efficiently with the range of health conditions that people present with, particularly those conditions that can be detected early and managed cost-effectively with appropriate screening and early intervention at primary health care level. Addressing underlying health system weaknesses is essential for UHC and for better NCD service integration. The literature review, and survey identified enablers for success of integration initiatives that were particularly relevant to this goal.

IMPERATIVES:

- Share and integrate health records, rather than setting up parallel systems
- Develop referral protocols between levels of care, and paying attention to the full care cascade for NCDs
- Ensure that health workers are skilled and equipped with appropriate diagnostics, supplies and medications to provide whole-of-person care

The importance of shared and integrated health records has been described across several initiatives, with an emphasis on keeping tools as simple as possible and integrated with health record keeping systems. [29] Co-located clinics seem to have particularly benefited from using shared digital health platforms to support referrals and information sharing between services used by people at different levels of the health system, and across disease-specialities.[34 39]

In the AMPATH example in Western Kenya an electronic medical record system into which NCD care could be included, was identified as a key enabler for integration, providing the basis for patient care and coordination. While each programme and country context will be different, the importance of working towards a stronger country-owned integrated health information system is widely acknowledged, with all global health initiatives needing to consider optimal ways to interface with and support local health information systems.

Attention to the full care cascade (find-link-treat-retain) is an important enabler of integration success. This is well illustrated in the AMPATH initiative [see page 40]. The Integrated Chronic Care Clinic in Malawi [see page 36] was able to leverage the strong referral protocols that had been established for HIV, applying them to NCD detection and care, and now functions using guideline-scheduled screening and referral protocols for these conditions.

Experience has also shown that building capacity for health workers to provide whole-of-person care is often necessary as part of integration efforts. For example, the Integrated Chronic Care Clinic in Malawi included attention to bolstering supplies for NCD medicines and diagnostics in the public health system, to clinic infrastructure, and to community engagement, such as mobilising traditional healers to support TB adherence and mental health concerns. Different elements of capacity may be required, with studies noting that capacity development is not just about training, but also about equipping health workers with the necessary diagnostics and monitoring tests and uninterrupted supplies of essential medication,[40] ensuring supportive clinical guidelines for integrated care and where needed, using task shifting models to address human resource constraints.[41 42]

Lack of documented clinical (including referral) guidelines has previously been noted as a key barrier to better integration of care – for example, agreed simple algorithms for clinicians to refer to for patients with more than one ongoing health condition.[40] There has been progress on this issue with the recent clinical and service delivery recommendations for people living with HIV. This guidance, launched by WHO, affirms that integrated delivery of people-centred HIV, TB, NCD, mental health, and sexual and reproductive health services will be needed to reach goals of ending AIDS as a public health issue by 2030.[43]

Zambia: Lessons from the scale-up of the cervical cancer prevention public health programme[4] - Leveraging an ongoing, funded vertical health initiative (HIV care and treatment) allowed the development of capacity for prevention of an NCD (cervical cancer).

Initiative description:

Following pilot research that demonstrated a very high burden of treatable high-risk cervical cancer lesions among HIV-infected Zambian women newly accessing antiretroviral therapy, the innovative Cervical Cancer Prevention Program in Zambia (CCPPZ) was initiated.

The CCPPZ provides a promising demonstration of the feasibility of developing and scaling up NCD services as part of a journey to UHC in routine public health services, through the route of innovative integration with vertical health initiatives (see box for lessons learned).[41]

The CCPPZ is the first large-scale, public sector cervical cancer prevention intervention effort in Zambia and remains one of the largest programmes of its type in sub-Saharan Africa. Initially implemented as an intervention targeting women with HIV, it is now part of routine health service delivery for all Zambian women, irrespective of HIV status. The operational model included co-locating new cervical cancer screening clinics with public sector health clinics and a surgical centre in Zambia, which delivered PEPFAR sponsored HIV care and treatment services at the same sites. HIV screening was also integrated into the cervical cancer clinics for women with unknown HIV status, with bi-directional referrals between the clinics contributing to efficiencies.

PEPFAR, through the U.S. Centers for Disease Control and Prevention (CDC), funded CCPPZ as its first-ever cervical cancer prevention initiative. The Zambian Ministry of Health led the programme locally, and operations were managed by Center for Infectious Disease Research in Zambia (CIDRZ), a Zambian-US non-profit organisation. With PEPFAR funding and in collaboration with the Department of Obstetrics and Gynecology of the University of Zambia, the services initially were offered to HIV-infected women only (who are also at highest risk of cervical cancer). However, over time, the development of the infrastructure and human resources through this funding allowed the programme to offer these services to all women in the catchment area, regardless of their HIV status, with low marginal costs. Starting with two public sector clinics in the country's capital city (Lusaka) in 2006, a decade later CCPPZ was operational in 33 government-run health facilities across all of Zambia's 10 provinces. By 2015, it had screened over 200,000 women, and that year it was adopted as the Ministry of Health's official cervical cancer prevention programme.

Lessons identified by programme implementers

- Initially providing services for high-risk HIV-infected women provided a foundation for sustainability and did not preclude later expansion of services to women without HIV.
- Adapting the intervention to be fit for local context was essential. In this innovation, the task shifting (from doctors to nurses), incorporating digital health innovations for clinical decision-support and quality assurance was important.
- Linking with and building capacity for higher level care was a key part of the initial vision and provided the basis for monitoring the most critical programmatic impact (in this case, CIN2+ lesions). The programme incorporated both 'single visit screen and treat' services, and surgical excision (treatment of more complex cervical lesions that may not be amenable to management by frontline providers).
- Incorporating on-going monitoring and evaluation supported programme improvement, and provided critical country-level data on burden of disease not available elsewhere.
- Working within, rather than in parallel to the public health system, and taking a problem-solving approach to system weaknesses, 'on the go', as they became apparent, meant that the public health care delivery system was strengthened and adapted incrementally.
- Applying principles of adaptability and innovation supported adoption by the Ministry of Health as the national cervical cancer prevention programme. The Ministry-led programme, rising to the challenge of scale-up, focuses on provision of services using an outreach model, incorporating traditional healers and traditional marriage counsellors as advocates and facilitators.

Embedding whole-of-person care at all levels in programme design

A strong theme from the online survey responses and the case studies, was that the design of programmes needs to be consistent with a vision of integrated, people-centred health systems.

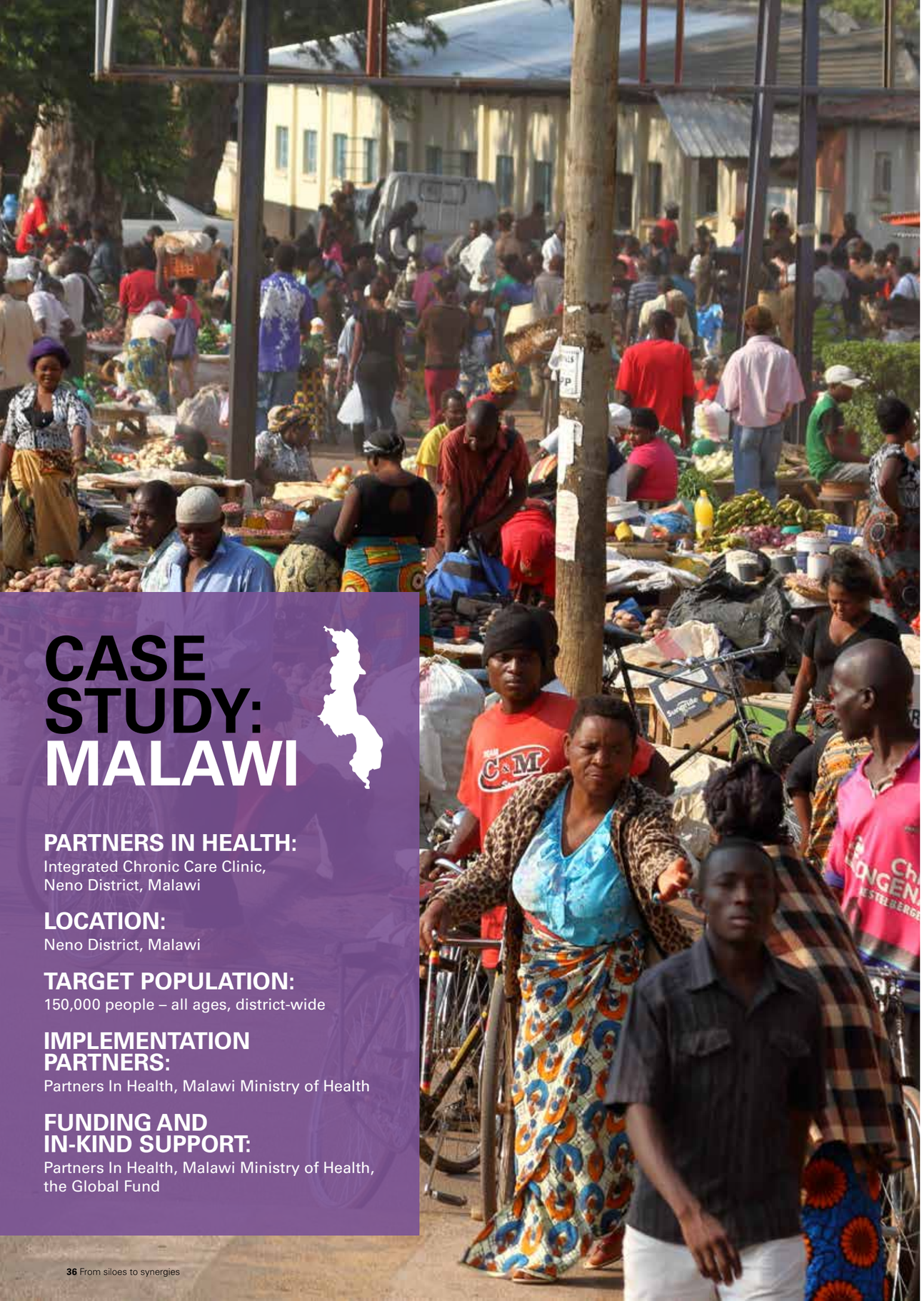
Two enablers were identified that support this:

- **Adapting funding guidance, and monitoring and evaluation requirements** so that these 'walk the talk' of integrated, whole-of-person care, and extend beyond disease-specific indicators
- **Developing an early shared vision for whole-of-person care –** important for sustainability and country ownership

Funding guidance, and monitoring and evaluation requirements that 'walk the talk' of integrated, whole-of-person care were frequently indicated by survey respondents as priorities for advancing global health contributions to UHC, including for NCD services. Our rapid review did not identify any published examples of the experiences of global health initiatives adjusting their monitoring and evaluation frameworks to support whole-of-person care. It is possible that these exist, but we did not find them, or this may be an area that is yet to be developed.

An example of early country ownership, and a shared early vision for eventual expansion of the service beyond the HIV positive population, was evident in Zambia's cervical cancer screening programme.

> **"Move towards a chronic care clinic – funding into the health systems – Monitoring and Evaluation... should be designed across HIV, BP, Diabetes for efficiency. At primary care level, it is often the same nurse anyway."**
>
> (Government worker, South Africa)



CASE STUDY: MALAWI

PARTNERS IN HEALTH:
Integrated Chronic Care Clinic,
Neno District, Malawi

LOCATION:
Neno District, Malawi

TARGET POPULATION:
150,000 people – all ages, district-wide

IMPLEMENTATION PARTNERS:
Partners In Health, Malawi Ministry of Health

FUNDING AND IN-KIND SUPPORT:
Partners In Health, Malawi Ministry of Health, the Global Fund

The case for integration

Partners In Health (PIH) began their collaboration with the Malawi Ministry of Health in 2007 in rural Neno District – one of Malawi's poorest – with the implementation of an innovative decentralised HIV/AIDS service delivery model.[22–24] Characterised by a strong community footprint, the initiative used community outreach events to identify patients requiring HIV care and mobilise them to go to one of the district's 12 primary health centres, with active home-based follow-up and support provided by a team of 900+ trained and mentored community health workers. Specialised HIV/AIDS treatment and care, for those who required it, was available via referral linkages with the district's two hospital facilities. The initiative proved highly successful with more than **62% of the total expected district population of people living with HIV enrolled in the programme by the end of 2015, and a treatment retention rate of more than 85%.** Concurrently, care for other chronic conditions was being provided by NCD clinics in the two main hospitals only, with limited reach and poor accessibility, resulting in low patient numbers and high rates of treatment default.

Witnessing this stark contrast in community access and retention between the HIV and NCD service models, and an increasing number of persons enrolled in the HIV programme with multiple chronic conditions, the PIH-Ministry of Health collaboration moved to expand their programme in early 2015 to an Integrated Chronic Care Clinic (IC3) model. Leveraging the established decentralised HIV service delivery platform, IC3 commenced with the delivery of integrated HIV and hypertension screening at the community level. The programme has since expanded to encompass provision of comprehensive integrated primary care for a range of chronic conditions – including HIV, hypertension, asthma, epilepsy, diabetes and mental health – available to all persons in Neno District.

The IC3 initiative will shortly expand its **mental health component** to integrate the screening and care of depression within routine clinic activities. This involves the strengthening of staff capacity (numbers and appropriate cadres) to effectively manage psychotherapeutics and patient counselling. Further, PIH continues to work with the **Malawi Ministry of Health** to guide strategies for the **inclusion of integrated chronic care in national planning.** This includes the introduction of the World Health Organization's PEN-Plus programme, which builds on WHO PEN to incorporate NCD care at primary level hospitals for complex chronic NCDs. Malawi recently launched a national operational plan for PEN-Plus and is implementing the package across a number of hospital facilities nationally. This sets the stage for a plan for step-wise decentralisation – underpinned by the clinical leadership and mentorship capabilities of local clinicians – to integrate the programme into primary health care.

Service delivery model - key elements of the IC3 model

Community-based screening for a range of chronic conditions, including HIV and NCDs, provided by trained staff (nurses, clinical officers, community health workers, and clinical support staff) during regular integrated outreach events and acute and chronic care clinics at the primary health centre. Hospital outpatient departments also provide active screening for hypertension, diabetes and epilepsy.

Treatment and medication provided at the point of care, with up to 90-day supplies of medications provided at the health centre for most chronic conditions. Hospital-based staff travel to join each health centre IC3 to provide additional clinical and laboratory support.

Referral of people requiring more specialised care to one of two district hospitals.

Active home-based follow-up of enrolled patients by IC3 community health workers who provide support for medication adherence, socio-economic needs and health education.

Socioeconomic support for the most vulnerable is provided by a PIH programme focusing on people in the district who need additional support including direct cash transfers, school fees, food packages, and housing assistance.

Integrated electronic medical record for HIV and NCDs, allowing real time patient tracking and detection of missed clinic visits and longitudinal clinical information for patients with HIV or NCDs who are hospitalised. NCD data from the integrated electronic medical record are fed into the national health information system (DHIS2) each quarter.

Linkages and coordination with local partners

Strong Ministry of Health partnership: The IC3 initiative is founded on a well-established partnership between PIH and the Malawi Ministry of Health, cemented by a Memorandum of Understanding which includes delivery of care for chronic conditions. While PIH provides additional support for training, programme operations and some medications and human resources, integrated clinics are conducted within government primary health care facilities, co-run by PIH and ministry-employed health workers and utilising the national supply of HIV supplies, antiretroviral therapy, and some essential NCD medicines.

Strengthening the primary health care system

Health workforce: Basic training for all clinical staff in screening, management and patient education for a range of NCDs was provided prior to the commencement of IC3, with onsite supervision and mentoring provided on an ongoing basis by PIH physicians and nurses. The initiative also employed some additional clinical and administrative staff prior to commencement to ensure the integrated services were able to adequately manage projected patient numbers.

Leadership: Local ownership of the initiative – from programme conceptualisation and design through to staff training and ongoing monitoring and evaluation – facilitated significant advancement in the service planning, team management and leadership capabilities of all programme staff. Many IC3 staff have developed additional skills in research, quality improvement and public presentation.

Clinical infrastructure: IC3 has facilitated minor repairs to the 12 primary health centres, and the chronic care model was adapted to the physical clinical infrastructure to optimise patient flow. The programme has also provided important architecture lessons for the design of chronic care facilities – including consideration of space for screening and group counselling – applied in the design of new dedicated chronic care building attached to Neno District Hospital which opened in early 2020.

Medicines, supplies and equipment: PIH support for the IC3 initiative includes the bolstering of Ministry of Health essential NCD medicines supply chains and point-of-care diagnostic equipment, including chemistry testing and HbA1C, at the primary health care level. Longitudinal programme data has enabled projection of NCD medicines consumption to inform ongoing supply needs and provides critical evidence for national NCD medicines planning.

Community engagement and empowerment: Much of the success of the IC3 initiative is attributed to the early and ongoing consultation with patients and community to ensure that the programme design was acceptable and best met their needs. The initiative's community health workers, many being patients themselves, also provide ongoing input on how the programme can better meet the needs of people living with chronic conditions at home. IC3 also leverages strong relationships with traditional healers in Neno District established during the earlier HIV programme, who now provide support in mobilising patients with tuberculosis and mental health concerns.

Monitoring processes and impact

Established monitoring and evaluation indicators are actively followed by IC3 implementers, including the district NCD Unit, and including a range of service delivery and clinical outcomes data. This data is reported nationally via DHIS2 every quarter. Data within the integrated electronic medical record are also routinely used to investigate more targeted clinical questions to inform quality of care and identify areas for improvement. Community feedback is sought through patient satisfaction surveys and quarterly meetings of CHWs in the district. Joint meetings of PIH and Ministry of Health staff occur monthly to discuss implementation lessons and outcomes to inform evidence-based planning of NCD services nationally.

Over the first three years of the IC3 initiative, 6233 new patients were enrolled (48% with an NCD diagnosis) and one-year treatment retention and survival averaged 72% in patients with NCDs and 85% in patients with HIV.

Lessons learned

ENABLERS OF EFFECTIVE INTEGRATION

- **Staff pride and ownership** – Willingness and ability of government, clinical and district health leaders to question the status quo and think innovatively in primary health care planning.
- **Flexible funding** – Enabled the programme instigation, providing evidence of what's possible with greater flexibility to previously more restrictive funding mechanisms.
- **Local leadership and decision-making**
- **Community/patient involvement**
- **Mechanisms to foster integration**
- **Local staff buy-in** - Integrating clinical programmes requires creativity and openness to change among the frontline healthcare workers affected. IC3 staff are positioned to contribute innovative and practical ideas to expand access for care, improve efficiency, and enhance care quality. Their involvement and voice in programme design and implementation is a critical ingredient, both for putting forward new and effective ideas as well as garnering their support to implement change and new vision.
- **Efficient patient flow and data systems** - A critical component to the success of IC3 was an initial mapping of patient flow through the integrated clinics. Understanding this in fine-grained detail enabled planning for resources (staff, laboratory tests, preventive care, medications, documentation system) and identifying areas for improved efficiency.
- **Adequate referral systems between community, primary and secondary care** - The IC3 initiative leverages the strong decentralised model of PIH's original HIV programme, which included well-established referral protocols linking community-based screening, primary care clinics and more specialised hospital-based diagnostics and care. Initially, a cautious approach to screening cut-offs and NCD referrals was implemented to avoid clinic overcrowding. For example, the initial blood pressure cut-off was quite high, to enrol the most at-risk patients first; the cut-off was then gradually decreased over time as clinic systems were enabled and ready. The now well-established programme implements guideline clinical screening thresholds.

Challenges identified

- **Overcoming early reluctance** from some clinical staff who had a long history with the HIV programme.
- **Devising efficient systems of patient flow**, including consideration of staffing and required screening 'stations', given the initial high volume of patients at the chronic care clinics. Ensuring this process was iterative was essential to enable ongoing improvements during programme implementation.
- **Pushback from the leadership of other districts** questioning the ability to emulate an integrated chronic care model with limited resources.

For more information, please see list of Related Publications at the end of this document.

CASE STUDY: KENYA

AMPATH:
Integrating HIV/AIDS and Diabetes Care in Western Kenya

LOCATION:
Eldoret, Kenya

TARGET POPULATION:
3.5 million people

IMPLEMENTATION PARTNERS:
Kenya Ministry of Health, Moi University, Moi Teaching and Referral Hospital, AMPATH Consortium of North American universities and health centres, led by Indiana University

FUNDING AND IN-KIND SUPPORT:
USAID, National Institutes of Health, US Centers for Disease Control and Prevention, Bill & Melinda Gates Foundation, AstraZeneca, Boehringer Ingelheim, Eli Lilly and Company, Merck, Pfizer, Takeda, The World Bank

The case for integration:

The Academic Model Providing Access to Healthcare (AMPATH) initiative in Kenya was established in 2001 in response to the growing HIV/AIDS epidemic. It has about five models leveraging on the HIV standard programme, with some commonalities and differences. Drawing on the published literature, we briefly describe the example of the diabetes integration initiative, and then also from the literature, summarise the lessons learned across the AMPATH models.

This initiative (active since 2010[45 46]) leverages the AMPATH HIV/AIDS community-based model of care to provide diabetes screening to those aged 18 years and older. Individuals with a random blood glucose level ≥7 mmol/L are referred to a local AMPATH clinic for follow-up and linkage into a programme of continued care.[45]

In 2015, it was estimated that over 5,000 patients had accessed diabetes care through the initiative.[47]

A key opportunity is to address low follow-up rates for NCD care in rural areas through intensive linkage strategies.[47] Interventions to address access barriers, including home-based screening using community health workers and financial interventions to reduce cost of travel, have proven effective.[47]

Service delivery model-key elements of the AMPATH diabetes initiative

Seeks to facilitate improvements along the entire NCD care cascade (find, link, treat, retain).[48]

Community and home-based screening of blood glucose level provided by the community health workforce (trained community HIV counsellors).

Referral of high-risk patients to AMPATH community clinics for further clinical assessment.

Medication provision: AMPATH clinics provide insulin therapy, oral hypoglycaemic agents and metformin, as well as routine tests such as blood glucose and HbA1C.[49] 'Revolving fund pharmacies' use the proceeds of medication sales to fund ongoing medication stock in a strategy to protect against drug stock-outs in government facilities.[50-52] Partnership with the Purdue University College of Pharmacy has helped create reliable infrastructure for medication distribution, and capacity to manage large donations of medicines and supplies.[47]

Phone-based self-monitoring of blood glucose, connecting patients with clinicians for ongoing treatment monitoring and adaptation.[47]

Education for patients on the self-management of diabetes (including dietary differences, food insecurity and safe medicines storage), and awareness of diabetes complications.

Mobile phone-based support for patients on non-clinic days to address immediate diabetes-related concerns.

Linkages and coordination with local partners

Laboratory services provided by Kenya Ministry of Health facilities.

Referral services to secondary specialised diabetes care, provided by Ministry of Health clinicians and facilities.[47]

Linkage with financial support initiatives including: provision of affordable health insurance to minimise out-of-pocket costs via collaboration with the Kenyan National Hospital Insurance fund.[50]

The programme is also linked with integration of income-generation and microfinance activities into care delivery to address socioeconomic barriers to health, through the Bridging Income Generation with GrouP Integrated Care (BIGPIC) programme.[50 53]

Building health workforce capacity for NCD management

AMPATH community HIV counsellors receive additional training in diabetes epidemiology, pathophysiology, risk factors, blood glucose screening and community diabetes education.[47] Training in screening and counselling for NCDs, such as hypertension, is provided concurrently.

Clinicians and other health professionals within AMPATH are provided specialised training in NCD care, through collaboration with Indiana University. A 'train the trainers' approach upskills higher levels of clinical staff and academics to ensure sustainable local knowledge transfer.[54]

A peer-led diabetes self-management support programme has also been evaluated by AMPATH in a proof-of-concept pilot. After taking part in a four-week training programme supported by the International Diabetes Federation Peer Leader curricula, persons with diabetes facilitated bimonthly peer meetings focussing on self-empowerment, behavioural modification and self-management skills.[55] Participation in the peer-led programme was associated with a reduction in blood glucose levels; the programme has since been recommended for expansion within AMPATH.[55]

Monitoring processes and impact

For people living with HIV already attending AMPATH's clinics, incorporation of NCD services has been found to Increase long-term adherence to care schedules, and improve patient retention in care.[56]

Patient feedback on the role of the community health workers identified that patients valued the community health workers' knowledge, their linkage with the health system, and their skills in helping manage NCDs.[57] There were also challenges identified in relation to ensuring confidentiality, perceptions of fairness, and perceptions of needs for upskilling for certain tasks, highlighting the importance of ongoing monitoring and supportive supervision.[57]

Lessons learned

ENABLERS OF EFFECTIVE INTEGRATION

- **Maintenance of electronic medical records and digital health interventions**[58] - Kenya Ministry of Health's collaboration with AMPATH to institute an electronic medical records-based, co-located care system for HIV and NCD was considered a key enabler[56]
- **Using and retraining an existing base of community health workers on NCD testing and care** - Effective care delivery by the community health workers was aided by: (1) selecting qualified workers embedded within the community they serve; (2) providing detailed, ongoing training and supervision; (3) authorising workers to prescribe medication and provide some aspects of care autonomously; (4) equipping workers with reliable systems to track patients' data; (5) consistently providing workers with medications and supplies; and (6) compensating workers adequately for their roles.[59, 47]
- **Strong partnerships with key stakeholders** – these included Kenyan government bodies and pharmaceutical companies[54,60]

Mechanisms to foster integration

- **Using the community health workforce**, who have skills and experience in home-based HIV testing and counselling and are trusted by their communities. This helps with service linkage, and retention in care.[50]
- **Using a sustainable electronic medical record system** - The system allows for systematic patient recall, patient follow-up and care linkage. An Android tablet-based electronic Decision Support and Integrated Record-Keeping tool is able to retrieve historical patient data to and transmit this to mobile tablets available for use by nurses and community health workers in the field.[61 62]

Challenges identified

IDENTIFIED BARRIERS INCLUDE:[63 64]

- **Sub-optimal communication between different levels of the health system**
- **Limited support to referral of patients between different levels of the health system** – for example, limited personnel and administrative systems supporting referrals
- **Distance of health facilities from the communities they serve**
- **Competing healthcare priorities and budgetary constraints.**

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS AND RECOMMENDATIONS

New models of global health support are likely to emerge post-pandemic, with the roles of existing global health funding mechanisms being reconsidered, and other funders potentially coming to the fore. While there will be policy debates around the topic of further 'securitizing' global health with a stronger focus on pandemic prevention and disease control, as opposed to a more comprehensive, 'slower', systems-wide approach to delivering UHC, there will need to be a balance between the two. As learned years ago with Ebola, health systems are not separate from global health security, but a key part of it. If funding agencies, donor countries, recipients and researchers do not take stock now of what has been learnt about building better integrated services that reflect the care needs of the poorest, when will this happen?

The journey to UHC needs to be accelerated. There is sufficient evidence and strong endorsement from WHO that critical NCD services can be cost-effectively delivered as part of a primary health care package (including screening, diagnosis, and disease management). There is also evidence that addressing social and environmental risk factors can prevent substantial disability and loss of lives as a result of many different diseases, including NCDs. There is growing evidence that the current framing of NCDs and research and funding priorities insufficiently reflects the voices of those most affected, particularly those in the poorest nations of the world. Finally, there is strong support from in-country stakeholders to pursue greater integration of NCD services and services for priority populations as part of UHC, with a growing body of experience showing how, in what contexts, and with what results this can be pursued.

Integrating NCD services into established, funded disease-specific programmes as add-ons or 'service bundling' can provide essential priority health interventions to key groups and communities during the transition to UHC. Such efforts can be a stepping stone, helping to build relationships and trust between people working in different disease areas, who need to collaborate if the journey to UHC is to progress.

Before COVID-19, many global health funds were already adopting UHC principles and – to varying degrees – including efforts to strengthen health systems in their funding models. This process now needs to accelerate: a failure to more effectively and comprehensively integrate NCD services will be a block on the road to UHC, and result in a failure to achieve SDG targets 3.4, 3.8 and many other targets by 2030.

Recommendations for strengthening relationships across health priorities and communities

MULTI-LATERAL FUNDING AGENCIES AND OTHER DEVELOPMENT PARTNERS SHOULD:

- Encourage (or mandate) participation of broad range of disease and programme specialities, including primary health care, in proposal development for requests for funding.
- Build flexibility and adaptability into programmes that include integrated care, recognising that integrated initiatives will face health system constraints, not all of which can be anticipated.
- Invest in evidence generation and synthesis of available evidence, with a focus on evidence that is relevant to whole-of-person care.

NATIONAL GOVERNMENTS SHOULD:

- Provide leadership in coordination and collaboration across disease areas, and diverse stakeholders.
- Ensure that there is a 'seat at the table' for people living with one or more NCD or chronic condition, and opportunities for managers and planners to listen to their experiences and priorities.
- Incorporate multi-morbidity data and discussions into planning processes.

NCD ADVOCATES AND RESEARCHERS SHOULD:

- Support and actively seek to build relationships and join forces with advocates and researchers from other health areas with shared agendas (e.g. environmental health, UHC advocates etc).
- Support people living with NCDs and multi-morbidities in LMICs to share their experiences of health systems and unmet care needs.
- Join with other stakeholders to advocate for abolishing fees for using primary health care, or for particular groups, such as pregnant women and children, in order to decrease access barriers for the world's poorest people.

Recommendations for identifying ways to strengthen local health systems through integrated programmes

MULTI-LATERAL FUNDING AGENCIES AND OTHER DEVELOPMENT PARTNERS SHOULD:

- Where appropriate, leverage disease-specific/programmatic systems and platforms to support more integrated care, including integration into and ownership by national health systems – e.g. data and IT systems, quality use of medicine initiatives, supply and distribution chains developed for single drugs, etc.
- Place a moratorium on newly funded initiatives developing parallel health records and supply systems that do not have a clear transition plan to country ownership, unless there is a clear justification for this.
- Identify health system implications for the full care cascade in all integration efforts (find-link-treat-retain), and help facilitate system improvements along the cascade, with leadership from Ministries of Health.
- Invest in robust evaluation of funded initiatives, including evaluation of the funding/initiative impact on local health systems and on communities living in the area.
- Invest in identifying and addressing capacity development needs of health workers to deliver whole-of-person care.

NATIONAL GOVERNMENTS SHOULD:

- Ensure that the priorities, experiences and capacities of local health service providers and communities are identified and taken into account in programme design and adaptation.
- Provide leadership for integrated care, ensuring that the full care cascade is considered prior to investment decisions.
- Actively seek funding for system improvements that will benefit more than one disease area.

NCD ADVOCATES AND RESEARCHERS SHOULD:

- Identify and disseminate successes and lessons learned from national efforts to harness global health funding for better integration of services towards UHC; consider implications of such efforts for NCD prevention and care, and any important omissions.

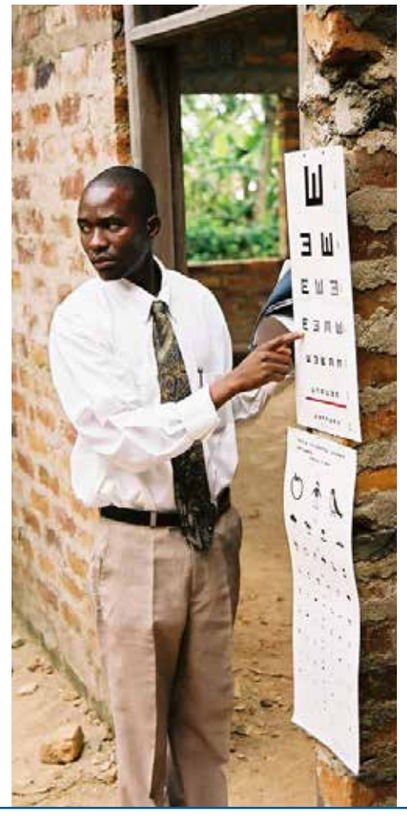
Recommendations for embedding whole-of-person care at all levels in programme design

MULTI-LATERAL FUNDING AGENCIES AND OTHER DEVELOPMENT PARTNERS SHOULD:

- Create opportunities for horizontal funding proposals to support integration as a path to UHC, including NCD prevention and care, and actively communicate these opportunities to potential recipients.
- Identify strengths of disease-specific/programmatic systems and platforms, and in what national contexts these can be leveraged for better integrated care across the system.
- Identify realistic whole-of-person indicators of integrated care that can be incorporated into funding guidance and monitoring and evaluation requirements of funded programmes to encourage integration efforts.
- Consider making some funding conditional upon evidence of contextually appropriate integration – noting that what is appropriate in one context may not be appropriate in another.
- Consider and communicate how funding can be used to foster healthy environments, recognising that social and environmental determinants of health influence disease susceptibility, and the ability of priority population groups to follow recommended care.

NATIONAL GOVERNMENTS SHOULD:

- Take a phased and context-specific approach to promoting the transition to UHC, considering the state of development of different national health systems, their priorities, disease burden, and availability and affordability of proven interventions.
- Join together with other countries, including donor countries, to call on funders to finance in more holistic and integrated ways.



NCD ADVOCATES AND RESEARCHERS SHOULD:

- Continue to support the dissemination of lessons learned about the importance of NCD service provision for UHC, ensuring that messages include the diversity of NCDs in LMICs, and advocate for a whole-of-person approach to service re-design.
- Partner with advocates and researchers with experience in addressing social and environmental determinants of health, noting the imperative to better address these determinants, not only as NCD prevention, but as an integral part of a commitment to human rights.
- Advocate that people living with NCDs, including those living with multiple conditions, have opportunities for meaningful engagement in design of integration efforts.
- Support and amplify the voices of those living with multiple chronic conditions in the poorest regions of the world.
- Seek to generate evidence that is useful to programme designers and planners in regard to integration efforts, and participate in the development of policy briefs and other translation efforts relevant for the different stakeholders who are engaged in programme design.

ANNEX

Evidence from global systematic reviews of increased risk for NCDs amongst priority population groups

NCD	Relative risk (95% Confidence interval)	Priority population
Cardiovascular disease	1.61 (1.43–1.81)	People living with HIV[68]
Type 2 diabetes	7.33 (4.79-11.51)	Women with gestational diabetes[69]
Cancers – head and neck[2]	2.64 (2.00–3.48)	People who have had Tuberculosis
Cancer - cervical	6·07 (4·40–8·37)	Women living with HIV[70]

2 TB is associated with increased risk of cancer at 10 site; others include Hodgkin's lymphoma (RR 2.19 95% CI 1.62–2.97) and lung cancer (RR 1.69; 95% CI 1.46–1.95)

Estimated prevalence of NCDs in priority population groups

	Priority population	Estimated prevalence	95% Confidence level or IQ range	Socio-demographic / setting (methods)
NCD or NCD risk factor				
Moderate to severe depression[3]	People living with HIV[9]	24.4%	12.5–42.1	LMICs
Major depressive disorder	People living with HIV[71]	13%	9.7–18.6	Sub-Saharan Africa
CVD risk factors[4]	People living with HIV[9]	21.2%	16.3–27.1	Global (systematic review and meta-analysis)
Diabetes	People living with HIV [9]	NA	1.3% -18%	Global (systematic review and meta-analysis)
Diabetes Mellitus	People in active TB treatment[16]	16%	(9.0%-25.3%)	Global (systematic review)
Depressive disorders	Multi-drug resistant TB patients[14]	25%		Systematic review and meta-analysis
Gestational diabetes	Pregnant women [19 72]	0.4%-24.4%	Not reported	Narrative and systematic reviews
Mental health disorders	Pregnant women [73]	15.6%		LMICs - Review
Chronic hypertension	Pregnant women[74]	4%		Brazil
Obesity	Pregnant women[74]	18%-38%		Various LMICs

[3] Other common mental disorders are prevalent in these populations - a systematic review on the prevalence of common mental disorder among people with HIV/AIDS in Ethiopia found that nearly one-third (28.83%, 95%CI: 17.93, 39.73) of people living with HIV suffers from common mental disorders.

[4] Prevalence of other CVD risk factors were at similar levels: hypercholesterolemia 22.2% (95% CI 14.7–32.1) and elevated LDL 23.2% (95% CI 15.2–33.8)

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We would like to thank all those who contributed to this report, through participation in the online survey, interview, and those who provided their comments on the draft report. We thank them for their time, considered views, and generosity. We include for the majority acknowledgement by name, position/organisation, and country. For the few wishing to remain anonymous, we also thank you.

Emily Wroe, Partners in Health, Malawi; Todd Ruderman, Partners in Health, Malawi; Chiyembekezo Kachimanga, Malawi; Sylvester Kimaiyo, AMPATH, Kenya; Solomon Agbor, Basic Foundation for Socio-Economic Development of Rural Women and Youth, Nigeria; Md. Moniruzzaman, Aid Organization, Bangladesh; T. Alafia Samuels, University of the West Indies, Jamaica; Dr Alayo Sopekan, Federal Ministry of Health, Nigeria; Marcelo Amaral, Ministry of Health, Mali; Ange Christian, family physician, DR Congo; Mr. Mange Ram Adhana, Association for Promotion of Sustainable Development, India; Dr Arun Nair, Robert Mangaliso Sobukwe Hospital, South Africa; Sanjeev kumar Bhagat, Lok kalyan seva Kendra, India; Obiagwu Vivian Ben, Bethel viva Foundation, Nigeria; Brenda Chitindi, Zambia Heart and Stroke Foundation, Zambia; Bisi Bright, LiveWell Initiative LWI, global; Dr Alexander Adjei, Shai-Osudoku District Hospital, Ghana; Donovan Casas Patiño, RED Internacional en Salud Colectiva y Salud Intercultural, Central and South America; Dr Caroline Kibosia, Moi University, Kenya; Cesar Ugarte-Gil, Instituto de Medicina Tropical Alexander von Humboldt - Universidad Peruana Cayetano Heredia, Peru; Nigel Rossiter, Primary Trauma Care Foundation, global; Felix Ukam Ngwu, Centre for Healthworks, Development and Research Initiative, Nigeria; Paul Brima Bangura, CISMAT-SL, Sierra Leone; Musa Ansumana Soko, South Partnership for Peace and Development, Sierra Leone; Cyriaque Okeogurutse, CEO and Director Executif, Burundi; Dr Devina Nand, Head of Wellness, Ministry of Health and Medical Services, Republic of Fiji; Dorairaj Prabhakaran, Public Health Foundation of India, India and South Asia; Feisul Mustapha, Ministry of Health, Malaysia; Paulo Pires, Lúrio University - Faculty of Health Sciences, Mozambique; Dr. Uzodinma Adirieje; Afrihealth Optonet Association, global South; Dudley Tarlton, UNDP, global; Michael Ede, Network of people living with HIV/AIDS, Nigeria; Dr Danny Devito Gotto, Uganda, Rwanda, DR Congo; Dr George Msengi, Africa NCDs Network, Tanzania; Gedeon Ngoga, Partners In Health, Rwanda, Liberia, Malawi, Haiti, Sierra Leone; Hanin Odeh, NCD Child, global; Dr Adekunle Salako, Ogun State Hospitals Management Board, Nigeria; Ralph Degollacion, Healthy Philippines Alliance, Phillippines; Helen Bygrave, MSF, Sub-Saharan Africa; Isaac Ampomah, Concern Health Education Project, Ghana, Nigeria, Kenya; Jane Barrow, Harvard School of Dental Medicine, global; Judy Khanyola, University of Global Health Equity, Rwanda, Africa and US; Jorge E Tolosa, St Luke's University Health Network, Latin America and US; Joyce Sibanda, National TB Control Program, Eswatini; Kabiru Garba, Community Enlightenment and Development Initiative, Nigeria; Kamaliah Mohamad Noh, Joint Learning Network, Africa, Asia, Eastern Europe; Kidest Nadew, Global Health Manager, Africa and Asia Pacific; Akegbeyale Lateef, College of Technology Medical Centre, Nigeria; Gashubije Longin , UNICEF, Burundi; Lindokuhle Sibiya, patient advocate and mentor, Eswatini; Dr Lila Raj Puri, The Fred Hollows Foundation, Southeast Asia; Mark Donald Mwesiga, Palliative Care Association of Uganda, Uganda; Maryam Bibi Rumaney, consultant, Africa; Melvyn Freeman, consultant, South Africa, global; Mohammed Bun Bida, Muslim Family Counseling Services, Ghana; Duru Eberechukwu Eric, Federal Ministry of Health, Nigeria; Marycelina Msuya Kilimanjaro Christian Medical University and Native Africa Foundation of Tanzania, Tanzania; Nadia Badraa, SIDC, Middle East and North Africa; Educar Consumidores, Colombia; Nydia Amador Costa Rica Saludable y RENATA, Costa Rica; Peter Diing Ngong, WADA, South Sudan; Peter Mtaa, project officer, Kenya; Dr Regulo Valdes, Caja de Seguro Social, Panama; Rikke Fabienke, Novo Nordisk, global; Dr Lobna Salem, Viatris, global; Sangeeta Jobanputra, Connecti3 LLC, Sub-Saharan Africa; Prof S. Moosa, AfroPHC, Africa; Silas Kipkenei, Christian Aid, Kenya; Stephanie Wheeler, University of Newcastle, Australia; Todd Ruderman, Partners in Health, Malawi; Joseph Severe, Union des Amis Socio Culturels d'Action en Developpement, Haiti; Dr Vicki Pinkney-Atkinson, South Africa NCDs Alliance, South Africa; International Society of Nephrology, Switzerland, Sub-Saharan Africa; Venus Dadirai Mushininga, Ministry of Health and Childcare, Zimbabwe; Walter Chikanya, ZiCHIRe, Zimbabwe; Angie Jackson-Morris, RTI International, global; Lizzy Igbine, Nigerian Women Agro Allied Farmers Association, Nigeria; Tom Ellman, MSF, global; Olivia Barata Cavalcanti, World Obesity Federation, global; Jocelyne S. 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