

Integrated approach for noncommunicable disease management in the Americas

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ABSTRACT

An overview of an integrated approach to improve noncommunicable disease (NCD) management is presented, along with tools on integrating NCD management as part of health system strengthening in the Americas. The study is based on an analysis of Pan American Health Organization/World Health Organization (PAHO/WHO) data and publicly available information on NCD care and capacity, disruptions in NCD services, and guidance on NCD management. Gaps in NCD care are highlighted, in which an estimated 43.0% of men and 28.0% of women with hypertension in Latin America remain undiagnosed; and for those with diabetes, 32.8% in Central and South America are undiagnosed. Yet, only 17/35 countries (49%) in the Americas report having evidence-based national guidelines for NCD management through a primary care approach and only 7/35 countries (20%) report provision of drug therapy, including glycaemic control for eligible persons. To improve NCD management, an integrated approach is needed to coordinate and deliver care across the levels of the health system. This includes increasing primary care capacity and competencies to address multiple chronic conditions, and integration with other complementary programs to avoid missing opportunities for NCD diagnosis and management. An integrated approach to NCD management, and implementation of available tools, should be part of rebuilding health systems after the COVID-19 pandemic.

Keywords

Noncommunicable diseases; primary health care; systems integration; delivery of health care, integrated; Americas

Cardiovascular diseases (CVD) and other noncommunicable diseases (NCDs) are the leading causes of death and disability globally, and the population affected by NCDs is increasing (1). For example, there were nearly 100 million additional healthy life-years lost in 2019, as in 2000, from heart disease, stroke, diabetes, cancer and chronic respiratory diseases (1).

In the Americas, NCDs are also the leading causes of death and account for 80.7% of all mortality in 2019, with 34% of NCD deaths occurring prematurely (between ages 30 and 70 years) (2). Although a Sustainable Development Goal target has been set for a one third reduction in premature mortality from NCDs by 2030 (SDG 3.4), this target will not be met in the Americas without significantly scaling up implementation of the cost-effective

NCD risk factor policies, and clinical interventions (3). Furthermore, the SDG 3.4 target cannot be achieved by addressing a single NCD or with a single intervention, as revealed by a global analysis, demonstrating that joint interventions are necessary to reduce the risk of death from cardiovascular disease, cancer, diabetes, and chronic respiratory diseases (3).

The evidence on effectiveness and costs for policies to prevent NCDs has been well documented (4). In low- and middle-income countries, it is estimated that 32 million deaths could be averted over 10 years by enacting tobacco legislation, implementing salt reduction strategies, and providing multidrug therapy to individuals at high risk of CVD events, requiring an annual investment of US \$1-\$3 per capita (4). This evidence for

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the 'WHO NCD Best Buys' provides justification for primary prevention of NCDs. However, there is global recognition that prevention alone is insufficient, and that reducing NCD mortality will also require robust health systems with increased capacity to screen, diagnose and manage people with NCDs on a long term, continuing basis. This requires strengthening primary health care and integrating NCD management in the health system, which is the focus of this article.

NCDs often begin without any symptoms, necessitating strategies for early detection and using any health encounter as opportunities for diagnosis. Once diagnosed, people living with NCDs need continuous care over the long-term, as well as education and support to manage their condition. Furthermore, many live with multiple conditions which share similar strategies for diagnosis, treatment and control, calling for an integrated approach to better coordinate care around people's needs, rather than individual diseases.

This article provides an overview of an integrated approach to improve NCD management, as a way to address needs of people living with NCDs, along with guidance and strategies on integrating NCD management, as part of health system strengthening post COVID-19 in the Region of the Americas.

IMPROVING NCD MANAGEMENT

Coupling NCD prevention policies with health system improvements for NCDs can lead to better health and well-being, and lead to more rapid declines in premature NCD mortality (3). Although data are scant, there are enormous gaps in NCD care in the Americas. One estimate shows that in Latin America, 43.0% men and 28.0%, women with hypertension remain undiagnosed (5); for those with diabetes, 32.8%

in Central and South America are undiagnosed (6). Although WHO STEPs surveys provide NCD prevalence data, individual data required to improve quality of care for people with NCDs is lacking.

In addition to improving data, reducing these gaps in care will depend on improving the deficiencies in the overall health system capacity for NCDs. Only 17/35 countries (49%) in the Americas report having evidence-based national guidelines/protocols for NCD management in primary care, while only 7/35 countries (20%) report provision of drug therapy, including glycaemic control, and counselling for eligible persons at high risk to prevent heart attacks and strokes. Sixty percent of countries (21/35 countries) reported all six essential NCD tests and procedures (measurement of height, weight, blood pressure, blood glucose, and total cholesterol, as well as urine strips for albumin assay) being available in public facilities and almost all countries report availability of essential NCD medicines in primary care in the public sector (2).

To improve NCD management, globally recognized evidence-based clinical interventions have been promoted through the WHO Best Buys (7), Chronic Care Model (8), the HEARTS technical package for cardiovascular disease management in primary health care (9), the HEARTS-D module for diagnosis and management of type 2 diabetes (10), the WHO package of essential noncommunicable (PEN) disease interventions for primary health care (11) to support the timely diagnosis and treatment of the main conditions (hypertension, diabetes, cancers amenable to screening and early diagnosis, asthma and other chronic respiratory diseases), as well as the Patient-Centered Medical Home model (12). Table 1 provides a brief inventory of the main PAHO/WHO guidance documents with evidence-based recommendations which can be

TABLE 1. PAHO/WHO resources and tools for noncommunicable disease management in primary health care

	Guidance document	Access to documents
NCDs	WHO package of essential noncommunicable (PEN) disease interventions for primary health care	https://apps.who.int/iris/bitstream/handle/10665/334186/9789240009226.eng.pdf?sequence=1&isAllowed=y
	Passport to Healthy Lifestyle (<i>for NCD self-management support</i>) Essential NCD medicines in the PAHO Strategic Fund for Essential Medicines	https://www.paho.org/en/news/3-5-2012-chronic-care-passport https://iris.paho.org/handle/10665.2/55092
Cardiovascular disease	HEARTS Technical package for cardiovascular disease management in primary health care	https://www.paho.org/en/hearts-americas/hearts-americas-technical-package
	Guideline for the pharmacological treatment of hypertension in adults	https://apps.who.int/iris/bitstream/handle/10665/344424/9789240033986-eng.pdf
Diabetes	Diagnosis and management of type 2 diabetes (<i>HEARTS-D module</i>)	https://www.paho.org/en/documents/hearts-d-diagnosis-and-management-type-2-diabetes
	Classification of diabetes mellitus	https://www.who.int/publications/i/item/classification-of-diabetes-mellitus
Chronic respiratory diseases	Global surveillance, prevention and control of chronic respiratory diseases	https://www.who.int/publications/i/item/global-surveillance-prevention-and-control-of-chronic-respiratory-diseases
Cancers amenable to early detection	Guide to cancer early diagnosis	https://apps.who.int/iris/bitstream/handle/10665/254500/9789241511940-eng.pdf?sequence=1&isAllowed=y
	WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention, second edition	https://www.who.int/publications/i/item/9789240030824
	WHO Position paper on mammography screening	https://apps.who.int/iris/bitstream/handle/10665/137339/?sequence=1
	Early Diagnosis of Childhood Cancer	https://iris.paho.org/bitstream/handle/10665.2/34850/9789275118467-eng.pdf?sequence=1&isAllowed=y

applied in primary care to improve NCD management. While these tools have disease-specific guidelines, they can be used in an integrated approach for NCDs, a principle to coordinate care around people's needs. Furthermore, the tools share common elements to improve quality of NCD care including use of standardized evidence-based protocols and clinical guidelines; a multi-disciplinary primary care team sufficiently trained to deliver NCD services; a core set of essential NCD medicines and technologies that are equitably available and affordable for the system and people affected; referral pathways to higher level care; information system to monitor and ensure follow up; and self-management support.

Recent systematic reviews of the outcomes associated with implementing such chronic care models to manage people with diabetes, hypertension and CVD have shown improvement in outcomes, including improvements in HbA1c for diabetes, reduced risk of heart failure, better adherence to clinical guidelines, and reduced health service utilization (13,14). This was attributed to the focus on communication between health professionals and patients, availability of essential medicines, diagnostics and trained personnel, and coordination between healthcare providers (13,14). Yet, a recent systematic review indicated that implementing a chronic care model had little or no difference to achieving blood pressure control, or reducing overall mortality, although the evidence was very uncertain (15). This highlights the need for more comprehensive evaluation to better understand the contextual factors and implementation modalities that affect success of approaches to improve NCD management.

INTEGRATED APPROACH TO IMPROVE NCD MANAGEMENT

But it is not simply a matter of having guidelines, training providers and ensuring availability of essential medicines and

diagnostics, to improve NCD outcomes. It requires changes in governance, service organization and financing, so that NCDs are integrated throughout the health system (Table 2), and care is coordinated around people's needs. Health systems have historically been built on a model of acute, episodic care, largely focused on infectious diseases. Over time, and with technological advances, health systems have transitioned to highly specialized, hospital-based care, away from people-centered, community-based primary care. This leads to increased segmentation and fragmentation of health services, exacerbating barriers in access to comprehensive, quality services, and poor response capacity at the first level of care, as well as increased out of pocket expenses for users (16).

For the estimated 242 million people (24% of the population) in the Americas that have at least one underlying chronic condition (17), such fragmentation has led to underdiagnosis, unnecessary procedures, or care provided at more complex levels and use of costly services (18). In fact, as an indicator of fragmentation, the hospitalization rate for chronic conditions that could be better managed at the first level of care ranged from 10.8% to 21.6% in countries in the Americas (19).

Integrated care can address fragmentation and is an approach to coordinating and delivering care across the health system, based on people's needs for continuum of care for chronic conditions, that achieves better health outcomes and improved patient experience (16). It includes establishing links between different clinical and social services at the organizational level, such as through multidisciplinary teams, and ensuring that care by providers is integrated into common processes such as shared guidelines and protocols so people receive holistic diagnosis and treatment at the point of care.

This level of integration can increase encounters with persons who would benefit from NCD diagnosis and treatment but would otherwise be missed. It aims to provide care across

TABLE 2. Elements to integrate noncommunicable disease management in primary care

Health system domain	Actions to integrate noncommunicable disease management
Governance	<ul style="list-style-type: none"> Establish policies for integrated chronic care, as part of the national health policy framework Develop national NCD plan of action, that includes clinical and social support interventions for NCD management in primary care Strengthen national NCD program, with adequate financing, human and technical resources
Financing	<ul style="list-style-type: none"> Health budget for the national NCD program, including adequate budget for essential NCD medicines, diagnostics and supplies in primary care Health coverage and social protection for diagnosis and treatment of people with the main NCDs to avoid catastrophic expenses for patient and their families
Service delivery	<ul style="list-style-type: none"> Guidelines/protocols/algorithms for diagnosis and treatment of main NCDs Primary care services that include capacity to identify at risk persons, diagnose, treat and care for persons with NCDs focusing on the person's continuous needs for their chronic conditions Patient education and community support for self-management of NCDs Referral pathway from primary care to specialized care Supplies and infrastructure in primary care clinics to deliver NCD services
Health workforce	<ul style="list-style-type: none"> Training of multi-disciplinary primary care providers in NCD management and quality improvement methods Task shifting Consultations and discussions between primary care providers and specialists Incentives for improving performance and retaining personnel in primary care
Essential medicines and technologies	<ul style="list-style-type: none"> Essential NCD medicines on national formulary Process for drug demand forecasting, distribution, quality control Essential NCD diagnostics included in the health plan, program and services
Health information system	<ul style="list-style-type: none"> Standardized indicators and systematic approach for patient monitoring and program evaluation for main types of NCDs

NCD, noncommunicable disease

the continuum, from primary through secondary and specialist tertiary care, with timely referral pathways and the ability to retain patients in long-term care, rather than having vertical programs for individual diseases.

Furthermore, a health information system that includes NCDs is a necessity when managing chronic conditions. This includes registering patients diagnosed with an NCD, recording any referrals, course of treatment and rates of control, notifications for timely follow up consultations, tracking progress and identifying trends in key NCD indicators. Structured and centralized information, accessible to the entire care team, can greatly aid care teams to anticipate problems, guide changes to treatment plans and reinforce patient's self-management (14).

COVID-19 AFFECTED SERVICES FOR NCD

While an integrated approach for NCD management has grown in the Region of the Americas (8), and the HEARTS in the Americas initiative has expanded throughout the Region, the COVID-19 pandemic has affected the progress. It has reinforced vertical and isolated programs, redirected scarce health resources away from NCDs, as well as had an enormous economic and social impact and disrupted care for people living with NCDs, including interruption of essential NCD medicines (20). While only one country in the Americas reported that outpatient NCD services were fully closed during the pandemic in 2020-2021, there were significant disruptions in health services, such that 54% of countries (19/35 countries) reported limited access to inpatient NCD services (20). Fear/mistrust in seeking health care (20/35 countries), decrease in outpatient volume due to patients not presenting (19/35 countries) and clinical staff deployed to COVID-19 relief (18/35 countries) were the main reasons cited for these disruptions. One of the benefits has been the expansion of telemedicine, which was used to replace in person consultations in 54% of the countries in the Region (19/35 countries) (20), although the coverage of this service has not been documented.

Health services now face the urgent task to recover from the backlog in diagnosis and treatment of persons with NCDs resulting from foregone care, while building more resilient health systems. In this transformation, there is need to evaluate the current response capacity for NCD prevention, diagnosis, and treatment.

WAY FORWARD FOR INTEGRATED NCD MANAGEMENT

Advancing integrated care for NCDs demands strategies for strengthening NCD management across all domains of the

health system (see Table 2). This includes, above all, increasing primary care capacity and competencies to address multiple chronic conditions, and integration with other complementary programs to avoid missing opportunities for persons who would not otherwise be diagnosed and managed for NCDs. Opportunities for integration include services for persons with comorbidities, such as diabetes and tuberculosis; persons requiring chronic care such as patients with HIV/AIDS, particularly older adults. Sexual and reproductive health care can incorporate cervical cancer screening and gestational diabetes, while maternal and child health programs can integrate obesity.

Technology is key to expand and support integrated NCD management. This includes use of telemedicine, new technologies for laboratory tests and diagnostics, improved access to shared electronic health records, and empowering people to manage their condition with the support of mobile phone applications and self-monitoring tests. New technologies can also improve communications between patients and providers through e-consultation, patient portals, as well as interactions among providers through e-referral, integration across providers, and others. Lastly, technology can be applied to improve health information systems that better reflect NCD management by expanding the collection of clinical NCD information and using it to improve quality of care and outcomes. Core NCD indicators, such as risk factors, diagnosis, treatment coverage, treatment outcomes, should be included in national health information systems to provide critical information on NCDs.

Ultimately, integrating NCDs in primary health care is essential for moving towards universal health coverage, as well as empowering people living with NCDs. This can best be achieved by increasing the political will, funding and incentives to integrate NCDs into health systems and implement the available evidence-based tools, as governments rebuild stronger and more resilient health systems after the COVID-19 pandemic.

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Un enfoque integrado para el manejo de las enfermedades no transmisibles en la Región de las Américas

RESUMEN

En este artículo se presenta una visión general de un enfoque integrado para mejorar el manejo de las enfermedades no transmisibles (ENT), así como herramientas para integrar el manejo de las ENT como parte del fortalecimiento de los sistemas de salud en la Región de las Américas. El estudio se basa en un análisis de datos de la Organización Panamericana de la Salud/Organización Mundial de la Salud (OPS/OMS) y en información disponible para el público sobre la atención de las ENT y la capacidad, las interrupciones en los servicios y la orientación sobre el manejo de las ENT. Se destacan las brechas en la atención de estas enfermedades; se estima que 43,0% de los hombres y 28,0% de las mujeres con hipertensión en América Latina siguen sin recibir un diagnóstico, mientras que entre las personas con diabetes, 32,8% en América Central y del Sur no están diagnosticadas. Sin embargo, únicamente 17 de 35 países de la Región (49%) afirman disponer de pautas nacionales basadas en la evidencia para el manejo de las ENT mediante un enfoque de atención primaria, y solo 7 de 35 países (20%) refieren la provisión de farmacoterapia —por ejemplo, para el control glucémico— para las personas que reúnen los requisitos. Para mejorar el manejo de las ENT, es necesario un enfoque integrado para coordinar y brindar atención en todos los niveles del sistema de salud. Esto supone el aumento de la capacidad y las competencias de la atención primaria para abordar diversas enfermedades crónicas y su integración con otros programas complementarios y así no perder oportunidades de diagnosticar y gestionar las ENT. Un enfoque integrado para el manejo de las ENT y la aplicación de las herramientas disponibles deben formar parte de la reconstrucción de los sistemas de salud después de la pandemia de COVID-19.

Palabras clave Enfermedades no transmisibles; atención primaria de salud; integración de sistemas; prestación integrada de atención de salud; Américas

Uma abordagem integrada para o manejo das doenças não transmissíveis nas Américas

RESUMO

O documento apresenta uma visão geral de uma abordagem integrada para melhorar o manejo de doenças não transmissíveis (DNT), bem com ferramentas para posicionar o manejo das DNT como parte integrante do fortalecimento dos sistemas de saúde nas Américas. O estudo tem como base uma análise dos dados da Organização Pan-Americana da Saúde/Organização Mundial da Saúde (OPAS/OMS) e informações disponíveis publicamente sobre cuidados e capacidade de atendimento a DNT, interrupções nos serviços de DNT e orientações sobre o manejo de DNT. São destacadas as lacunas na atenção às DNT. Estima-se que 43,0% dos homens e 28,0% das mulheres com hipertensão na América Latina permanecem sem diagnóstico, e entre aqueles com diabetes, 32,8% na América Central e do Sul permanecem sem diagnóstico. Apenas 17 de 35 países (49%) nas Américas relatam ter diretrizes nacionais baseadas em evidências para o manejo de DNT na atenção primária e apenas 7 de 35 países (20%) relatam o fornecimento de terapia medicamentosa, incluindo medicamentos para o controle glicêmico para pessoas elegíveis. Para melhorar o manejo das DNT, é necessária uma abordagem integrada para coordenar e prestar cuidados em todos os níveis do sistema de saúde. Isso inclui o aumento da capacidade e da competência da atenção primária para atender pessoas com múltiplas doenças crônicas e a integração com outros programas complementares para evitar a perda de oportunidades para o diagnóstico e o manejo das DNT. Uma abordagem integrada ao manejo das DNT e a implementação das ferramentas disponíveis devem fazer parte da reconstrução dos sistemas de saúde após a pandemia de COVID-19.

Palavras-chave Doenças não transmissíveis; atenção primária à saúde; integração de sistemas; prestação integrada de cuidados de saúde; América.
