FINAL REPORT
WORKING GROUP ON THE INCLUSION OF NCDs IN OTHER PROGRAMMATIC AREAS

WHO GLOBAL COORDINATION MECHANISM ON THE PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES (WORKING GROUP 3.1, 2016-2017)
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Executive summary

• This final report is the outcome of the Working Group convened by the WHO Global Coordination Mechanism on the Prevention and Control of Noncommunicable Diseases (GCM/NCD) to recommend ways and means of encouraging Member States and non-State actors to promote the inclusion of the prevention and control of noncommunicable diseases within responses to HIV/AIDS and programmes for sexual and reproductive health and maternal and child health; within responses to other communicable disease programmes, such as tuberculosis; and as part of wider efforts to strengthen and orient health systems to address the prevention and control of noncommunicable diseases through people-centred primary health care and universal health coverage.

• The Working Group was tasked with providing, by end of 2017, recommendations to the WHO Director-General on ways and means of encouraging countries to realize the commitments made by Heads of State and Government in 2011, 2014 and 2015.

• In line with the World Health Assembly-approved work plan 2016–2017, the GCM/NCD will continue to support communities of practice in 2016 and 2017. Working Group members have been invited to join a community of practice in order to sustain discussion and engagement and promote and enhance knowledge transfer on these recommendations, particularly at local and national levels.

• The report offers a rich body of information, including a set of key findings, best practice examples, country cases, recommendations and concrete policy actions, for countries to integrate NCD management into existing programs, while also identifying synergies and interlinkages, and in so doing enhance effective and sustainable national NCD responses.

For patients, communities and families, integration can lead to better quality care, improved health behaviours, early and better screening, less fragmented services, better access, improved health promotion, greater continuity of care, better referral systems, greater cost-effectiveness, greater satisfaction with care, and improved health outcomes.
KEY OBSERVATIONS AND POLICY MESSAGES

• NCDs are now the leading cause of death and disability worldwide, threatening social and economic prosperity and wellbeing at individual, household, national, and global levels.

• Most premature deaths from NCDs (representing 27% of all global deaths) could have been largely prevented.

• As part of the 2030 Agenda for Sustainable Development, world leaders agreed to by 2030, reduce by one third premature mortality from NCDs through prevention and treatment and promote mental health and wellbeing (SDG target 3.4).

• A major innovation of the SDG era is the ability to locate health in all sectors of policy-making, and the call for accountable responses to reduce disparities within countries’ populations. This has profound implications for all nations, and for development strategy, including the fact that silo-based, vertical approaches to development will have to give way to broader, integrated, cross-cutting approaches coordinated around and aligned with countries’ and populations’ needs and priorities.

• Integration of NCD programmes into existing health programmes aims to result in better and more holistic patient care, prevention and treatment outcomes while avoiding duplication of efforts and addressing prevention and treatment of diseases with shared risk factors and common management frameworks in a simultaneous and integrated manner.

• Cost-effective and high-impact ‘best buy’ interventions to prevent and control NCDs are available and at individual level, they cost next to nothing. In order to ensure that these interventions are delivered in an efficient and effective manner and have the desired impact especially in light of the prevailing economic difficulties, an integrated approach is necessary.

• Integration of NCD with other health initiatives and programmes is a dynamic process with multiple dimensions and should be a continuous process of context-specific balance between horizontal and vertical integration of, and linkages and synergies within, health services. Different approaches to integration can be used although integrating NCD interventions into the health system based on primary health care remains the best model.
• Integration of mental health in NCD and other health programme and improving access to mental health care will reduce policy fragmentation and will be synergic to achieving SDG target 3.4.

• This report calls for a paradigm shift in our approach – from addressing NCDs and other programmatic areas separately or vertically to collectively addressing diseases in an integrated manner, from a clinical to a public health approach guided by the principles of universal access and social justice, and from action expected from the health sector alone to a broad-based, coordinated, and intersectoral “whole of society” response. Implementation of such an approach widely and rapidly, accompanied by high levels of political commitment, can stall and reverse the growing burden of NCDs and complement and sustain gains in other programme areas.

**Recommendations Promoted**

- Assess existing national health policies to evaluate and ensure effective integration;
- Develop context-specific evidence and practices to guide implementation of integrative approaches;
- Establish a high-level multisectoral commission on NCDs, with clear guidance from the health sector;
- Engage international development partners, intergovernmental organizations and non-State actors to effectively implement the integration;
- Ensure sustainable health workforce that has the resources and competencies to manage and integrate NCDs;
- Incorporate NCD services at all levels of health care with a particular focus in primary and community care services;
- Invest in research and technologies to support integration of NCD strategies and programs;
- Include assessments of health and economic impact.
Great strides have been made in improving health over the past two decades. Advances in infectious disease control and treatment, improved maternal, newborn and child health strategies and care, and greater access to sexual and reproductive health interventions have all led to gains in life expectancy worldwide, particularly in low- and middle-income countries (LMICs). However, these advances are increasingly threatened by the burgeoning epidemic of noncommunicable diseases (NCDs). Driven by trends including globalization, urbanization, growing inequities and population ageing, and accelerated by five leading modifiable behavioural risk factors - tobacco use, harmful use of alcohol, physical inactivity, unhealthy diet and air pollution, the NCDs mainly - cancer, cardiovascular diseases, diabetes, and chronic respiratory diseases and mental disorders- are now the leading cause of death and disability worldwide. They impose a huge burden on health system of a country and undermine multiple aspects of national development such as workforce productivity, education and quality of life. NCDs threaten social and economic prosperity and wellbeing at the individual, household, national and global levels. Health systems in most countries are already struggling to respond to the increased demands and costs placed on the system by the need to provide comprehensive preventive care and chronic, long-term treatment and care for NCDs, but countries that bear the greatest burden are the low and middle income countries where the people living in poverty are most vulnerable and have poor access to health care. Without bold action now, the global NCD epidemic is on track to reverse the fragile gains made in global health and prevent the achievement of the Sustainable Development Goals by 2030. More importantly, the health sector alone cannot deal with the “chronic emergency” of NCDs - multi-sectoral and multistakeholder action addressing the underlying social, environmental and commercial determinants of health and strengthening of health systems for universal health coverage of population and individual is required.

1.1 SCALE OF THE BURDEN

Over two thirds of all global deaths, 71% or 41 million deaths in 2016, were caused by NCDs. These statistics should be considered alongside the 11 million people who died in 2016 from communicable diseases and perinatal
conditions and the 5 million from injuries and violence.\(^1\) The probability of dying from one of 4 of the main NCDs, cardiovascular disease, cancer, diabetes and chronic respiratory disease was 18% in 2016.

WHO estimates that 75% of premature deaths (deaths between age of 30 and 70)\(^2\) were due to NCDs in 2016. Alarmingly, 85% of premature NCD deaths, and 87% of all-cause premature deaths occurred in LMICs. Four out of five (82%) premature NCD deaths were caused by cardiovascular disease, cancer, diabetes and chronic respiratory disease. In addition, the age-standardized death rates from NCDs are nearly 70% higher in LMICs than in high-income countries (HICs). The probability of dying from an NCD between the age of 30 and 70 is up to twice as high in LMICs than in HIC. Most of these premature deaths from NCDs (representing 27% of all global deaths) could have been prevented\(^2\) by effective large-scale implementation of high-level political commitments made in 2011, 2014 and 2015 for the prevention and control of the major NCDs, including mental disorders, and by reducing the common risk factors, including air pollution, and the underlying social, economic and environmental determinants, as well as by improving disease management to reduce morbidity, disability and death.

Figure 1. Causal pathway to socio-economic impact of noncommunicable diseases

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Attempts have been made to explain the pathways through which the increased prevalence of NCDs has an impact on socioeconomic status and health outcomes (Figure 1). Socioeconomic inequalities affect health through more than one mechanism and involve material, psychosocial and behavioural factors. Within countries (at all levels of development), NCDs particularly affect the poorest and most disadvantaged people. Therefore, premature mortality from NCDs is a marker of the devastating impact of their high burden on the lives of poor people and their untold suffering, and the threat to socioeconomic development. Low income may affect health directly, for example, due to low purchasing power for a healthy diet, or indirectly, through the psychosocial effects of deprivation. Health-damaging behaviours such as smoking, drinking, consuming unhealthy diets (rich in salt, sugar and trans fats, and low in vegetables and fruits) are also found to be common among the low socioeconomic group.

However, personal behaviours are not only a matter of personal choice but may be driven by factors such as higher levels of urbanization, technological change, market integration and foreign direct investment. A study which estimated causes of premature mortality in US found that 40% of premature mortality in the US is the result of behavioural factors, compared with 30% arising from genetic predisposition, 20% from social and environmental factors and 10% from healthcare deficiencies. A study which estimated causes of premature mortality in US found that 40% of premature mortality in the US is the result of behavioural factors, compared with 30% arising from genetic predisposition, 20% from social and environmental factors and 10% from healthcare deficiencies. With this in mind, estimates of the human, social and economic costs due to NCDs are substantial. The significant and growing cost of NCDs contributes to poverty and inequality and threatens the health and the development of all countries alike. The projected cumulative lost output due to major NCDs in LMICs alone for 2011-2025 has been estimated at more than US$ 47 trillion, if no additional mitigation efforts are put in place. This figure represents the “cost of inaction.” By contrast, evidence shows that an additional US$1.27 per person per year in low- and lower-middle-income countries will save 8.2 million lives, achieve a 15% reduction in premature mortality from NCDs and generate US$350 billion in economic growth by 2030 through the implementation of cost effective interventions such as the WHO best buys included in Appendix 3 of the WHO Global NCD Action Plan 2013-2020. NCDs cause far more deaths and disability than any other group of diseases and thus maximizing the impact of every dollar spent is crucial. In short, smart investments in NCD prevention and control now has the potential to forestall tremendous health and economic losses in the future and also maximize and sustain the benefits for other areas of development.
1.2 POLITICAL AND TECHNICAL RESPONSES TO NCDs

In recognition of the scale and urgency of the burden, NCDs have become a prominent part of the global health agenda. Few issues have acquired such global importance that the United Nations has convened a special session to discuss the potential implications. In 2011, Heads of State and Government adopted the Political Declaration of the High-level Meeting of the United Nations General Assembly on the Prevention and Control of Non-communicable Diseases, acknowledging that NCDs constitute one of the major challenges for development in the 21st century. The Political Declaration recognizes that “...the conditions in which people live and their lifestyles influence the health and quality of life, and that poverty, uneven distribution of wealth, lack of education, rapid urbanization and population ageing...” are important determinants and contributing factors to rising burden of NCDs. The Political Declaration also notes “the possible linkages between NCDs and some communicable diseases, such as HIV/AIDS, and calls to integrate, as appropriate, responses for HIV/AIDS and NCDs” and “promotes the inclusion of NCD prevention and control within sexual and reproductive health and maternal and child-health programmes, especially at the primary health-care level, as well as other programmes”. In 2014, governments again convened under the auspices of the UN General Assembly and adopted an Outcome Document with a comprehensive review and assessment on progress made to prevent and control NCDs. It was at this juncture that all countries committed to the following four time-bound commitments:

- To, by 2015, consider setting national NCD targets for the year 2025;
- To, by 2015, consider developing or strengthening national multisectoral policies and plans to achieve the national targets;
- To, by 2016, reduce risk factors for NCDs and address underlying social determinants;
- To, by 2016, strengthen and orient health systems to address the prevention and control of NCDs.

Guiding the implementation of these commitments is the WHO Global NCD Action Plan 2013–2020 (GAP 2013-2020). Organized around six objectives, the GAP 2013-2020 provides guidance to Member States, the WHO Secretariat, and international partners on development and strengthening NCD prevention and control, including across health systems and in other sectors beyond health, in order to achieve, by 2025, the nine voluntary global NCD targets adopted by the World Health Assembly.

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In 2015, the United Nations General Assembly adopted a new agenda to achieve global sustainable development, “Transforming our world: the 2030 Agenda for Sustainable Development” including the Sustainable Development Goals (SDGs). Health has a central place within the 2030 Agenda, as a major indicator of, contributor to, and beneficiary of sustainable development policies.

A major innovation of the SDGs is the ability to locate health in all sectors, to address disparities within all countries, and to combine the forces of multiple stakeholders, underscoring the importance of pursuing whole-of-government and whole-of-societies approaches, as well as a health-in-all-policies approaches, equity-based approaches, life-course approaches, and human rights-based approaches.

There are two classic strategies to control diseases and improve population health status – one focusing on specific diseases, and the other focusing on health systems.

Though the disease-specific strategy has attracted substantial support and produced significant results, it has helped to create a fragmented array of uncoordinated “vertical” programmes. Meanwhile, system failures have inhibited the scaling up of vertical programmes and a collective call from system reformers and disease-oriented strategists has arisen in recent years on the need for global action on health care systems. This represents a new phase in global health policy – seeking to restore an appropriate balance between disease-specific actions and actions to strengthen health systems. This also has profound implications for development strategies, many of which will only be revealed as we move forward. However, some seem fairly clear at the outset, including the fact that silo-based, vertical approaches to development will have to give way to broader, integrated, cross-cutting approaches coordinated around and aligned with countries’ and populations’ needs and priorities, which should be grounded on robust human rights, gender equality and equity approaches. By taking joint action across different segments of society, and by exploiting feedbacks, synergies, co-benefits and cost efficiencies, the SDGs offer new ways to confront today’s major health challenges, reduce health inequities and advance the right to health.

As part of the 2030 Agenda for Sustainable Development, world leaders agreed to “by 2030, reduce by one third premature mortality from NCDs through prevention and treatment” (SDG target 3.4). This target derives directly from the commitments made by world leaders in 2011 and 2014 and takes into account that effective NCDs prevention and control requires leadership and multisectoral approaches to health at the governmental level, including whole-of-government and whole-of-society approaches throughout the life-course. The global epidemic of premature deaths from NCDs is driven by (i) poverty (leading to barriers in access to safe, quality, effective and affordable medicines, medical products and technology for the prevention, detection, screening, diagnosis and treatment – including surgery – of noncommunicable diseases); (ii) the impact of the globalization on marketing and trade of products deleterious to health (leading to tobacco use, harmful use of alcohol and unhealthy diets); (iii) rapid urbanization (leading to physical inactivity); and (iv) population ageing.\footnote{Global status report on noncommunicable diseases 2010, Description of the global burden of NCDs, their risk factors and determinants, chapter 2, 2010.}

Looking ahead, there is increasing consensus that mental health should be an integral part of the NCDs agenda. Indeed, mental health is already in SDG target 3.4. It was a topic of the WHO Global Conference on NCDs in Montevideo 2017 and is highlighted along with NCDs in the forthcoming WHO 13th General Programme of Work. Mental disorders share common features with other NCDs, including heart disease, stroke, and diabetes. They share many underlying causes, social determinants and overarching consequences, but also in terms of their prevention and management approaches. Mental health is also closely linked to other conditions, such as HIV/ AIDS, TB, neglected tropical diseases, maternal and child health, as well as social determinants such as violence and poverty.

\textbf{Attaining SDG target 3.4 on NCDs will also benefit many other SDG targets – reducing poverty, hunger and inequity, ensuring that all human beings can enjoy prosperous and fulfilling lives, and that economic progress occurs in harmony with health.}
1.4 PROGRESS TO DATE

While advances in NCD prevention and control within the context of improving overall health have been made in many countries, progress has been insufficient, highly uneven, and in many cases, ineffective.

In 2015, 138 Member States had shown very poor or no progress towards implementing the four time-bound national commitments for 2015 and 2016. The attainment of those commitments by Member States will again be assessed during the second quarter of 2017. WHO will submit a progress report to the UN General Assembly in August 2017. At this early juncture, it appears that the pace of progress in 2015 and 2016 has continued to be insufficient and that WHO will need to recommend to the UN General Assembly that bolder measures are needed. The number of countries that have an operational national NCD policy with a budget for implementation has increased from 32% in 2010 to 50% in 2013. However, many countries, in particular developing countries, continue to struggle to move from commitments to solutions. The main obstacles include:

- Limited policy expertise to integrate measures to address NCDs into national responses to the Sustainable Development Goals;
- Unmet demands for technical assistance to strengthen national capacity, provided through bilateral and multilateral channels, which would enable countries to develop national multisectoral NCD responses;
- Changing patterns of health financing (as more of the burden for health care has been placed on domestic budgets);
- Insufficient legal capacity;
- Insufficient action on increasing domestic taxes on health-harming products in order to ensure the self-financing of national responses;
- Industry interference that blocks the implementation of certain measures;
- Limited advocacy, activism, civil society engagement and delays in creating a multistakeholder social movement to address NCDs;
- Limited context-specific investment cases for NCDs as part of the 2030 Agenda;

15 Available at http://www.who.int/nmh/events/2015/technical-note-en.pdf?ua=1
• Slow prioritization of NCDs in national health budgets, and thus limited predictable and sustained funding from national and/or external sources;

• Slow progress on establishing an operational national multisectoral commission, agency or mechanism for coordinated NCD prevention and control.

Globally, the probability of premature death from the four main NCDs has fallen by 22% between 2000 and 2016. However, this current rate of decline is insufficient to meet SDG target 3.4. Preventable health inequities seem to be playing a major role in the 6% drop. In the high income OECD countries, the probability of premature death from the four main NCDs is low, indicating that many more of these deaths in other countries or among subpopulations with greater outcome disparities may be prevented by effective public health interventions, including risk reduction through holistic health promotion, effective prevention and improved disease management.

NCDs are characterized by multiple, often interlinked chains of causation, which means that identifying the specific factors that have led to their decline is challenging. Nevertheless, important lessons have been learned regarding how efforts should be focused:

• Global action;

• Multisectoral responses, including cross-cutting approaches;

• Health promotion (i.e. links with SDGs), disease prevention, and early detection, diagnosis and treatment;

• Integrated approaches to NCD care.

The SDGs are a tool for breaking down barriers, building partnerships and integrating approaches. This is particularly significant given that the most established public health responses in LMICs continue to address, and in some cases prioritize, communicable diseases such as HIV, TB and malaria, as well as sexual and reproductive health and maternal and child health services. For patients, communities and families, integration can lead to better quality care, improved health behaviours and action for early diagnosis, less fragmented services, better access, improved health promotion, higher levels of continuity of care, better referral systems, and greater satisfaction with care resulting in improved health outcomes, in line with a human rights approach to health.

Where do we stand today?

NCDs are a growing challenge in developing countries and threaten the achievement of the Sustainable Development Goals 2016-2030. The probability of dying prematurely from an NCD is four times higher for people living in developing countries than in developed countries. This is resulting in a vicious cycle whereby NCDs and their risk factors worsen poverty, and poverty contributes to rising rates of NCDs. NCDs currently represent an inexcusable ‘blind spot’ in poverty eradication efforts. Morbidity and premature deaths from NCDs reduce productivity, curtail economic growth, and trap populations in poverty.

The commitments, tools and frameworks are in place. Heads of State and Government have made political commitments to tackle NCDs (2011, 2014, 2015 and 2018), a road map, a menu of policy options and cost-effective interventions are available, a monitoring framework is approved, and there is readiness to move from planning to action.

Data from the WHO NCD Progress Monitor 2017 reveal insufficient progress made by countries in the implementation of key indicators for NCD prevention and control. For instance, 69 countries have yet to develop national NCD targets and indicators; 163 countries have not fully met targets on tobacco taxation; 144 countries have not implemented measures related to saturated fatty acids and trans-fats policies as well as restrictions on marketing to children.

The current level of investments in NCDs will be insufficient to attain SDG target 3.4 and related targets by 2030 and could eventually derail the overarching efforts of the 2030 agenda to end poverty and hunger. Significant additional investments are needed through domestic, bilateral and multilateral channels.

Heads of State and Government have agreed to develop and implement multisectoral plans and set national targets. Multisectoral and multistakeholder involvement also from outside the health sector is necessary to tackle NCDs. It is estimated that up to two-thirds of premature deaths from NCDs are linked to the four main risk factors (tobacco use, unhealthy diet and physical inactivity, and harmful use of alcohol). These risk factors impact maternal and child survival goals, and also impact sectors outside of health – financial, investment, trade, energy, urban planning, agriculture, development, gender equality, human rights and others. Action towards effective prevention of NCDs is therefore inescapable. The ‘integrated and indivisible’ nature of the SDGs provides an entry point for the engagement of all relevant sectors and actors in national efforts to strengthen multisectoral action on NCDs.

Evidence-based and multisectoral integrated responses should be promoted to combat NCDs. 62% of countries have adopted a multisectoral approach that engages all relevant stakeholders and sectors. All remaining countries now need to adopt this approach, benefitting from the lessons learned in countries that have already done so, not just for an integrated approach to managing NCDs, but in implementing the SDGs in general.

Highly cost-effective interventions, underpinned by strong evidence that they prevent disease and save lives (WHO GAP Appendix 3 “best buys”), have been identified to assist governments in their efforts to attain NCDs targets at the national level. Policy options include integrated people-centred and community-based care and screening, counselling and drug therapy for people with or at high risk of cardiovascular disease, screening for cervical cancer, and hepatitis B immunization to prevent liver cancer.

18 Global status report on noncommunicable diseases 2010, Description of the global burden of NCDs, their risk factors and determinants, chapter 2, 2010.
2 Context and purpose of the Working Group

The WHO Global Coordination Mechanism on NCDs (GCM/NCD) was established by the World Health Assembly in 2014 with the scope and purpose to facilitate and enhance the coordination of activities, multistakeholder engagement and action across sectors at the local, national, regional and global levels in order to contribute to the implementation of the WHO Global NCD Action Plan 2013–2020. The GCM/NCD is a global Member State-led coordinating and engagement platform with the task to bring together multiple stakeholders, foster multisectoral engagement and coherence for high-level NCD commitments and accelerate the implementation of the WHO Global NCD Action Plan, as well as to realize target 3.4 and the NCD-related targets of the 2030 Agenda for Sustainable Development. The GCM’s functions are to advocate and raise awareness; disseminate knowledge and information; encourage innovation and identify barriers; advance multisectoral action; and advocate for mobilization of resources.

To date the WHO GCM/NCD engages 367 participants composed of WHO Member States, UN Organizations and non-State actors from health and beyond, around a collaborative agenda to achieve the global targets on NCDs and reduce premature mortality from NCDs, while building healthier societies globally. The GCM/NCD delivers on its mandate through a variety of activities, including Member State-led Working Groups.

The Sixty-eighth World Health Assembly agreed to establish a Working Group on how to recommend ways and means of encouraging Member States and non-State actors to promote the inclusion of the prevention and control of noncommunicable diseases within responses to HIV/AIDS and programmes for sexual and reproductive health and maternal and child health, as well as other communicable disease programmes, such as those on tuberculosis, including as part of wider efforts to strengthen and orient health systems to address the prevention and control of noncommunicable diseases through people-centred primary health care and universal health coverage.19 The Working Group is tasked with

19 More information available at http://www.who.int/global-coordination-mechanism/working-groups/working-group-3-1/en/
providing recommendations to the WHO Director-General on ways and means of encouraging countries to realize these specific commitments made by Heads of State and Government in 2011, 2014 and 2015.

The members of all GCM/NCD Working Groups are appointed by the WHO Director-General, drawn from a roster of experts nominated by the Member States, and co-chaired by representatives from two Member States, one from a developed country and one from a developing country. The Co-chairs are also appointed by the WHO Director-General, in consultation with Member States. The Working Group’s terms of reference, membership, meeting papers and background documents are available on the WHO website.\textsuperscript{20} Much of the experience and evidence that informed the Working Group’s deliberations is contained in the background documents, and these form important references for this report’s conclusions and recommendations.

\textsuperscript{20} Available at http://www.who.int/global-coordination-mechanism/working-groups/en/.
3 Making the case for integrative approaches

3.1 CONCEPT AND SCOPE OF INTEGRATION

The persistent challenge facing countries, particularly in LMIC, is to develop a sustainable health infrastructure able to provide quality health care in an integrated, comprehensive manner. The idea of integrated health services is not new. It was the basis for the focus on primary health care in the 1980s. In 1996, integration was defined by the WHO in functional terms as “a series of operations concerned in essence with bringing together of otherwise independent administrative structures, functions and mental attitudes in such a way as to combine these into a whole”. More recently, in 2013 UNAIDS defined programme integration as “joining together different kinds of services or operational programmes in order to maximize outcomes”. The current challenge is to be specific about what integrated programmes and services look like in different settings and how integration can contribute to the intended aim of what WHO also defines as “the organization 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”.

WHO’s framework on integrated people-centred health services, recently adopted at the 69th World Health Assembly, May 2016, provides a comprehensive definition of, and approach to, integrated health services that incorporates these considerations “services that are managed and delivered so that people receive a continuum of health promotion, diseases prevention, diagnosis, treatment, diseases-management, rehabilitation, and palliative care services, coordinated

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21 Integration of mass campaigns against specific diseases into general health services: report of a WHO Study Group. WHO 1965
22 Smart Investments. UNAIDS, 2013
25 Definition: health services: health services include all services dealing with the promotion, maintenance and restoration of health. They include both personal and population-based health services.
across the different levels and sites of care within and beyond the health sector, and according to their needs and throughout the life-course."

Effective integration aims to result in better and more holistic patient care, prevention and treatment outcomes, ensuring enhanced health of the people and fulfilment of the right to health. It avoids duplication of efforts, maximizes synergies, ensures comprehensive promotion and behaviour change and addresses prevention and treatment of diseases with shared risk factors and common management frameworks in a simultaneous and integrated manner. An integrated approach is also a tool to addresses inequities in health care service delivery, recognizing and addressing the needs of sub-populations, and promoting the provision of standardized activities to specific populations by well-trained health workers.26

An integrative approach that demonstrates the significant health impact of combined care is always beneficial, independent of country context, but particularly when resources are limited and countries face a high burden of communicable and non-communicable diseases.27 Integration of health care delivery can lead to increased community involvement and greater overall satisfaction with those services. Integration can lead to reduced inequities in access and utilization of services between gender, ethnic groups, geographical and socioeconomic groups, and reduction of financial risks (out-of-pocket costs) for patients, resulting in greater equity in health care and health outcomes. In an effective integrated service delivery model, tools, approaches and human resources are shared, and multidisciplinary teams of trained health workers provide comprehensive, high quality services. Integration should, however, follow a contextual, structured and sustainable approach, and is not limited to pilot projects. In addition, the necessary upstream integration of services means that services are not only integrated at the point of service delivery, but that a systematic and unified approach is used for developing guidelines, training and support for health workers, procurement, health records, and for continuous monitoring, evaluation and quality improvement. This approach ensures that lessons are shared, systems are harmonized, resources are appropriately distributed and efficiency and quality are recognized.

However, integration is not a panacea, and it is not a cure for inadequate resources. It is not a strategy to fall back on when vertical programmes run out of funds, nor is it achieved by adding to responsibilities of service providers without a corresponding increase in resources. Integration does not mean that specialized disciplines, programmes, personnel and services should be abolished, that all services will be provided by multipurpose workers, or that everything must be integrated into one package. A local health service can, therefore, continue to have vertical

programmes where and when the situation requires them, and rather establish, strengthen and sustain synergies and linkages. However, even then, the health service should define an integrated strategy to sustain these activities in the long term. The two approaches are complementary. Integration is best seen as a continuum rather than as two extremes of integrated vs not integrated. Integrated care can look different at different service levels and in different contexts and should be understood as context and content specific.

In line with the above, integration of NCD programmes into, and linkages and synergies within, existing health programmes, whether HIV, tuberculosis, maternal and child health, sexual and reproductive health, or community-based primary health care, should be a continuous process of context-specific balance between horizontal and vertical planning, budgeting and implementation of health services. Integration includes both the inclusion of NCD prevention and treatment into and linkages with these categorical and population service streams, and also integration of the existing care and system priorities into efforts to provide NCD related services. At the point of service delivery, there should be a focus on comprehensive integration of promotion, prevention, diagnosis and treatment of NCDs, including patient education, health promotion, referrals, counselling, support on adherence and on behaviour change, decentralizing clinical and lab services and community-level resource mobilization. Additionally, evidence based mental health interventions can be integrated in primary care.28 It is also useful to look for good ‘entry points’ for enhancing integration and to consider what incentives (e.g. career enhancements) there can be for health workers and their managers to change their behaviour. For specialized care, a concern is how those activities are linked to other services. A rational referral system implies the need for specialists at secondary and tertiary levels; and where resources permit, some specialization may be appropriate at the primary health care level.

A recent publication demonstrates that long-established, disease-specific, siloed approaches to service delivery usually are not able to build on commonalities between programmes, and thus do not improve joint care.29 Another qualitative study was conducted to investigate the status of governance response to NCDs at national level in different LMIC countries. They found that NCD programmes were treated with a stronger managerial and implementation approach, rather than a technical expertise/advisory focus. This results in multisectoral plans that provided unclear prioritization, targets and costs, which diminished their potential effectiveness.30 The authors recommend strengthening

28 The WHO mhGAP Intervention Guide (mhGAP-IG) for mental, neurological and substance use disorders for non-specialist health settings at http://www.who.int/mental_health/publications/mhGAP_intervention_guide/en/
technical and analytical capacity at the Ministry of Health (MoH) level to complement the strong programme management and implementation focus and developing NCD plans in close collaboration with sector-wide health and non-health stakeholders. Multisectoral plans should be coordinated and strengthened through leadership, policies and resource commitment, and complemented by sustained and integrated monitoring of outputs and evaluation of impact and effectiveness.

Integration of programmes (for example TB and NCDs) at service delivery level allows implementing common activities that recognize shared risk factors, comorbidities and a common management approach, increasing the efficiency of interventions and optimizing resources and impact, and also addressing the barriers that specific populations face to access services that are in fact available. Tooling and re-training of service providers is accordingly ensured to enable them to deliver the right care and the right services.

On the other hand, consideration also needs to be given to upstream NCD programme integration, as part of a wider system of coordination and inter-linkage of services at the policy and planning, human resources, financing and surveillance levels. When implementing these complementary approaches, a mix of political will and policy, budgeting, technical and administrative action is required to effectively manage change in the way services are delivered. It may require action at several levels, including sustained high-level leadership and multisectoral and multistakeholder involvement and commitment throughout.

Although integration may provide some savings, integrating new activities into existing systems will require strengthening the system with additional resources. Approaches that integrate the prevention and control of NCDs across programme areas and into service delivery strategies are, overall, cost effective and efficient, which should help prioritize NCDs in the agendas of universal health coverage and people-centred primary health care.

Please refer to the five Policy briefs on the integration of NCDs with other programme areas (Annex 1 of this report) for more details on the many opportunities for the integration of NCD programmes into, and linkages and synergies with, specific health programmes (HIV, tuberculosis, maternal and newborn health, child health and sexual and reproductive health).
3.2 CONTEXT-SPECIFIC FACTORS, CHALLENGES, SUCCESS FACTORS, PREREQUISITES

Many countries face a burgeoning epidemic of NCDs. Noncommunicable diseases are being felt with greatest impact in LMIC, the age-adjusted death rates from NCDs are nearly twice as high in low- and middle-income countries as in high-income countries. The prevalence of diabetes, for example, is forecast to increase by 50% globally and by 100% in sub-Saharan Africa between 2010 and 2030. Using the public health approach to provide people-centred health services and implementing step-by-step standardized algorithms and log frames to facilitate the integrated treatment of large numbers of people is essential, especially when, in these contexts, there is a lack of trained health workers. Task shifting only works when front-line workers are technically prepared and health systems are adequately-resourced.

Additionally, co-morbidities and co-mortalities related to NCDs among people affected by or living with HIV is increasing. As people with HIV are living longer and are at elevated risk of NCDs for a variety of reasons, including those directly related to and associated with HIV-infection (UNAIDS, 2011), integration and linkages between HIV and NCD programmes and services become of high priority. Non-AIDS-defining

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cancers increasingly contribute to morbidity and mortality with a particularly high burden of lung cancer that is partly attributable to higher prevalence of traditional risk factors (e.g. smoking), immunodeficiency or a higher incidence of pulmonary infections. The recent review of the Demographic and Health Survey data for low and middle-income countries\(^{33}\) has shown that the prevalence of tobacco smoking is significantly higher among HIV-positive men and women than HIV-negative men and women, respectively. Use of some antiretroviral medicines for HIV treatment may increase the risk of developing type 2 diabetes as they often cause hyperglycemia. Women living with HIV have higher risk of invasive cervical cancer, reflecting both immunosuppression caused by HIV infection and shared risk factors, and higher prevalence of persistent HPV infection, compared with those HIV negative. Women living with HIV progress more frequently and quickly to pre-cancer and cancer.

As more evidence and best practices support decentralization, interest is growing for effective models for integrating different types of health services. Since primary health centres, as well as clinics and hospitals, are increasingly managing the double burden of diseases, there is interest in institutionalizing an integrated approach to communicable and noncommunicable disease services at the point of service delivery, such as in an integrated chronic disease clinic in Cambodia.\(^{34}\) The pilot programme in Cambodia demonstrated the effectiveness of providing services for HIV, diabetes and hypertension in the same clinic, in which stigma associated with HIV infection did not prove to be a major obstacle. Co-located NCD services for individuals enrolled in HIV care and treatment have been advocated by people who note the large and growing numbers of adults and children who are already engaged in HIV promotion, prevention, management and continuous chronic care, returning regularly for services.

As countries strengthen and expand integrated NCD services, they can draw on lessons learned from other programme areas, review and adapt programme approaches, tools, and systems.

- Programme approaches: i.e. peer programmes, defaulter tracing initiatives, multi-disciplinary teams and community engagement and community-based service delivery;

- Tools: i.e. registers, charts, forms, and medical records;

- Systems: i.e. governance, leadership and policies; monitoring and evaluation (including health inequalities monitoring), improving quality, supply chain, procurement, referral support, and processing of specimens.

\(^{33}\) Available at https://dhsprogram.com/data/

An appropriate integrative approach:

- Allocates resources towards combinations of and linkages between interventions that will achieve the greatest impact;
- Enhances equity and impact by focusing efforts on key locations and populations with the greatest needs or facing barriers to effectively access services may be available or that need to be adapted or set up;
- Improves the efficiency of prevention, treatment, care and support programmes;
- Enables countries to establish and sustain sustainable funding for NCD programmes;
- Provides the framework to align government domestic funding strategies for the medium and long term with donor- or privately-supported efforts.

A strong policy and business case for integration:

- Can help drive strategic decision-making around resource allocation, resource mobilization, service delivery and funding;
- Can be articulated in a variety of forms, based on countries’ and local specific contexts and needs, and is a means of demonstrating national and local leadership in the NCD response;
- Unites diverse stakeholders including Ministries of Finance, Health, Social Care and Welfare, Development and Planning; civil society; people living with NCDs; other communities at risk of NCDs and / or co-morbidities, development partners; and private sector, e.g. insurance companies;
- Articulates a common effort to identify programmatic gaps and bottlenecks and creates a roadmap for action.

Economic theory suggests several potential efficiency advantages at various levels of a health system arising from integration of NCD and other health programmes.

At the service delivery level, integration has the potential to improve both technical efficiency (providing services or producing outputs at the lowest cost) and allocative efficiency (cost-effectiveness), as well as quality measures such as patient and community satisfaction.

Technical efficiency can be achieved through economies of scope and scale.

- Economies of scope, or reductions in NCD costs from combining services, may be found through shared use of a common infrastructure, overheads and certain ‘indivisible’ operational resources;
• Economies of scale, or reductions in NCD costs associated with increased scale of service provision, may be found where integration enables expansion of service coverage to clients who have not previously accessed them.

NCD integration may also be clinically essential for the provision of cost-effective services for those with NCDs. Integration can thus also contribute to an overall improvement of the allocative efficiency of NCD services. Moreover, integration may enable further efficiency gains beyond the service level.

The second compelling reason is that the scale up of integration, linkages and synergies of NCD prevention with some programme areas will achieve recognized co-benefits. For example, since diabetes is a common comorbidity in people with tuberculosis (TB) and the clinical outcomes are worsened by the combination of the two diseases, there are co-benefits to integrating NCD services in TB clinics to ensure early diagnosis and management of diabetes in people with TB.

Effective integration of NCDs provides countries with new opportunities to explore options for innovative funding and service delivery, to identify specific steps to enhance equity, participation and inclusiveness for key populations throughout the life-course, to use available evidence to better understand the health and economic benefits of timely, rights-based, S.M.A.R.T.35 NCD investments and to eliminate inefficiency.

3.3 INTEGRATION OF NCDs INTO PRIMARY HEALTH CARE

The Alma-Ata Conference mobilized a “Primary Health Care movement” of professionals and institutions, governments and civil society organizations, researchers and grassroots organizations that undertook to tackle “politically, socially and economically unacceptable”36 health inequalities in all countries. Primary health care is essential health care based on practical, scientifically sound, and socially acceptable methods and technologies that should be made universally accessible to individuals and families in the community through their full participation in the spirit of self-reliance and self-determination. This is in line with the SDG ambition of ‘leaving no one behind’. Governments need to ensure adequate resource allocation to NCD care in primary health care with political commitments, legislation and regulation, and coordinated care.37 To strengthen the integration and management of NCDs in primary health care, health systems should address integration of governance, financing, workforce development, service

35 Specific, Measurable, Achievable, Responsible and Time-related.
delivery, essential medicines and technologies and health information. Integration in all domains is needed to ensure health systems “put people at the centre of health care” and thus achieve health for all.38

Putting people at the heart of the health-care experience and focusing on a true and lasting integration of services offered to them is urgently needed to meet the challenges faced by today’s health systems, however diverse. All people have the right to access health services that are provided in a way that responds to their preferences, are coordinated around their needs and are safe, effective, timely, efficient, culturally appropriate and of acceptable quality. For instance, United Nations Relief and Work Agency for Palestine Refugees in the Near East support screening of diabetes and hypertension, provision of NCD technical guidelines with regular training and supportive supervision. This programme has been operational since 1950, providing integrated care to 5.7 million Palestine refugees in a primary health care setting.

In addition, attention to the private sector and methods to regulate and incentivize practices that are people-centred and integrated will be of benefit. Special attention also needs to be paid to health care models that draw upon and take advantage of resources within the community. In low- and lower-middle income countries, community-based care has received much attention, particularly in light of the scarcity of health workers. A national diabetes/NCD programme in Tanzania is building sustainable health workforce by strengthening and capacity for diabetes/NCD care at district, regional and referral hospitals as well as strengthening NCD competencies within different services. The effectiveness of community health workers in disparate settings within higher income countries is also well documented – eg – nurse home visitation models for pregnancy outcome and early child development outcomes for adolescents and other high-risk pregnancies, or neighbourhood health promoters in housing projects to encourage dental care, immunizations, cancer screening or hypertension management. While the effectiveness of community health workers treatment programmes, across settings and even for relatively complex conditions such as pneumonia, has been demonstrated39, scaling-up such programmes to whole countries is challenging.

People-centred and integrated health services have been shown to generate benefits for people and health systems in countries across the world at all income levels. The evidence suggests that people-centred and integrated services are essential components of building universal health coverage40,41 and can improve health status and reduce health inequities amongst population groups. For example, evaluations of primary care expansions, and community-delivered care in low-income and emerging economies have

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both shown either improvements or non-inferiority of outcomes with integrated care. Strengthening primary health care involves ensuring adequate funding, appropriate training, connections to other services and sectors (especially existing vertical programmes), and developing sustainable workforce plans.\textsuperscript{42,43} Across all settings, strategies should address the planning and strengthening of workforce capabilities and skills diversity to provide services targeted towards identified health system priorities. Responding effectively to these priorities is likely to require attention to the necessary cultural and behavioural changes within the workforce and community. These include raising the prestige of primary care cadres and establishing people-centred and integrated health care as a mainstay of practice.

\textbf{Implementation principles for primary health care}

In moving forward with a strategy to integrate NCDs in primary care, it is important to acknowledge that each country or sub-national jurisdictions needs to set its own goals for integrated and people-centred health services and develop strategies for achieving these goals. The goals must respond to the local context, existing barriers and the values held by people within the state or area, should be measureable, and should be achievable given the current health service delivery system and the financial and political resources available to support change. Therefore, the implementation principles of this strategy are:

\textbf{Country-led:} strategies for pursuing integrated people-centred health services should be developed and led by countries, with external support where necessary, and should respond to local conditions and contexts.

\textbf{Equity-focused:} efforts to enhance equity are a necessary part of people-centred and integrated health care strategies. Efforts can target immediate factors driving inequitable service access and utilization but should also address more fundamental social determinants and health disparities and should also monitor health inequities as part of health information systems.

\textbf{Participatory:} the notion of people-centred and integrated health services puts informed and empowered people at the centre of the health system. Therefore, processes to develop national and local strategies for such services should ensure accountability to local stakeholders and inclusion of disadvantaged or discriminated against populations.

\textbf{Systems strengthening:} service delivery depends on effective information and financing systems, and the availability of skilled and motivated health workers. Changes made to service delivery will inevitably have ramifications across the entire health system.


\textsuperscript{43} Dudley L, Garner P. Strategies for integrating primary health services in low- and middle-income countries at the point of delivery. Cochrane Database Syst Rev. 2011(7):CD003318.
3.4 INTEGRATION OF NCDs WITH STRENGTHENED HUMAN RESOURCES FOR HEALTH

Health systems can only function with health workers; improving health service coverage and realizing the right to the enjoyment of the highest attainable standard of health is dependent on their availability, accessibility, acceptability and quality. The United Nations General Assembly (UNGA) has adopted a new set of Sustainable Development Goals (SDGs) for 2016–2030. The health workforce underpins the proposed health goal, with a target (3c) to “substantially increase health financing, and the recruitment, development and training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States”.

Evolving epidemiologic profiles and population structures are increasing the burden of noncommunicable diseases and chronic conditions on health systems throughout the world. This is accompanied by a progressive shift in the demand for patient-centred care, community-based health services, and personalized long-term care. Evidence shows that improved availability and enhanced skill levels of human resources for health can lead to improved health outcomes. There are opportunities to adopt innovative service delivery models, including through integrated care rendered by multi-professional teams, and delegation of tasks to a range of cadres with shorter pre-service education, such as community-based and extension health workers.

In particular, community health workers (CHWs) are increasingly being recognized as a crucial part of the health workforce, with the aim of rendering certain basic health services to the communities they

Iterative learning/action cycles: success is most likely when there are iterative learning and action cycles that track changes in the service delivery system, identify emerging problems and bring stakeholders together to solve problems.

Goal-oriented: a key focus of the strategy should be on the ongoing monitoring of progress within a framework that includes specific and measurable outcome objectives.

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come from\textsuperscript{48,49}. CHWs have taken on a variety of fundamental roles, including community empowerment, provision of services and linking communities with health facilities. CHWs’ tasks over the years have evolved to include promotion, prevention, control, and more supportive roles that are associated with the increased burden of chronic lifelong conditions. The burden of NCDs has, in particular, led to increased workloads, overcrowding at health facilities and poor quality of care\textsuperscript{50}, and has exerted a tremendous strain on human resources in the healthcare system, especially those working at primary healthcare level. CHWs have multiple roles in the prevention and control of NCDs. They act as health promotors, educators, advisors, rehabilitation workers and support group facilitators for patients, families and communities. They further screen for complications of illness and assist community members to navigate the health system. It is important, however, to look at clear and sustained community-to-facility referral pathways, as this is important in linking clients to formal health services as well as in the continuity of care, especially for NCDs. The flexibility and relevance of these varied roles are shaped both by expectations of the health system and in response to community needs.

The centrality of the health workforce in enabling demand for and delivering health care is recognized as the core of dynamic, local health systems\textsuperscript{51,52} - it is “the backbone and limbs of the health care sector”\textsuperscript{53} - and hence is the starting-point for aligning supply with need and demand. It is therefore critical that the health workforce, able to deliver integrated health services (including for NCDs) is adequately supported through appropriate investment and policy decisions.

\textsuperscript{49} Community health workers: What do we know about them? The state of the evidence on programmes, activities, costs and impact on health outcomes of using community health workers, A report by Uta Lehmann and David Sanders, School of Public Health University of the Western Cape, WHO Evidence and Information for Policy, Department of Human Resources for Health, 2007.
\textsuperscript{51} Marchal B, Caovati A, Geagea G. Global health actors claim to support health system strengthening: is this reality or rhetoric? PLoS Medicine, 2009, 6. doi:10.1371/journal.pmed.1000059.
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<th>BENEFITS OF INTEGRATION</th>
<th>CHALLENGES OF INTEGRATION</th>
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<td><strong>At global level:</strong> As part of realizing the &quot;integrated and indivisible&quot; SDGs, NCD integration can enhance the sustainability of health, social and environmental goals.</td>
<td>Lack of political will for prioritizing and implementing integration.</td>
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<td><strong>At national level:</strong> Integration at governance level may improve technical efficiency, coordinated planning and management of scarce resources. Joint financing, monitoring, evaluation and reporting may also improve allocative efficiency.</td>
<td>Lack of health system and stakeholder commitment, coordination and consensus.</td>
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<td><strong>At system level:</strong> Integration of health management systems at service delivery level can contribute to improved outcome and technical efficiency through reductions in systems management costs, such as through facility integration, joint procurement, sharing of middle managers, joint training and supervision, sharing information, education and communication materials, and joint management of information systems.</td>
<td>Health systems prioritization of single-disease treatment. Siloed programme management, funding and training.</td>
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<td><strong>At community and individual level:</strong> integration may lead to better quality care, improved health and wellbeing, prevention and treatment of co-morbidities, health behaviours and action for early diagnosis, less fragmented services, better access, improved health promotion, higher levels of continuity of care, better referral systems, and greater satisfaction with care resulting in improved health outcomes and equity.</td>
<td>Overloaded and shortage of health workforce, inadequate infrastructure and lack of continuous supply of essential drugs and diagnostics.</td>
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<td>Weak and siloed monitoring and evaluation.</td>
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<td>Poor community engagement and empowerment.</td>
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<td>Lack of documentation and validation of integration of programmes and services, lack of evidence and data on the impact, efficiency and effectiveness of integrated approaches.</td>
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<td>Lack of implementation research related to integration of services.</td>
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Approaching health system integration: An integrative approach based on local context

No single approach to combining services is appropriate in all contexts; the most appropriate strategies depend on the specific disease prevalence (and also as relevant, the prevalence of co-morbidities), patient needs and the characteristics of the health system in each country. Solutions need to be country-led, draw on local expertise and involve local stakeholders to succeed.

**An integrative approach based on local context**

The model of integration offered below consists of a series of systematic steps that can provide higher chances of success compared to fragmented or unsystematic approaches. We must however note that there is no single systemic model to guide the process of integration and these proposed actions are principles that should be adapted by countries according to their context. Additionally, integration should be people-centred and aim to provide accessible and comprehensive care for people living with, or at risk of, NCDs and related special health care needs (eg, HIV) at the lowest possible cost.

1. Analyze and define similarities between the management of a specific programmatic area and NCDs at the population, patient and health system levels within your specific context.
   - Determine what percentage of that population is at risk for NCDs, and if possible disaggregate the population according to different dimensions of inequality (e.g. income, sex, age, location, ethnicity/race, level of education, occupation, etc.);

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• Examine the direct and indirect linkage between the programme area and NCDs in the population;

• Analyze the opportunities to address NCD prevention within population-based health systems and specific delivery initiatives (eg, RMNCHA services);

• Analyze the magnitude of co-occurrence with NCDs, including mental disorders, to design effective strategies that can address the needs of multi-morbid patients (eg, HIV or Tb services).

2. Examine the similarities and understand the differences between response functions for a specific programmatic area and NCDs within the health system.

• Identify and define the key health systems building blocks for both programme areas; policies, health promotion, health care service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance;

• Assess the relational similarities and differences between these functions, for both responses, using agreed comparators;

• Rate the degree of similarity/difference between the key response functions;

• Determine the strategic importance of the similarities/differences and develop a short list of functions that can undergo an integrative process.

3. Scan the health system environment for integration influencers.

• Internal environment (e.g. healthcare workers, managers, healthcare setting, etc);

• Task environment (all actors e.g. patient/clients, communities, donors, partners, CSO, etc);

• External environment (political, economic, sociocultural, technological, etc).
  - Motivate policy makers, health managers and providers and communities of interest about benefits of integration;
  - Build consensus on level of integration among patients;
  - Define collaborative approaches, including with external stakeholders;
  - Reorient and train health workforce, revise curriculum and guidelines and strengthen the capacity of health systems particularly at primary level to address the prevention and control of NCDs;
- Empower and engage individuals, families and Civil Society Organizations (CSO) through, for example, enhanced health education and health literacy, inclusive participation and shared decision making and self-management;

- Foster inter-sectoral partnerships.

The context-specific evidence regarding the opportunities for integration obtained from local analyses in the above steps would indicate:

- The desired level and modalities of integration;

- Existing level and modalities of integration and

- The gaps between the desired and existing levels of integration.

4. Repackage and share context-specific evidence on the opportunities for integration with all relevant audiences in a usable form; presenting the evidence in an understandable, readable, acceptable and user-friendly format.

5. Translate the plan into action.

- Develop a plan for integration between the programme area and NCDs, relevant to country context;

- Identify the components of responses to be integrated and different options, including levels and modalities, of integration, linkages and synergies;

- Identify the strategies to be used, the resource requirements, the benefits and the challenges and shortfalls of integration, and a monitoring and evaluation framework.

- Assess regional and global country cases and best practices relevant to local integration;

- Map local resources required for integration;

- Engage and consult with relevant stakeholders to develop measurable and common objectives;

- Select an integrative approach based on local context;

- Set objectives, goals and measurable targets.
The priority given to NCD prevention and control, particularly through a multisectoral and multi-stakeholder approach, has been clearly and effectively elevated by the recent adoption of the 2030 Agenda for Sustainable Development, which includes SDG target 3.4, to reduce by one third premature mortality from NCDs, by 2030, through prevention and treatment and promote mental health and well-being. The inextricable link between an effective NCD response and sustainable and inclusive development only highlights the need for streamlining and aligning NCD and SDG policies across and beyond the health sector. The call for whole-of-government and whole-of-society approaches builds on, implements and realizes the commitments made by Heads of State and Governments. The 17 Sustainable Development Goals and 169 targets demonstrate the scale and ambition of this new universal agenda, but they must be considered and addressed as integrated, synergistic and people-centred.

The seven main recommendations provided below by the Working Group emphasize key actions that governments can take in promoting the inclusion of NCDs in other programmatic areas. The proposed policy options/actions that support each of these main recommendations have been organized in terms of levels of decision making and priorities.

An analytical framework for health system performance complements the model of integration, offered in the previous section. This framework proposes that “the performance of health systems is by and large determined by three factors: capacity, incentives and accountability”. These conditions can be divided into “necessary” conditions (capacity) and “sufficient” conditions (incentives and accountability). To accomplish effective integration of programmes, both the demand and supply sides need to possess some necessary capacity (technical, organizational, managerial etc). This is a necessary but not a sufficient condition. People and organizations are also driven by financial and non-financial incentives, and only when involved parties are held accountable for their actions and the extent to which the intended goals are achieved, one can expect realistic behaviour change and thus a better performance.

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The first major guiding principle, capacity building, ensures adequate capacity of health systems by promoting governments to significantly increase prioritization, funding and resources for public health efforts. The second major guiding principle, mechanisms for incentives and accountability, mobilizes wide participation in public health and enhances system performance by better understanding and aligning the interests and incentives of the major stakeholders in the system (e.g., consumers, providers, government officials and sectors, policy developers, etc) and developing effective mechanisms for providing tangible benefits to reward good behaviour and hold stakeholders, at all levels, accountable.

Consideration was given to the principles of capacity, incentives and accountability when providing the following recommendations and the accompanying policy options.

**KEY RECOMMENDATIONS**

Governments should assess existing national health policies with a view to develop and/or strengthen strategies to ensure integration of the prevention and control of NCDs with other health programmes, with a particular emphasis on HIV, TB, MCH, and SRH.

**POLICY OPTIONS/ACTIONS**

1. Sector wide health plans should reflect NCDs prevention and treatment in proportion to their public health importance, with consideration for life-course population health priorities.

2. National health policies, strategies and plans should promote and implement integrated people-centred health services. Adequate resources must be available for population needs.

3. Countries should implement robust and participatory governance mechanisms with sustainable monitoring and evaluation, and accountability frameworks.

4. Complete an initial assessment of current health policies that reflects current situation and challenges and sets goals related to integration of NCDs and other programmes.

5. Constantly focus on expected and achieved accomplishments, examining the results chain, processes, contextual factors and causality, to understand achievements or the lack thereof.

6. Determine the relevance, impact, effectiveness, efficiency and sustainability of the interventions and institutional contributions.
7. Robust governance mechanisms should include strengthened health services governance and management at subnational, district and local levels, and comprehensive planning across the public/private sector to achieve a coherent and integrated approach in NCD/health policy.

8. Mental health legislation should protect the rights of people with mental disorders for example by establishing legal and oversight mechanisms to promote human rights and requiring the availability of relevant services.

USA COUNTRY CASE: MEDICAL HOME AND PRIMARY CHILD AND ADOLESCENT HEALTHCARE IN COMMUNITIES

Focus: Prevention through balanced nutrition, control of tobacco and second-hand smoking, alcohol/drugs, injury, mental health, early brain development and toxic stress. Treatment for children with special health care needs, including but not limited to access to care for children with heart disease, cancer, diabetes, asthma and other chronic diseases.

Governments should develop, disseminate and use context-specific evidence, best practices and investment cases supporting integration in order to ensure prioritization, implementation and scale up of the integration of NCDs and other program areas.

POLICY OPTIONS/ACTIONS

1. Develop evidenced-based programme-specific and broad based indicators to measure quality of service, equity of access and output against costing.

2. Define and map priorities based on local context, such as country and community needs, geographical situation, cost effectiveness impact, etc. (Investment framework).

3. Invest in implementation research and advocacy for dissemination and knowledge translation.

4. The strategy should be on the ongoing monitoring of progress within a framework that includes specific and measurable objectives.

5. Consider existing tools (i.e. WHO’s Innov8, PEN, mhGAP).

6. Develop integration programmes moving from a “problem space” to a “solution space” (Innov 8 STEP2).


8. Policy-makers could provide funding mechanisms that guarantee short- and longer-term use or the prospect of rapid inclusion in the usual care system and access to its funding.
“It is useful to differentiate between evidence of the ‘problem space’ and evidence for the ‘solution space’. The ‘problem space’ provides knowledge of what variables or systems of relationships are associated with health inequities (e.g. information on ingredients of health inequities) while the ‘solution space’ offers knowledge of what kinds of interventions are likely to ‘work’, ‘for whom’ and under what contexts. Much of research on health inequities to date has focused on the problem space of health inequities. The ‘solution space’ has not received the attention in the literature it most certainly deserves. Existing knowledge of the ‘solution space’ is often incomplete for the successful implementation of interventions in specific settings. For example, ‘off the shelf’ literature on best practices does not often provide information on the contexts necessary for the programme to work.”

TANZANIA COUNTRY CASE: NATIONAL DIABETES/NCD PROGRAMME

Focus: Integration of DM with HIV and RCH services; implemented under the National Strategy for Noncommunicable Diseases by Tanzania Diabetes Association (TDA), coordinated under the Ministry of Health, Community Development, Gender, Elderly and Children.

Heads of State and Governments need to realize their commitment to establish a high-level multisectoral mechanism/commission on NCDs, with clear guidance from the health sector, which should prioritize and lead an integrated approach between NCDs and all programmatic areas and sectors.

POLICY OPTIONS/ACTIONS

1. Develop appropriate and comprehensive stakeholder mapping, with a view to creating effective networks between health and other sectors, and establish shared commitments, and identify feasible interventions through participatory processes.

2. Develop common implementation plans with clear goals, measurable objectives and defined roles and responsibilities, including different and diverse stakeholders.

3. Strengthen community literacy, empowerment and mobilization strategies.

4. Identify the role of multisectoral action and social participation in tackling the identified barriers and contributing to reducing health inequities for each strategy, and for prioritized subpopulations. Develop specific recommendations (inclusive of mechanisms and actions) on integration of NCDs prevention and treatment.
5. Coordinate across sectors including social services, finance, education, labour, housing, the private sector and law enforcement to promote integration of services and vertical programmes, national health systems, and NCD initiatives.

6. Innovative payment mechanisms need to be developed, which are tailored to the specific characteristics and goals of a programme as well as the local context and national health system in which they operate. Payment mechanisms for integrated care for people with multimorbidity should provide incentives for providers to collaborate and adequately account for the complexity of cases treated.

**CHINA COUNTRY CASE: DEMONSTRATION SITES ON THE PREVENTION AND CONTROL OF NCDs**

Focus: Organized by the Chinese Ministry of Health since 2012, China has been piloting an inter-sector approach for NCD control in 256 districts and counties. To qualify as a “demonstration site“, an NCD Control Leadership Group, chaired by the local government head, must be established to facilitate inter-sector collaboration, health education campaigns must be carried out, standardized disease management programs must be implemented, and health IT (including wearable devises) must be used for monitoring and evaluation. According to a recent evaluation study by the Peking Union School of Public Health, the “Demonstration Sites” have shown remarkable improvement in NCD control, and dissemination of the successful operational experiences from these sites have been benefiting more and more communities in China.

Governments should consider the engaged, focused and coordinated support of international development partners, intergovernmental organizations and non-State actors in order to effectively implement the integration of the prevention and control of NCDs with other programme areas.

**POLICY OPTIONS/ACTIONS**

1. Reframe national development plans to incorporate SDGs, including UHC and a rights-based approach to population health.

2. National NCD response can only be effective in the context of adequate national financing of health systems.

3. In countries dependent on aid assistance, governments should use innovative domestic financing mechanisms as a catalyst to attract external financing and show commitment.

4. Development agencies should avoid channelling external funding for specific diseases and avoid earmarking. Instead, donors should be encouraged to provide broader development assistance for health that supports the SDG agenda and UHC.
5. Governments should invest in the prevention and control activities (prevention, treatment, rehabilitation and palliation) according to the principles of Primary Health Care (PHC). Where resources are limited, governments should prioritize high impact, cost-effective interventions within national budgets.

6. Governments should invest in institutional capacity to implement and enforce taxation laws, advertising bans and other regulatory measures to support the national NCD programme.

7. Governments should allocate adequate resources for NCD research, monitoring and evaluation (including health inequality monitoring) and include these costs in the national NCD plans.

8. Governments and development partners should implement the relevant international commitments regarding health spending.

9. Governments should harmonize and align national financial management systems to ensure accountable and transparent use of resources. This would include paying attention to the procurement and supply systems.

10. Development partners should provide technical assistance to strengthen legal capacity and financial management systems in countries.

11. Governments and development partners should address and plan care system strengthening to meet SDG NCD targets through public and private partnerships.

12. Governments should prioritize screening and clinical and community interventions for NCD prevention priorities, recognizing their impact on other SDG targets (e.g., tobacco and second-hand smoke impact on nutrition and poverty).

13. National leadership should promote and ensure alignment of international development support with national NCD priorities with focus on integrative strategies.

THE KINGDOM OF SAUDI ARABIA COUNTRY CASE: NATIONAL BREAST CANCER EARLY DETECTION PROTECTION

Focus: Launched in Spring 2012 under the auspices of the MoH with significant collaboration with NGO and the private sector (Saudi Cancer Foundation, Zahra Foundation, GE Healthcare and Susan G. Komen for the Cure.

Governments must build adequate and sustainable health workforce that has the resources and capacities to manage and integrate NCDs.

POLICY OPTIONS/ACTIONS

1. Map local and national health workforce resources and requirements, and integrate the prevention and control of NCDs in all phases of health workforce training, development and management.
2. Policies, guidelines, standardized protocols; consistent training of both primary care and specialized health care workers, in accordance with the WHO Global Code of Practice on the International Recruitment of Health Personnel and Global strategy on human resources for health: workforce 2030.

3. Aligning regulatory framework to establish the rules within which professionals and organizations must operate to promote/support integration of NCDs and other health areas.

4. Invest in the education, recruitment and retention of a fit-for-purpose and responsive workforce that is effectively and equitably deployed to contribute to integration of NCDs and other health areas.

5. Ensure effective information and financing systems for training, to achieve availability of sufficient numbers of skilled and motivated health workers.

6. Across all settings, strategies should address the planning and strengthening of workforce capabilities and skills diversity to provide services targeted towards identified health system priorities.

7. Collaborative activities need to focus on sharing and producing joint knowledge between professionals to improve the care of patients with multi-morbidity.

8. Patients, informal carers and care professionals will all need training in digital health literacy with educational campaigns having an important role in improving uptake.

9. Coordination of clinical care and the related competencies of social care workers are needed to provide integrated effective, appropriate and high-quality services for people with NCDs.

10. Integrate pay-for-performance into existing provider compensation schemes.

**TANZANIA COUNTRY CASE: NATIONAL DIABETES/NCD PROGRAM**

Focus: Integration with HIV and Reproductive health care services. Showcases where government is building sustainable health workforce by strengthening and capacity for diabetes/NCD care at district, regional and referral hospitals as well as strengthening NCD competencies within different services.

Governments should incorporate and integrate NCD services at all levels of health care, with a particular focus in primary and community care services, applying an integrated people-centred approach.

**POLICY OPTIONS/ACTIONS**

1. Define service priorities based on life-course needs and preferences, common risk factors and co-morbidities, with a focus on promotion and primary prevention.

3. Decentralize governance of health services and assessment of local health needs, with enhanced multi-stakeholder collaboration within and beyond the health sector at local and community levels.

4. Identify the barriers and facilitating factors that subpopulations experience at each stage in access and use of specific care and in integrated programmes, to ensure universal coverage.

5. Empower and engage communities in producing healthy environment through developing civil society, enhancing community health workers and delivering care through expanded primary care-based systems.

6. Special attention should be paid to health care models that draw upon and take advantage of resources within the community.

7. Processes to develop national strategies for integrated services that include NCD prevention and treatment should ensure accountability to local stakeholders and, especially, to disadvantaged or discriminated against populations.

8. Define the package of services, set the standards of quality users should enjoy, and monitor the adequacy of the services actually provided to contract specifications.

9. In addition to multi-professional collaboration, inter-organizational collaboration should also be supported and promoted.

10. Integrated care programmes should be integrated into regular care, rather than being separate from the everyday work of professionals.

11. Build on the media and political interest for mental health during emergencies to make mental health care available integrated in primary health care and other disease programs.

UNIVERSAL NATIONS RELIEF & WORK AGENCY FOR PALESTINE REFUGEES IN THE NEAR EAST (UNRWA)

Focus: Operational since 1950 providing integrated care to 5.7 million Palestine refugees in a Primary Health Care setting. The programme supports screening of DM and HTN, provision of NCD technical guidelines with regular training and supportive supervision, with a particular focus on NCD integration into other services; outpatient, preconception, antenatal, postnatal, family planning and screening.
Invest in research and implementation of innovative technologies, to support integration, scale-up and outreach of NCD strategies and programmes.

**POLICY OPTIONS/ACTIONS**

1. Strengthen political commitment and advocacy to prioritize, fund and enable system and implementation research and knowledge sharing in support of integration, through engagement of academia and local and international technical support.

2. Convene multistakeholder consultations to identify the priorities and funding for research and implementation of innovative technologies to support NCD integration throughout the lifecourse.

3. Develop tools and guidelines to strengthen national capacity in the four main functions of national health research systems (stewardship, financing, creating and sustaining resources, and synthesizing and using knowledge) and provide support for implementation and scale up of advances in information technologies (shared electronic records, m-health, e-Health, telemedicine, point of care diagnostics, etc.).

4. Support a global or regional compendium of indicators related to integration of NCD and other services that countries can adapt for their own monitoring.

5. Research for health should be organized and managed in a systematic and comprehensive manner, and efforts to improve health should be based on evidence from research.

6. The guiding principles of WHO’s strategy on research for health are:
   - Quality: i.e. research that is ethical, expertly reviewed, efficient, effective, accessible to all, and carefully monitored and evaluated.
   - Impact: i.e. research with the greatest potential to improve global health, accelerate health-related development, redress health inequities and help attain the development goals.
   - Inclusiveness: i.e. considers partnerships, a multisectoral approach, and the participation of communities and civil society in the research process.

7. WHO’s “Guide to implementation research in the prevention and control of noncommunicable diseases” outlines the four main steps necessary for implementation research: Identify evidence-based policies and interventions that are appropriate to local context; adapt and pilot the policy or intervention; evaluate the implementation of a policy or intervention; and scale up a policy or intervention.
8. Promote and develop technical cooperation and technology transfer to help countries adapt, implement, translate and build capacity on norms and standards for research, and monitor subsequent compliance.

9. Develop Information Technology (IT)-supported mental health care, test them though randomized controlled trials, and integrate in primary health care and other disease programs.

EGPAF PROJECTS IN LESOTHO AND TANZANIA: INTEGRATING NCD SCREENING AND MNCH

Focus: In 2011, the MoH identified the need to create a comprehensive and cost-effective national cervical cancer screening program through implementation of evidence-based strategies for early detection and treatment of pre-cancers. In Jan 2013, Lesotho’s first cervical cancer screening centre opened at Senkatana (MoH and EGPAF, with USAID funding) and was integrated with MNCH and HIV Services.
WHO GCM/NCD Working Group 3.1 has provided 4 annexes in support of the consideration of the report and the recommendations. These annexes are presented in a separate document and address the following issues:

**Annex 1:** Policy briefs on the integration of NCDs with specific programme areas

**Annex 2:** Country cases that address the integration of NCDs in other programmatic areas

**Annex 3:** Presentations from Working Group members and invited Stakeholders on integration of NCDs
Annex

FINAL REPORT
WORKING GROUP ON THE INCLUSION OF NCDs IN OTHER PROGRAMMATIC AREAS

WHO GLOBAL COORDINATION MECHANISM ON THE PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES
(WORKING GROUP 3.1, 2016-2017)
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**PRESENTATIONS FROM WORKING GROUP MEMBERS AND INVITED STAKEHOLDERS ON INTEGRATION OF NCDs**

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Annex 1
Policy briefs on the integration of NCDs with other programme areas
Global commitments to prevent and control noncommunicable diseases and to end the global tuberculosis epidemic

In 2011, the High-level Meeting of the United Nations General Assembly on the Prevention and Control of Non-communicable Diseases issued a Political Declaration, agreed to by all Member States, acknowledging that NCDs constitute one of the major challenges for development in the 21st century. To act upon this declaration, the World Health Assembly endorsed the Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020. Further, in September 2015, the world adopted the Sustainable Development Goals, which contain ambitious targets related to NCDs, including, by 2030, to reduce by one third premature mortality from NCDs through prevention and treatment and, in the same period, to end the epidemic of tuberculosis (TB).

The Global NCD Action Plan recognizes the strong interaction between NCDs and infectious diseases, including TB, and the resultant need to explore opportunities to maximize the detection and treatment of comorbidities using common platforms and approaches. The need for interaction, linkages and/or synergies and the need for integrated, patient-centred care, support and prevention are also key components of the WHO End TB Strategy, endorsed by all WHO Member States in 2014. Both the Global NCD Action Plan and the End TB Strategy recognize the key role of universal health coverage, social protection, poverty alleviation and other factors, including broader social determinants, in determining disease incidence and outcomes.

The 2015 Bali Declaration, signed at the Bali Summit on TB and Diabetes, November 2015, was another important political milestone demonstrating the importance of integration, linkages and synergies. The declaration represents commitment from leaders of government, nongovernmental organizations, research institutions, media and advocacy groups, affected groups and industry to jointly address the growing and linked epidemics of TB and diabetes.

The case for integration of TB and NCD programmes and services

In 2016, 41 million people died from NCDs, primarily from diabetes, cardiovascular diseases, cancers, and chronic respiratory diseases.
Among persons between the ages of 30 and 70, WHO estimates that 75% of all deaths were due to NCDs in 2016, most of which could have been prevented. An estimated 85% of premature NCDs deaths were in low- and middle income countries, and many countries with the highest burden of TB also face growing epidemics of NCDs (WHO, 2015).

The double burden manifests itself through susceptibility of those with NCDs to TB and through the negative impact of NCDs on treatment outcomes for TB. Further, poor and vulnerable populations are the ones most affected by TB. There is a strong association of poverty with major NCD and TB risk factors, such as poor diet, smoking and alcohol abuse, leading to an inequitable impact and a double burden of disease (Blas, 2010). Estimates of the human, social and economic costs due to NCDs are substantial. The projected cumulative lost output due to major NCDs in LMICs alone for 2011-2025 has been estimated at more than US$ 47 trillion, if no additional mitigation efforts are put in place.

The new SDGs give the opportunity to locate health in all sectors of policy-making. Addressing health related issues requires an intersectoral “whole of society” response. This includes integrated health services building linkages and synergies between their different components, coordinated planning and preventive frameworks, and integrated funding streams.

**Diabetes.** One fourth of the world’s population is latently infected with TB, and diabetes increases the risk of conversion to active TB by a factor of 2 to 3 (Houben, 2016). Conversely, TB may trigger the onset of diabetes and worsen glycaemic control for those with pre-existing diabetes (WHO, 2011). Diabetes has also been associated with a negative impact on TB treatment outcomes, including a risk of treatment failure up to 4 times higher and a significant increase in the risk of death for patients co-infected with diabetes and TB (Baker, 2011). Diabetes may also interfere with several anti-TB medications (Nijiland, 2006).

**Cardiovascular diseases.** There is an increased risk of cardiovascular diseases in patients with a history of TB, and recent studies suggest an association between latent TB and chronic inflammation that may lead to cardiovascular diseases (Huaman, 2015).

**Cancers.** Due to immunosuppression or intensive treatment, cancer patients are vulnerable to the development or reactivation of active TB. Conversely, TB has been associated with an increased risk of lung cancer, inflammation and scarring. A high prevalence of TB has been noted in people with Hodgkin’s disease and lung cancer (Harikrishna, 2012).

**Chronic respiratory diseases.** Strong associations exist between TB and chronic respiratory diseases in TB-endemic areas. These diseases share risk factors such as tobacco use and environmental exposure to
silica dust, cigarette smoke and indoor air pollution. For example, more than 20% of TB incidence can be linked to smoking, a risk factor that also increases risk of death from TB (WHO, 2015). TB itself may lead to chronic respiratory diseases, and the sequelae of TB may contribute to risk of chronic obstructive pulmonary disease (Byrne, 2015).

Opportunities for synergistic action (programme commonalities and opportunities for action)

Integrated management. TB and most NCDs are preventable and share many risk factors that need to be addressed for effective prevention, such as smoking, poor diet and harmful use of alcohol. As mentioned above, they are also both impacted by common underlying social and economic determinants, such as issues related to financial and social protection, which are particularly important for chronic conditions. Both require long-term, well organized, people-centred disease management in order to achieve favorable outcomes, and most cases require a comprehensive primary care focus. Within the primary health care setting, there is potential for combined health communication and community engagement strategies, coordinated opportunities for training of health workers, provision of coordinated, interlinked or combined care, and strengthening of referral mechanisms, linking to the broader health system approach.

Diagnostic services. In a number of areas there is potential for reciprocal screening. For example, based on the intersecting epidemics of TB and diabetes in countries with a high burden of TB, the WHO and International Union Against Tuberculosis and Lung Disease Collaborative Framework for Care and Control of Tuberculosis and Diabetes recommends screening for diabetes among TB patients, as well as screening for TB among diabetes patients in highly TB-endemic settings. The goal is earlier diagnoses, and thus better treatment outcomes and control of both diseases. Further, people suffering from TB and diabetes co morbidity could be linked to ongoing care for diabetes after TB treatment completion.

With regard to cancer, in some cases there is also potential for considering reciprocal diagnostic efforts. This is important as clinical diagnosis and confirmatory diagnosis of co morbidity can be challenging and requires a synergistic approach to avoid delays in diagnosis and timely start to appropriate treatment.

Access to medicines. With regard to the need to increase access to safe, effective, affordable and quality-assured essential NCD medicines and health technologies, the establishment of the Global Drug Facility for TB using pooled procurement for TB drugs and diagnostics has contributed to an impressive scale-up of TB treatment in the last 15 years in low- and middle income countries. Access to essential medicines for NCDs, including insulin for diabetes and inhalers (bronchodilators and inhaled corticosteroids) for asthma and chronic obstructive pulmonary
disease, is currently low and prevents the implementation of effective NCD programmes. The Global Drug Facility could, therefore, serve as a good model for an efficient procurement service for NCD medicines.

**National plans and resources.** Other examples of programme integration opportunities include linking smokers with TB to smoking cessation programmes, and TB patients with chronic lung disease to ongoing respiratory care. The Practical Approach to Lung Health (PAL) provides a framework for integrated diagnosis and management of people presenting with respiratory symptoms to primary care providers. This approach has been piloted in Egypt, Indonesia and Nepal, among other countries (WHO, 2009). Additionally, information and communication technologies offer opportunities to create integrated programmes to address both TB and risk factors such as tobacco addition, which both require long-term strategies that can be facilitated by innovative use of technology (WHO, 2015).

**Risk factor control.** Considering other NCD risk factors, there is also potential to provide TB patients with screening for alcohol and substance abuse, as well as outreach and care programmes when appropriate (Bates, 2015). Undernutrition is a risk factor for and consequence of TB, and poor diet is also a risk factor for NCDs. A key principle of the care of TB patients is the necessity of an adequate diet with all essential macro- and micronutrients. Nutritional assessment and counselling for TB patients should take into account potential co-morbidities such as diabetes, and can take advantage of the opportunity to address nutritional risk factors for NCDs (WHO, 2013).

**Follow-up and monitoring.** For both TB and NCDs, treatment adherence can pose a major challenge. Effective patient support models, patient-centred care, enabler packages and patient supervision have been shown to reduce morbidity and mortality from TB. Initial studies show that applying this approach to chronic disease programmes, such as diabetes and chronic respiratory diseases, could have similar effects and improve treatment outcomes, including for patients with co-morbidities (Kalra, 2014).

A united approach is indeed required to deliver on the promise to end TB. A convergence between infectious diseases and NCDs – on the basis of their increasingly shared risk factors – could enable a renaissance not only in TB research but also in the energy and consistency of TB prevention and treatment programmes (Lancet, 2016).

**Case study: Screening people with diabetes mellitus for TB in China**

China has experienced an escalating epidemic of diabetes mellitus, affecting as many as 11% of the urban population and 3% of rural people over the age of 15. Similarly, despite tremendous progress, they still have over 1 million new cases of TB each year. In 2011, a study was conducted to assess the feasibility and results of screening diabetes
mellitus patients for TB within routine health care settings. A standardized procedure, monitoring tool and quarterly reporting system for screening diabetes mellitus patients for TB were agreed and implemented within routine health care settings. No additional or special budget was set aside for implementation. Although some challenges were identified, including pressure felt by doctors in relation to this additional duty, some underreporting of suspected TB cases, and TB patients lost to follow-up, the study demonstrated that TB case notification rates in screened diabetes mellitus patients were indeed higher than in the general population. The results show the feasibility of the approach and suggest that it could be cost-effective in countries with a high double burden of disease. Routine screening of TB patients for diabetes mellitus could also help reduce the large numbers of undiagnosed diabetes mellitus patients.

The School of Public Health at the Medical College of Qingdao University also worked to implement diabetes screening in two provinces in China, through training of health care providers working in TB in the detection and management of diabetes. These health care providers screened TB patients for diabetes and offered appropriate treatment and referrals, coordinating with local centres of disease control and health centres to ensure treatment compliance for both diseases, with the objectives of reducing risk of diabetes-related complications and of the development of multidrug-resistant TB. As a result of the project, 290 TB health care workers and 2000 village nurses were trained in the diagnosis and management of diabetes. They screened 11,523 TB patients and 10,525 non-TB patients, identifying 552 co-infected patients and educating nearly 1 million people about the link between diabetes and TB.

For key resources and more information:
http://www.who.int/nmh/events/ncd-coordination-mechanism/en/
The following is in part extracted from the UNAIDS Report (2011) “Chronic Care of HIV and Noncommunicable Diseases: How to Leverage the HIV Experience”

Noncommunicable diseases and HIV infection often overlap

Many countries with a high burden of HIV infection also face burgeoning epidemics of noncommunicable diseases. Similar to HIV, noncommunicable diseases are most frequent in low- and middle-income countries, and the age-adjusted death rates from noncommunicable diseases are nearly twice as high in low- and middle-income countries as in high-income countries. The prevalence of diabetes, for example, is forecast to increase by 50% globally and by 100% in sub-Saharan Africa between 2010 and 2030.

People living with HIV often also have high rates of noncommunicable diseases. With HIV programmes rapidly expanding, people with HIV are living longer and ageing, and are developing non-HIV-related chronic conditions, in many cases similar to the rest of the population, although some studies demonstrate that the prevalence of some NCDs (diabetes, CVD, lung cancer and cervical cancer) are higher in HIV+ vs HIV- patients. Some noncommunicable diseases are related to HIV infection itself and to the side effects of some of the medicines used to treat HIV infection. Several of the opportunistic illnesses associated with HIV infection are noncommunicable diseases in their own right, such as HIV-associated lymphoma, cervical cancer and others. One study in Kenya, presented in the UNAIDS report (2011), demonstrated that, when people were screened for both HIV infection and noncommunicable diseases, HIV positive people had significantly higher rates of hypertension than those who were HIV negative. More than one third of the people who came for HIV testing had elevated blood pressure, and one quarter were obese.

Chronic care for noncommunicable diseases and HIV share many similarities

HIV and noncommunicable disease programmes share many challenges, both in start-up and maintenance, and can learn from each other. Many people who have noncommunicable diseases and many people living with HIV initially have few symptoms. Providing continuous care services
for individuals with minimal symptoms requires different approaches than those used to provide acute or episodic care. Active models of chronic care delivery are rare in many low- and middle-income countries.

HIV and noncommunicable disease care both require ongoing attendance at appointments, adherence to tests and medications, healthy living and self-management. The responses to HIV and noncommunicable diseases can use similar approaches, including developing and using locally appropriate appointment and medication reminder systems, transport support, community follow-up of people who have not returned for their appointments or medication, patient education, referrals, accompanying people when appropriate, and counselling to support adherence and ongoing behaviour change. Decentralizing clinical and laboratory services and moving care to the community rather than requiring individuals to travel long distances to health facilities can play critical roles in supporting retention in both HIV care and noncommunicable disease care.

Similarly, both HIV and noncommunicable disease programmes are ideally implemented in primary health care and should address multiple health and family issues. For instance, HIV programmes have emphasized rapid, simple and standardized diagnostic testing that nurses or trained community health workers can perform for all family members at primary health centres and in the community. During family-focused clinical care, each person is asked about the status of all partners and family members at every visit to facilitate diagnosis and enrolment into care.

Using the public health approach to providing personal health services and implementing step-by-step standardized algorithms to facilitate the treatment of large numbers of people is essential, especially when there are few health workers and task shifting to nurses and community health workers occurs. This includes introducing structured medical charts, encompassing checklists and flow sheets, and ensuring the availability of medical supplies.

**HIV programmes can be leveraged for noncommunicable disease programmes**

With the recent rapid scale up of HIV treatment, HIV has effectively become the first large scale chronic care programme in many resource-limited settings. As countries strengthen and expand noncommunicable disease services, they can draw on the lessons learned by HIV programmes and review and adapt HIV programme approaches (peer programmes, defaulter tracing initiatives, multidisciplinary teams and community engagement), tools (registers, charts, forms and medical records) and systems (monitoring and evaluation, improving quality, supply chain and procurement, referring people and processing of specimens).

For instance, HIV programmes in many low- and middle-income countries have supported task-shifting and task-sharing, including the use of community health workers. The engagement of people living with HIV as peer educators, expert clients and community liaisons has
further strengthened the health workforce and the responsiveness of HIV programmes. The response to HIV provides a model for engaging and empowering the individuals and communities affected by HIV, and the active role of people living with HIV in their own care has been groundbreaking and can serve as a model for other health programmes. Finally, HIV programmes have incorporated home-based care as well as faith and community-based organizations and the private sector. These and other innovations have been shown to increase the efficiency, effectiveness and reach of HIV care services and can serve as models to facilitate the scaling up of noncommunicable disease services.

Tools developed for HIV care may be easily adapted for use in such programmes as those for diabetes and hypertension and may also apply to the care and treatment of people with cervical cancer and heart disease. A pilot programme in Ethiopia demonstrated the effects of adapting tools and approaches used in an HIV clinic to support diabetes services.

**Leveraging the lessons of HIV to support diabetes services in Ethiopia**

In 2010, Columbia University and Ethiopian Diabetes Association, with the support of the Oromiya Regional Health Bureau and colleagues at Adama Hospital, implemented a study to determine whether the tool and approaches used for HIV could be applied to the care of adults with diabetes. Interventions included:

- Adapting training materials, registers, appointment book, charts, flow, sheets and job aids from the HIV clinic for use with people with diabetes in the general outpatient clinic;
- Focused supportive strategies for supervising health workers providing diabetes care;
- Training health workers in diabetes care and training and mentoring in supporting adherence;
- Peer educator training to provide adherence support and patient education, with multidisciplinary team meetings convened to review cases and overall progress.

At the end of six months, the quality of care provided to people with diabetes improved notably, including the percentage of people receiving key diabetes-related services, such as measuring blood pressure and weight, examining eyes and feet and assessing adherence. Since the tools and charts were locally developed and used by colleagues at the HIV clinic, the clinicians readily adopted the programme changes and collaborated well with peer educators.

**Lessons learned: Integrating HIV and noncommunicable disease services**

Since primary health centres as well as clinics and hospitals are increasingly managing both HIV and noncommunicable diseases, interest is growing in various models for integrating both types of health services. Integrating HIV and noncommunicable disease services at the point of service refers to an integrated chronic disease clinic that
provides continuous care services to a wide range of people, including those living with HIV and those with noncommunicable diseases. Tools and approaches are shared, and a multidisciplinary team of health workers provide services to everyone, such as in an integrated chronic disease clinic in Cambodia. Although there have been concerns that HIV stigma might make this impractical, there are success stories about such integration, and integrated chronic care clinics might be an opportunity to further reduce HIV stigma and discrimination. The pilot programme in Cambodia demonstrated the effectiveness of providing services for HIV, diabetes and hypertension in the same clinic, and stigma associated with HIV infection did not prove to be a major obstacle. Co-located noncommunicable disease services for individuals enrolled in HIV care and treatment have been advocated by people who note the large and growing numbers of adults and children who are already engaged in HIV continuous care, returning regularly for services.

Upstream integration of HIV and noncommunicable disease services means that services are not integrated at the point of service; a systematic and unified approach is used for developing guidelines, training, the roles and responsibilities of health workers, patient support, procurement, health records, monitoring and evaluation and measuring quality improvement. This ensures that lessons are shared, systems are harmonized and efficiency is recognized.

Many HIV programmes already screen for tuberculosis and can introduce a systematic approach to screening for and treating noncommunicable diseases and their risk factors – including tobacco use, excessive alcohol consumption, poor diet and physical inactivity. Several programmes have recognized the opportunity to use HIV counselling and testing to screen for noncommunicable diseases. The initiative in Kenya described previously is providing integrated cardiovascular disease and HIV diagnosis at five sites in the Coast and Rift Valley Provinces. The goal is to identify risk factors for cardiovascular disease among HIV counselling and testing clients, people living with HIV enrolled in care and people living with HIV receiving antiretroviral therapy and to provide medical and behavioural intervention on site at the HIV clinic or via referral. Overall, more than 5000 people have been screened, proving the feasibility of using the HIV counselling and testing platform to screen for noncommunicable disease risk factors.

South Africa’s Ministry of Health recently announced plans for a unified health testing campaign aiming to test 15 million people for HIV infection, elevated blood pressure and blood sugar level. This will be the largest combined HIV and noncommunicable disease diagnosis programme in the world.
In 2002, Médecins Sans Frontières and Cambodia’s Ministry of Health piloted two chronic disease clinics for HIV, diabetes and hypertension in the provincial capitals Takeo and Siem Reap. They designed a fully integrated model using a patient-centred case management approach, flow charts, generic drugs and routine cohort monitoring. The integrated chronic disease clinics saw more than 9000 people between 2002 and 2005, including almost 5000 living with HIV, more than 2500 with diabetes and almost 1500 with hypertension. This programme demonstrated:

- High retention rates of between 70–90% for the various diseases;
- Good health outcomes:
  - The median CD4 count of people living with HIV rising from 53 to 316 per mm3 at 24 months;
  - The median HbA1c (a measure of blood glucose) of people with diabetes falling from 11.5% to 8.6%;
  - 68% of people being treated for hypertension reaching the target blood pressure within six months;
- Clinicians, counsellors, pharmacists and support group leaders proving able to manage people with various diseases;
- No difficulties noted with the mingling of people with various diseases despite initial concerns about HIV-related stigma.

This programme illustrates the potential to provide integrated HIV and noncommunicable disease services at the point of service.

Conclusion

Health services for HIV care and noncommunicable diseases have common features, since both require health systems that can provide for people’s long term, chronic care needs. The health system innovations arising from the recent rapid scaling up of HIV treatment in several settings have already provided synergy to re-energize chronic care programmes and services for noncommunicable diseases. In particular, the emphasis on individual and community empowerment, leadership and engagement, anchored in the principles of universal access and social justice can be a model for the response to noncommunicable diseases. The delivery of care for people with noncommunicable diseases at primary health care centres can be a model for the further decentralization of HIV care. Increasingly, the traditional divisions between programmes for HIV and noncommunicable diseases are being bridged, enabling countries to build on the success of scaling up HIV services to expand access to 21st-century primary care that includes services for both HIV and noncommunicable diseases, through vertical and horizontal integration, synergies and linkages. No single approach to combining services is appropriate in all contexts; the most appropriate strategies depend on the prevalence of the specific disease and the specific characteristics of the health system in each country. Solutions need to be country-led, draw on local expertise and involve local stakeholders to succeed.
A Global Commitment to Prevent and Control Non-Communicable Diseases

In 2011, the High-level Meeting of the United Nations General Assembly on the Prevention and Control of Non-communicable Diseases issued a Political Declaration, agreed by all member states, acknowledging that NCDs constitute one of the major challenges for development in the 21st century. To act upon this declaration, the World Health Assembly endorsed the Global Action Plan for the Prevention and Control of NCDs 2013-2020. In September 2015, the world adopted the Sustainable Development Goals, which contain ambitious targets related to NCDs, including that of reducing by one third premature mortality from NCDs through prevention and treatment, and reducing maternal mortality to less than 70 per 100,000 births. Women who face low socioeconomic, legal or political status are especially vulnerable to the combination of risks resulting from pregnancy and communicable and non-communicable disease.

To this end, the linkage of efforts to address each of these risks was also endorsed by the UN Secretary-General’s Global Strategy for Women’s and Children’s Health which recommends an approach that integrates NCDs into programmes to promote women’s and children’s health.

The Case for Action

Worldwide, NCDs are the leading cause of death for women, accounting for nearly 73% of deaths. Over three quarters of these deaths are in low- and middle income countries (LMICs), primarily from cardiovascular diseases (CVD), cancers, chronic respiratory diseases and diabetes. These NCDs share the common modifiable risk factors of unhealthy diet, physical inactivity, tobacco use, and harmful use of alcohol (WHO, 2015). NCDs can have significant adverse effects on maternal health and pregnancy outcomes, and can negatively impact the health of children later in life through effects experienced in utero.

A well-balanced healthy diet with sufficient calories and nutrients is important for pregnancy outcomes. Maternal anaemia is associated with an increased risk of infant anaemia and malnutrition (Zhang, 2012), and micronutrient deficiency is associated with increased risk of gestational diabetes, pre-eclampsia and small for gestational age and low birth weight.
babies (Aghajafari et al., 2012; Krishnaveni et al., 2009). Obesity and being overweight during pregnancy can also result in complications for both the mother and foetus (Kapur, 2015). The number of reproductive-aged women who are overweight is now greater than the number of underweight women (Mendez, 2005). Pregnancy complications in obese or overweight women include hypertensive disorders, gestational diabetes, respiratory problems and pre-eclampsia, with significant impact on perinatal health outcomes, for which pre-pregnancy obesity is highly predictive (Sibai et al., 1995). This emphasises the mother-baby couple. Not only are the maternal outcomes important but also the perinatal. Healthy mothers have healthy babies.

Diabetes is also a critical area for maternal health. There are 184 million women worldwide who suffer from diabetes, and 92% of cases of hyperglycaemia in pregnancy occur in LMICs. Gestational hyperglycaemia and high blood pressure are linked directly or indirectly to haemorrhage, hypertensive disorders, obstructed labour, infection and sepsis, the leading causes of maternal mortality. Women with pre-existing type 1 or 2 diabetes have these same risks, and in addition, pregnancy can worsen existing eye, kidney, heart or nerve problems caused by diabetes (CDC, 2015). Furthermore, women with gestational diabetes have an increased risk of developing type-2 diabetes later in life, a higher prevalence of metabolic syndrome, and an increased risk of cardiovascular disease (Bellamy et al., 2009).

NCDs during pregnancy can increase the risk of spontaneous abortion, stillbirth, congenital malformation, birth injuries, neonatal hypoglycaemia, infant respiratory distress syndrome, and being large for gestational age (Kapur, 2015). They may also increase risk of obesity, diabetes and cardiovascular disease later in life as well as have transgenerational effects on NCD risk (Hanson and Gluckman, 2011). There is also a strong association between maternal gestational diabetes and obesity with diabetes and obesity in youth (Dabelea et al., 2008). As, globally, obesity is on the rise, the age of onset of type 2 diabetes is decreasing, and age of initiation of childbearing is increasing, the number of women pre-disposed or entering pregnancy with pre-existing diabetes is likely to rise (Kapur, 2015). Additionally, smoking during pregnancy is increasing in LMICs, which, along with exposure to second-hand smoke and air pollution, further elevates risk of pregnancy complications (Lumley, et al., 2009).

Integration of services can improve access to care, efficiency and outcomes

Current statistics and trends demonstrate the necessity of an integrated approach to maternal health and NCDs, with prenatal and pre-pregnancy care as critical points of contact, providing co-benefits for NCD management and maternal and newborn health outcomes. Information provided to women on physical activity and nutrition during pregnancy and appropriate breastfeeding practices could emphasize benefits for NCD prevention—both for the woman and the baby. Preconception care and antenatal services
can serve as an entry point for health interventions and health promotion for staying healthy later in life, improving outcomes for their babies later in life. These messages can be integrated into efforts to improve uptake and quality of antenatal services (Unicef, 2015). Similarly, including information on alcohol, tobacco use and second-hand smoke exposure can address adverse pregnancy outcomes (Lumley, et al., 2009). Preconception counselling for women with pre-existing diabetes can also help reduce risks for diabetic women and their babies (NCD Alliance, 2011). Information needs to be supplemented by supportive policies and programs that help women act on the knowledge they receive. As part of the Global Strategy and goal of Ending Preventable Maternal Mortality, WHO is working with partners towards addressing the inequalities in access to and quality of vital antenatal and postnatal services. By addressing the burden of NCDs on women, maternal and child health outcomes can be significantly improved. For example, access to insulin, for management of diabetes, is a huge problem in LMIC. A specific opportunity for effective integration could be thinking of ways to use channels and cold-chains already in place such as vaccines and oxytocin used in maternal and child health programs to improve access to insulin.

Screening pregnant women for NCDs is essential. Relying on clinical markers alone for gestational diabetes fails to correctly identify more than half of the women with gestational diabetes (Kapur, 2015), highlighting the importance of universal screening for hyperglycaemia in pregnancy. Early detection and management of diabetes in pregnancy as part of a comprehensive antenatal package was shown to reduce stillbirths by up to 45% and also to prevent maternal and newborn deaths (Pattinson et al, 2011). Post-natal care can integrate NCD services as well, ensuring that high-risk mothers and children receive support to prevent, manage or delay NCDs. One example is the identification of a mother who is overweight or has gestational diabetes or hypertension and linking her with follow-up care that corresponds to her child’s vaccination schedule (Kapur, 2015). WHO is working to ensure accountability within maternal health systems in order to improve quality of care and equity.

A “Life Course” Approach

Traditionally, maternal health programmes have focused on short-term outcomes of maternal, neonatal and infant survival. Moving forward, there is tremendous opportunity to use these programmes as part of a comprehensive “life course” approach. Interventions related to NCDs in this period can have immediate effects on pregnancy outcomes as well as longer term impact on the health of the mother and her baby (Kapur, 2015; Lumley et al., 2009, PMNCH, 2011), and on the health of future generations.

For Key Resources and More Information

http://www.who.int/nmh/events/ncd-coordination-mechanism/en
http://www.who.int/maternal_child_adolescent/en/
A Global Commitment to Prevent and Control Non-Communicable Diseases

In 2011, the High-level Meeting of the United Nations General Assembly on the Prevention and Control of Non-communicable Diseases issued a Political Declaration, agreed by all member states, acknowledging that NCDs constitute one of the major challenges for development in the 21st century. To act upon this declaration, the World Health Assembly (WHA) endorsed the Global Action Plan for the Prevention and Control of NCDs 2013-2020 (GAP). In September 2015, the world adopted the Sustainable Development Goals, which contain ambitious targets related to NCDs, including that of reducing by one-third premature mortality from NCDs through prevention and treatment. At the same time, the WHA also adopted ambitious goals to address maternal and child health. The link between these efforts was enforced by the UN Secretary-General’s Global Strategy for Women’s, Children’s and Adolescent Health, which recommends integration of early NCD prevention into programmes that promote women’s and children’s health.

The Case for Integration

Worldwide, 41 million people die each year from NCDs, primarily cardiovascular diseases (CVD), preventable cancers, chronic respiratory diseases and diabetes. Although NCDs predominantly affect adults, approximately 3% of all NCD deaths occur among children and adolescents under 20 years of age. The leading causes of death among children under five in 2016 were acute respiratory infections, injuries, congenital anomalies and other noncommunicable diseases (WHO, 2016). Further, the risks for many of the NCDs targeted by the GAP are established early in life. This is particularly important as more evidence comes to light on the complex interaction between genetics and the environment, including evidence on the risk for development of adult NCDs conferred by early life influences, even before conception, and the potential transgenerational impact of those risks (UNICEF, 2015; Hanson and Gluckman, 2011). Further, maternal influences like prenatal malnutrition and smoking in pregnancy can lead to low birthweight, which, in addition to threatening newborn survival, creates a predisposition to obesity, high blood pressure, heart disease and diabetes later in life (WHO, 2013). NCDs can also originate from conditions beginning in childhood, including obesity (38 million children under 5 worldwide were overweight in 2017 (WHO, 2016)) as
well as behaviours adopted during childhood and adolescence, such as tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity (Sawyer, 2012). The global disease burden due to NCDs affecting children in childhood and later in life is rapidly increasing, even though many of the risk factors can be prevented (WHO, 2016).

A “Life Course” Approach

Health during early life, beginning with conception, pregnancy and continuing into childhood, sets the stage for health during adulthood (the “life course”); interventions delivered through child health programs and to adolescents may see their ultimate benefit in later years, or even in future generations. Examples of this include promotion of appropriate nutrition early in life, beginning with exclusive and continued breastfeeding and the avoidance of breast milk substitutes, the avoidance of energy-dense, nutrient-poor complementary foods, and physical activity. These can prevent overweight, one of the biggest risk factors for NCDs (Unicef, 2014).

Moreover, immunizations for children and adolescents can protect against NCDs. Infant vaccination against hepatitis B protects more than 90% of those who receive all three doses (CDC, 2015) and has been shown to dramatically reduce incidence of liver cancer in children, adolescents and adults (WHO, 2015). Later in life, cervical cancer incidence can be significantly reduced by human papilloma virus (HPV) vaccination among adolescent girls, which is over 99% effective in protecting against the two HPV strains that cause 70% of cervical cancers (CDC, 2012). HPV vaccination as a primary prevention strategy for cervical cancer is particularly important in settings where access to screening is limited (Wigle, 2013).

Opportunities for Integration

NCD deaths are projected to increase from to 52 million by 2030 (WHO, 2015). Despite the fact that many of the root causes of NCDs relate to social determinants such as poverty and lack of access to education, within the primary health care and educational settings, there is potential for health communication and community engagement strategies to have a major impact on NCD prevention. It is widely noted that combined interventions based in schools, homes, primary care clinics, child care settings and within communities are more effective than single interventions (UNICEF, 2015; WHO 2016). Opportunities for integration can also include advertising on televising, marketing practices and industry regulations, i.e. breastmilk substitutes and follow on milks, marketing of inappropriate complementary foods, sugar and sugary drinks. WHO is calling on Member States to address the lack of health equity for children through the promotion of universal health services so that children are able to access essential services without undue financial hardship (WHO 2016). Ideally, these should combine to form an integrated approach across each stage of the life-course, including integrating as well as building linkages and synergies across the continuum of maternal to child to adolescent health.
Opportunities for integration, linkages and synergies include:

- Ensuring that health workers are adequately educated and supported to promote appropriate infant and young child feeding.

- Emphasizing that appropriate breastfeeding reduces the risk of overweight, high cholesterol and blood pressure, and type 2 diabetes later in life (Plageman, 2005, Lancet series, Jan 2016).

- Good quality health services that reach young children and families with screening and counselling on the topics of responsive rearing practices and healthy diet.

- Ensuring integrating across the continuum of maternal to child to adolescent health.

- The promotion of healthy eating habits in kindergartens and in the community.

- Life skills education and school-based screening for NCD risks (beginning in primary and continuing into middle and secondary school), including engaging parents to review family life styles including exercise.

- Continued Vaccination against HPV and hepatitis B.

- The treatment of certain infections (such as streptococcal infection which can lead to rheumatic heart disease).

Further opportunities include reducing exposure to air pollution (both domestic, from tobacco, cooking or heating, and environmental) and “toxic stress,” or persistent stress which can affect healthy psychosocial and physical development from conception onward (Shonkoff, 2011).

School-based interventions can target risk factors such as poor diet and inadequate exercise, using information and communication technology to improve diet and exercise-related behaviours, and campaigns against tobacco smoking and excessive alcohol intake. Many school-based child health programs are already in place and can be easily modified to directly address NCDs (UNICEF, 2015). WHO stresses that strategic directions are needed to move forward and we must move from “business as usual” thinking to innovative, multiple, and tailored approaches to increase the access, coverage, and quality of child health services (WHO, 2016).
A Need for Policy Action

Policy change is also critical to foster protective environments and make healthy choices easier (UNICEF, 2015). NCD and health advocates can combine forces to implement policy changes around the issues taxation of unhealthy commodities, banning of marketing of unhealthy foods and beverages to children, labelling of processed foods, healthy eating and physical activities in schools.

For Key Resources and More Information

http://www.who.int/nmh/events/ncd-coordination-mechanism/en
A Global Commitment to Prevent and Control Non-Communicable Diseases

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The Case for Integration

Worldwide, 41 million people die each year from NCDs, primarily cardiovascular diseases (CVD), preventable cancers, chronic respiratory diseases and diabetes. Although NCDs predominantly affect adults, approximately 3% of all NCD deaths occur among children and adolescents under 20 years of age. The leading causes of NCD deaths among children are rheumatic heart disease, type 1 diabetes, asthma and leukaemia (NCD Alliance, 2014). Further, the risks for many of the NCDs targeted by the GAP are established early in life. This is particularly important as more evidence comes to light on the complex interaction between genetics and the environment, including evidence on the risk for development of adult NCDs conferred by early life influences, even before conception, and the potential transgenerational impact of those risks (UNICEF, 2015; Hanson and Gluckman, 2011). Further, maternal influences like prenatal malnutrition and smoking in pregnancy can lead to low birthweight, which, in addition to threatening newborn survival, creates a predisposition to obesity, high blood pressure, heart disease and diabetes later in life (WHO, 2013). NCDs can also originate from conditions beginning in childhood, including obesity (43 million children under 5 worldwide are currently overweight (NCD Alliance, 2014)) as
well as behaviours adopted during childhood and adolescence, such as tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity (Sawyer, 2012). The global disease burden due to NCDs affecting children in childhood and later in life is rapidly increasing, even though many of the risk factors can be prevented (WHO, 2016).

A “Life Course” Approach

Health during early life, beginning with conception, pregnancy and continuing into childhood, sets the stage for health during adulthood (the “life course”); interventions delivered through child health programs and to adolescents may see their ultimate benefit in later years, or even in future generations. Examples of this include promotion of appropriate nutrition early in life, beginning with exclusive and continued breastfeeding and the avoidance of breast milk substitutes, the avoidance of energy-dense, nutrient-poor complementary foods, and physical activity. These can prevent overweight, one of the biggest risk factors for NCDs (Unicef, 2014).

Moreover, immunizations for children and adolescents can protect against NCDs. Infant vaccination against hepatitis B protects more than 90% of those who receive all three doses (CDC, 2015) and has been shown to dramatically reduce incidence of liver cancer in children, adolescents and adults (WHO, 2015). Later in life, cervical cancer incidence can be significantly reduced by human papilloma virus (HPV) vaccination among adolescent girls, which is over 99% effective in protecting against the two HPV strains that cause 70% of cervical cancers (CDC, 2012). HPV vaccination as a primary prevention strategy for cervical cancer is particularly important in settings where access to screening is limited (Wigle, 2013).

Opportunities for Integration

Integration of services is done with the goals of supporting patients with co-occurring conditions, improving treatment outcomes, reducing costs, and improving efficiency of services.

Family planning programmes provide opportunities to raise awareness among women, men and family members on, for example, critical reflections about unequal gender and power relationships, about prevention, screening and care on breast and cervical cancer, counselling on violence and injuries and to conduct health promotion activities around NCD risk factors such as smoking, sexually transmitted infections, harmful use of alcohol, unhealthy diet and lack of physical activities. Family planning clinics can also serve as a good entry point screening for NCDs and their risk factors. For example, most deaths from cervical cancer can be avoided with early detection via symptom awareness and increased rates of screening (NBCCEDP - CDC, 2015).
Family planning services can also provide an opportunity for addressing issues related to cardiovascular disease, hypertension, diabetes, violence and mental health. Cardiovascular diseases are the greatest killer of women worldwide, and a gender gap exists in the diagnosis and treatment of these diseases (NCD Alliance, 2011). Screening for these diseases and risk factors in health services that already reach women can facilitate early detection and thus early treatment. Proper management of diabetes can substantially decrease the risk of birth defects among women with pre-existing diabetes (Johnson, 2006), and preconception care and counselling for women with type 1 and 2 diabetes, is another important point of integration for family planning services.

 Violence against women – particularly intimate partner violence and sexual violence – is a major public health problem and a violation of women’s human rights. Global estimates published by WHO indicate that about 1 in 3 (35%) of women worldwide have experienced either physical and/or sexual intimate partner violence or non-partner sexual violence in their lifetime. Violence can negatively affect women’s physical, mental, sexual, and reproductive health, and may increase the risk of acquiring HIV in some settings.

 There is evidence that advocacy and empowerment counselling interventions, as well as home visitation are promising in preventing or reducing intimate partner violence against women (WHO, 2017). WHO is working with partners to ensure comprehensive sexual and reproductive healthcare and prioritising the need to strengthen systems to respond to the specific needs of women. A key element of this is to establish a skilled and appropriate workforce in which NCD training, particularly on NCD screening and prevention, and awareness should be a major component.

### Case study

Integration of Cervical Cancer Screening with Family Planning Services in Kenya.

The integration of cervical cancer screening into family planning services in Kenya was shown to be feasible using visual inspection with acetic acid and Lugol’s iodine. These screenings identified a 16.9% prevalence of cervical dysplasia among family planning clients, along with 0.9% of clients with a suspicion of cervical cancer. Women identified were then referred for further evaluation and treatment (Were, et al., 2010).
Bringing boys and men into sexual and reproductive health programmes and services provides an opportunity to offer holistic, people-centred health information and counselling and potentially prevention, detection and control of NCDs, including on mental health and wellbeing.

For Key Resources and More Information

http://www.who.int/nmh/events/ncd-coordination-mechanism/en/
http://www.who.int/reproductivehealth/en/

Original Policy Briefs can be found on the following website:

https://www.who.int/global-coordination-mechanism/working-groups/1st-wg-apr-2016-documents/en/
Annex 2
Country cases that address the integration of NCDs with other programmatic areas
<table>
<thead>
<tr>
<th>Country</th>
<th>Partners</th>
<th>Design</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>Médecins Sans Frontières (MSF) and the Cambodian Ministry of Health</td>
<td>Establishing chronic disease clinics that integrate HIV/AIDS care with the management of diabetes and hypertension</td>
<td>Two provincial capitals</td>
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<tr>
<td>Kenya</td>
<td>Ministry of Health</td>
<td>Promoting integration of NCD prevention and control and HIV programmes and services under the Kenya health policy framework 2012-2030</td>
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<tr>
<td>Uganda</td>
<td>Collaboration between Makerere University - University of California, San Francisco (MU-UCSF) investigators and the Mulago-Mbarara Joint AIDS Program (MJAP) in Uganda, with Ministry of Health (MOH) support</td>
<td>Integrating NCD and communicable diseases into a rapid HIV testing and referral campaign for all residents of a rural Ugandan parish</td>
<td>Kakyerere parish, a rural community in southwestern Uganda</td>
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<tr>
<td>Tanzania</td>
<td>Implemented under the National Strategy for Non Communicable Diseases. Coordination under the Ministry of Health, Community Development, Gender, Elderly &amp; Children (MoHCDGEC) Tanzania Diabetes Association (TDA) as project implementing partner. Funded by World Diabetes Foundation</td>
<td>Integrating HIV, maternal, newborn and child health, and cervical cancer screening</td>
<td>Country Level</td>
</tr>
<tr>
<td>Malawi</td>
<td>Fully endorsed by MoH. High-level policymakers, researchers, civil society members and program implementers</td>
<td>Launch of the Malawi Knowledge Translation Platform, including - high-level policymakers, researchers, civil society members and program implementers - Communities of Practice for the integration of NCDs into HIV care and treatment - Literature review and policy brief for MOH Integrated screening and management of PLHA at community and facility level</td>
<td>Country Level</td>
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<tr>
<td>Zambia</td>
<td>Endorsed by the Zambian Ministry of Health, with support from the US Centers for Disease Control and Prevention (CDC)-PEPFAR program and other charitable resources</td>
<td>Launch of an innovative program for cervical cancer prevention targeting, but not limited to, HIV-infected women</td>
<td>Lusaka, capital city</td>
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<tr>
<td>Country</td>
<td>Partners</td>
<td>Design</td>
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<td><strong>NCDs + TB</strong></td>
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<tr>
<td>China</td>
<td>Grants from the World Diabetes Foundation, collaboration with the UNION, WHO, MoH</td>
<td>Integrate NCDs into National TB Programme</td>
<td>Shangdong, Gansu Province</td>
</tr>
<tr>
<td>India and Kenya</td>
<td>The Global Fund to Fight HIV, Tuberculosis and Malaria</td>
<td>TB and diabetes screening for CVD and diabetes in HIV management. Coordination of health and social services, school health promotion campaigns</td>
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<td><strong>NCD + MCAH</strong></td>
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<tr>
<td>Sri Lanka</td>
<td>National Center for Global Health and Medicine for administrative support. Endorsed by the Provincial Minister of Education and the Provincial Director of Education, support by the Zonal Education Office in Homagama</td>
<td>School-based intervention to enable school children to act as change agents on weight, physical activity and diet of their mothers</td>
<td>Homagama</td>
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<tr>
<td>USA</td>
<td>American Academy of Pediatrics, UNICEF, WHO and International Pediatric Association (IPA)</td>
<td>Preventive services from birth through adolescence</td>
<td>Country level</td>
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<tr>
<td>USA</td>
<td>American Academy of Pediatrics, UNICEF, WHO and International Pediatric Association (IPA)</td>
<td>A philosophy for approaching patients and families Age-specific recommendations developed through expert consensus and evidence-based review Applicable for all primary care settings</td>
<td></td>
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<tr>
<td>Chile</td>
<td>Ministry of Health</td>
<td>Healthy kiosks: To reduce the exposure to “junk food” in schools Physical education: To increase the total hours of physical activity Health promotion: To introduce health topics on a regular basis in schools</td>
<td>Regional and community level</td>
</tr>
<tr>
<td>Chile</td>
<td>Ministry of Health</td>
<td>Permanent support to make healthy choices (food and physical activities)</td>
<td>Community Level</td>
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<tr>
<td>Japan</td>
<td>National Institute of Public Health, with national and local government, collaboration among schools, nursery centers, the operators of agriculture, forestry and fishery, food-related businesses</td>
<td>Promoting “Shokuiku” policies so to enhance sustained national health status (including NCDs prevention), and to realize cultural, intellectual, moral, physical and education levels</td>
<td>Country Level and Community Level</td>
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<tr>
<td>Country</td>
<td>Partners</td>
<td>Design</td>
<td>Level</td>
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<tr>
<td>Kingdom of Saudi Arabia</td>
<td>Auspices of the Ministry of Health with significant collaboration from NGOs &amp; private sector</td>
<td>National Breast Cancer Early Detection Program: integrating NCDs with shared risk factors (cardiovascular, diabetes, obesity, breast cancer and osteoporosis) in women’s health screening clinics</td>
<td>Riyadh, capital city</td>
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<td>NCD + SRH</td>
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<tr>
<td><strong>Kenya</strong></td>
<td>Regional Health Authorities, County Medical Officers, District Health Nurses; the Ministry of Health of Trinidad and Tobago</td>
<td>Cross sectional, descriptive study in which consecutive women were screened for genital tract inflammatory disease and cervical cancer through visual inspection</td>
<td>Moi Teaching and Referral Hospital.</td>
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<tr>
<td><strong>USA</strong></td>
<td>Pitt County Health Department, supported by Cooperative Agreement from the Centers for Disease Control and Prevention</td>
<td>Female patients were screened for CVD risk factors. 56.1% were rescreened one year later, with protocol-driven referrals for women identified with newly diagnosed CVD risk factors</td>
<td>A family planning clinic in Pitt County, North Carolina</td>
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<tr>
<td><strong>The Sexual Rights Initiative (SRI)</strong></td>
<td>Engaging governmental and non-governmental actors</td>
<td>Preventable maternal mortality &amp; morbidity, the right to sexual and reproductive health</td>
<td>Country Level</td>
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<td></td>
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<td>Human Rights Indicators including quality of care indicators</td>
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<td>Comprehensive Sexual Education</td>
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<td>NCDs + PHC</td>
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<tr>
<td><strong>The Kingdom of Bahrain</strong></td>
<td>Ministry of Education, Ministry of Social Affairs, Youth &amp; Sport Institute, Municipality Council, Pharmaceutical Companies, Schools, Private Sector</td>
<td>Integrating NCDs into Primary Health Care: Involving NCD clinic, Nutrition clinic, Tobacco cessation clinics, Diabetes central clinic, Mental Health clinic, Early detection program, Monitoring health centres</td>
<td>Country Level</td>
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<td>Protect your Heart campaign: Early detection of people with risk factors in the community beyond the local health centre. Empowering people to take responsibility of their own health. Enrolling high risk groups into a lifestyle changing program</td>
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<tr>
<td><strong>West Bank, Gaza, Jordan, Lebanon, Syria</strong></td>
<td>In collaboration with United Nations Relief &amp; Work Agency and WHO</td>
<td>Electronic medical records, NCD cohort monitoring, Diabetes Campaigns</td>
<td>Regional Level</td>
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<tr>
<td>Country</td>
<td>Partners</td>
<td>Design</td>
<td>Level</td>
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<tr>
<td>Solomon Islands</td>
<td>MHMS and Japanese experts from Japanese International Cooperation Agency (JICA)</td>
<td>Health Promoting Village Project, to improve the health status, living conditions and behavior and lifestyle choices of villagers. The approach adopted by Malaria Control Project will be extended to NCDs control</td>
<td>Three pilot provinces (Malaita, Guadalcanal and Honiara City Council)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Funded by Department of Health and Social Security (UK), Tobacco Research Council (UK), British Heart Foundation (UK), Medical Research Council (UK), European Science Foundation (EU), Wellcome Trust (UK), and Academy of Finland (Finland)</td>
<td>To assess how much the successful implementation of the most effective (ie, best-practice) interventions could reduce socioeconomic inequalities of coronary heart disease mortality in an occupational cohort study comparing low with high socioeconomic groups</td>
<td>London, capital city</td>
</tr>
<tr>
<td>South Africa</td>
<td>Agincourt Health and Population Unit</td>
<td>To assess the prevalence of several vascular risk factors in Agincourt by using a multidisciplinary approach</td>
<td>Regional level (Agincourt sub-district of Limpopo Province)</td>
</tr>
<tr>
<td>Caribbean</td>
<td>ministers of health and senior officials in Caribbean governments, CARICOM Secretariat, PAHO/WHO, and the University of the West Indies</td>
<td>Convened the first summit dedicated to NCDs to raise the priority of chronic non-communicable disease</td>
<td>Multi Country level</td>
</tr>
</tbody>
</table>

*Details of some country cases are available on this link: [http://www.who.int/global-coordination-mechanism/activities/working-groups/ncd-integration-country-cases/en/](http://www.who.int/global-coordination-mechanism/activities/working-groups/ncd-integration-country-cases/en/)*
Annex 3

Presentations from Working Group members and invited Stakeholders on integration of NCDs
1. Healthy Heart Africa (HHA) - AstraZeneca

2. UNRWA’s NCD Programme - Yousef Shahin - Chief Disease Prevention and Control

3. Carmen Pérez Casas, HIV Strategy Manager, UNITAID

4. HIV and noncommunicable diseases integration - Celeste Sandoval - Science Adviser, OSP, UNAIDS

5. HIV and NCD WHO consolidated guidelines - Meg Doherty - Department of HIV/AIDS, World Health Organization, Geneva

6. Integrated Approach to Health - George Shakarishvili, MD, PhD, MPH - Senior Advisor, Health Systems, The Global Fund to Fight HIV, Tuberculosis and Malaria

7. Tuberculosis and Non-Communicable Diseases - Hannah Monica Dias - Policy, Strategy and Innovations

8. Integrating Non-communicable Disease Screening and MNCH - EGPAF Projects in Lesotho and Tanzania

9. NCD Child - Eussen

10. A case of integration with MCH (and beyond) - Dr. Luwei Pearson - Principal Adviser Health, UNICEF HQ

11. Action Canada for Sexual Health and Rights - Meghan Doherty

12. Vertical vs Horizontal - G. Schmets – HGF department

13. Tanzania National Diabetes/NCD Program and its integration with HIV and RCH services - Dr Kaushik Ramaiya - Hon General Secretary, Tanzania Diabetes Association

14. Integrating NCDs into other programme areas: Examples of WDF supported partnerships - World Diabetes Foundation

* Details of presentations from working group members are available on the following links:

