

SHAPING THE HEALTH SYSTEMS OF THE FUTURE

Case Studies and
Recommendations for
Integrated NCD Care



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Foreword

In the 70 years since the establishment of the World Health Organization (WHO) and 40 years since the adoption of the Alma-Ata Declaration on Primary Health Care, the global health landscape has changed dramatically, not least with vast, welcome improvements in reducing the burden from infectious diseases and maternal and child deaths.

But amid this progress, an increasingly urgent question is facing low- and middle-income countries: how best to address the growing burden of noncommunicable diseases (NCDs) in ways that maximise support for people living with the conditions but that remain feasible within overstretched health systems. Unless we act immediately, 120 million people will die prematurely from an NCD between now and 2025.

Integrated care can be an effective and affordable way to strengthen the framework for preventing and treating NCDs. It is an essential component of the enhanced efforts that will be needed if the world is to reach the Sustainable Development Goal (SDGs) target of a 30% reduction in premature death from NCDs by 2030.

Integrated care places people and communities at its heart, providing more personal, continuous and holistic treatment for individuals living with physical or mental-health conditions, and empowering communities to bring care closer to home. This approach aligns with our work at the NCD Alliance to ensure that the voices and needs of people living with NCDs are heard and responded to promptly and effectively. If health systems are to be effective, people cannot be considered as a collection of isolated body parts – care and prevention must be tailored to each individual as a whole. As Ban Ki-moon said, “success will come when we focus our attention and resources on people, not their illnesses; on health, not disease.” Integration is an investment in people, not in single instances of disease.

However, for all the benefits to individuals and health systems, it may not be easy to accommodate the systemic changes that will be necessary. This Guide recommends ways to overcome these barriers: creating an enabling environment, training health care workers in integrated care, developing people-centred approaches, capturing and using data, and ensuring effective governance and sustainability. This Guide also fills an important gap by providing a set of detailed case studies demonstrating the practical benefits of an integrated approach to NCDs, drawn from countries including India, Malawi, Rwanda, Ethiopia, Kenya and Vietnam. Many are multi-sector partnerships, which we hope will provide inspiration to all potential stakeholders: governments, health care workers, donors, NGOs and the private sector.

The Guide is publishing just prior to the third UN High-Level Meeting on NCDs in September 2018, and the Second International Conference on Primary Health Care the following month. With ever stronger commitments to NCDs and primary health care, rooted within the robust framework of the SDGs, it is our hope that the Guide will raise awareness of novel and successful practices to drive change to achieve the new commitments and aspirations which will be outlined.

Without partnership, there can be no progress. This Guide is a result of collaborative work in itself, involving NGOs, academia and private sector who contributed their views and expertise, and demonstrating the strength and value of multistakeholder engagement to implement effective NCD action. It would not have been possible without those in the NCD Alliance network who responded to our call for case studies, and who have worked with us to create such a rich, robust set of exemplars to scale up demonstrated good practice to achieve concrete progress. Finally, we wish to thank Eli Lilly and Company for its support to enable the development of the Guide, which is a new milestone in its long-standing partnership with the NCD Alliance and pioneering contributions to improving global health.

Katie Dain,
CEO, NCD Alliance

Over the past decades, health systems in many low- and middle-income countries (LMICs) have developed around the need to rapidly address infectious diseases and acute conditions. As a result, these systems are still evolving to meet the needs of people with chronic conditions such as noncommunicable diseases (NCDs), which require ongoing interactions with the broader health system. In the face of aging populations and the rise of NCDs, governments and health organisations worldwide are struggling to provide effective and efficient care for people living with NCDs.

Lilly's global health journey began more than 20 years ago when we first collaborated with Partners in Health to deliver multi-drug resistant tuberculosis (MDR-TB) treatment to people in high-burden settings. We learned greatly from our work in the TB space, which focused on decentralising care to lower levels of the health system and driving improved outcomes through treatment support models. We then applied these learnings to address the growing burden of NCDs.

Today, our Lilly Global Health Partnership aims to develop effective person-centred models for chronic care to expand access and improve health outcomes at

the primary level for people in resource-limited settings. Much of this strengthens health systems, mechanisms and capacity to drive integrated care, looking at the individual holistically, and all their needs; not just one disease. Our partners in our focus countries are piloting efforts spanning bi-directional screening, provider training and disease management for people with multiple morbidities.

The NCD Alliance is a stellar organisation with a strong track record of creating change, a deep and wide network of local, regional and global actors, a thought leader on NCD policy and practice, and a team of committed individuals driving change every day. There could not be a better organisation to partner with on this effort than NCD Alliance.

We believe strongly in the impact of sharing lessons learned and best practices and recognise the limited evidence base which currently exists around effective models of integrated care to address the needs of people living with NCDs. Our hope is that this guide can contribute to this body of knowledge, and to growing efforts around tackling NCDs.

Amy Israel,
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Practical Guide Purpose

Reducing premature deaths from NCDs requires delivering more and better care for individual diseases. Equally important is to recognise the interactions between different diseases, and to leverage the overlapping nature of some treatments and strategies—in other words, to pursue integration of health services.* However, there is only a limited evidence base available for informing real-world, practical decisions that must be made while instigating strategies for integration to improve the response to NCDs in low- and middle-income countries (LMICs).

Built on interviews with experts and health practitioners leading implementation of strategies for integration in the field, this Guide provides an analysis of the health systems landscapes in LMICs, sets out how integrating NCD care at lower levels of health systems can work, and illustrates case studies of successful good practice to provide practical answers to the following questions:

- What opportunities and challenges are faced when pursuing integration?
- How can greater integration for NCDs be achieved in practice and result in improved health systems and outcomes for people living with NCDs?
- Which approaches have demonstrated impact and could be scaled in other settings?

This Guide is intended for those who are involved in pursuing integration as a strategy for improving NCD outcomes—or who simply seek to understand more about how health stakeholders are pursuing integration in real-world settings.

Practical Guide Development

This report was developed drawing on:

1. Desk research of the grey and non-peer-reviewed literature on integration, including policy documents, implementation guidance, discussion and working papers;
2. A review of the peer-reviewed literature on integration for public health, with a focus on literature on integration as it pertains to NCDs; and,
3. Key informant interviews with experts and health policy implementers who are currently pursuing integration in India, Kenya, Rwanda, Malawi, Mongolia and Vietnam as a means for improving the response to NCDs, through efforts supported by companies, NGOs, governmental and academic institutions.

* Harries AD et al, 2015. Communicable and non-communicable diseases: connections, synergies and benefits of integrating care. *Public Health Action*. 5(3): 156-157.

Executive Summary

In the context of noncommunicable diseases (NCDs), integrated health services are implemented in a way that ensures people living with NCDs receive a full continuum of health care. This includes health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services as needed. Integrated services are coordinated across all levels of care and aim to optimise effectiveness across the health system and throughout the life-course. While no one-size-fits-all model exists for integration, this Guide aims to provide practical information and recommendations on existing models that seek to effectively meet people's needs throughout their life-course. What follows is a review and analysis of three integration models which are being implemented across different country contexts.

Model 1

Integrating NCD control interventions with other vertical health programmes

CASE STUDIES

AMPATH

Overlaying cancer care onto HIV service delivery system in Kenya

AMPATH repurposed the 'hub-and-spoke' model for decentralisation of HIV services (whereby the hub is a central care delivery site and the spokes are decentralised sites) – which was developed to increase access to services for an impoverished rural population – to overlay cancer care services. Under this model, cancer screening, diagnosis and treatment is embedded in current practices from the primary to tertiary care level, with feedback mechanisms back to lower levels of care. The cancer programme includes a network of more than 100 remote sites housed in government-funded facilities with varying levels of infrastructure and has processes in place for referral of more complex cancer cases to higher-level care centres.

REACH

Overlaying diabetes services onto TB care in India

REACH established a public-private mix model which provides TB screening, diagnosis and support across a network of public and private health providers and institutions. The model has been expanded to support screening and follow-up for people with TB who may also have diabetes. Scale-up of the diabetes component is now being considered as part of a city-wide initiative – TB Free Chennai – in collaboration with USAID and Stop TB Partnership.

MSH

Integrating comprehensive HIV and cervical cancer services in Malawi

MSH integrated cervical cancer screening and treatment services across five districts where health system strengthening efforts had originally focused on improving access to HIV-related services. The programme provides training and mentorship to staff on cervical cancer screening and treatment and established a referral network from primary care clinics to tertiary institutions.

Model 2

Integrating NCDs within existing services across different levels of the health system

CASE STUDIES

Partners in Health (PIH) Integrating NCD services into lower levels of care in rural Rwanda and Malawi

PIH is supporting the health ministries of Rwanda and Malawi to integrate NCD care into lower levels – health centres and local district hospitals – with the goal of efficiently moving the provision of NCD care for severe and easily treatable diseases as close to the community as possible.

PATH Integrating hypertension screening at the primary care level in Vietnam

Vietnam's National Strategy on Prevention and Control of NCDs calls for integrating hypertension screening and care into the primary care level and community level, targeting people who are 40 and older. The Communities for Healthy Hearts programme aims to improve blood pressure control among adults in Ho Chi Minh City by making hypertension services person-centred, with a priority placed on integrating screening services into community-level access points.

HealthRise Integrating community-based NCD interventions into public health services in India

Partners integrated community-based NCD interventions with public sector health system services. This includes decentralisation of diagnosis, management and care systems and empowerment of patients and communities, all while leveraging data management systems to track and support people along the cascade of care.

Model 3

Integrating interventions that address multiple NCD risk factors together

CASE STUDIES

MSH Addressing multiple risk factors for gestational diabetes in Ethiopia

This programme is an initiative funded by PEPFAR to integrate quality, comprehensive HIV services into other health services, including: maternal, newborn and child health; family planning; tuberculosis; sexually transmitted diseases; malaria; neglected tropical diseases; nutrition; mental health; and laboratory services. While over 95% of pregnant women reached by the initiative are tested for HIV, only 43% receive tests for albumin, pH levels, and glucose. Even when all tests are performed, providers often ignore glucose test results, which can be used to screen for GDM. Using materials adapted from the American Diabetes Association, trained health providers were trained on the importance of screening for GDM during routine antenatal care services, as well as ways to treat and manage the condition. Health providers were trained to provide nutritional and exercise advice to those who were diagnosed during counselling sessions and follow-up visits.

Practical Recommendations for Integration

How to create an enabling environment for successful integration

- Make the case for integration as a mechanism to mobilise long-term change and improve efficiency
 - Activate a realistic process that starts from where the health system is today
 - Embed discussions on financing, human and technical needs from the outset
-

How to train health care workers to achieve effective integration

- Empower the health care workforce across all levels of the health system
 - Nurture a supportive team culture with training and mentorship as an ongoing effort
 - Establishing a robust referral network is critical
-

How to develop people-centred approaches in support of integration

- Foster holistic approaches to NCD care services across the life-course
 - Enable a dynamic shift in terms of how individuals interact with the health system
 - Engage community stakeholders and health workers at all stages of programme design
-

How to capture and use data to support integration

- Comprehensive facility evaluations are key at the outset
 - Using data for decision making is essential, even in facilities with paper data systems
-

How to ensure effective governance and sustainability of integration efforts

- Develop constructive collaboration across stakeholders
- Ensure adequate resource allocation at all levels of the system
- Manage the multi-stakeholder nature of integration
- Work towards scalability and implement for success

SHAPING THE HEALTH SYSTEMS OF THE FUTURE

Case Studies and Recommendations for Integrated NCD Care

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NCDs: A Growing Challenge in LMICs

Noncommunicable diseases (NCDs) are now widely recognised as a major challenge to health and sustainable human development in the 21st century. NCDs are the leading cause of death and disability worldwide, responsible for 70% of global mortality. This figure is projected to reach 74% by 2030, exacting a heavy and growing toll on the health and economic security of all countries. Increasingly, it is LMICs and the poorest and most at-risk populations which are hardest hit by these largely preventable diseases.¹

The primary focus of the global NCD response has been on the four major diseases – namely cardiovascular disease (CVD), cancer, diabetes, and chronic respiratory diseases identified by the World Health Organization (WHO) as those responsible for the greatest burden. There is, however, a range of diseases and conditions, including mental and neurological disorders, autoimmune disorders such as psoriasis, bone and joint conditions such as osteoporosis and arthritis, and renal, oral, eye and ear diseases that are linked to the four most prominent NCDs.

NCDs emerge from complex relationships between a range of different factors, including the four main risk factors of tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol; but also, genetics, the environment, socio-economic determinants, age and sex, with variable causes and consequences on populations in urban and rural settings.^{2, 3} In settings of extreme poverty, most NCDs are not attributed to behavioural and metabolic risks and require the adoption of approaches specific to the poorest populations.⁴

The global economic impact of NCDs is staggering, and LMICs are faced with multiple overlapping health priorities. As a result, NCDs lack adequate, predictable and sustained resources within health systems. While domestic financing should form the backbone of sustainable health care delivery, few LMICs are at present able to provide care for NCDs in their health benefits packages, and most care is financed out of pocket. In the case of NCDs, external development assistance has equally been lacking. NCDs receive 2% all development assistance for health, even as people's health and economic well-being are increasingly harmed by NCDs.⁵

Realising the growing NCD challenge, governments have worked together to establish a coordinated global response. In 2011, governments adopted the UN Political Declaration on NCDs, followed by the WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 which aims to achieve a 25% reduction in premature NCD mortality by 2025. Yet, progress to date has been insufficient and uneven. Out of the 194 countries featured in the 2017 WHO Progress Monitor on NCDs, only 90 have guidelines for the management of major NCDs, which is an essential first step towards provision of effective care.

This delay in progress, coupled with the growing financial burden of NCDs, have created an urgent need for development and scale-up of approaches to effectively deliver the necessary care for people living with NCDs.

¹ World Health Organization. Noncommunicable Diseases Progress Monitor 2017. WHO, Geneva, 2017. Accessed April 2018 at: <http://apps.who.int/iris/bitstream/10665/258940/1/9789241513029-eng.pdf?ua=1>

² Brown SA and Sharpless JL. Osteoporosis: An Under-appreciated complication of diabetes. *Clinical Diabetes*, 2004; 22(1): 10-20

³ Mezuk B et al. Depression and type 2 diabetes over the lifespan: a meta-analysis. *Diabetes Care*, 2008; 31(12): 2383-90

⁴ Bukhman G et al. Reframing NCDs and injuries for the poorest billion: A Lancet Commission, *The Lancet* 2015; 386(10000): 1221-1222

⁵ Institute for Health Metrics and Evaluation (IHME). Financing Global Health 2017: Funding Universal Health Coverage and the Unfinished HIV/AIDS Agenda. Seattle, WA: IHME, 2018. Accessed May 2018 at: <http://www.healthdata.org/policy-report/financing-global-health-2017>

Reorienting Health Systems for an Effective Response to NCDs

The rise of NCDs poses unique challenges that most health systems in LMICs are not yet equipped to face.

NCDs are chronic in nature and require people to regularly interact with the health system over multiple decades

Health systems have historically been designed to provide care for acute health conditions, in which people are assumed to be healthy most of the time while occasionally, and temporarily, suffering from illness. Many health systems are configured to treat specific diseases in a vertical approach, which restricts their capacity to address populations' needs holistically while making best use of resources, especially in settings where these are most limited. It is noteworthy that with vast improvements in treatment for infectious diseases such as drug-resistant tuberculosis (TB) and HIV, these infectious diseases are also often chronic, offering opportunities for long-term integration.

People living with NCDs are often impacted by two or more diseases at the same time—whether they are facing a combination of communicable and noncommunicable diseases, or multiple NCDs

Driven by similar risk factors, together with demographic changes including rapid urbanisation and ageing populations, different NCDs are closely interconnected. Often, two or more NCDs manifest in the same individual, referred to as 'NCD co-morbidities'. NCD co-morbidities can occur because diseases share the same risk factors, with tobacco use being a risk for cancer, CVD and dementia⁶; or because some diseases predispose individuals to developing others, as in the case of diabetes, which is a risk factor for CVD, stroke, osteoporosis², kidney failure and depression.³ In addition, co-morbidity of infectious and noncommunicable diseases are increasingly observed for similar reasons. As a result, these conditions can benefit from a comprehensive and integrated response.

NCDs require a life-course approach which encompasses both prevention and control

NCDs can be addressed through non-clinical interventions combining population-wide measures and interventions targeting individuals that remain relevant and beneficial to people throughout their whole lifetime. This includes not only acute care but also prevention, extensive education⁷ and non-traditional 'accompaniment' mechanisms to ensure that which people living with NCDs are supported and receive well-coordinated holistic medical, social and economic support along the cascade of care. Focusing on earlier stages of the life-course has huge potential for impact in later stages of the life – for improving health and well-being, while also saving costs to health systems.⁸

NCDs require support outside of the traditional health system, extending into the communities in which people live their lives

People living with NCDs need support in their day-to-day lives to sustain healthy behaviours and manage their conditions. Given the complex social determinants of NCDs, integrated NCD services also ideally involve integration across the health system and the social system.⁹ NCDs require us to recognise that people have the most influence over their personal health. Rather than being 'providers', health systems must shift to becoming partners with people in promoting and sustaining good health. The roots of NCDs extend across multiple sectors, and while the effects of NCDs are observed in the health system, a far more comprehensive approach encompassing communities and municipal authorities is needed to drive change. Involving entities such as schools, formal and informal workplaces and faith-based organisations help to create environments in which it is easy for people to live healthily.

⁶ Alzheimer's Disease International. World Alzheimer Report 2014, Dementia and Risk Reduction: An analysis of protective and modifiable factors. ADI, London, 2014

⁷ Amelung VE et al. Handbook Integrated Care. Springer, 2017. ISBN 978-3-319-56103-5

⁸ Bertram MY et al. Investing in non-communicable diseases: an estimation of the return on investment for prevention and treatment services. The Lancet, 2018. Online, accessed April 2018: [https://doi.org/10.1016/S0140-6736\(18\)30665-2](https://doi.org/10.1016/S0140-6736(18)30665-2)

⁹ Xiao Y. Community-based integration of management of non-communicable diseases in China. Chronic Diseases and Translational Medicine, 2015 Sep; 1(3): 133–140

NCD Integration: Three Models of Implementation

As defined by WHO, integration is ‘the organisation and management of health services so that people get the care they need, when they need it, in ways that are user-friendly, achieve the desired results and provide value for money’¹⁰

Integration involves changing the design of the health system so that its various levels and functions—funding, administration, management, clinical service delivery—are more thoughtfully connected in a way that improves coordination between the actors responsible for prevention, care and treatment.¹¹ Successful integration can significantly improve the overall quality of people’s interaction with the health system, and therefore improve health outcomes, especially in environments where health care delivery has historically been fragmented and poorly coordinated.⁷

Primary health care (PHC) plays an important role in management and integration of NCDs. For people living with NCDs, support to manage their condition must be easily accessible and focussed on day to day life. In many cases, NCDs can be managed at the primary health care level using standard protocols and low-cost medicines.¹² Therefore, integrating NCD care into existing primary health care services can draw efficiencies and significantly improve health outcomes for people living with NCDs. While the key to NCD daily management and prevention of further complications lies in strengthened primary care delivery, secondary and tertiary care have increased relevance at times of diagnosis or when complications arise.

The approaches that health systems take to integrate care for NCDs will look different in every country and local context. Often models can be combined to address multiple challenges or to leverage existing efforts. The extent to which health promotion, prevention and primary care services are integrated varies across the programmes that are currently being undertaken. Integration is best seen as a continuum rather than as two extremes of ‘integrated’ versus ‘not integrated’. Complete integration would entail providing services for two or more risk factors or health conditions at the same location, using the same staff, methods, protocols/guidelines, care pathways, and data systems (i.e. same place, same people, same time, same methods and processes). Feasibility, effectiveness and sustainability may vary depending on the nature of risk factors and health conditions being integrated and the status of the health system.

¹⁰ World Health Organization. Integrated Health Services: What and Why? Technical Brief. WHO, 2008. Accessed April 2018 at http://www.who.int/healthsystems/technical_brief_final.pdf

¹¹ Kodner et al. Integrated care: meaning, logic, applications, and implications. *International Journal of Integrated Care*, 2002; 2: e12

¹² Amarchand R et al. Lessons for addressing noncommunicable diseases within a primary health-care system from the Ballabgarh. *WHO South-East Asia Journal of Public Health*, 2015; 4(2): 130-138

Integration approaches that are being implemented for NCDs often include one or more of the following models:

Model 1

Integrating NCD control interventions with other vertical health programmes

Upstream integration of NCD services into existing health programmes, such as those to address HIV, TB, maternal and child health, incorporates services such as education, health promotion, service referrals, counselling, support for adherence and/or behaviour change.

CASE STUDIES

AMPATH: Overlaying cancer care onto HIV service delivery systems in Kenya

REACH: Overlaying diabetes services onto TB care in India

MSH: Integrating comprehensive HIV and cervical cancer services in Malawi

Model 2

Integrating NCDs within existing services across different levels of the health system

This model can entail integrating NCD drug procurement with overall drug procurement and supply-management systems, integrating laboratory services for NCDs into pre-existing lab infrastructure, or integrating NCD surveillance or training of health care workers.¹³

CASE STUDIES

Partners in Health: Integrating NCD services into lower levels of care in rural Rwanda and Malawi

PATH: Integrating hypertension screening at the primary care level in Vietnam

HealthRise: Integrating community-based NCD interventions into public health services in India

Model 3

Integrating interventions that address multiple NCD risk factors together

Provision of a package of services and education can help people control their use of tobacco, limit their alcohol consumption, maintain a healthy diet, and increase physical activity.

CASE STUDY

MSH: Addressing multiple-risk factors for gestational diabetes in Ethiopia

¹³ Narain JP. Indian Journal of Community Medicine, 2011; 36(Suppl1): S67–S71

Accelerating Action Against NCDs: Practical Recommendations for Integration

How to Create an Enabling Environment for Successful Integration

Make the case for integration as a mechanism to mobilise long-term change and improve efficiency

Given the diversity of views and competing priorities between stakeholders, all actors that need to be brought together should be clear about the purpose, objectives and benefits of integration to be able to work together on a single unified process. One of the greatest assets is trusting relationships among the various stakeholders to effectively leverage the different skills and resources needed for success. It is critical to concretely demonstrate co-benefits of integration at different stakeholder levels and how activities can reinforce one another to ensure shared ownership over the process in the long-term.

Activate a realistic process that starts from where the health system is today

The extent to which individual risk factors and health conditions inherently lend themselves to being integrated varies according to common underlying causes/drivers, and facilitators/barriers to successful control. The structure of the health system and resources available are also important factors to consider. In theory, there are many steps to consider when pursuing integration but it is critical to start by assessing 'health system readiness' for integration, i.e., areas deemed to be conducive and prohibitive to implementing strategies for integration. Building on existing resources and strengths with clear administrative procedures operating at baseline efficiency will help ensure adequate and realistic prioritisation and adaptability to system complexity. There is no blueprint for integration; rather, it is a process which requires embracing trial and error while continually pushing the boundary of what is possible to achieve. Starting with pilots and demonstration projects allows more time for adaptation and ensures greater sustainability of approaches in the long run.

Embed discussions on financing, human and technical needs from the outset

Integration of NCD services into the primary care level may require additional funding and optimisation of resources. For example, decentralisation of clinical services requires strengthening capacity at the primary care level. Integration for NCDs also needs to be implemented in a way that advances achievement of universal health coverage (UHC) and eliminates financial barriers to the uptake of and adherence to NCD interventions that are cost-effective. Integrating NCD services therefore requires strategies for additional financing to be developed by the Ministry of Health, in partnership with other stakeholders.



How to Support Health Care Workers to Achieve Effective Integration

Empower the health care workforce across all levels of the health system

Effective integration of NCDs requires the optimal and efficient use of existing or available human resources to effectively match the supply and skills of health workers to disease burden and population needs. The prevention and control of NCDs should be included in all phases of health workforce training, development and management to best exploit the potential of different health workers and create a responsive skills mix. In addition, task ownership and team leadership are essential for understanding and sequencing of the NCD/infectious disease integration process and serve to maximise efficiencies of multidisciplinary team-based approaches and ensure health workers are deployed strategically.

Nurture a supportive team culture with training and mentorship as an ongoing effort

Continuous mentorship and training to build in-house knowledge, skills and maintenance capability is key. Supervision from experienced providers from district and tertiary hospitals plays an important role in building the confidence of providers in primary health care facilities. This can include direct observation and hands-on advising. District hospitals can serve as a source of clinical leadership. Imparting knowledge, skills and attitudes that support the integrated service provision should be a continuous process with short on-site courses and continuous support and mentoring.

Establishing a robust referral network is critical

Informal providers and traditional care providers may not refer people living with NCDs to other more appropriate HCPs until the care of the person is complicated or difficult to manage. This delay in referral can worsen symptoms and be a costly burden on people living with NCDs. Establishing a robust referral network is critical. This requires engagement of both informal and formal providers, including in planning processes. Integrating the health promotion, screening and activities of community health workers across reproductive health, nutrition, infectious disease and NCDs will also ensure control of risk factors and early detection of NCDs. Potentials for synergies should be identified and taken full advantage of.



How to Develop People-Centred Approaches in Support of Integration

Foster holistic approaches to NCD care services across the life-course

Planning service provision for NCDs should be different than planning for infectious diseases such as HIV and TB. Entirely disease-specific approaches to individual NCDs result in ineffective use of resources and added financial burden on the health system; therefore, a holistic approach should be taken to address NCDs. Integration models should be designed and implemented by multidisciplinary teams which may comprise a range of experts including public health specialists, social and behaviour change communications professionals, marketing and social enterprise experts, information technology and digital health specialists, among others.

Enable a dynamic shift in terms of how individuals interact with the health system

Adopting a person-centred care approach is critical to change how people see their own health, allowing them to feel empowered to address these conditions, and by changing the relationship people have with their health system so that individuals, others in the community, and the health system all become partners. Critical efforts to drive person-centred care can include:

- **Raising awareness at the personal and community levels:** Health education can be driven by peer educators who can conduct community mobilisation, and track clients who need care.
- **Fighting stigma:** Integration across health platforms can help address stigma. For example, stigma is often tied to infectious diseases such as sexually-transmitted diseases and TB. NCDs provide an opportunity to incentivise bi-directional screening as a package of services.
- **Embedding local perspectives into programme design:** Engaging community stakeholders and health workers from the beginning, in particular when discussing the development, selection, planning implementation and monitoring of NCD interventions, can help ensure they are appropriate, feasible, and meet the needs of local communities, as well as ensuring services are culturally appropriate and welcoming.
- **Strengthening patient-provider relationships:** As NCDs are chronic diseases, people living with NCDs often tend to develop close relationships with their service providers. This emotional support bond can significantly contribute to achieving pre-set therapeutic goals.

How to Capture and Use Data to Support Integration

Comprehensive facility evaluations are key at the outset:

In planning for the integration of NCD services into existing health platforms, it is critical to carry out detailed site-specific assessments at every single facility—not just a subset of facilities. See example of assessment guidelines, [PIH NCD Handbook Appendix A](#).

Using data for decision making is essential, even in facilities with paper data systems:

Building on current electronic medical records can allow for easy collection and sharing of data across different health facilities. But even in facilities without electronic medical records, good data can still be collected. What is key is that health workers understand why data are being collected so that they become good stewards of the data and ensure its quality. To get the most value out of the data it should be shared with a wide variety of stakeholders at various levels. This includes:

- Sharing data with local governments and health policymakers in the health ministry can build support and ownership at higher levels within the health system.
- Sharing data with health workers helps demonstrate how their work is making a difference.
- Sharing data between facilities can create healthy competition to improve outcomes.

See examples of Indicators for Monitoring and Evaluation, [PIH NCD Handbook Appendix C](#).

Note: The above actions must always be carried out with stringent adherence to privacy law, including to regulations on the use of electronic data and owner rights where relevant. Health care professionals have an obligation to keep patient health information confidential as defined by professional association codes of ethics and national law.

How to Ensure Effective Governance and Sustainability of Integration Efforts

Develop constructive collaboration across stakeholders

The community, health care providers and health care leadership need to be well aligned on the whole process of integration. Cultural views and social norms of the community, health care provider work environment and burden, and existing regulations on roles and responsibilities of health care providers are all factors to consider when designing and implementing an integration project.

Ensure adequate resource allocation at all levels of the system

While integration can be cost effective and efficient, it should not be seen as a cure for inadequate resources. Integrating NCDs into the health system cannot be achieved without the system as a whole being better resourced, with NCDs being prioritised in the agendas of UHC and people-centred primary health care.

Manage the multi-stakeholder nature of integration

Since integration requires ongoing cooperation between members of multidisciplinary teams, maintaining trust is critical to successful integration. This shift in team dynamics exposed many leadership gaps, as significant changes happened across work culture within the system. Establishing strong governance, structure and accountability from the outset is important.

a. Task planning

Setting up timelines and work plans can help prepare for potential roadblocks such as delays in finalising necessary approvals.

b. Team-building

Integration can be difficult to implement when people see their tasks as their responsibilities—responsibilities that belong to themselves—rather than seeing their responsibilities as being integrated with those of everyone else throughout the system. Thoughtful team-building and conflict resolution is critical to successful integration.

c. Leadership development

Doctors, nurses, community health workers and all others involved in delivering care can, for example, meet for an hour three times a week to discuss cases and provide optimal care effectively. Leadership development is critical to ensure teams are operating in an effective manner.

Work towards scalability and implement for success

Building sustainability and plans for scaling up should be embedded in the programme design from the outset. Scale-up plans should consider a variety of factors such as financial sustainability, market conditions, potential stakeholders and partnerships, characteristics of the target population, and cultural factors. Specifically, they should consider:

a. Timeline for implementation

For example, since cancer care requires high-cost technologies, it is important to secure adequate funding before commencing active cancer screening at the community level.

b. System absorptive capacity

Because NCDs, like HIV, require long-term care, attention needs to be paid to the capacity for the system to absorb increasing numbers of people living with NCDs.

While any set of recommendations cannot be universally comprehensive, the suggestions outlined are grounded in specific learnings from organisations that have successfully implemented integration models. They are intended to be used as a practical set of suggestions for consideration during design and implementation of NCD programmes.

From Challenges to Solutions: Leveraging Opportunities and Improving Lives

To address the **challenges** posed by NCDs, action is needed particularly in primary care, but indeed across all levels of the health system.

- At the **systems level**, integration establishes an enabling environment for implementing specific interventions for integrated NCD care across all levels.
- At the **health centre level**, integration leads to NCD care that is organised around the needs of people living with NCDs, and that helps people treat and manage NCDs and any co-morbidities while improving people's overall well-being.
- When **NCD integration is pursued at the community level**, care becomes even more person-centred because services are made available as close to home as possible.

When actions are implemented at all of these three levels through a combined top-down and bottom up approach, the greatest impact will be observed. At each of these levels, a range of challenges, key actions to address them, and ultimate outcomes exist, as outlined in the table which follows. Some of the challenges, actions and outcomes are applicable across multiple levels, but only referred to once.



Community Level

Challenges

Limited health literacy and awareness of NCD risk factors in some communities

Lack of guidance and best practices aligned to local context or infrastructure to inform community-based interventions for NCDs

Lack of experience or support of community-based action for NCDs and in task shifting by community health workers

Centralised health services with limited history of active partnership between government sector and communities or systems not under a coordinated command at national, district, municipal or community level

Socioeconomic inequalities and high out of pocket payments for NCD health services

Actions

Empowering communities to prioritise health education and health literacy activities tailored for specific audience groups

Integrating NCD screening services into local pharmacies, businesses, or in-home settings close to communities

Integrating NCD screening and community education into the package of services provided by community health workers, with a system for referring potential cases to local health centres and supporting outpatient treatment with community-based support

Strengthening community health workers' participation in prevention and control of NCDs including via the integration of specific NCD modules into their training curricula

Supporting decentralisation of health services, with enhanced collaboration at local levels

Outcomes

Greater community awareness of NCD risk factors, co-morbidities, and opportunities for prevention

Improved action for early diagnosis with less fragmented services enabling better access and improved health promotion

Community environments that better support and sustain health and wellbeing

Higher levels of continuity of care, better referral systems, and greater satisfaction with care and improved outcomes

Improved self-management, reduced dependence on community health workers, greater proximity of services and reduced delays in seeking consultation to access diagnosis and treatment

Lower out-of-pocket costs for people living with NCDs and families

Health Centre Level

Challenges

Multiple possible entry points (e.g. depending on which condition lead them to first interact with the health system)

Limited knowledge of relevant interventions to prevent NCDs and their secondary complications

Lack of standardised clinical protocols for NCD management with unclear referral systems

Overloaded health workforce, limited support for skills development on integration and barriers to inter-professional collaboration

Unclear prioritisation, targets and costs resulting in sub-optimal decision-making, resource commitment, weak planning and siloed budgeting within facilities

Limited availability of medicines, technologies and weak supply chain systems

Limited dialogue and capacity to enable leverage of mHealth and eHealth solutions to support integration, scale-up and outreach of NCD strategies and programmes – these technologies may be seen as competition to traditional health care delivery methods when they are in fact complementary



Actions

Developing comprehensive range of services across levels of care, health conditions and throughout the life-course that should be available to all, including preventive, curative, palliative and rehabilitative services and health promotion activities

Integrating screening for NCDs into routine care for please change to infectious diseases and supporting bi-directional screening

Developing robust referral systems for complicated cases to higher levels and establishing collaborative agreements between clinicians at different health centres

Providing people living with NCDs with health education and support to improve NCD self-management and prevent secondary complications of NCDs

Developing vehicles for shared decision-making between people living with NCDs and their care providers

Creating multidisciplinary teams to design and assess individuals' treatment and care plans for NCDs and co-morbidities within the same health centre

Establishing clear guidelines on task shifting and sharing to facilitate the delegation of non-clinical tasks and allow more time for health professionals to focus on early detection, diagnosis and treatment of NCDs

Ensuring availability of simplified guidelines for NCD management in PHC facilities based on the adaptation of WHO's Package of Essential Noncommunicable Disease (PEN) Interventions for Primary Health Care in Low-Resource Settings

Improving supply and procurement management systems for essential medicines and technologies

Strengthening technical leadership of the PHC facilities' managers to improve supervision and ensure quality NCD services

Promoting the value of leveraging eHealth and mHealth interventions to improve access to information and the establishment of integrated medical record systems to facilitate the tracking of medical history

Outcomes

Improved health promotion and health behaviours, greater satisfaction with care, and adherence to treatment, with fewer patient visits to health centres necessary

Improved access to a holistic spectrum of good-quality essential health services for NCDs and less fragmented services for NCDs and co-morbidities

Improvements in the quality and continuity of care, including reduced delays in seeking consultation to access diagnosis and treatment for NCDs and co-morbidities

Efficiency gains with reduced facility costs and improved health outcomes for health systems

Systems Level

Challenges

Competitive mindset between health system levels, programmes and institutions, lack of cross-sectoral integration across programme areas and limited awareness of interlinkages between sectors

Difficulty in identifying opportunities and co-benefits for integration at different stakeholder levels

Siloed programme management and financing with sustained funding gaps for NCDs and weak monitoring and evaluation

Limited financial coverage for NCD services

Limited workforce capacity to provide integrated NCD care



Actions

Setting policies and regulations for guiding the integration of NCDs across sectors and supporting strategic planning for NCD care providing basic packages of cost effective strategies to prevent and treat NCDs

Integrating NCD goals into existing governance structures, through joint coordinated planning and management, monitoring and evaluation and reporting

Designing financing and incentive schemes to support integrated NCD care and eliminate financial barriers to the uptake of and adherence to NCD interventions that are cost-effective

Developing financial-risk protection mechanisms to ensure the cost of using care does not put people at risk of financial hardship

Establishing and strengthening national health information systems (including registries) for monitoring and evaluation of NCDs and risk factors, as well as morbidity/mortality statistics by cause

Integrating the prevention and control of NCDs in all phases of health workforce training, development and management

Outcomes

Reduced redundancy in the administration of health care services

More coordination between vertical programmes

Improved communication and information sharing within government

Improved efficiency in allocating resources

Improved data collection on health outcomes of patients living with NCDs and co-morbidities

Improved communication and information sharing between all actors in different parts of the health system

Stronger governance and accountability for overall health outcomes

More multidisciplinary health workforce

Improved financial protection and coverage against catastrophic NCD expenditures

A photograph of a person wearing a purple patterned dress, holding a smartphone. In the foreground, another person's hand is visible holding a smartphone. The background is slightly blurred, showing a colorful patterned object. A semi-transparent purple box is overlaid on the image, containing text.

The project-based case studies featured in this publication were collated after several calls for input were shared across the global health community. These included an open call for submissions via the NCD Alliance's website and newsletter, and more targeted requests to partners with whom Eli Lilly and Company and the NCD Alliance work closely. A first round of selection was completed based on geographical and disease focus, followed by in depth interviews and consultation with those responsible for project implementation to summarise progress and lessons learned; and to assess availability of impact data.

The case studies included here are intended to provide real-world examples of integration and do not reflect a comprehensive view of all efforts currently underway.

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MODEL 1

Integrating NCD control interventions with other programmes

AMPATH

Overlaying Cancer Care onto HIV Service Delivery Systems

Location	Eldoret, Kenya
Setting	Rural
Target population	Oncology and haematology programme: 18 million people; HIV/AIDS programme: 2 million people.
Partners	Kenya Ministry of Health, Moi University, Moi Teaching and Referral Hospital, Indiana University (Leading a consortium of more than 14 North American institutions), Eli Lilly and Company, Takeda, Celgene, Bristol-Myers Squibb Foundation, Indiana Hemophilia and Thrombosis Center.



Integration Model

AMPATH repurposed the hub-and-spoke model for decentralisation of HIV services (whereby the hub is the central care delivery site and the spokes are decentralised sites) – which was developed to increase access to services for an impoverished rural population – to overlay cancer care services. Under this model, cancer screening, diagnosis and treatment is embedded in current practices from the primary level to tertiary care level, with feedback mechanisms back to lower levels of care. The cancer programme includes a network of more than 100 remote sites housed in government-funded facilities with varying levels of infrastructure and has processes in place for referral of more complex cancer cases to higher-level care centres.

Overarching Findings

Integration of cancer care into existing infectious disease platforms is feasible in low-resource, rural settings. Cost-efficiency can be achieved by using existing infrastructure, coordinating with local governments, developing treatment protocols for affordable off-patent chemotherapeutics, and task-shifting practices. In addition, targeted training and staff collaboration across all levels of the health system is critical to ensure that infectious disease programme staff recognise the benefit that integration can bring to their current work.



“

NCD care is multidisciplinary in nature and you have to follow up patients for life. I often tell my patients that I will follow up with you until you or I die.

Dr Fredrick Chite Asirwa, Medical Co-director, AMPATH Oncology and Hematology Programme

An agricultural exhibit at Eldoret, Kenya.

© Greg Webb / IAEA

HEALTH SYSTEM CHALLENGES

As people receiving treatment and care for HIV were living longer in Kenya thanks to advances in HIV care, almost one in ten HIV patients were developing cancers that typically went undetected for long periods. Indeed, 80% of reported cancer cases in the country are diagnosed at an advance stage. In parallel, cancer mortality in Kenya has increased exponentially – now accounting for 7% of all annual deaths. This is due to limited existing infrastructure for cancer screening, diagnosis and care across the country.

INTEGRATION MODEL

Integration of Cancer Screening into HIV Services: Having established an HIV community-based model which delivers care to over 140,000 patients with 2,000 new patients enrolling monthly, clinicians noticed patients were increasingly developing HIV/AIDS associated malignancies such as Kaposi's sarcoma and non-Hodgkin's lymphoma. This led to the development of the AMPATH Oncology programme, a hub-and-spoke model where the AMPATH Centre at Moi Teaching and Referral Hospital serves as the hub and collaborating sites serve as spokes. Spokes include 100 health facilities providing cancer screening, education and training, clinical care support, oversight and feedback. Health workers involved in AMPATH activities are public health workers whose salaries are paid by the national and county governments. However, each of the staff at the central AMPATH is linked to the international partner institutions that provide funding for their position (see partners above).

INTERVENTIONS

Establishment of a hub-and-spoke model

A hub-and-spoke model was established where the AMPATH Cancer Centre at MTRH is the hub and the collaborating sites are the spokes. Each centre is engaged in activities that are dependent on the level of expertise available. For example, since Kisumu County Hospital has a gynaecologic oncologist (who has been trained at AMPATH/Moi University), gynaecologic oncology surgeries are carried out at the site.

Efficient task-shifting and upskilling

Cancer care is multidisciplinary in nature and therefore, all cadres of staff are trained. Nurses, physicians, pathologists and surgeons train and assist in equipping local hospitals both in capacity building as well as infrastructure to screen and treat many more people for cancer. This was done by supporting health workers to develop the necessary skills, and then integrating cancer screening and treatment into those health workers' responsibilities. For example, because one clinician was treating 50 cervical cancer patients at each clinic, gynaecologists were trained to become gynaecologic oncologists through a 2-year fellowship programme to provide care for cervical cancer and other gynaecologic cancers.

Integrated diagnostics

Leveraging the current laboratory infrastructure for HIV, AMPATH developed diagnostic capacity for cancer that would be driven through the central clinical laboratory and supported through small laboratory facilities in remote clinic sites for both HIV and cancer services. For example, flow cytometry for diagnosing leukaemia/lymphomas is conducted in the same reference laboratory that supports management of HIV/AIDS. Local technicians and staff for both have been trained in the same centre in the United States-Indiana University Pathology Department.

Telemedicine

Telemedicine is integrated into the AMPATH Oncology system to both increase people's access to cancer care and improve the quality of care. Telemedicine allows cancer specialists based at the Central Hospital, MTRH/AMPATH Centre to consult with health workers and patients who are in remote health centres. Telemedicine also promotes person-centred care as patients can receive consultations and second opinions, which are important in a cancer diagnosis, without having to travel. The remote telemedicine sites are scaling up from two health centres to at least 20 in the next two years.

Community-based education and financial support

Integrated cancer awareness education is provided through the mobile platform as well as integrated into door-to-door HIV education activities that community health workers were already providing in the community. The same community health workers trusted by the communities to assist in HIV care provision and information dissemination are utilised for cancer education and screening information. In addition, the programme assists communities to form women groups to improve their living standards, and support enrolment into the National Hospital Insurance Fund (NHIF), working with the local leaders to ensure community ownership of programmes and sustainability.

Data collection and evaluation

Data collection is a critical component of the programme. Cancer data is captured through the existing HIV open-source electronic medical record system (AMRS). In order to evaluate the programme, AMPATH implemented a step-wise approach that considers a minimum set of key indicators with the goal of adding new indicators to allow for progressive expansion of clinical data tracking and treatment guidelines.

IMPACT

The AMPATH Oncology programme¹⁴, which started more than 12 years ago has:

- Established a cancer and chronic care facility that accommodates more than 10,000 patients and screens more than 12,000 women for cervical cancer each year. The facility has bunkers ready for four radiation units to be delivered in 2018.
- Developed Kenya's first approved curriculum in gynaecology-oncology, which has three graduating classes and four students in training.
- Recruited ten staff members for cancer care (four in medicine, three in gynaecology, two in radiation, one in paediatrics) and a palliative care team serve 20 million patients within the catchment area of western Kenya.
- Established a Directorate of Oncology at Moi Teaching and Referral Hospital.
- Created a revolving pharmacy for oncology to ensure adequate supplies of drugs, bought via grants by foundations and pharmaceutical companies. Drug donations are given to patients free of charge.

¹⁴ Loehrer PJ et al, Capacity building in sub-Saharan Africa: models of care. *The Lancet Global Health*, 2018; 6: S17–S18

LESSONS LEARNED

1. Tailored training for health care workers

Integrating cancer education into community health workers' activities proved challenging due to volunteer community health workers (CHWs) being overburdened with additional responsibilities. As a result, AMPATH Oncology provided different levels of workers with different levels of training and responsibilities. For example, in the lymphoma programme:

- a. **'Spotters':** At the most basic level, CHWs called 'spotters' are provided books that have pictures of people with advanced-stage cancer. Spotters do not share information about cancer. They are trained simply to tell their supervisor whenever they see anyone in the community who looks like they might have the same condition as the people in their pictures.
- b. **'Outreach CHWs':** CHWs who have completed secondary education receive tools such as flip charts that they use to educate the community about cancer. They are responsible for reaching out to those people identified by the spotters and initiate cancer screening and education.
- c. **Nurses:** Outreach nurses then backstop education from CHWs.
- d. **Physicians:** Complementary high-level training is carried out for physicians.

2. Information systems and data sharing

Electronic medical records allow for easy collection and sharing of data across different health facilities. But good data can be collected even in places without electronic medical records. The key is for all health workers to understand why the data are being collected, so that they become good stewards of the data and ensure its quality. To get the most value out of the data it should be shared with a wide variety of stakeholders at various levels.

- a. **Government:** Share data with the government on a regular basis even if they don't ask for it. Sharing data and analysis with health policymakers in the health ministry builds support and ownership at high levels within the health system.
- b. **Health Workers:** Sharing data with community health workers helps demonstrate how their work is making a difference. Sharing data between facilities can create healthy competition to improve outcomes.

3. Governance, structure and accountability

Since integration requires ongoing cooperation between members of multidisciplinary teams, maintaining trust is critical to successful integration. This shift in team dynamics exposed many leadership gaps, as significant changes happened across work culture within the system.

- a. **Team-building:** Integration can be difficult to implement when people see their tasks as their responsibilities—responsibilities that belong to themselves—rather than seeing their responsibilities as being integrated with those of everyone else throughout the system. Thoughtful team-building and conflict resolution is critical to successful integration.
- b. **Leadership development:** Doctors, nurses, radiologists, pathologists, and all others involved in delivering care meet for an hour three times a week to discuss cases and provide optimal care effectively. Leadership development is critical to ensure teams are operating in an effective manner. AMPATH is currently pursuing resources to provide leadership training for managers and supervisors.

4. Long-term sustainability

Integration for NCDs needs to be implemented in a way that advances achievement of UHC. It is therefore very important to sequence activities properly. In this case, it was necessary to have enough funding to be able to care for cancer patients before starting active cancer screening at the community level. Because NCDs, like HIV, require long-term care, particular attention needs to be paid to the capacity for the system to absorb increasing numbers of patients over time.

RESOURCES

[AMPATH Kenya. Webpage](#); 2018

[Capacity Building in sub-Saharan Africa: models of care](#). The Lancet Global Health; March 2018

[Strengthening care and research for women's cancers in Sub-Saharan Africa](#). Gynaecologic Oncology Reports; August 2017

[Factors Associated with Uptake of Visual Inspection with Acetic Acid \(VIA\) for Cervical Cancer Screening in Western Kenya](#). PLOS ONE; May 2016

[AMPATH-Oncology: A model for comprehensive cancer care in sub-Saharan Africa](#). Journal of Cancer Policy; June 2013

[AMPATH: A strategic partnership in Kenya. Global Perspectives on Strategic International Partnerships](#). Institute of International Education; 2016

[Engaging the entire care cascade in western Kenya: a model to achieve cardiovascular disease secondary prevention roadmap goals](#). Global Heart; December 2015

[Adoption of scale up strategy and its effects on health care service provision in Kenya: a case of AMPATH cervical cancer program](#). International Journal of Disaster Management and Risk Reduction; March 2014

[The evolution of comprehensive cancer care in Western Kenya](#). Journal of Cancer Policy; April 2013

REACH

Overlaying Diabetes Services onto TB Care in India

Location	Chennai, India
Setting	Urban
Target population	4,500 patients
Partners	REACH, Corporation of Chennai, Eli Lilly and Company.

Integration Model

REACH established a private-public mix model which provides TB screening, diagnosis and support across a network of public and private health providers and institutions. The model has been expanded to support screening and follow up support for TB patients with diabetes. Scale-up of the diabetes component is now being considered as part of a city-wide, four-year initiative – TB Free Chennai – in collaboration with USAID and Stop TB Partnership.

Overarching Findings

With the growing dual burden of disease between infectious and noncommunicable diseases, existing platforms can be leveraged to integrate NCD services in low-resource urban settings. Screening TB patients for diabetes and other NCDs can help with timely case detection and treatment and can indirectly lead to better TB treatment outcomes.



HEALTH SYSTEM CHALLENGES

Over the past two decades, the government of India has implemented a number of initiatives to address the country's TB epidemic. While these state-run programmes have seen the reduction of TB mortality, their implementation continues to face a critical challenge: up to 80% of TB patients first seek care in the private sector, where unqualified providers outnumber qualified doctors and where patients are often unable to afford a full treatment regimen once diagnose. In addition, the diabetes, which affects 1 in every 5 Indians, is associated with increased risk of developing TB.

INTEGRATION MODEL

Overlaying NCD Services onto TB Care: In order to engage TB patients seeking care in the private sector, the Revised National TB Control Programme (RNTCP) developed the 'public-private mix model' (PPM model), which allows for collaboration between NGOs, the public sector and a network of private sector providers. REACH worked in collaboration with the Corporation of Chennai in the establishment of a PPM, which engages private HCPs in the RNTCP. REACH operates 35 PPM centres located in private hospitals that work with a network of private HCPs in Chennai to support people with TB. Under this model, private HCPs refer patients with TB to PPM centres to receive free directly observed treatment under the supervision of REACH staff. Since 2016, REACH has been integrating diabetes education and screening referral services into TB services at PPM centres.



A street stall in Chennai, India. © McKay Savage

INTERVENTIONS

Integrated education and referral at ppm centres

- a. **Training staff:** The centres' main service is TB treatment support. Each centre staff includes a health counsellor with basic education qualifications who has been trained to provide TB and diabetes management support. Diabetes training occurs two or more times per year and is conducted by diabetes experts and nutritionists from local diabetes centres.
- b. **Bi-directional screening:** Once people with TB are referred to the PPM Centre, they are interviewed for risk factors related to diabetes and other NCDs. PPM centre staff will refer them to laboratories in public facilities where they can be screened. If they are given a positive diagnosis, the PPM Centre refers them back to their current HCP or to diabetes specialists who can provide treatment.
- c. **Individual follow-up:** A number of factors including financial burden, stigma and travel time impact loss-to-follow-up. This is particularly challenging for people who are sent for screening but do not follow up with HCPs. PPM Centre staff provide follow up reminders every 15 days once people have been sent for screening. If this follow up proves to be ineffective, PPM staff conducts home visits to individuals.

- d. **Disease management:** People with TB who are also diagnosed with diabetes are able to continue receiving treatment support for both diseases throughout the six months of their TB treatment. Linking quality treatment and support for these co-morbidities can improve patient retention. This can be done by shifting responsibility from HCPs to staff in PPM Centres who are already providing TB support.

Note: REACH does not continue supporting patients beyond the six months; rather the aim is that referrals to other HCPs have been strengthened during the first six months and therefore, people are able to continue treatment with the support of HCPs at their clinics. At this point, REACH has not the quality or length of patient support beyond the six-month period.

Referral and feedback network

REACH established the following network for TB and is actively looking for opportunities to integrate NCD interventions across the network:

- a. **Awareness building for private HCPs:** REACH aims to provide education and awareness building about the linkages between TB and diabetes, while advocating for diabetes screening for people with TB. Many HCPs providing TB services are general practitioners. By providing guidance on the risk factors related to these co-morbidities, HCPs are encouraged to refer people to PPM Centres for screening.
- b. **Training pharmacists:** As part of the PPM model, REACH established a network of 300 private pharmacies and trained 2,000 pharmacists on TB and diabetes screening. Because many people first seek informal providers, such as their local pharmacists or the traditional care providers, pharmacists play a critical role in referring patients to hospitals to receive personalised follow up.
- c. **Linking laboratories:** REACH has developed a network of laboratories to work with HCPs and support services for TB and is now considering opportunities to embed diabetes screening across these laboratories. By conducting bi-directional screening in one location, REACH can minimise loss-to-follow-up due to travel time.

IMPACT

- In 2017, 4,500 patients attended the PPM centres and received information and diagnosis. Out of those, 1,650 received direct care for TB. Nearly half of people receiving services at the PPM centres were living with diabetes who also received treatment adherence support and nutrition counselling.

LESSONS LEARNED

1. High costs of care

People are burdened by financial barriers of receiving long-term care which often results in loss-to-follow-up. Often people will take their medication for one of the conditions at the expense of the other. Affordability is also a challenge in diagnosis. Currently, REACH provides government subsidised coupons for people living with TB to receive free-of-charge chest exams and diagnosis for TB in private clinics. While this subsidy model could be replicated for NCDs, it is not currently available.

2. Value of patient-physician relationships

REACH does not interfere with patient/physician relationships. By providing an added service that is free of cost, the model encourages people to continue visiting their physician. This prevents additional loss-to-follow-up that occurs when people are asked to see multiple health care professionals.

3. Addressing stigma

Beyond current efforts, REACH is considering opportunities to expand NCD screening services to:

- a) TB referrals,
- b) people with TB, and
- c) household contacts. Historically,

TB screening has been low in household contacts because of stigma. REACH is exploring opportunities to incentivise TB screening by offering NCD screening as a package of services.

4. Informal providers

Informal providers and traditional care providers may not refer patients to other more appropriate HCPs until the care of the patient is complicated or difficult to manage. This delay in referral can worsen symptoms and be a costly burden on the person and their family. Establishing a robust referral network is critical. This includes engaging both informal and formal providers as well as conducting community-based awareness events.

5. Understanding the ecosystem of stakeholders

Developing a robust referral and feedback network requires a thorough understanding of the role of different actors in the health ecosystem. Different groups impact outcomes. A comprehensive network needs to be developed that included formal, informal, public, and private sectors.

RESOURCES

[Toward comprehensive global health care delivery: Addressing the double threat of tuberculosis and diabetes.](#) Advance Access & Delivery Report; October 2017

[How do patients access the private sector in Chennai, India? An evaluation of delays in tuberculosis diagnosis.](#) International Journal of Tuberculosis and Lung Disease; April 2016



A street stall in Chennai, India.

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MSH Integrating Comprehensive HIV and Cervical Cancer Services in Malawi

Location	Malawi
Setting	Rural
Target population	+5,000 women in five districts – Blantyre, Thyolo, Chiradzulu, Neno and Mwanza.
Partners	Management Sciences for Health (MSH), President’s Emergency Plan for AIDS Relief (PEPFAR), United States Centres for Disease Control and Prevention (CDC), Government of Malawi.

Integration Model

MSH integrated cervical cancer screening and treatment services across five districts where health system strengthening efforts had originally focused on improving access to HIV-related services. The programme provided cryotherapy machines and supplies, training and mentorship to staff on cervical cancer screening and treatment and established a referral network from primary care clinics to tertiary institutions for complicated cases, such as suspicion of cervical cancer.

Overarching Findings

If caught early, cervical cancer is treatable. This can be done through cervical cancer screening using the visual inspection with acetic acid (VIA) method as well as performing treatment on uncomplicated lesions. This approach has been proven to be safe, effective, and resource efficient. Such an intervention can be easily implemented in primary health care facilities, with linkages and referrals established with tertiary institutions for complicated cases. Particular focus should be given to people living with HIV, who are at increased risk of cervical cancer.

HEALTH SYSTEM CHALLENGE

Nearly 4.8 million women over the age of 15 in Malawi are at risk for developing cervical cancer, a number which will continue to increase as the country’s significant youth population ages. Cervical cancer, largely caused by the human papillomavirus (HPV), is the most prevalent form of cancer among women in Malawi, with nearly 3,700 new cases reported per year and a mortality rate of about 80%. Cervical cancer is a life-threatening disease that occurs at higher rates in HIV-infected women (known as an AIDS-defining condition). Because Malawi has one of the highest HIV prevalence rates in the world—with 10.6% of the adult population aged 15–64 years having HIV (12.8% in women vs 8.2% in men)—cervical cancer remains a significant challenge. Studies show that, historically, patients presenting with cervical cancer in Malawi are young, with a high prevalence of HIV, and late-stage disease. Malawi faces a number of health system challenges to improve cancer screening and treatment, including an insufficient number of service providers, poor supervision, lack of basic equipment, stock-outs of essential supplies, lack of policy awareness, inadequate funding, and lack of standards and guidelines for screening and treatment.

INTEGRATION MODEL

Integrating comprehensive HIV and cervical cancer services: From 2012 through 2018, MSH implemented the CDC-funded District Health System Strengthening and Quality Improvement for Service Delivery (DHSS) Project, which aimed to improve quality of, access to, and coverage of priority HIV-related health services. Through the project, MSH provided HIV testing and antiretroviral therapy (ART) at five health facilities in five districts: Ndirande health centre and Chiradzulu, Thyolo, Neno, and Mwanza district hospitals from April 2015 to December 2017. Building on the current infrastructure at the facilities, MSH expanded these services to provide cervical cancer screening and treatment in these five districts.

INTERVENTIONS

Training and mentorship of staff on cervical cancer screening and treatment of uncomplicated lesions:

DHSS supported the training of 32 staff in five facilities on the VIA method. Staff trained included clinicians and nurses from the ART and antenatal clinics. Once training was completed, participants were able to properly conduct screening with VIA, as well as perform treatment on uncomplicated lesions using cryotherapy machines (freezing of precancerous cells).

Procurement of supplies and cryotherapy machines

The DHSS Project supported the procurement of crucial supplies and equipment to address facility infrastructure shortages. Supplies procured to support cervical cancer screening included 3–5% acetic acid, cotton swabs, and examination gloves. Additionally, the project procured and distributed vaginal speculums, instrument trays, and six cryotherapy machines and gas to the five facilities. DHSS oriented and mentored staff on the proper maintenance and upkeep of the equipment.

Mentoring on documentation

The project provided mentoring on documentation of cervical cancer screening and treatment of uncomplicated lesions. Data was collected using standard Ministry of Health registers; and in each facility, staff were trained on completing the registers. DHSS and Ministry of Health mentors conducted monthly mentorship visits to ensure proper documentation in the registers.

Establishing referral and linkages with tertiary hospitals

Patients with complicated lesions or overt cancers were referred for specialised services at tertiary institutions such as Mzuzu and Queen Elizabeth central hospitals. Gynaecologists and obstetricians reviewed the patients and provided specialised services, such as loop electrosurgical excision procedure, cold knife conisation, chemotherapy, and radiotherapy. Physicians also made referrals for palliative care.

IMPACT

Screenings

From January 2015 to December 2017, a total of 5,027 women received cervical cancer screening. The number of women screened per quarter increased from 149 to 1,038 in a two-year period, reflecting massive demand for the services. HIV status was documented for the majority of women—of these, 22% were HIV positive and on ART and 69% were HIV negative.

Diagnosis

Over 85% of the visits were for initial VIA screening. A total of 159 women tested VIA positive. Of these, 50.4% received cryotherapy, 19.5% had cryotherapy postponed, and 17.6% were referred to another health facility. The remaining 12.5% either received another type of management or were not accounted for.

Treatment

The percentage of women who sought cryotherapy increased from 11% to 56% over a two-year period, demonstrating an increased demand for services.

Referrals

There were 218 women who had documented reasons for referral. Over 90% of referrals were for other gynaecological reasons, while suspected cancer contributed to 13%, and larger lesions 6%.

“

I was encouraged by my grandmother after realising that my mother had died of [cervical cancer] just like her sister... I had to break the circle and went for testing. I knew I would be treated right there at Thyolo District Hospital.

Teresa*, cervical cancer screening patient, age 32.

**the name of the individual has been changed.*



LESSONS LEARNED

1. Early screening

By integrating cervical cancer screening into antenatal care and ART services, health facilities can reach a large number of women and identify those with pre-cancerous lesions early enough for treatment. In addition, cryotherapy can be made readily available and thereby reduce the need for referring women to other facilities for follow-up and treatment.

2. Importance of awareness-raising at the community level

In most instances, clients did not access cervical cancer screening services due to lack of awareness in the five facilities that DHSS supported. This underscores the importance of health education and raising awareness at the personal and community levels about cervical cancer screening programmes. Awareness campaigns could include peer educators who can offer health education, conduct community mobilisation, and track clients who need care.

3. Ongoing mentorship and training is critical

The project's experience showed that most providers lacked adequate knowledge and practical skills regarding this low-cost intervention. It is important to increase provider knowledge and skills to be able to conduct screening using VIA and manage uncomplicated cases using cryotherapy. Continuous mentorship and supervision by experienced providers from district and tertiary hospitals plays a great role in building the confidence of providers in primary health care facilities. This ensures the availability of competent staff to provide cervical cancer screening and treatment services. An important follow-up to training was monthly mentorship which DHSS provided to all 32 staff that was trained. This included direct observation and hands-on advising.

4. Procurement and supply mechanisms must be tied to the programme

There is a need to ensure availability of supplies and reagents such as acetic acid, speculums, gloves, normal saline, and gas for the cryotherapy equipment. Most Ministry of Health facilities lack funding to maintain sufficient supplies and have frequent stock-outs.



RESOURCES

[Integrating comprehensive HIV and cervical cancer services saves lives.](#) Technical Brief MSH; January 2018

[Aiming for the three 90s: Strengthening Malawi's response to HIV and AIDS.](#) Final Report MSH; 2018

[District health system strengthening and quality improvement for service delivery in Malawi.](#) MSH website; 2018

Dance in Majuni, Malawi.

© Tim Cowley

MODEL 2

Integrating NCDs across different levels of the health system

Partners in Health Integrating NCD Services into Lower Levels of Care in Rural Rwanda and Malawi

Location	Rwanda, Malawi
Setting	Rural
Target population	Rwanda: 800,000 people in the Burera, Kayonza and Kirehe Districts. Malawi: 150,000 people in Neno District.
Partners	NCD Synergies (a Partners in Health Project), Government of Malawi Ministry of Health, Government of Rwanda Ministry of Health.

Integration Model

PIH is supporting the health ministries of Rwanda and Malawi to integrate care for NCDs into lower levels of care – health centres and local district hospitals – with the goal of efficiently moving the provision of NCD care for severe and easily treatable diseases as close to the community as possible.

Overarching Findings

District hospitals and health centres in rural settings can provide a comprehensive package of services for even severe NCDs. Through an efficient care delivery structure with proper supervision and mentorship, nurses and community health workers can be empowered and trained to care for a wide spectrum of NCDs.



HEALTH SYSTEM CHALLENGE

Until recently, care for NCDs in Rwanda and Malawi has been available only within referral hospitals, making access especially difficult for people living in rural areas. While there has been slow decentralisation of services for some NCDs, less progress has been made for severe NCDs such as cancer. NCDs account for as much as 30% to 40% of adult hospitalisation time in these countries, in part due to the lack of reliable outpatient follow-up care. At the same time, the rural health systems within these countries - village-based community health workers, nurse-staffed health centres, and district hospitals with generalist physicians - suffer from severe resource constraints and are therefore not able to replicate the referral hospital model, which includes vertical programmes focused on a single disease.

INTEGRATION MODEL RWANDA

Integration of NCD care into single delivery platform: PIH is piloting NCD clinics at the district level which are responsible for organising multiple diseases onto a single integrated delivery platform. These clinics leverage a single clinical team, medical equipment, and referral networks to serve multiple severe and more easily managed NCDs.



A clinic in Rwanda. © 2017 Riccardo Gangale, Photoshare

INTERVENTIONS

District Hospital NCD Clinics

Each day of the week NCD clinics deliver care focused on a specific NCD—for example, hypertension on Monday, diabetes on Tuesday, etc.—within one or two rooms of the local health facility. If people seek care for one NCD on clinic day, they are also treated for other NCD co-morbidities on the same day.

Progressive decentralisation

People with stable, well-controlled, and easily treated NCDs are transferred to their local health centre, which is geographically more accessible. Patients are registered as having been transferred and all relevant medical records are sent to the health centre. Given that all paper records in both the health centre and district hospitals are entered into the same electronic medical record, all patients with missed appointments are able to be captured and then tracked.

Task-Shifting

Nurses are trained to provide outpatient NCD care at district hospitals and health centres. At the district level, nurses are specialised in NCD care through rigorous training and ongoing supervision and mentorship. The



We don't talk often enough about how as an NGO we can facilitate national scale-up.

Dr Paul Park, Director of Implementation, NCD Synergies, Partners In Health.

scope of practice includes medicines, equipment, and skills necessary for managing complex, severe NCDs. For example, people with rheumatic heart disease require that nurses are proficient in cardiac ultrasound and anti-coagulation (e.g., warfarin) prescribing. In turn, these nurses then train and mentor the health centre nurses within their respective catchment areas. PIH uses a standard checklist of responsibilities that all chronic care nurses must be able to perform. Mentors use this checklist to assess health centre nurses' performance and to identify areas where closer mentorship is needed.

Integrated Chronic Care Clinics at Health Centres

Through progressive decentralisation and task-shifting, health centres ultimately become equipped with nurses who are proficient in both NCD and HIV care. These combined skillsets allow for integrated chronic care services.

Psychosocial Support

Psychosocial support services and peer-support activities are integrated into the NCD clinics. Support groups are led by government social workers, nurses and other patients.

IMPACT

- PIH and the Ministry of Health are working together to scale-up this decentralised integrated model of NCD care to all 42 districts in the country.
- As of 2014, 3,367 patients had been enrolled in clinics across three PIH-supported districts. Of these, 67% were female. Disease categories, in descending order of predominance were: hypertension (30%), chronic respiratory disease (26%), heart failure (26%), and diabetes (16%). More than 80% of people lived in rural districts, and of these, more than 60% of those with documented occupation were subsistence farmers.

INTEGRATION MODEL MALAWI

Decentralisation of NCD care: Neno District is comprised of two hospitals (1 district hospital, 1 community hospital) and 12 health centres supported by PIH. Working with the Ministry of Health, in 2015 PIH implemented an Integrated Chronic Care Clinic (IC3) model in the District which leveraged the previously successful HIV decentralised clinics by adding care for chronic NCDs. Teams from the two hospitals travelled to health centres to hold IC3, where people were seen for a variety of conditions in one appointment including HIV and NCDs. The visit included education on common conditions, screening for a variety of common conditions, and distribution of HIV and NCD medications.

INTERVENTIONS

Set-up

Recognising common needs between people living with HIV and NCD (namely, routine appointments, adherence counselling, side effect management, laboratory follow up, and monitoring for disease progression), PIH and the Ministry of Health decided to dissolve ART clinics across the 14 health facilities and establish fully integrated clinics, where all patients with chronic illness – infectious or noncommunicable – could be treated. At the time, the 12 health centres in Neno were serving populations from 2,000 to 18,000 people and were typically staffed by 1-2 nurses and a medical assistant.

Mobile team deployment

Under this decentralised structure, the existing HIV staff for the clinics became IC3 staff. No additional staff were hired. This initial team of 13 integrated HCWs (formerly ART HCWs) was comprised of two nurses, two HIV testing counsellors, four HIV-positive expert patients, and four clinicians. The team was split across two hospitals as their home base and was responsible for delivering a package of integrated services for HIV and chronic NCDs in health centres in the hospitals' respective catchment areas. Previously operating as an HIV-specific team, all members recognised the need for more comprehensive care for people living with HIV and comorbid NCDs, as well as the unmet need for people living with NCDs in the community.

Decentralisation

Patients that had been seen for common and/or chronic NCDs at the hospitals were given follow up appointments at the health centre nearest to their home. Following the existing HIV model, two teams travelled from the base hospital to the health centres

three days per week to hold the IC3 clinic. Patients with either severe NCDs or those that are acutely ill were admitted into wards as needed. The two hospitals had additional senior staff and physicians available to provide higher level care. The programme is now in scale-up mode. In 2018, it will launch two Advanced NCD Clinics at the hospitals, to address care needs for people living with complex chronic NCDs.

Task-shifting

Screening for NCDs is a critical component of the IC3 model. Integrated HCWs have undergone instruction sessions and mentorship to learn about taking blood pressure, screening for TB, assessing blood glucose level by finger prick test strips and measuring body mass index for evaluation and malnutrition. In addition, health centre staff, supported by community health workers, have been holding twice weekly community screening campaigns in remote areas and to provide both active and passive NCD case finding. In cases where NCD patients live in extreme poverty, have mental health conditions, or experience adverse side effects that make treatment difficult, community health workers – assigned to every household in Neno District – will have increased communication and interaction with the clinicians as to better coordinate care delivery.

Data management and evaluation

In order to streamline data processes, a new storage system was developed for all patients. All patient charts are saved in one unique patient file which allows HCWs to consolidate records and ensures confidentiality. Building on this data, the team develops a monthly report which includes many indicators, including the following: total and newly enrolled patients by diagnosis, patients seen within the preceding three months, patients diagnosed in previous three months, and number of patients screened for hypertension, malnutrition, diabetes, HIV, and TB.

IMPACT

- As of 2015, IC3 was supporting 6,781 patients on antiretroviral therapy and 721 patients with NCDs including 379 with hypertension, 187 with asthma, 144 with epilepsy and 76 with diabetes. Today, IC3 supports over 8,000 patients with HIV and over 3,000 patients with NCDs.
- Twice weekly community outreach events are held in remote parts of the district. Each screen between 100 and 200 patients for HIV, hypertension, and malnutrition, and approximately 30-50 additional patients for diabetes.

LESSONS LEARNED

1. Tailored strategies are needed for NCDs

Planning service provision for NCDs should be different than planning for infectious diseases such as HIV and TB. For example, entirely disease-specific approaches to individual NCDs can divert manpower and funds from more prevalent health problems. Hence, integration of services is critical to ensure the best use of resources. However, lessons from chronic disease programmes such as HIV may offer valuable lessons and experience to designing care systems for chronic NCDs.

2. District hospitals can serve as a source of clinical leadership

A district hospital-focused approach to NCDs can ensure prioritisation of sickest patients while establishing a training mechanism that can trickle down to lower levels of care.

3. While significantly effective, decentralisation may require additional funding

Decentralisation of clinical services requires establishment of drug supply chains that include the health-centre facilities. While decentralisation has shown to significantly increase uptake of services, it can also have budgetary implications. Decentralising services may require strategies for additional financing developed by the Ministry of Health in partnership with other stakeholders.

4. Task ownership and team leadership

Uniformity in patient flow is essential to ensure efficiency. As tasks shift to include NCD services, staff ownership of various tasks allows for patient understanding and sequencing of the NCD/HIV integration process. Staff ownership can improve workflow, timing, and quality screening procedures.

5. Importance of comprehensive evaluations

In evaluating the integrated approach, it is critical to carry out detailed site-specific assessments at every single facility—not just a subset of facilities.

6. Addressing training gaps for severe NCDs is key

When people with more severe NCDs such as rare types of chronic kidney disease, rheumatic heart disease, type 1 diabetes, cancer, or chronic liver diseases seek care at lower levels of care, nurses and other clinical staff may receive patients with conditions that they have not been trained to treat given the lack of training curricular on these types of conditions. A solution is to have supervising general practitioners or mid-level providers who can treat those people, and when a general practitioner is not available, referring them to referral hospitals.



From the perspective of an invited NGO or technical advisor, a critical component is relationship-building. It doesn't matter how perfect an idea is or how much funding and resources you're able to bring, if there's not a strong relationship and clear lines of partnership and teamwork, nothing is going to happen.

RESOURCES

Rwanda

[MESH-QI Implementation Guide: Mentorship and Enhanced Supervision for Healthcare and Quality Improvement](#). PIH; October 2017

[A Simplified Echocardiographic Strategy for Heart Failure Diagnosis and Management Within an Integrated Noncommunicable Disease Clinic at District Hospital Level for Sub-Saharan Africa](#). Journal of the American College of Cardiology: Heart Failure; June 2013

[Endemic diabetes in the world's poorest people](#). Lancet Diabetes Endocrinol. Endocrinology; June 2015

[The PIH Guide to Chronic Care Integration for Endemic Non-Communicable Diseases](#); 2011

[Diabetes in Rural Rwanda: High Retention and Positive Outcomes after 24 Months of Follow-up in the Setting of Chronic Care Integration](#). International Journal of Diabetes and Clinical Research. May 2016

Malawi

[Delivering comprehensive HIV services across the HIV care continuum: a comparative analysis of survival and progress towards 90-90-90 in rural Malawi](#); BMJ Global Health; 2018

[Integrated Care Cascade Toolkit](#). PIH; August 2017

[Leveraging HIV platforms to work toward comprehensive primary care in rural Malawi: The Integrated Chronic Care Clinic](#). HealthCare; August 2016

PATH

Integrating Hypertension Screening at the Primary Care Level in Vietnam

Location	Ho Chi Minh City, Vietnam
Setting	Urban
Target population	2 million people (700,000 aged 40 years or older) in the following districts: Go Vap, Thu Duc, District 8 and District 12.
Partners	General Department of Preventive Medicine at the Vietnam Ministry of Health, Ho Chi Minh City Provincial Health Department, Ho Chi Minh City Preventive Medicine Centre, PATH, Novartis Foundation, Hanoi University of Public Health.

Integration Model

Vietnam's National Strategy on Prevention and Control of NCDs calls for integrating hypertension screening and care into primary health care at the community level, targeting people who are over the age of 40. The Community for Health Hearts programme aims to improve blood pressure control among adults in Ho Chi Minh City by making hypertension services person-centred, with a priority placed on integrating screening services into community-level access points.

Overarching Findings

A major barrier to hypertension screening is the perception that hypertension screening is only available as part of a lengthy and expensive whole-body health check at higher level hospitals, rather than a quick and easy task than could be performed almost anywhere. Hypertension can be addressed by training community volunteers and establishing a social franchise model which can provide free blood-pressure checkpoints in convenient locations closer to where people live.



HEALTH SYSTEM CHALLENGE

In Vietnam, the prevalence of NCDs is growing rapidly with cardiovascular disease (CVD) leading the way. Today, a quarter of adults in Vietnam have hypertension, but less than half of them are aware of it. Of those diagnosed, only 11% are controlled¹⁵. People often wait until they experience complications before seeking medical services. As a result, hypertension has become one of the ten leading causes of morbidity and mortality in hospitals¹⁶. These conditions are exacerbated in urban areas which offer unequal quality of care and often lack community-level NCD services¹⁷.

INTEGRATION MODEL

Integrating hypertension screening and care into the community and primary care level facilities: Applying the Expanded Chronic Care Model and learning from successful community-based HIV and TB health services, Communities for Healthy Hearts is designed to shift people's mindsets so that they see the prevention or long-term management of CVD as a key part of an overall healthy lifestyle.

¹⁵ Son PT. Hypertension in Vietnam: from community-based studies to a national targeted programme. Doctoral dissertation, Umeå universitet, 2012. Accessed May 2018 at <https://www.diva-portal.org/smash/get/diva2:526145/FULLTEXT01.pdf>

¹⁶ Ministry of Health Vietnam. Health Statistical Yearbook 2002. Health Statistics and Informatics Division, Department of Planning & Finance, Ministry of Health Vietnam, Hanoi

¹⁷ Islam et al. Non-Communicable Diseases (NCDs) in developing countries: a symposium report. *Globalization and Health* 2014; 10:81



Buses in rush hour, Ho Chi Minh. ©Ngô Trung

Strategies include:

- increasing awareness of hypertension and demand for blood pressure screening;
- increasing quality and availability of people-centred services for prevention, detection, treatment, and management of hypertension, including making screening for hypertension available in non-traditional but convenient locations ('checkpoints') close to where people live and where they congregate—such as coffee shops, salons, pharmacies, dental offices, and neighbourhood security posts;
- reducing loss to follow-up by promoting client-health provider contact and empowering people with hypertension to self-manage their condition; and
- enabling country-level decision-makers to translate the evidence and models from Communities for Healthy Hearts into policy, to improve blood pressure control across Vietnam.

INTERVENTIONS

Targeted social and behaviour change communication strategies

Recognising that chronic disease management takes a village, social and behaviour change campaigns were designed that targeted both people at risk of hypertension (aged 40 and over) and their families, so that they can support each other to prevent and manage hypertension.

Providing hypertension screening services

- Training community health workers:** Checkpoint operators and volunteers are nominated by local

commune health stations and local councils (certified People's Committees) based on their reputation among community members and their support to other social initiatives in the past. Each receives training, materials, and blood pressure monitors to enable them to communicate effectively with the community about hypertension and deliver high quality screening services.

- Funding social enterprises:** Through Novartis Foundation funding to PATH's Innovation Fund seed grant scheme, Communities for Healthy Hearts awarded funding to two social enterprises that provide screening services at the community level.

– **G-link:** is a community-based organisation and social enterprise based in Ho Chi Minh City. Established in 2011, G-link has also recently developed a community clinic. They are using their entrepreneurship skills and medical knowledge to equip market sellers and small household businesses to provide community-based hypertension screening and refer people with elevated blood pressure to the clinic for further diagnosis.

– **Galant:** is a private polyclinic in Ho Chi Minh City, with a socially responsible mission. They are training community-based organisations in District 8 to provide blood pressure measurements in community hotspots and refer people with suspected hypertension to Galant for follow-up diagnosis, treatment, and case management.

Establishing a referral network

More than 70 public and private health centres, commune health stations, and polyclinics (including G-link and Galant) have agreed to provide standardised and integrated services by participating in Communities for Healthy Hearts' hypertension network and are receiving training according to agreed guidelines and procedures developed by Vietnamese and international experts.

Capturing and managing data

Patient data is logged and tracked using Communities for Healthy Hearts' digital patient tracker (eHTN.Tracker); the first digital tool of its kind for NCD management in Vietnam. The eHTN.Tracker is an online, searchable database that enables local health workers to quickly and easily access a person's hypertension records, and to provide follow-up and support at the community level (by local health workers and community volunteers) as needed. A multidisciplinary team involving all of the partners evaluates data monthly and makes continual implementation adjustments—ensuring the overall model is addressing the needs of all stakeholders and promoting local ownership and buy-in.

Providing disease management support

The eHTN.Tracker system also links to an optional SMS reminder service, whereby people can receive messages to encourage treatment and appointment adherence and healthy lifestyle changes, direct to their mobile phones. These systems and tools enable health centres to provide the long-term support needed for effective chronic disease management.

IMPACT

Established community-based networks

70+ health providers, 132 community volunteers, and 358 blood pressure checkpoints.

Increased access to and uptake of hypertension screening

124,358 people aged 40 and over were screened between September 2016 and the end of January 2018 (17% of the total 40+ population).

Improved linkage to care

82% of those diagnosed with hypertension through Communities for Healthy Hearts are now on treatment. In contrast, the Vietnam National Survey on the Risk Factors of NCDs (STEPS) found that only 13.6% reported their hypertension currently being managed at a health facility.¹⁸

Raised awareness

666,115 people have been reached with hypertension messaging. More than 3,000 people have attended community events.

Plans laid for scale-up

The Ho Chi Minh City Provincial Health Department and Preventive Medicine Centre is considering replicating the model for scale-up across the city. It is expected that G-link and Galant will be financially sustainable after support from the Communities for Healthy Hearts Innovation Fund ends at the end of 2018, due to increased client bases as a result of referrals from hypertension screening. At the national level, Communities for Healthy Hearts has been instrumental in securing commitment from the Vietnamese Ministry of Health to form a national technical working group on NCDs.



Facilities of the Open University of Ho Chi Minh City © Trường Đại

¹⁸ Ministry of Health Vietnam. National Survey on the Risk Factors of Non-communicable Diseases (STEPS). Ministry of Health Vietnam, Hanoi 2016.

LESSONS LEARNED

1. Building trust at the community level is critical for success

Community trust was built by: a) engaging volunteers who are already well-known in their neighbourhood and providing them with high quality training and professional-looking resources; and b) by engaging local health authorities to refer people to checkpoints.

2. Leveraging social enterprises for service provision

In collaboration with the public health system, social enterprises and the private sector can be leveraged to expand NCD services. To achieve financial and operational sustainability, it is important to support these franchises beyond funding. Business management and technical skill building can help ensure this model can become financially sustainable.

3. Working with local authorities to develop incentives for health workers

Gaining consensus from service providers on the new model was key before implementation could begin. Health workers were motivated to engage in new and improved services because local health authorities certified Communities for Healthy Hearts training sessions on hypertension as valid contributions to the ongoing medical education that each practitioner must complete in order to renew their annual license to practice. Community-based outreach activities and screening, referral and counselling services were pitched as a form of corporate social responsibility, boosting staff job satisfaction and health facilities' profiles.

4. Governance and partner engagement

Integration requires working with a variety of stakeholders. Setting up timelines and a joint workplans is necessary to prepare for potential roadblocks such as delays in finalising necessary approvals. A local advisory committee can play an important role in gathering expertise and perspectives from the community being served.

5. Importance of data collection

Collecting and evaluating programmatic data with a multidisciplinary team can ensure real-time adjustments are made to across the spectrum of interventions. Incorporation of findings into the design of the programme is critical to the project's implementation. Quality data collection is also critical in determining the programme's impact.

6. Long-Term Sustainability

Building sustainability and plans for scaling-up should be embedded in the programme design from the outset. Scale-up plans should consider a variety of factors such as market conditions, potential stakeholders and partnerships, characteristics of the target population, and cultural factors.

7. Changing people's relationship with health care

The project partners recognised that successfully integrating hypertension services into primary health care depended on them also a) changing the way that people see their own health, so that they are empowered to prevent hypertension through lifestyle changes, and b) changing the relationship that people have with their health system, so that individuals, others in the community, and the health system all become partners, working together to reduce people's risk for cardiovascular disease.

RESOURCES

[Improving Hypertension Management and Control in Vietnam](#). PATH Communities for Healthy Hearts; March 2018

[Ho Chi Minh City Communities for Healthy Hearts](#). Novartis Foundation; 2016

HealthRise

Integrating Community-Based NCD Interventions into Public Health Services in India

Location	India
Setting	Rural
Target population	population in Shimla (Himachal) and Udaipur (Rajasthan) districts
Partners	HealthRise (Medtronic Foundation), Catholic Health Association of India, MAMTA Health Institute of Mother and Child, Abt Associates, Institute for Health Metrics and Evaluation (IHME).

Integration Model

Integrating community-based NCD interventions with public sector health system services including: decentralisation of diagnosis, management and care systems and empowerment of people and community; while leveraging data management systems to track and support people along the cascade of care.

Overarching Findings

An integrated follow-up system which has points of contact across all levels of the health system can help identify efficiencies so that resources and activities are executed in the most effective manner while achieving improved health outcomes for the largest pool of patients.



HEALTH SYSTEM CHALLENGE

Improving people's adherence to treatment, including lifestyle modifications and pharmacotherapy, has been a major challenge in most interventions for NCDs in India. Providers often face limited time to counsel people living with NCDs in overburdened health facilities, including tertiary care centres, where late stage patients often go for diagnosis. In the Shimla and Udaipur districts, people face long distances and difficult terrains to reach care facilities, especially in Shimla, where 94% of the population is rural and scattered in remote mountain locations. People also face financial barriers as Udaipur and Shimla have high rates of poverty and unemployment. 60-70% of those with hypertension have not been diagnosed and less than 50% of people with diabetes achieve clinical control. In addition, there is an erratic supply of diagnostics, equipment/supplies, and pharmaceuticals, especially at lower levels of care, and a lack of coordination between the health system and community-based support services. These challenges present significant barriers for the public system to effectively provide early detection, as well as follow-up care for people already diagnosed.

INTEGRATION MODEL

Integrating community-based interventions with public health system services: HealthRise in India is working to demonstrate decentralised diagnosis, management and care systems, and empowerment of patients and communities as a common strategy that can improve detection and management of hypertension and diabetes. In India, partners have strived to integrate community-based interventions with public sector



Udaipur, Rajasthan. © R. M. Calamar

health system services in order to leverage existing primary care platforms to train providers; decentralise screening and care provision into the community; enable technology for greater efficiency in access to care; incentivise frontline health workers; and engage the community by developing a participatory appraisal system.

- Both the state governments in Rajasthan and Himachal Pradesh have been supportive of the HealthRise project. The Himachal Pradesh government has championed an electronic HealthCard for active surveillance of ten NCDs with both technical and financial support from HealthRise team while the district health authorities in Udaipur have been working closely with the HealthRise team in establishing model NCD villages within the district.
- The Federal Ministry of Health in India has been making efforts to re-designate the lowest public health facilities (the 'subcentres') into health and wellness centres by equipping them with screening and referral facilities for the most common NCDs. HealthRise is providing training for staff in subcentres as well as front line workers called the ASHAs (Accredited Social Health Activists), with support from public health officials in both the states.
- HealthRise has built a prototype health management information system (MIS) that can provide robust real time data for decision making around various NCDs. The MIS can provide a comprehensive information solution for both active and passive surveillance of chronic disease conditions.

INTERVENTIONS

Task-shifting

To train providers including pharmacists, medical officers, clinical supervisors and ASHAs.

- Using a 'Train the Trainer' model, 60 Ministry of Health master trainers will conduct further cascade training of providers, through interactive modules focused on diabetes and hypertension. Between August 2017 to March 2018, master trainers have trained 2000 ASHAs, auxiliary nurses and midwives, medical officers, and pharmacists. Their refresher training is held on a regular basis.
- ASHAs are trained to ensure that patients who are diagnosed positive are going to the health facilities for regular check-ups and medicines. They reach out to patients on a quarterly basis and provide counsel on treatment services available at public health facilities. As local accredited social health activists under the supervision and support of the government, they provide outreach services, community education and awareness for various health programmes and link the community to the nearest primary health care centre.
- Medical officers are stationed in government primary health centres, community health centres and district health facilities. They provide clinical care and treatment to the patients. Their capacity building helps the project leverage their support for improved care practices.
- Pharmacists, especially in the private sector, provide counselling to patients and act as a link to referral facilities. Their training has been instrumental in improving patients' follow up visits and treatment adherence.

Community-based screening

Front-line health workers mobilise eligible people to participate in screenings. They do so through household visits. In addition, they support those who screen positive, by encouraging them to visit public health facilities for confirmatory diagnosis and follow-up.

Telemedicine

Telemedicine is used to provide assistance to patients who need special attention in terms of care, especially in Shimla where access to care is severely challenged by the terrain and long distances to facilities. Two E-clinics have been established at remote health facilities in Shimla where medical consultation is given by a senior physician based at a tertiary health care facility for two hours once every week over real time video/teleconferencing. The medical officer at the remote facility discusses the details of a person with senior physician at the tertiary centre and if required, the

specialist also asks questions directly to the patients. Tools used are mainly laptops with internet connectivity and Skype for video-conferencing. The medical officer at remote health facilities fills the E-clinic case sheet for patients as per the consultation provided by the specialist at the other end. Informal reports have shown that people are accessing E-clinic to consult specialists, save on travel cost, opportunity cost and waiting times. However, overall impact of the E-clinic is yet to be evaluated.

Adherence and control

An electronic NCD MIS is integrated at every level of care inside the public health system. The electronic MIS provides:

- a. Evidence backed decisional support for low and mid-level health system functionaries
- b. Predictive analytics for policy decisions available at higher levels
- c. User friendly tool for frontline health workers (FLHWs) to capture individual patient level data
- d. Both real time and offline data management systems
- e. Accessibility through various electronic modalities including mobile and web-based platforms
- f. SMS based reminder services to both patients and providers

Participatory appraisal system

Patient support groups are used to help in problem solving by utilising a participatory technique of community appraisal.

- a. The project is utilising the support of 'Constellation', an international NGO that harnesses community empowerment through a participatory technique called 'SALT' (stimulate, appreciate, learn and transfer) that helps in designing locally available innovative solutions to the problems identified by the patient groups.
- b. The goals of the patient support groups are manifold. Peer support is sought by newly diagnosed patients from known patients who are managing their condition to understand their diagnosis, lifestyle modifications, and management. The health workers and community leaders advocate for awareness of NCDs in the community and reduce barriers for people seeking treatment through the local health facilities.
- c. These patients regularly meet to identify and collectively solve their problems related to management of their chronic conditions - specifically diabetes and hypertension in the case of HealthRise. The group consists of a quartet of known patients, newly diagnosed patients, community leaders and

health workers in the village. The patient support groups meet every three months and are led by outreach workers of the HealthRise project who are recruited from within the community. The outreach workers obtain the buy in of key opinion leaders in the community, village health workers, teachers, and self-help groups to facilitate the meetings.

- d. Monetary and non-monetary incentives have been piloted for ASHAs in conjunction with the district health authorities including awareness, sensitisation and mobilisation for screening and confirmation, periodic follow up and treatment adherence. Non-monetary incentives including community recognition and awards have also been instituted for ASHAs.

Data use for decision making

These patient follow-up processes are standardised within a care cascade and monitored via routine data captured in the MIS which help identify efficiencies by assessing performance across different activities of the cascade.

- In Shimla, the HealthRise project introduced an electronic HealthCard for all of its 3 million adult populations. As of the end of March 2018, government had scaled up the provision of the HealthCard to the entire state, thus collecting over 150,000 patient information on NCD risk factors within primary health care. Within the project geography of Shimla, the HealthRise team has set up a robust MIS system that helps in patient tracking once enrolled into the cascade of care. The government of Himachal Pradesh is in discussion with the HealthRise team to have both the HealthCard and the MIS systems integrated and piloted in the district of Shimla before scaling up to the state level. Similar efforts are ongoing with Udaipur district health authority.

Project steering committee

- District project steering committees have been formed in association with the health authorities including the State Mission Director of National Health Mission, Chief Medical Officer of the district, NCD officers, private practitioners, medical personnel from tertiary referral centres, regional medical colleges and other stakeholders. This group is briefed on project planning, activities and progress, and inputs are sought on strategies and ways of reducing barriers to seeking care through local advocacy.
- A country-level advisory committee consisting of champions in various domains of public health including experts in both community-based and clinical NCD management from different parts of India, has been consulted by the HealthRise team on a regular basis for strategic directions and programmatic guidance.

PRELIMINARY RESULTS

As of March 2018, 2,490 people living with hypertension and 1,014 people living with diabetes were being followed up for improving their treatment adherence practices. The HealthRise project is in the final stage of implementation. The IHME will conduct an independent, mixed methods impact evaluation of the programme in each of the sites at the end of 2018. Until then, the HealthRise India MIS will continue to guide the programme managers and outreach workers, collaborate with the public health workforce in following up people living with diabetes and hypertension, and support improving treatment outcomes. The HealthCard has already been introduced as an active surveillance tool across the state of Himachal Pradesh and Udaipur district is working on adopting it along with the HealthRise MIS system.

LESSONS LEARNED

1. Screening practices and consistent follow-up play a key role in ensuring people seek confirmatory diagnosis.

Data from December 2016 to December 2017 shows efficiencies at various levels of the cascade. As of the end of March 2018, 48,613 people have been screened in Shimla and Udaipur. Activities are tracked using a graphing system and fluctuations were viewed in reference to ongoing processes. For example, the rising trend of individuals being screened and positive

suspects followed up has a direct impact on the growing trend of positive suspects reaching higher referral facilities for confirmatory diagnosis and being diagnosed positive. Regular follow up of the positive suspects has ensured improvement in the efficiency of the screen positives from 30% to 60% who reach a public health facility for an early which is not seen in any other NCD programme.

2. There is significant reduction in loss to follow-up with increased follow-up over an extended period of time with positive suspects who need to go for confirmatory diagnosis.

In Shimla, it is observed that five follow-ups over 120 days with positive suspects led to 74 % of the screened positives reaching the health facility for early diagnosis. Data visualisations allow programme managers to decide on effective action on the ground to improve programme efficiencies.

3. Patient follow-up should be enhanced once screening efforts slow down.

Figure 1 shows how outreach workers could progressively enhance their follow-up of diagnosed patients. As screening efficiency plateaus, increasing efforts are paid by the FLHWs to retain the diagnosed people in treatment by aggressively following them up. As of the end of March 2018, over 1,800 people are under active follow up in an effort to ensure treatment compliance.

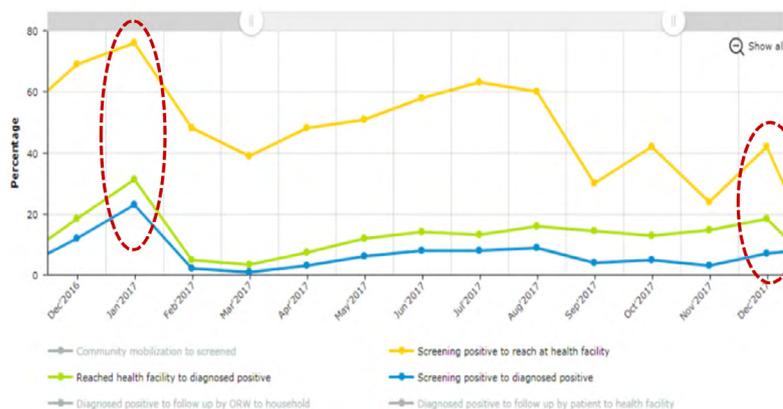


Figure 1: Efficiency trends: Correlation between screening activities and diagnosis

(Source: HealthRise India, HMIS)

RESOURCES

[HealthRise India](#). Webpage; 2018

[HealthRise](#). IHME; 2018

MODEL 3

Integrating interventions that address multiple NCD risk factors together

MSH

Addressing multiple risk factors for gestational diabetes in Ethiopia

Location	Tigray, Ethiopia
Setting	Urban & Rural
Target population	1,417 pregnant women across three public health centres in Tigray, Ethiopia
Partners	The Ethiopia Network for HIV/AIDS Treatment, Care, and Support (ENHAT-CS) Programme is a USAID initiative funded by PEPFAR and implemented by a Management Sciences for Health (MSH)-led consortium of national and international partners.



Integration Model

The ENHAT-CS programme aims to integrate comprehensive HIV services into other health services across Ethiopia, including: maternal, new born and child health; family planning; tuberculosis; sexually transmitted diseases; malaria; neglected tropical diseases; nutrition; mental health; and laboratory services. ENHAT-CS works with the Government of Ethiopia to scale-up HIV services by training providers to conduct diagnostic services in public health centres. MSH and partners expanded this model to integrate gestational diabetes (GDM) screening and counselling services into antenatal care (ANC) at three public health centres in Ethiopia. Participants diagnosed with GDM are provided with ongoing behavioural counselling, which focuses on maintaining a healthy diet and promoting physical activity to manage their condition.

Overarching Findings

Integrating GDM services into ANC services is an efficient and cost-effective way to assess the prevalence of GDM, as well as prevent, treat and manage the condition. Providing follow-up counselling to women diagnosed with GDM is a particularly effective and low-cost solution to increase health seeking behaviours and help pregnant women manage their condition. Cost-efficiency can be achieved by: using adapting existing protocols and guidelines to local needs, leveraging existing infrastructure and programmes to deliver services, as well as task-shifting practices.



Womens. © Kate Holt / AusAID

HEALTH SYSTEM CHALLENGES

The maternal mortality rate in Ethiopia is 676 deaths per 100,000 live births, more than three times the worldwide average. Diabetes in pregnant women, known as gestational diabetes mellitus (GDM) can significantly increase the risk of haemorrhage, eclampsia, hypertension, and obstructed labour, all of which are major contributors to maternal mortality. However, diabetes screening is rarely offered as part of routine antenatal care (ANC), and an estimate 80% of GDM cases remain undiagnosed. Even when women are screened and diagnosed with the condition, health centres offer few options for managing the disease. With estimated 1.4 million Ethiopians are living with diabetes, it seems imperative that Ethiopian health services provide more services to prevent, treat, and manage the condition. Studies show that GDM can be managed through diet therapy and exercise interventions, which are low-cost and easy to implement.

INTEGRATION MODEL

Integration of GDM behavioural change modules into ANC services

The Ethiopia Network for HIV/AIDS Treatment, Care and Support (ENHAT-CS) programme is an initiative funded by PEPFAR to integrate quality, comprehensive HIV services into other health services, including: maternal, new born and child health; family planning; tuberculosis; sexually transmitted diseases; malaria; neglected tropical diseases; nutrition; mental health; and laboratory services. While over 95% of pregnant women reached by the initiative are tested for HIV, only 43% receive tests for albumin, pH levels, and glucose. Even when all tests are performed, providers often ignore glucose test results, which can be used to screen for GDM. Using materials adapted from the American Diabetes Association, ENHAT-CS trained health providers on the importance of screening for GDM during routine antenatal care services, as well as ways to treat and manage the condition. Health providers were trained to provide nutritional and exercise advice to those who were diagnosed during counselling sessions and follow-up visits.

INTERVENTIONS

Adaptation of international guidelines

ENHAT-CS worked with local and international experts from the Ethiopian Diabetes Association, the Federal Ministry of Health/Tigray Regional Health Bureau, and MSH's Ethiopia and home offices, to develop an Ethiopia-specific standardised testing manual and protocols for GDM services, using existing international guidelines, norms, and standards.

Health provider training

Health providers in primary care public clinics are trained to conduct blood-test diagnosis and screen for signs of GDM during routine antenatal care services. Trainings also include information about ways educate and support people on key risk factors including: managing GDM through a healthy diet and consistent physical activity. MSH staff visit public health centres one to two times every month to provide ongoing clinical guidance and support to health providers.

GDM data collection and testing

Health providers and laboratory technicians collect data through interviews, physical examinations, and laboratory investigations to understand sociodemographic characteristics, personal and family medical history, and outcome of previous pregnancies (if any). All data is collected in paper-based tools and translated into a database for analysis. Programme staff review and cross-check to ensure data quality and conduct on-site review meetings with health centre staff to provide feedback, identify implementation challenges and share best practices.

Integrating diagnostics: After conducting initial tests (urine dipstick, random plasma glucose test, and HIV), women are asked to return for a follow-up test after fasting for 8-14 hours. GDM is diagnosed based on fasting plasma glucose (FPG) and RPG levels identified through simple finger prick tests.

Behavioural change modules

Women diagnosed with GDM are provided with individual counselling and ongoing risk factor support from health providers, who educate and encourage people to address two critical risk factors: maintaining a healthy diet and increasing physical activity. Educational material is offered to people in the waiting area at the public health centres to increase awareness about the risks of diabetes and promote health seeking behaviours.

Referrals

Women who do not respond positively to changes in diet and exercise are referred to the diabetes centre at Aider Referral Hospital in Mekelle for further evaluation and management.

IMPACT

Screening & diagnosis

From January to April 2014, the three health centres served 1,417 pregnant women. Among the participants, 87% returned for a follow-up appointment to test their fasting plasma glucose (FPG) levels.

Management of GDM

The total GDM prevalence detected by FPG test was 11.3%. Out of the pregnant women diagnosed with GDM, 77% had at least one follow-up appointment to monitor FPG levels, and all received nutrition and exercise advice after their baseline diagnosis. Among those with GDM who actively followed the dietary and exercise regimen, 79% were able to bring their glucose levels to normal after two weeks.

HIV and GDM co-morbidity

Out of the 1,234 pregnant women tested, 37 (3.1%) were HIV positive. GDM prevalence was higher among HIV-positive women (21.6%) compared to HIV-negative women (11%). Among HIV-positive women with GDM, 43% responded to changes in diet and exercise, compared to 79% of HIV-negative women with GDM. Among the HIV-positive pregnant women, 29% of those were on antiretroviral treatment (ART) tested positive for GDM, compared 15% of HIV-positive women not on ART prior to treatment.

Note: none of these differences were statistically significant, likely due to the small sample size of HIV-positive women in the study.



A woman pictured with her children in southern Ethiopia.

© Tanya Axisa/Department for International Development

LESSONS LEARNED

1. Integrated screening and behavioural counselling

Integrating counselling on nutrition and exercise into routine ANC is an effective way to help women manage GDM during pregnancy, especially when coupled with support and mentoring from trained health professionals.

2. Overlaying diabetes services onto HIV services can be a low-cost, effective intervention

Now that Ethiopia has adopted Option B+, which places all HIV-positive pregnant women on lifelong antiretroviral treatment, there is an opportunity to provide pregnant women with GDM services on a wide scale. Going forward, ART clinics should consider screening for diabetes in all people living with HIV, not only pregnant women and mothers.

3. Need for treatment for HIV-positive women

Future programmes should provide specialised GDM screening and counselling services for women living with HIV, who were less likely to improve their condition through simple lifestyle changes in this study.

5. Establishing partnerships is critical for success

The programme was able to build momentum by engaging a range of stakeholders with varying expertise, including government officials, prominent diabetologists as well as members of the Ethiopia Diabetes Association. To support scale-up, it is important to establish partnerships from the outset.

6. Securing funding through awareness and advocacy

While the government of Ethiopia is interested in scaling up, funding continues to be an issue. Efforts should be made to educate donors and politicians about the prevalence of diabetes, and potential to reverse the condition with simple, low-cost interventions.

7. Patient incentives

In this study, most women were motivated to commit to a healthy diet and exercise regimen in order to improve the health of their babies. Further research should examine what incentivises women to stay on treatment and lifestyle interventions more generally.

RESOURCES

[Identifying and treating gestational diabetes among women living with HIV in Ethiopia](#). Maternal Health Task Force; February 2018

[Targeting gestational diabetes during antenatal care: experience from Ethiopia](#). Maternal Health Task Force; February 2018



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