TRENDS 2021

CHRONIC DISEASE

in Latin America and the Caribbean

A Pan-American Life Insurance Group White Paper

PAN AMERICAN LIFE INSURANCE GROUP

TABLE OF CONTENTS

81%

of deaths in Latin America and the Caribbean are due to the Top Four Chronic, Non-Communicable Diseases (NCD's): Cardiovascular Diseases, Diabetes, Cancer and Chronic Respiratory Diseases[1]

[1] https://www.paho.org/en/topics/noncommunicable-diseases

Executive **Summary**

> The COVID-19 pandemic has further amplified the risks associated with having a chronic disease.

Over the course of a single generation, Latin America and Caribbean (LAC) countries have experienced an historic transformation in their health and disease landscape.

Just thirty years ago, infectious and parasite-transmitted diseases such as gastrointestinal maladies, dengue, malaria and measles were widespread.

Today, the prevalence of these infectious "communicable" diseases has decreased significantly while rates of chronic, "noncommunicable" diseases (NCDs) e.g. cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases, have sky-rocketed and are now responsible for the vast majority of illness, deaths, and health-related costs, muertes y costos asociados con la salud[2]. In addition, chronic mental health and substance use disorders are highly prevalent and often co-exist with NCD's, further complicating treatment.

The numbers of people in Latin America and the Caribbean that suffer or die from one or more NCD's is staggering. Eight out of ten deaths in the region are due to just four NCDs: cardiovascular diseases, diabetes, cancer and chronic respiratory diseases[3].

In addition to excess early deaths, millions of people suffer daily while trying to manage their chronic condition. For example, the Pan American Health Organization (PAHO) estimates that in 2020, 32 million people in the Americas are living with diabetes and 1.2 million in Latin America and the Caribbean are living with cancer.

2 https://www.paho.org/en/topics/noncommunicable-diseases

3 https://www.paho.org/en/topics/noncommunicable-diseases

4 https://www.paho.org/en/news/17-6-2020-COVID-19-has-impacted-operation-health-services-noncommunicable-diseases-americas

The COVID-19 pandemic has further amplified the risks associated with having a chronic disease. Around a quarter of people in the Americas have a chronic disease and are at greater risk of becoming critically ill or dying if they are infected with COVID-19[4].

NCDs are very expensive. Diabetes alone is estimated to cost $70 billion in Latin America and the Caribbean, accounting for up to 12% of national health budgets[5]. For employers, a workforce with chronic disease has higher health care costs, more absenteeism, lower productivity, lower retention, and lower employee morale. A diabetic employee, for example, costs an employer 2.3 more in medical expenses than one without diabetes[6].

On a positive note, a significant proportion of NCD deaths are preventable

In sum, the need for substantive actions to address the excess disability, deaths and costs associated with chronic diseases in Latin America and the Caribbean has never been more urgent.

On a positive note, a significant proportion of NCD deaths are preventable by tackling just four common risk factors: tobacco use, harmful use of alcohol, unhealthy diet, and physical inactivity[7].

The challenge for employers and healthcare professionals seeking to address NCDs is that getting people to adopt healthier behaviors and habits isn't easy. Rising family incomes, wide spread availability of high-calorie, highly processes foods, and urbanization all play a role.

The importance of these so-called "social determinants of health" has been amplified by the COVID-19 pandemic, in which people with NCDs that have lower health literacy, lower incomes, and less access to healthcare have suffered significantly more than their more well off compatriots.

So, what to do?

There IS hope!

Decades of research and experimentation have revealed strategies and approaches that have a proven impact on reducing and preventing chronic diseases. Experience has also revealed what doesn't work.

This report summarizes the latest best practices for designing and implementing chronic care management programs at the employer and community-level. Our goal is to offer practical, actionable guidance that our partners can put to use quickly and effectively.

We also touch on some of the exciting new innovations and technologies that are on the horizon for more effectively preventing and managing chronic disease in Latin America and the Caribbean

As a leader in health insurance and innovation in the region, PALIG is committed to working with its corporate partners, brokers, medical professionals, and members to tackle the challenge of chronic disease in Latin America and the Caribbean. We welcome the opportunity to work with you in this quest.

5 https://www.paho.org/en/topics/diabetes

6 American Diabetes Association, https://www.diabetes.org/resources/statistics/cost-diabetes

7 World Health Organization. Global status report on noncommunicable diseases, 2014. Geneva: WHO; 2014. Disponible en: http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf.

Introduction

As has already happened in the United States and Europe, chronic noncommunicable diseases, with their high rates of disability and costs, have the potential of overwhelming Latin American healthcare systems and economies.

Latin America and the Caribbean countries still have a small window of opportunity to slow these trends and avoid this same fate, but only if forward thinking stakeholders, including major employers, healthcare companies and medical professionals act now.

In this report, we provide an in-depth and fresh look at chronic disease in Latin America and the Caribbean, with a particular focus on what our employer and medical community partners can and should do.

In the first section of this report, we present current **rates and trends** of chronic diseases in Latin America and the Caribbean and examine the underlying causes that explain why the burden of these chronic diseases has been rising more sharply than nearly any other region in the world. We take an in-depth look at the **four key chronic diseases** that are the most important for Latin America and the Caribbean: cardiovascular disease, cancer, diabetes, and chronic respiratory diseases.

We then look at the **costs** associated with these chronic conditions, both to the individual as well as to employers and the healthcare system.

We also review the **causes** of these chronic noncommunicable diseases, both at the individual and societal levels. The importance and role of the social determinants of chronic disease has become very clear during the COVID-19 pandemic.

In the next section of this report, we review some of the most promising **interventions and approaches** to preventing and managing chronic disease.

Finally, at the time of the writing of this white paper, the COVID-19 pandemic was still raging. In the last section, we highlight some innovations that resulted from the COVID-19 experience and offer some early perspectives on the long-term **impact that the COVID-19** pandemic might have on the prevention, management and control of chronic diseases in the Latin American/Caribbean region for perhaps years to come.

Rapid Rise of **NCDs**

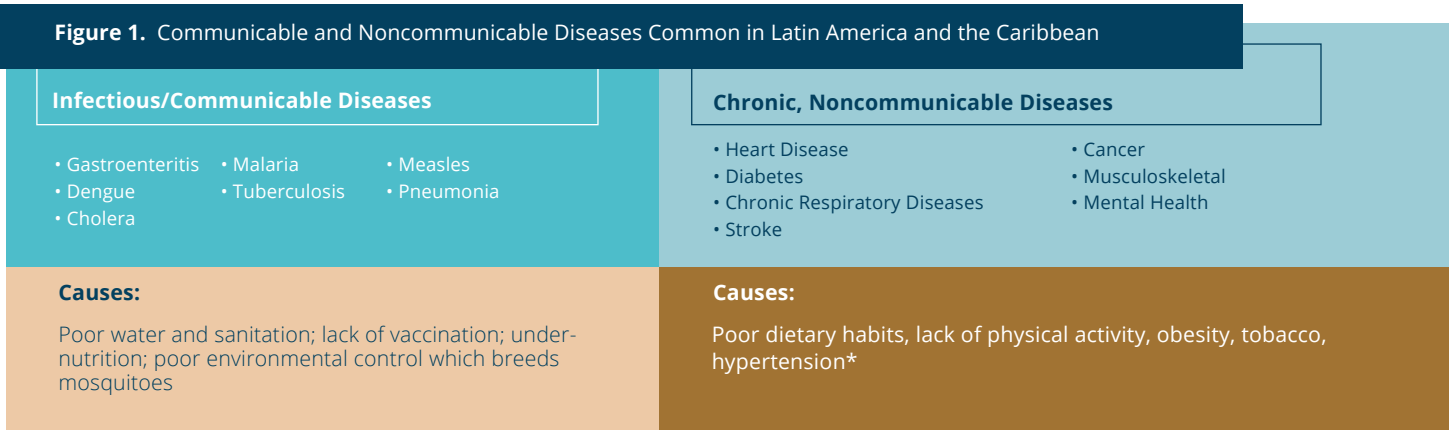
Over the course of just one generation, Latin America and the Caribbean countries have experienced an historic transformation in their health and disease landscape.

Just thirty years ago, infectious and parasite-transmitted diseases such as gastrointestinal maladies, dengue, malaria and measles were widespread. The high prevalence of these conditions was due mainly to inadequate water and sanitation, lower vaccination rates, malnutrition among infants and children, and poor environmental control.

With economic growth and strategic public health programs, Latin America and the Caribbean countries have significantly reduced the incidence, prevalence and deaths from these infectious communicable diseases.

In their place, however, has been an exponential rise in chronic, "noncommunicable" diseases (NCD's) comprised of cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases, among other chronic maladies (Figure 1).

Figure 1. Communicable and Noncommunicable Diseases Common in Latin America and the Caribbean



(*Hypertension is both a cause and outcome of these behaviors)

Figure 2 shows how radically the ranking of diseases and death due to specific conditions changed from 1990 to 2017 in Latin America and the Caribbean. Disease conditions are expressed in Disability Adjusted Life Years (or DALYs), which is a widely used metric that takes into account *both* the prevalence of the disease *and* the deaths associated with disease and allows for easier comparison among very different types of disease conditions.

DALY's (Disability Adjusted Life Years) An easy way to measure and compare disease conditions

In order to compare a wide variety of health and medical conditions, taking into account both morbidity and mortality, researchers commonly use a metric called **Disability Life Adjusted Years or DALYs** per 100,000 people in the population .

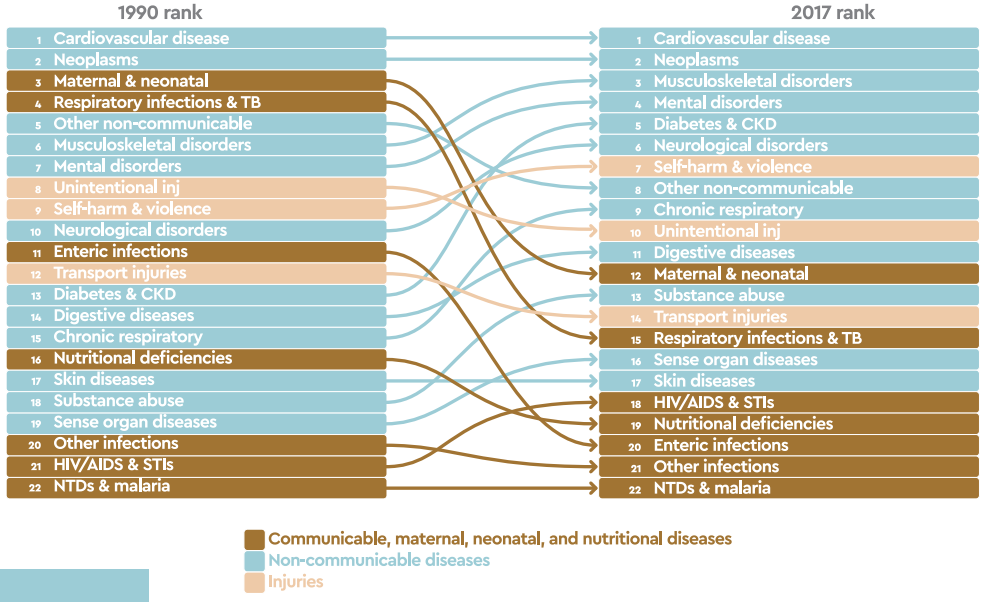


Figure 2. Ranking of Disease Burden (Illness and Death) in Latin America and the Caribbean, by DALYs (Disability Adjusted Life Years)

Sources: The Institute for Health Metrics and Evaluation (IHME) and Global Burden of Disease Collaborators. University of Washington, . 2019. http://www.healthdata.org/. https://ourworldindata.org/burden-of-disease. https://vizhub.healthdata.org/gbd-compare/

Some notable takeaways from this analysis:

The top **communicable** (in gold) diseases which were prevalent in 1990 have been completely replaced by **noncommunicable** (blue), and **injuries** (cream) in the Americas and Caribbean in 2017.

Cardiovascular diseases and Neoplasms (e.g. cancer) were responsible for the most morbidity (illness) and mortality (death) in both periods.

Disease and deaths due to Maternal & Neonatal and Respiratory & TB fell sharply over the period, dropping from the 3rd and 4th highest rank to 12th and 15th, respectively.

Musculoskeletal, Mental and Neurological Disorders rose sharply between 1990 and 2017, and importantly,

Diabetes and CKD (Chronic Kidney Disease) showed the greatest change, rising from 13th place to 5th place.

While most infectious diseases have moved down the ranking, certain communicable diseases, e.g. **HIV/AIDS and STIs** are increasing as a proportion of disease burden.

Epidemiologic Transition

is the "shift from acute infectious and deficiency diseases characteristic of underdevelopment to chronic noncommunicable diseases characteristic of modernization and advanced levels of development."[8]

The speed and severity of this so-called "epidemiologic transition" from infectious communicable diseases to chronic noncommunicable diseases have surprised employers, healthcare institutions and governmental policy makers.

In part because of how rapidly this transition has occurred, there are some widely held beliefs about chronic communicable diseases that are untrue. Some of these myths, along with the facts are presented in the following section.

[8] Omran AR. The epidemiologic transition: a theory of the epidemiology of population change. 1971. Milbank Q. 2005;83(4):731-757. doi:10.1111/j.1468-0009.2005.00398.

Common Myths about Chronic Diseases

Perhaps in part because their rise was so sudden, there are some common myths regarding chronic noncommunicable diseases that are widely held throughout Latin America and the Caribbean. Figure 3 offers a list of some of the most common "myths" about chronic disease in Latin America and the Caribbean [9].

	MYTHS	FACTS
1	Chronic diseases are diseases of affluence; they mainly affect rich people in a society	In fact, all sectors of societies in Latin America and the Caribbean: poor, middle-class and well-off, are have rates of diabetes and other chronic disease [12,13]
2	Chronic diseases are diseases of old age	In fact, half of chronic disease deaths occur in people under 70 years of age
3	Chronic diseases mainly affect men	In fact, they affect women just as much as men. Heart disease is the #1 cause of death among women in the LAC region
4	They are purely the result of individual choices – "unhealthy lifestyles"	In fact, the social and economic context (employment, income, education) are key determinants of chronic disease
5	Nothing can be done to prevent them	In fact, there are many proven effective interventions and programs that can reverse and prevent chronic diseases

Figure 3. Common Myths [10] – and the Facts - Surrounding Chronic Diseases in Latin America and the Caribbean. . [11]

Dispelling these myths is critical as we work to put in place interventions, policies and programs that actually have the intended effects of preventing and reducing NCDs.

In the next section, we look at why there have been so many significant changes in patterns of disease and causes of death in Latin America and the Caribbean over the past 30 years. By understanding the causes of these changes, we are able to design more effective interventions and programs to address the chronic diseases.

[9] De Maio. FG. Understanding chronic non-communicable diseases in Latin America: towards an equity-based research agenda. Globalization and Health 2011; 7:36-44.
[10] World Health Organization: Preventing Chronic Diseases: a Vital Investment. Geneva; WHO, 2005.
[11] De Maio. FG. Understanding chronic non-communicable diseases in Latin America: towards an equity-based research agenda. Globalization and Health 2011; 7:36-44.
[12] Boutayeb A: The double burden of communicable and non-communicable diseases in developing countries. Trans R Soc Trop Med Hyg 2006; 200: 191-199
[13] Moura EC et al. Prevalence and social distribution of risk factors for chronic noncommunicable diseases in Brazil. Rev Panam Salud Publica 2009;26:17-22.

THE BIG 4

NCD
DEATHS/YEAR

Globally, cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.0 million), respiratory diseases (3.9 million), and diabetes (1.6 million), globally. These 4 groups of diseases account for over 80% of all premature NCD deaths.

Cardiovascular diseases
17.9 Million

Cancer
9.0 Million

Respiratory diseases
3.9 Million

Diabetes
1.6 Million

In Latin America and the Caribbean, the probability of a 30-year old individual dying from one of the four main NCDs before his or her birthday ranges from 12% to 18%, depending on which region of the Americas he or she is living. (See Figure 4).

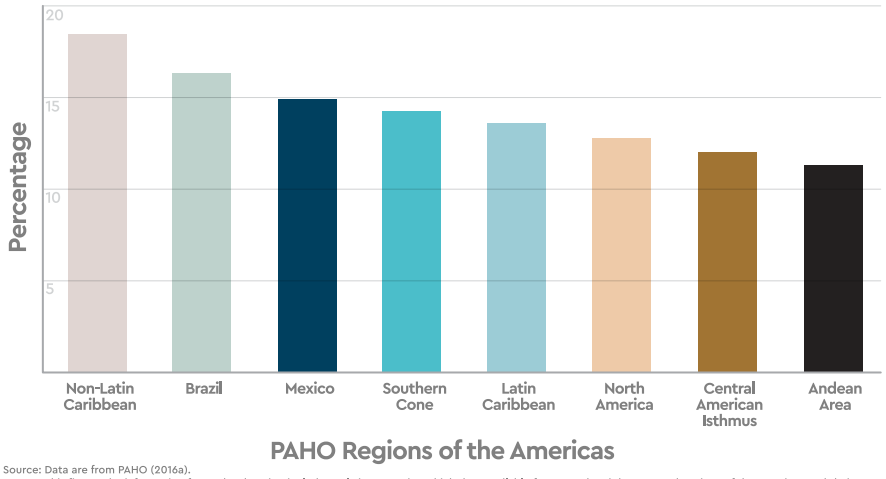
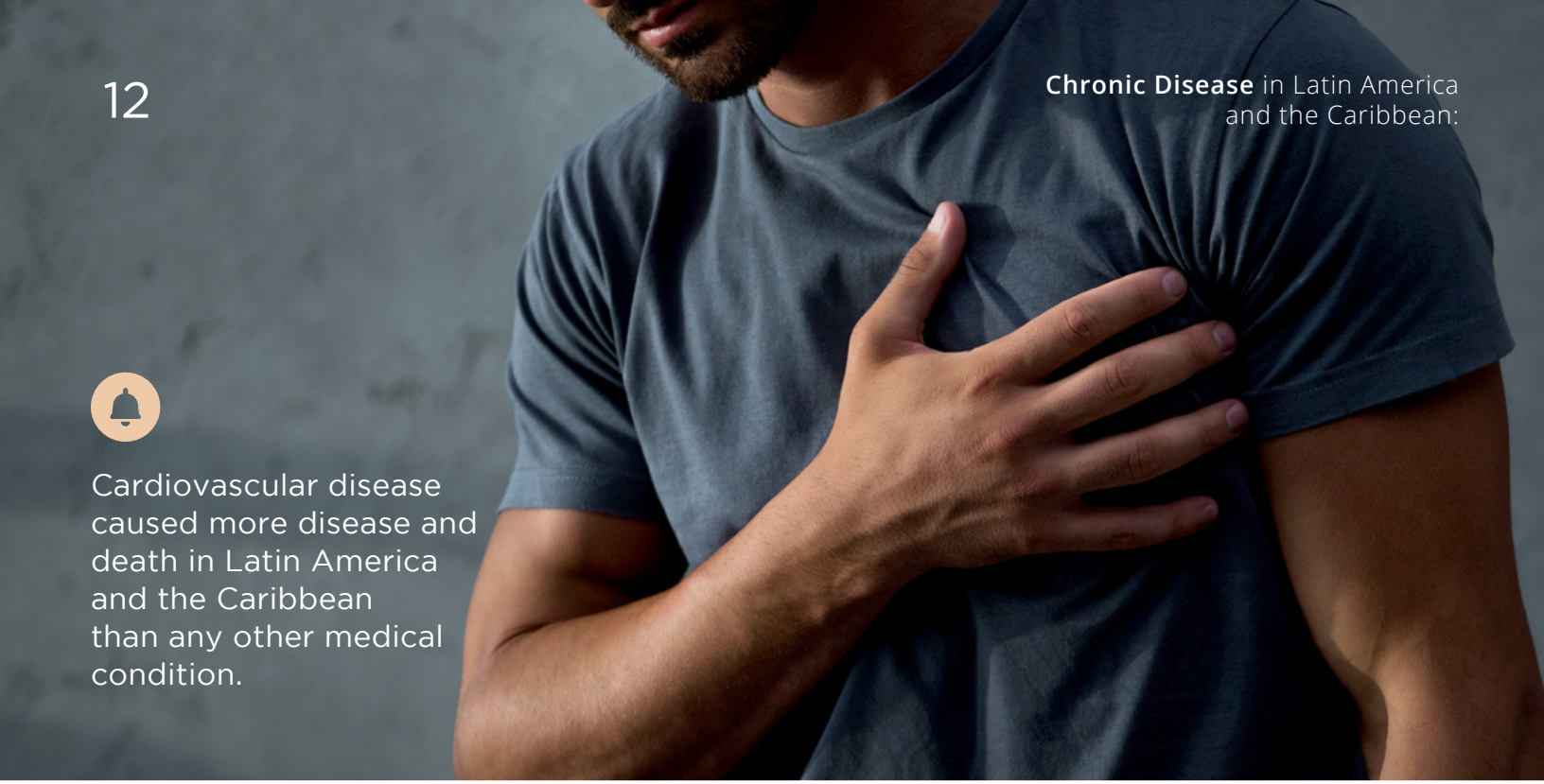


Figure 4. Probability of a 30-Year-Old Individual Dying from One of the Four Main NCDs before His or Her 70th Birthday, in the Eight PAHO Subregions of the Americas in 2012.

Source: Data are from PAHO (2016a).
Note: In this figure, the information for each subregion includes only its countries which data available for 2012. The eight PAHO subregions of the Americas and their countries are: (1) North America: Bermuda, United States of America; (2) Mexico; (3) Central America Isthmus: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama; (4) Latin Caribbean: Cuba, Dominican Republic, Puerto Rico; (5) Andean Area: Colombia, Ecuador, Peru, Venezuela (Bolivarian Republic of); (6) Brazil; (7) Non-Latin Caribbean: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Virgin Islands (U.S.); (8) Southern Cone: Argentina, Chile, Paraguay, Uruguay.

We go into some more depth on each of these key four conditions and their impact in Latin America and the Caribbean in the following section.



Cardiovascular disease caused more disease and death in Latin America and the Caribbean than any other medical condition.

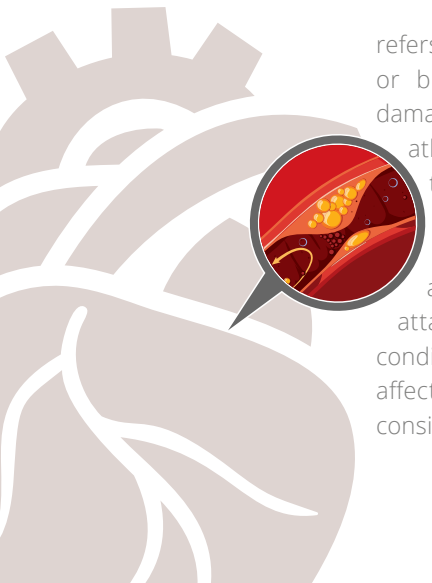
Cardiovascular (Heart) Disease

As we saw in Figure 1, cardiovascular disease caused more disease and death in Latin America and the Caribbean than any other medical condition. Cardiovascular disease represents 34% of total mortality rates in Latin America.

Cardiovascular diseases (CVDs) is a cluster of conditions that includes ischemic heart disease, stroke, and cardiomyopathy myocarditis, among other maladies. Of these, ischemic heart disease and stroke are the most prevalent, accounting for nearly 85% of the CVD burden in Latin America and the Caribbean[14].

ISCHEMIC HEART DISEASE

refers to conditions that involve narrowing or blockage of blood vessels, caused by damage to the heart or blood vessels from atherosclerosis. A build-up of fatty plaque that thickens and hardens on the artery walls, which can inhibit blood flow through the arteries to organs and tissues and can lead to a heart attack, chest pain (angina), or stroke. Other conditions of the heart, such as those that affect the muscles, valves, or rhythm, are also considered forms of heart disease[15].



SOME KEY FACTS REGARDING CVD INCLUDE:

- Unhealthy diet, characterized by a low intake of fruit and vegetables and high intakes of salt, fats, and sugars, increases risk.
- High blood pressure (hypertension) increases risk for CVD. A hypertension lowering diet such as the DASH diet can lower it[16].
- An unhealthy diet contributes to obesity and overweight, which are also risk factors for cardiovascular disease.
- People who are insufficiently active are between 20% and 30% more likely to die prematurely than those who are sufficiently active. Insufficient physical activity and sedentary behavior are key risk factors for CVD, cancer, and diabetes.
- Tobacco use can damage every part of the body and is one of the main risk factors for CVD. It causes an estimated 10% of all CVD deaths.

[14] https://www.paho.org/en/topics/cardiovascular-diseases
[15] https://www.paho.org/en/topics/cardiovascular-diseases
[16] https://www.nhlbi.nih.gov/health-topics/dash-eating-plan

CANCER (neoplasms)

Cancer is the second leading cause of death and disease in Latin America and the Caribbean, responsible for 1.3 million deaths and 3.7 million new cases in 2018. Cancer is the name given to a collection of related diseases.

In all types of cancer, some of the body's cells begin to divide without stopping and spread into surrounding tissues[17].

SOME KEY FACTS REGARDING **CANCER** INCLUDEN:

The number of cancer cases is projected to increase 32%, to more than 5 million cases by 2030, due to the aging of the population and the epidemiological transition in Latin America and the Caribbean.

A myth about cancer is that "nothing can be done to reduce your risk". In fact, 40% of cancer cases can be prevented by avoiding smoking, eating a healthy diet, being physically active, and minimizing alcohol consumption[18].

Cancer screening and early detection programs are the other key pillars to cancer reduction.

CANCER FACTS[19]

40%
of cases

could be prevented by reducing key risk factors

30%
of cancers

can be cured if detected early and treated adequately

See PALIG's previous report in this series, "Reducing Cancer Risk Factors is Possible" for practical insights and guidance in this area.

[17] https://www.cancer.gov/about-cancer/understanding/what-is-cancer
[18] https://www.paho.org/en/topics/cancer
[19] https://www.paho.org/en/topics/cancer

diabetes

DIABETES
IN LATIN AMERICA[24]

WHAT EXACTLY IS DIABETES?

Diabetes Mellitus is a chronic metabolic disease characterized by elevated blood glucose (hyperglycemia). It is associated with an absolute or relative deficiency in the secretion and/or action of insulin.

There are three main forms of diabetes: type 1, type 2, and gestational diabetes. Type 2 diabetes is the most common, accounting for approximately 85% to 90% of all cases.

Metabolic syndrome is characterized by the presence of prediabetes in conjunction with one other cardiovascular disease (CVD) risk factors (hypertension, upper body obesity or dyslipidemia).

32 Million
(or 1 in 10)
People
have diabetes

30%-40%
of peoples
with diabetes in the Americas
are undiagnosed

50%-75%
of cases
of diabetes in the Americas
are uncontrolled

[24] https://www.paho.org/en/topics/diabetes

Diabetes has seen the sharpest rise of any chronic disease in Latin America, quadrupling in number since 1990.

The number of people with diabetes in Latin America and the Caribbean was 32 million 2019 and will reach the 49 million mark by 2040[20].

In part because diabetes is a relatively new phenomenon in Latin American and the Caribbean, many people don't know they have it, and even if they do, they do not have a good understanding of how to control the disease

SOME KEY FACTS ABOUT DIABETES IN LAC:

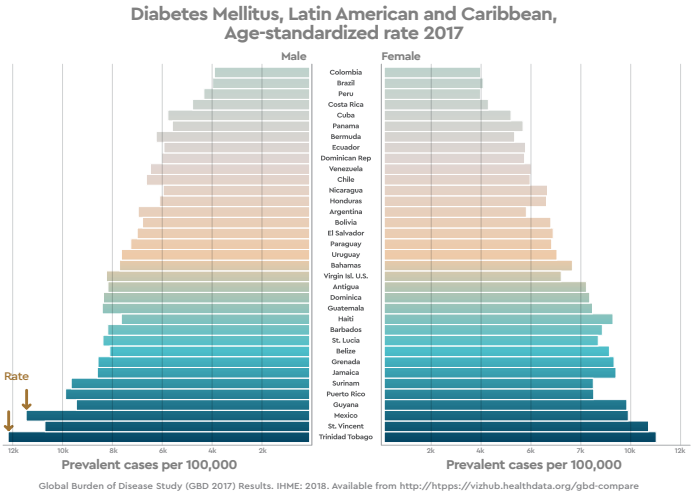
In Latin America and the Caribbean (LAC), the lower consumption of fruit and vegetables, as well as the higher intake of saturated fats, sugar and salt in comparison with other regions in the world, is leading to high rates of of obesity and, consequently diabetes.

Diabetes is frequently undiagnosed or poorly treated[21], and consequently, there are high rates of diabetic complications[22].

Diabetic retinopathy is especially relevant in LAC, where the prevalence of blindness due to diabetes is higher than in any other region in the world[23].

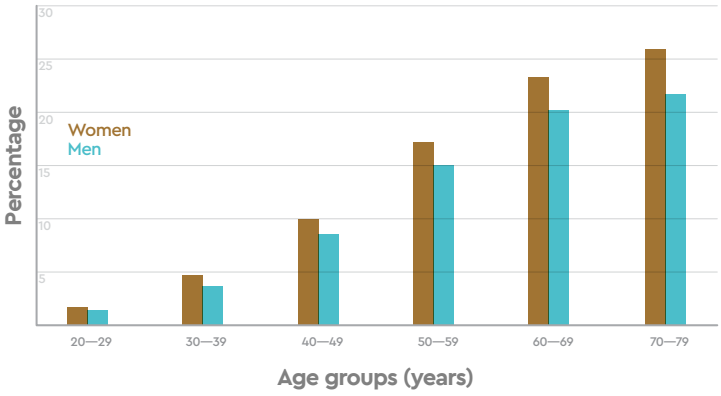
Diabetes rates vary by country, with the lowest rates in Colombia and Brazil and the highest rates in some of the Caribbean island nations (Figure 5).

Figure 5. Diabetes mellitus, Latin America and Caribbean, Age-standardized rate 2017



Diabetes increases with age (Figure 6), but is also very common among middle-aged individuals still in the prime of their working years. As we will explore in a later section of this report, this early onset and chronic nature of diabetes results in high lifetime costs for both employers and carriers.

Figure 6. Prevalence (%) estimates of diabetes by age and sex in South and Central America Region, 2019[25].



A recent review found that "diabetes management in Latin American and Caribbean countries is far from optimal.[26]. The consequences of undiagnosed and uncontrolled diabetes are dire. Left unmanaged, people with diabetes have a higher risk of tuberculosis, extremity damage that can require amputation, and vision loss.[27].

[20] https://www.diabetesatlas.org/en/

[21] Beagley J, Guariguata L, Weil C, Motala AA. Global estimates of undiagnosed diabetes in adults. Diabetes research and clinical practice. 2014;103(2):150–160. 10.1016/j.diabres.2013.11.001

[22] Harding JL, Pavkov ME, Magliano DJ, Shaw JE, Gregg EW. Global trends in diabetes complications: a review of current evidence. Diabetologia. 2019;62(1):3-16. 10.1007/s00125-018-4711-221 https://www.paho.org/en/topics/cancer

[23] Bourne RR, Stevens GA, White RA, Smith JL, Flaxman SR, Price H, et al. Causes of vision loss worldwide, 1990–2010: a systematic analysis. The lancet global health. 2013;1(6):e339–e49.

[27] Lee R, Wong TY, Sabanayagam C. Epidemiology of diabetic retinopathy, diabetic macular edema and related vision loss. Eye Vis (Lond). 2015;2:17. Published 2015 Sep 30. doi:10.1186/s40662-015-0026-2

Chronic Respiratory Diseases

Chronic respiratory diseases (asthma, chronic obstructive pulmonary disease (COPD), emphysema, and chronic bronchitis) cause about 5% of all deaths in the LAC region.

SOME KEY FACTS ABOUT CHRONIC RESPIRATORY DISEASES[28]:

Smoking tobacco is a primary risk factor for chronic respiratory diseases.

Air pollution is the largest environmental risk for public health in the Americas.

Exposure to high levels of air pollution can cause a variety of adverse health outcomes. It increases the risk of respiratory infections, heart disease, stroke and lung cancer. Air pollution affects largely the most vulnerable population, children, the elderly and women.

A NOTE ON MENTAL HEALTH

As we saw in the first table in this report, mental disorders are the fourth highest cause of disability in the LAC region. Although mental and neuropsychiatric disorders are not as often the direct cause of death, they are often co-morbid with other chronic conditions and can have direct impact on the costs of care.

A diabetic employee with depression, for example, costs up to 50% more than a diabetic employee without depressionl [29].

[28] https://www.paho.org/en/topics/air-quality
[29] https://onemind.org/onemindatwork/

costs

Preventable chronic conditions are a major contributor to the costs of health insurance premiums and employee medical claims, which are at an all-time high and continue to rise worldwide (CDC, 2020)

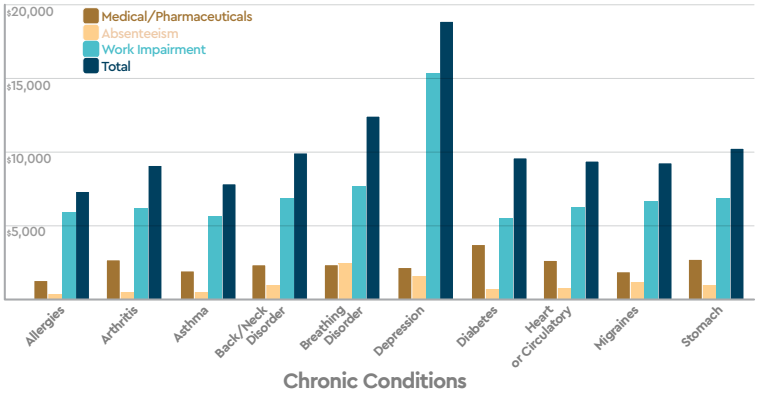
Chronic, noncommunicable diseases are expensive: for individuals, employers, the healthcare system, and to society at large.

Most NCDs are chronic conditions that require expensive treatment regimens and prolonged individual care by increasingly specialized healthcare services. NCDs also have a negative impact on private and public sector income and growth through productivity losses, prolonged disability and increases in health expenditure[30].

Five chronic diseases or risk factors—high blood pressure, diabetes, smoking, physical inactivity, and obesity—cost US employers $36.4 billion a year because of employees missing days of work[31].

An example of the impact of chronic conditions on a major employer in the U.S.[32] is presented in Figure 7.

Figure 7. Total costs for chronic conditions for a major employer in the U.S.



We use diabetes and heart disease as representative examples of the costs of management and care in Latin America and Caribbean.

[30] Bloom DE et al. The global economic burden of non-communicable diseases. Geneva: World Economic Forum. 2011. Disponible en: http://www3.weforum.org/docs/WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicableDiseases_2011.pdf.

[31] https://www.cdc.gov/chronicdisease/resources/publications/factsheets/workplace-health.htm [32] Collins JJ et al. The Assessment of Chronic Health Conditions on Work Performance, Absence, and Total Economic Impact for Employers. J Occup Environ Med 2005:547-57

Fuente: Collins JJ et al. The Assessment of Chronic Health Conditions on Work Performance, Absence, and Total Economic Impact for Employers. J Occup Environ Med 2005:547-57.

COSTS OF DIABETES

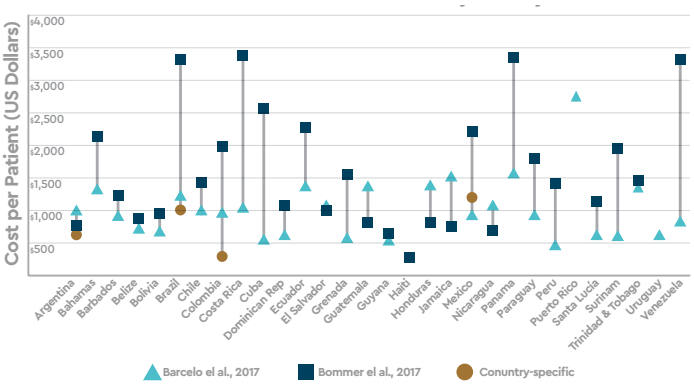
MANAGEMENT AND CARE IN LAC

The total (direct and indirect) costs of managing people with diabetes in Central and South America were estimated at $70 billion (or 12-14% of health budget) in 2019 and will increase to $86 billion by 2045[33].

The current cost of diabetes treatment is estimated to be double the current cost of HIV treatment— reaching as much as US$ 10.7 billion in Latin America alone. Spending on diabetes accounts for 9% of the total health expenditure in South and Central America, including the English-speaking Caribbean countries and Haiti[34]. The total direct cost for diabetes in Latin America is $10.7 billion, or $701 per person with diabetes[35].

The Costs of diabetes include both direct and indirect costs. The direct costs vary by LAC country from a few hundred dollars to about $3,500 per patient (Figure 8).

Figure 8. Direct Medical Costs of Diabetes by Country.



In Mexico, assuming that the prevalence of diabetes and hypertension continues to rise as predicted, it has been estimated that national health spending will have to increase by 5%–7% per year just to meet the needs of the newly diagnosed. In Trinidad and Tobago, the current cost of hypertension and diabetes is estimated to represent 8% of GDP[36].

The costs of chronic noncommunicable diseases include direct costs related to higher medical expenses, insurance premiums, as well as indirect costs associated with absenteeism, productivity and retention.

In the U.S., for example, people diagnosed with diabetes incur average medical expenditures of $16,752 per year, of which $9,601 is attributed to diabetes[37]. People diagnosed with diabetes have medical expenditures approximately 2.3 times higher than what expenditures would be in the absence of diabetes[38].

Indirect costs incurred by employers are presented in the following Figure 9. Of note, the largest impact is on reduced productivity of employees while at work, a finding that is likely also true in Latin America and the Caribbean.

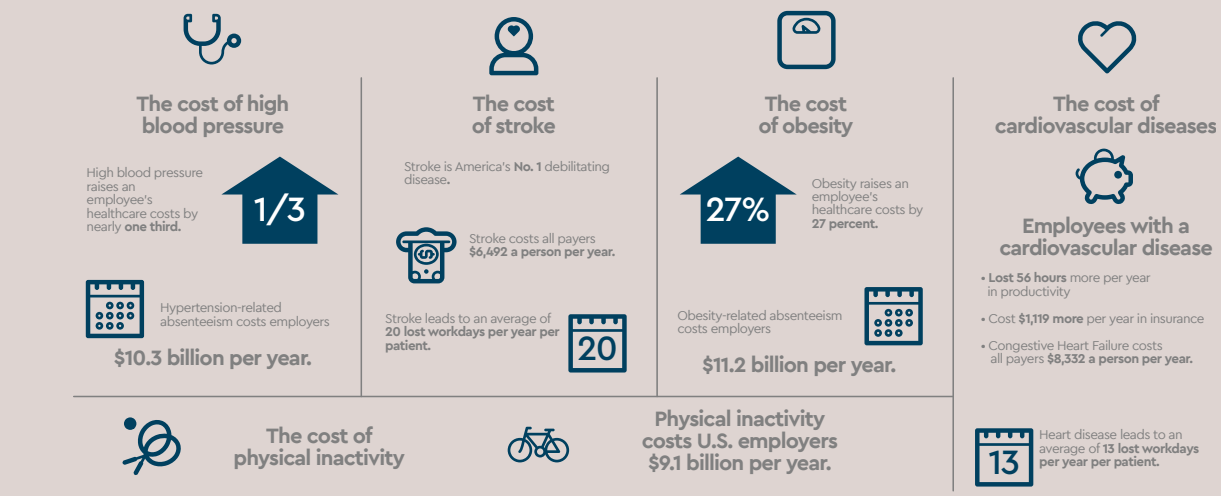
Figure 9. Diabetes Impact on Work Productivity and Costs in the U.S.

Impact on Work Productivity	Cost/Loss Due to Diabetes ($US Billions)	Percent of Total Cost/Loss
Increased Absenteeism	$3.3	3.8%
Reduced Productivity while at work	$26.9	30.7%
Inability to work as a result of disease-related disability	$37.5	42.8%
Lost productive capacity due to early mortality	$19.9	22.7%
TOTAL	$87.6	100%

American Diabetes Association. https://www.diabetes.org/resources/statistics/cost-diabetes

[33] https://www.paho.org/en/topics/diabetes
[34] PAHO. Innovative Care for Chronic Conditions: Organizing and Delivering High Quality Care for Chronic Noncommunicable Diseases in the Americas, 2013.
[35] PCorrea R et al. The status of diabetes and its complications in Latin-American population: a review article. Diabetes Research and Clinical Practice, 168, 2020.
[36] Glassman A, Gaziano TA, Bouillon Buendia CP, Guanais de Aguiar FC. Confronting the chronic disease burden in Latin America and the Caribbean. Health Affairs. 2010;29(12):2142-8.
[37] American Diabetes Association, https://www.diabetes.org/resources/statistics/cost-diabetes
[38] American Diabetes Association, https://www.diabetes.org/resources/statistics/cost-diabetes

Figure 10. Cardiovascular Diseases Burden on Employers



HEART DISEASE

has similarly high costs for employers. According to the American Heart Association (Figure 10).

- High blood pressure raises an employee healthcare costs by nearly one third
- Hypertension-related absenteeism costs employers $10.3 billion per year
- Stroke costs all payers $6,492 a person per year and leads to 20 lost workdays per year per patient
- Obesity raises an employee's healthcare costs by 27 percent
- Obesity-related absenteeism costs employers $11.2 billion per year
- Heart disease leads to an average of 13 lost workdays per year per patient
- Physical inactivity costs U.S. employers $9.1 billion per year

In the next section, we look at why there have been so many significant changes in patterns of disease and causes of death in Latin America and the Caribbean over the past 30 years. By understanding the causes of these changes, we are able to design more effective interventions and programs to address the chronic diseases.

FIGURE [10] Asociación Americana del Corazón. https://www.heart.org/idc/groups/heartpublic/@wcm/@fc/documents/downloadable/ucm_496180.pdf

Core Common Causes

So, now that we understand the drastic shift in the patterns of disease and death in the region, and that these shifts are driving up healthcare costs, the next questions are:

? What caused this tremendous shift to NCDs to occur, and why did it occur so rapidly?

A key takeaway from this report is that all four of the top chronic, noncommunicable diseases (cardiovascular disease, cancer, diabetes, and chronic respiratory disease) share just a handful of key behaviors at the individual level.

- **KEY INDIVIDUAL RISK BEHAVIORS COMMON TO TOP FOUR CNCDS:** cardiovascular disease, cancer, diabetes, and chronic respiratory disease:

These behaviors, in turn, are associated with raised cholesterol, fasting glucose and blood pressure which are common risk factors for a number of NCDs. As seen in Figure 11, these NCD risk factors are very common and ranked some of the highest of any region in the world.

Figure 11. Prevalence of Key NCD Risk Factors in the Americas compared to Worldwide[39].

Risk Factor	Worldwide			Americas			Ranking of the Americas among WHO regions
	Both sexes	Women	Men	Both sexes	Women	Hombres	
Insufficient physical activity	23.3 [16.6–34.5]	26.8 [18.5–38.9]	19.8 [13.4–32.1]	32.4 [22.7–48.1]	37.8 [26.3–54.3]	26.7 [17.4–44.3]	1
Overweight and obesity (BMI ≥ 25 kg/m²)	36.6 [35.3–37.8]	37.3 [35.6–39.1]	35.9 [34.1–37.8]	59.0 [57.1–60.9]	57.8 [55.2–60.4]	60.3 [57.7–63.0]	1
Obesity (BMI ≥ 30 kg/m²)	11.5 [10.8–12.1]	13.7 [12.7–14.7]	9.3 [8.5–10.2]	24.6 [23–26.2]	27.4 [25.2–29.8]	21.7 [19.5–23.9]	1
Alcohol (heavy episodic drinking)	7.8 [6.8–8.8]	3.6 [2.9–4.3]	11.9 [10.6–13.1]	14.0 [12.6–15.4]	7.2. [6.0–8.3]	21.0 [19.3–22.7]	2
Raised total cholesterol	9.8 [8.6–11.2]	10.9 [8.9–13.1]	8.6 [7.3–10.1]	12.6 [10.1–15.4]	13.7 [10.0–18.1]	11.2 [8.6–14.4]	2
Raised fasting glucose	8.3 [7.3–9.4]	7.9 [6.7–9.4]	8.7 [7.2–10.4]	8.1 [6.7–9.4]	7.6 [5.9–9.6]	8.5 [6.5–29.9]	3
Tobacco (smoking)	22.1 [17.5–27.1]	7.3 [5.7–9.0]	36.9 [29.4–45.2]	19.0 [14.9–23.5]	14.2 [11.3–17.4]	24.1 [18.8–17.4]	4
Raised blood sugar	23.2 [21.4–24.8]	21.4 [19.3–23.5]	25.0 [22.6–27.4]	19.3 [17.4–21.3]	16.8 [14.3–19.4]	22.0 [18.9–25.2]	6

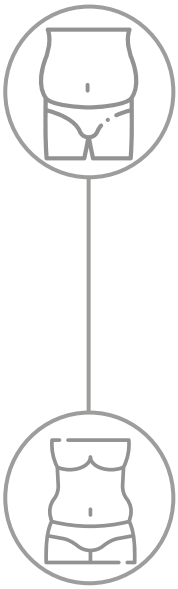
Source: Data from WHO (WHO 2010a and WHO 2014b).
Note: Estimates for all the indicators are for 2010, except for raised total cholesterol (2008). The prevalence rates are age-standardized, except for insufficient physical activity and tobacco smoking. All of the estimates are for persons aged 18+ years, except for tobacco (smoking) and alcohol, where the population covered was aged 15+ years. The alcohol (heavy episodic drinking) values are based on a surveys, and are age-standardized and not corrected for alcohol per capita.

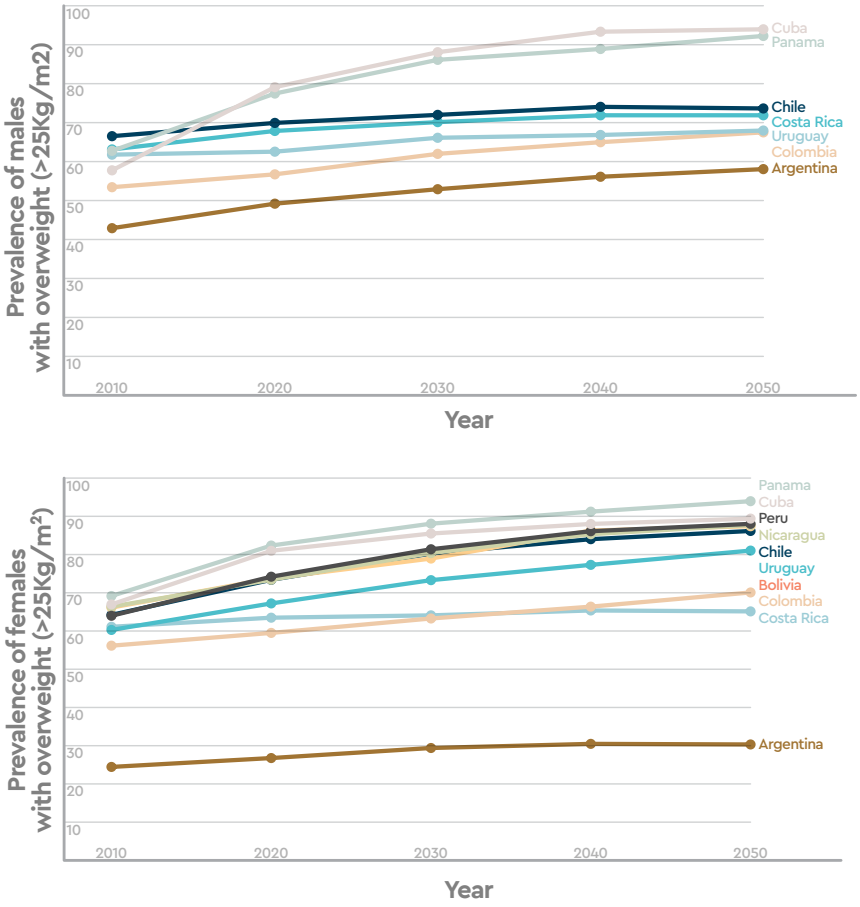
[39] Economic Dimensions of Noncommunicable Diseases in Latin America and the Caribbean. June 2016. Publisher: Pan American Health Organization (PAHO) and Diseases Control Priorities - Third Edition (DCP3). Editor: Branka Legetic, Andre Medici, Mauricio Hernández-Avilla, George Alleye, Anselm Hennis. ISBN: ISBN 978-92-75-11905-1

OBESITY RATES BY COUNTRY

Obesity is a particularly good indicator of risk for diabetes, cardiovascular disease and even cancer. Overweight and obesity rates have been going up across the entire LAC region over the past 10 years and are projected to continue these trends into the future.

Figure 12. Obesity Rates in Select Latin American Countries: Males and Females



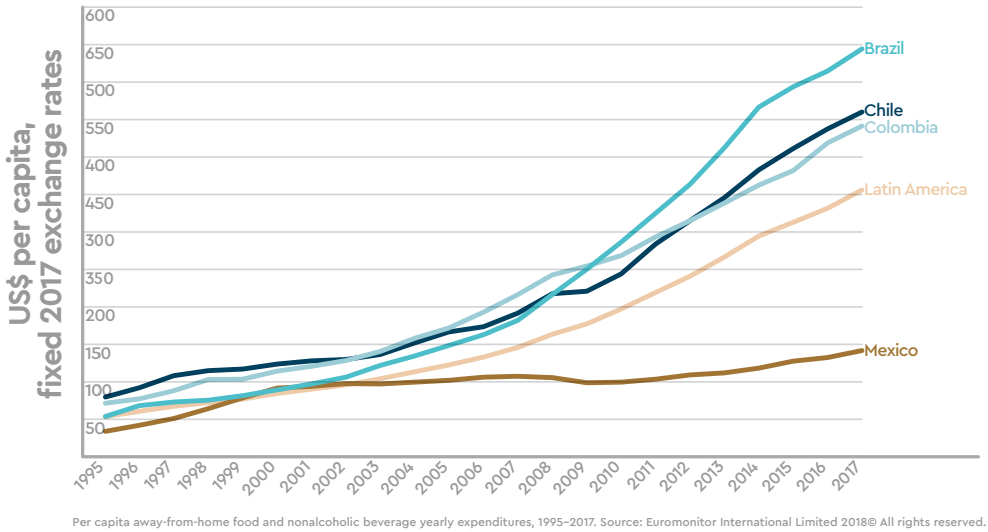


Behaviors that have driven skyrocketing obesity rates in Latin America and the Caribbean

In order to design effective interventions that can reduce the trends described above, we need to drill down a bit further on ***why*** there has been such significant changes in diet, physical activity, and overweight which are common to these NCDs.

One good example is presented in Figure 13, which shows the amount of money spent by Latin Americans on food outside of the home and nonalcoholic beverages over the past few decades.

The amount spent increase 7-10 fold over this period, with a rapid rise in the late 2000's.



Per capita away-from-home food and nonalcoholic beverage yearly expenditures, 1995–2017. Source: Euromonitor International Limited 2018© All rights reserved.

Figure 13. Per capita away-from-home food and nonalcoholic beverage yearly expenditures, 1995-2017 [40].

[40] Popkin BM, Reardon T. Obesity and the food system transformation in Latin America. Obes Rev. 2018;19(8):1028-1064. doi:10.1111/obr.12694

Food and beverages consumed away from home tends to be more calorie dense, more highly processed, and higher in refined grains.

HEALTH LITERACY

Managing a chronic condition can be complex and often requires substantial education exchange and frequent communications among the healthcare provider, patient and their caregivers.

Health literacy which involves the ability to access, understand, evaluate, and use health information to make informed decisions[41]; and can play a crucial role in the management of chronic diseases[42,43].

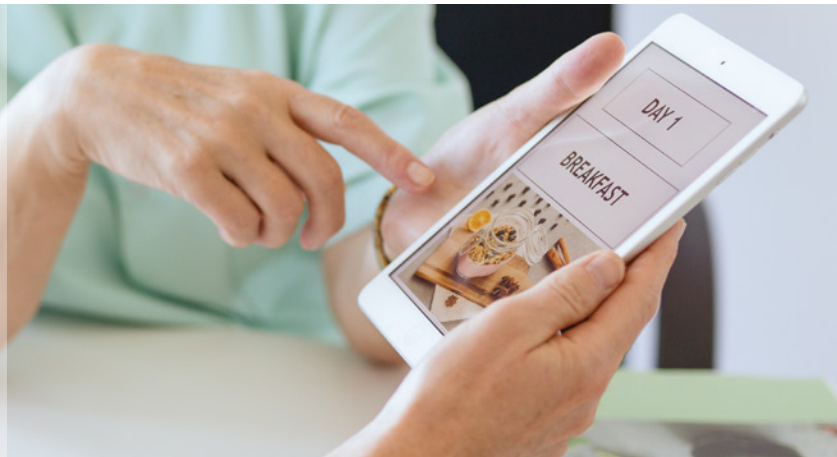
Low health literacy has been associated with lack of use and adherence to proper medication regimens[44], inability to understand and use educational materials[45] and worse proper self-care practices[46]. Oftentimes, patients are overwhelmed with a new diagnosis and not understand this information can compound the patients' stress[47].

Health literacy has traditionally been perceived as solely the responsibility of the individual or patient. It is now recognized, however, that health literacy is also the responsibility of the healthcare system and other institutions (e.g. employers, carriers) that can support, or impede the individuals' ability to learn and access information.

Organizations that provide educational opportunities (e.g. videos and audio in addition to text) and support that is tailored to health literacy abilities of their constituents see the best outcomes from their chronic care management programs[48].

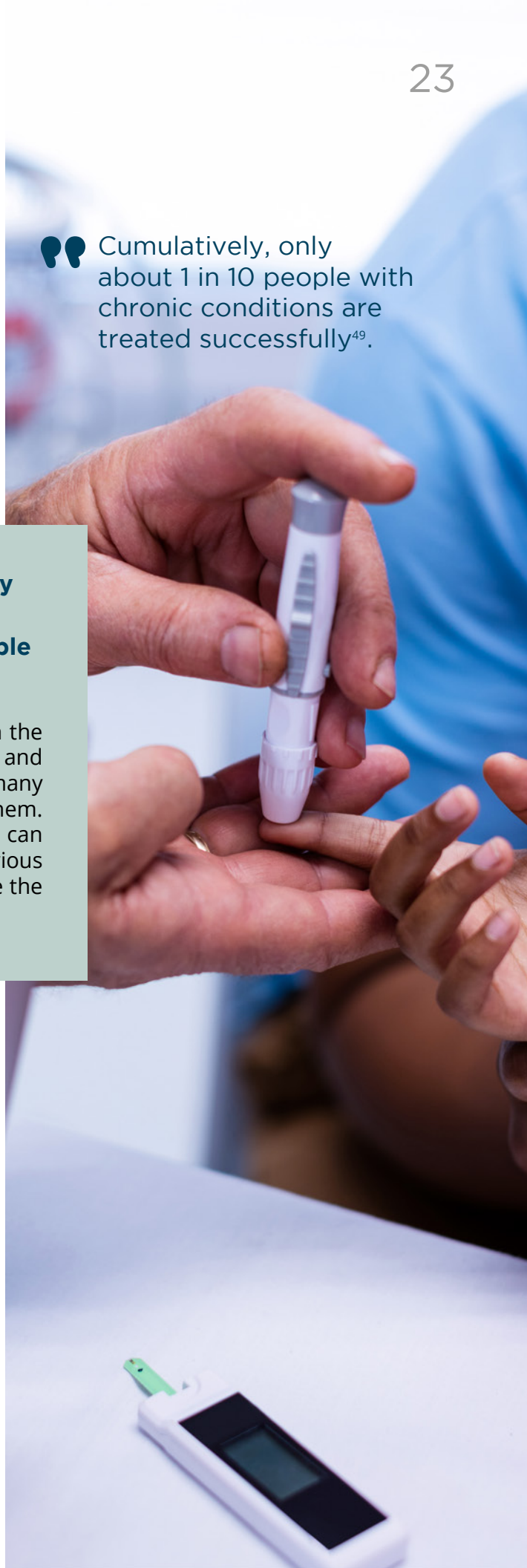
[48] Fors A, Blanck E, Ali L, Ekberg-Jansson A, Fu M, Lindström Kjellberg I, Mäkitalo Å, Swedberg K, Taft C, Ekman I. Effects of a person-centred telephone-support in patients with chronic obstructive pulmonary disease and/or chronic heart failure - A randomized controlled trial. PLoS One. 2018 Aug 31;13(8):e0203031. doi: 10.1371/journal.pone.0203031.

[41] Nutbeam D. The evolving concept of health literacy. Soc Sci Med 2008;67:2071-78.
[42] Van der Heide I, et al. Health literacy in chronic disease management: a matter of interaction. J Clin Epi 2018:102;134-38.
[43] BBerkman ND et al. Low health literacy and health outcomes: an updated systematic review. Ann Intern Med 2011;155:97-107
[44] Salas M et al. Challenges facing drug utilization research in the Latin American region. Pharmacoepidemiol Drug Saf 2020;1:1-11.
[45] Devan H, Hale L, Hempel D, Saipe B, Perry MA. What Works and Does Not Work in a Self-Management Intervention for People With Chronic Pain? Qualitative Systematic Review and Meta-Synthesis. Phys Ther. 2018 May 1;98(5):381-397.
[46] Farley H. Promoting self-efficacy in patients with chronic disease beyond traditional education: A literature review. Nurs Open. 2019;7(1):30-41.
[47] Cutler, S. , Crawford, P. , & Engleking, R. (2018). Effectiveness of group self-management interventions for persons with chronic conditions: A systematic review. MED/SURG Nursing, 27(6), 359–367.



MANAGEMENT AND SCREENING

Management of NCDs — particularly diabetes hypertension and cancer— is suboptimal throughout LAC region. The vast majority of people with chronic noncommunicable diseases (NCDs) do not receive appropriate care. Only about half are diagnosed, and among those patients, only about half are treated. Among the quarter of people with CNCDs who do receive care, only about half achieve the desired clinical .



> Cumulatively, only about 1 in 10 people with chronic conditions are treated successfully[49].

What is the cause of the failures to properly diagnosis and manage people in Latin America who have chronic noncommunicable diseases?

> "In essence, there is a mismatch between the most prevalent health problems (CNCDs) and the ways in which health care systems in many countries are organized to deal with them. This mismatch is historical in nature and can be understood by looking back to previous eras when acute, infectious diseases were the most prevalent health problems".

MEDICATION MANAGEMENT

Medication management and adherence for people with NCDs is generally suboptimal. In studies through the region, patients with hypertension and/or diabetes are not prescribed medications at sufficient levels to control these diseases[50].

Inadequate Screening and Delayed Diagnosis are additional challengess. In the Region of the Americas, for example, still 30-40% of women with breast cancer are diagnosed at late stages, compared to only 10% in industrialized countries.

[49] PAHO. Innovative Care for Chronic Conditions: Organizing and Delivering High Quality Care for Chronic Noncommunicable Diseases in the Americas, 2013.

[50] Zavatini M, Obreli-Neto P, Cuman R. Estratégia saúde da família no tratamento de doenças crónico-degenativas: avanços e desafi os. Rev Gaúcha Enferm. 2010;31(4):647-54.

Solutions and Programs

In this section of the report, we look at ***what can be done*** to slow down and reverse the burden and costs of NCDs in Latin America.

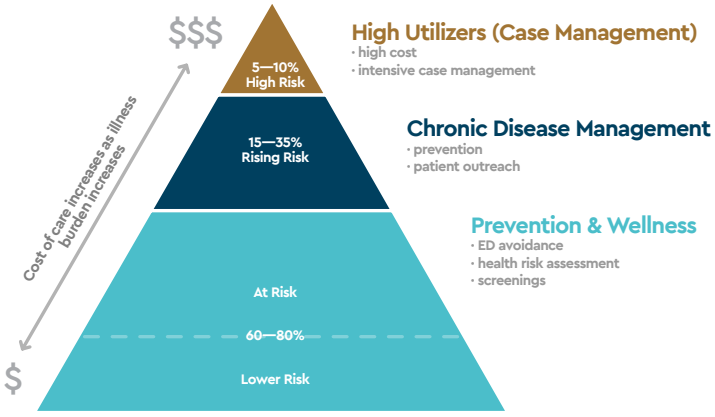
We highlight best practices, effective solutions, and the best practices that have been scientifically proven to make a difference. We offer some strategies and case studies that take into account the context and cultural realities of Latin America and the Caribbean. Finally, we focus on those strategies and programs that put the employer and private sector at the center of the action.

We often hear from our corporate and healthcare partners, “Ok, I get it. We see the problem of chronic diseases is all around us and it is expensive, but what can we do about it”? Below we provide some answers.

LEVELS OF INTERVENTION

There are three basic types of interventions to prevent, manage, and treat chronic disease. These levels of interventions align with three typical groups of employees or community members: (1) the 5-10% of people that already have a chronic disease, (2) the 15-35% of people who are at rising or high risk for a chronic disease, and (3) the 60-80% of people that are lower risk for disease, usually because of their age or better dietary, physical activity habits.

Figure 14. Risk Groups for Chronic Disease, Costs and Most Appropriate Strategies for Care.



As presented in Figure 14, the intervention strategies and approaches are best tailored to each of these groups. Those with a chronic disease are typically actively engaged with the healthcare system and require large amounts of treatment (medical procedures, medications, etc).

At the top of this pyramid are "High Utilizers" tend to be very costly to the system or employer and are best managed through a "Case Management" approach that includes intensive attention by medical professionals. The second, larger group that is at "Rising Risk" requires education and assistance to keep them from getting the disease or from keeping their NCD from getting worse. This group benefits most from "Chronic Disease Management" programs that include prevention, coaching, and peer support.

Finally, the third and largest group, at lowest risk is best served through "Prevention and Wellness" programs. These programs should include health risk assessments and screenings to identify individuals that have or may get a chronic disease, along with education and activities (e.g. worksite fitness programs, healthy menus in cafeterias) to help prevent them from getting a chronic disease.

INTEGRATED CARE SOLUTIONS
FOR CHRONIC CONDITIONS WORK BEST

Traditional disease management programs were typically narrowly focused on a single disease, operated in isolation of the wider social and community context and, were difficult to scale. For example, traditional disease management programs that focused exclusively on enrolling and treating people that already had diabetes did little to address the underlying issues of poor diet, physical inactivity and overweight.

Many of these hyper-targeted approaches may have assisted a small number of participants, but did little to prevent NCDs from increasing in the community or reoccurring after treatment.

The Pan American Health Organization (PAHO) conducted in-depth analysis of what would work better in the Latin American context. PAHO's extensive report and case examples entitled ***Innovative Care for Chronic Conditions: Organizing and Delivering High Quality Care for Chronic Noncommunicable Diseases in the Americas***[51] was a culminating result of these efforts and is highly recommended.

"Integrated care models" that are patient-, rather than disease, centric are most effective

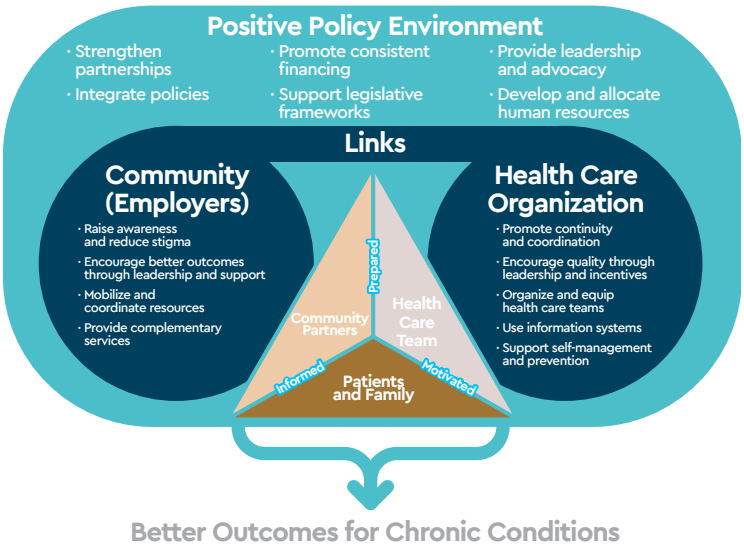
In brief, the subject matter experts that contributed to the PAHO report concluded that "integrated care models" that are patient-, rather than disease, centric are most effective. The PAHO model built upon the well-established "Chronic Care Model" that had been developed in the U.S. and Europe which recognized that managing chronic disease is a "partnership" between a patient and their healthcare provider which requires collaboration and trust[52].

[51] PAHO. Innovative Care for Chronic Conditions: Organizing and Delivering High Quality Care for Chronic Noncommunicable Diseases in the Americas, 2013.
[52] Bodenheimer T, Lorig K, Holman H, Grumbach K. Patient self-management of chronic disease in primary care. JAMA. 2002;288(19):2469-75.

PAHO's "Innovative Care for Chronic Conditions" Framework broadened this scope and recognizes that this partnership between the patient and provider takes place within a broader policy, economic and social environment, i.e. the social determinants of health (Figure 15). Finally, the Innovative Care model places the Community, including Employers, at the center of the action.

Reviews of effective programs in Latin America and Caribbean consistently find that initiatives that are conducted in collaboration with employers and community-based organizations are much more successful in preventing and managing NCDs than those that ignore these important players.

Figure 15. PAHO's Innovative Care for Chronic Conditions Framework



At the core of this chronic care model is the development of an informed, proactive patient population and prepared, proactive health care teams. On the provider side, preparation means having the necessary expertise, information, and resources to ensure effective clinical management. It also means having timely access to the necessary equipment, supplies, and medications needed to provide evidence-based care.

On the other side of the equation, patients must have information, education, motivation, and confidence to act as partners in their care.

Integrated management of NCDs makes sense for at least three important reasons. First, most people have more than one risk factor and/or NCD (e.g., hypertension and obesity, or hypertension and diabetes and/or asthma)[53]. Therefore, it makes sense to treat their conditions within an integrated framework of care. Another reason that integrated care makes sense is that most NCDs place similar demands on health workers and health systems, and comparable ways of organizing care and managing these conditions are similarly effective regardless of etiology.

Third, most NCDs have common primary and secondary risk factors. For example, obesity is a major risk factor for diabetes, hypertension, heart disease, and certain types of cancers, and heart disease may be a long- term complication of more than one chronic condition.

THREE PILLARS FOR SUCCESS
PRACTICAL GUIDANCE

Practitioners require specific, practical guidance that goes beyond a Framework. **Exhibit 1** offers specific objectives and interventions for each of the four leading chronic conditions. For each, interventions are grouped into three categories:

1. **Counseling, Education, and Prevention**
2. **Screening and Early Detection, and**
3. **Treatment**

Exhibit 1 provides detailed guidance for each of the types of interventions, for each of the four major NCDs.

[53] https://www.paho.org/en/topics/noncommunicable-diseases

What Employers Can Do

THE PRIVATE SECTOR, INCLUDING EMPLOYERS AND HEALTHCARE COMPANIES, HAVE A CRITICAL ROLE IN ADDRESSING CHRONIC NONCOMMUNICABLE DISEASES IN LATIN AMERICA AND THE CARIBBEAN.

HOW THE PRIVATE SECTOR CAN CONTRIBUTE TO **NCD** PREVENTION

Employers in the private sector should "promote and create an environment for healthy behaviors among workers by establishing tobacco-free workplaces and safe and healthy working environments..., including good corporate practices, workplace wellness programs, and health insurance plans"

Source: United Nations. Political declaration of the high-level meeting on the prevention and control of noncommunicable diseases. New York: UN; 2011

Unfortunately, workplaces in Latin America and the Caribbean are lagging other regions in offering their workers access to workplace wellness programs and services (Figure 16).

The available literature on worksite chronic care management programs in Latin America are limited, but have been shown to be effective. For example, in a review by Mehta et al of ***Worksite Interventions: Improving Lifestyle Habits Among Latin American Adults***[54], interventions found significant outcomes for improvements in overweight and obesity as measured by body mass index (BMI), weight, waist circumference and waist-to-hip ration.

In addition to "doing the right thing", employers have a strong financial incentive to proactively address chronic diseases among their employees and the communities they serve.

As presented later in this report, there is strong empirical evidence that a workforce with high rates of chronic disease has higher health care costs, more absenteeism, lower productivity, lower retention, and lower employee morale.

WORKPLACE HEALTH MODEL

The U.S. Centers for Disease control has been studying workplace health promotion programs for decades and has recently (2019) released the latest guidance on designing and implementing workplace programs that are effective in promoting good health and reducing the risk of chronic disease.

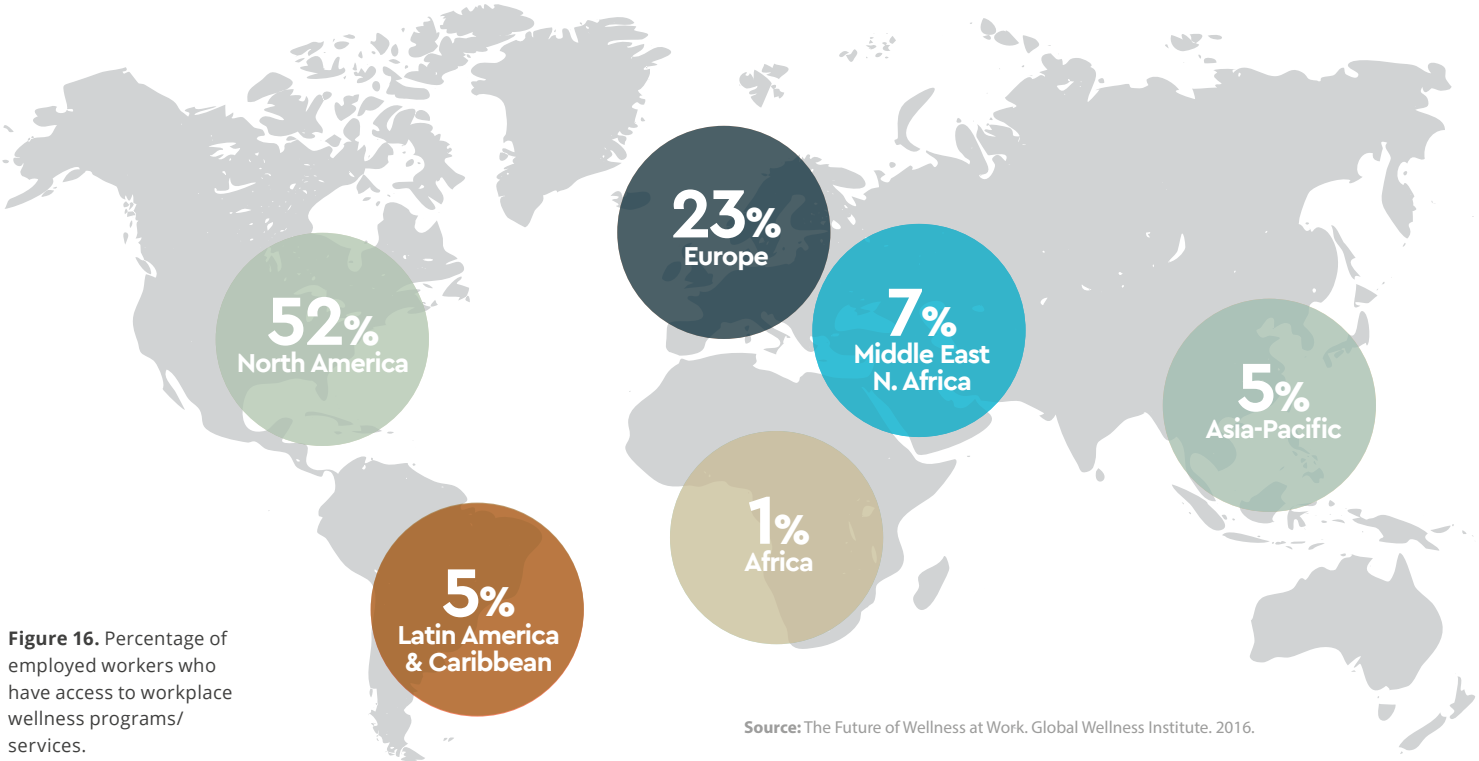


Figure 16. Percentage of employed workers who have access to workplace wellness programs/ services.

Source: The Future of Wellness at Work. Global Wellness Institute. 2016.

[54] Mehta et al. Worksite Interventions: Improving Lifestyle Habits Among Latin American Adults Am J Prev Med 2013;44(5):538-542.

The CDC WorkPlace Health Model is built on four main steps to success

1 ASSESSMENT:

An assessment to define employee health and safety risks and concerns and describe current health promotion activities, capacity, needs, and barriers.

2 PLANNING:

A planning process to develop the components of a workplace health programs including goal determination; selecting priority interventions; and building an organizational infrastructure.

3 IMPLEMENTATION:

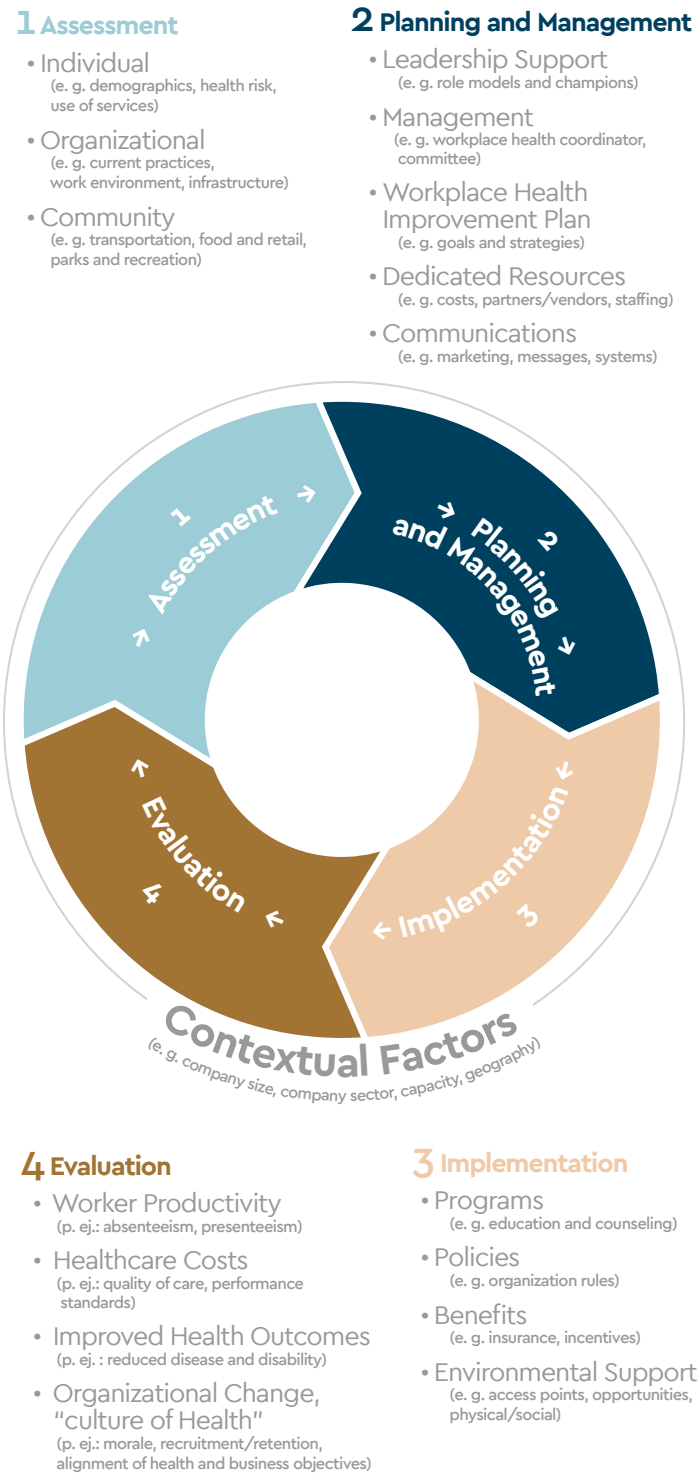
Program implementation involving all the steps needed to put health promotion strategies and interventions into place and making them available to employees.

4 EVALUATION:

An evaluation of efforts to systematically investigate the merit (e.g., quality), worth (e.g., effectiveness), and significance (e.g., importance) of an organized health promotion action/activity.

Components of these four key steps are shown in Figure 17. Additional guidance for employers in implemented these steps is available through the CDC's workplace health promotion website [55].

Figure 17. CDC Workplace Health Model



[55] https://www.cdc.gov/workplacehealthpromotion/index.html

Best Practices for Workplace Programs

Implementing a successful workplace health promotion and chronic care management program are based a number of keys.

Figure 18. Keys to Workplace Health and Chronic Care Program Success

- **Engagement and Support** from Senior Leadership
- The company has identified lead and advisory group that will spearhead, **monitor and champion** the program
- Clearly define the Program **Objectives and Success Metrics**
- The Health Promotion Program complements and aligns with **other corporate initiatives**
- Assess **Company Needs**, Assets and Risk
- **Communicate**, Market and Promote the Program
- **Motivate** the Target (Employee) Population through Recognitions and/or Incentives
- Measure, **Evaluate and Refine** the Program

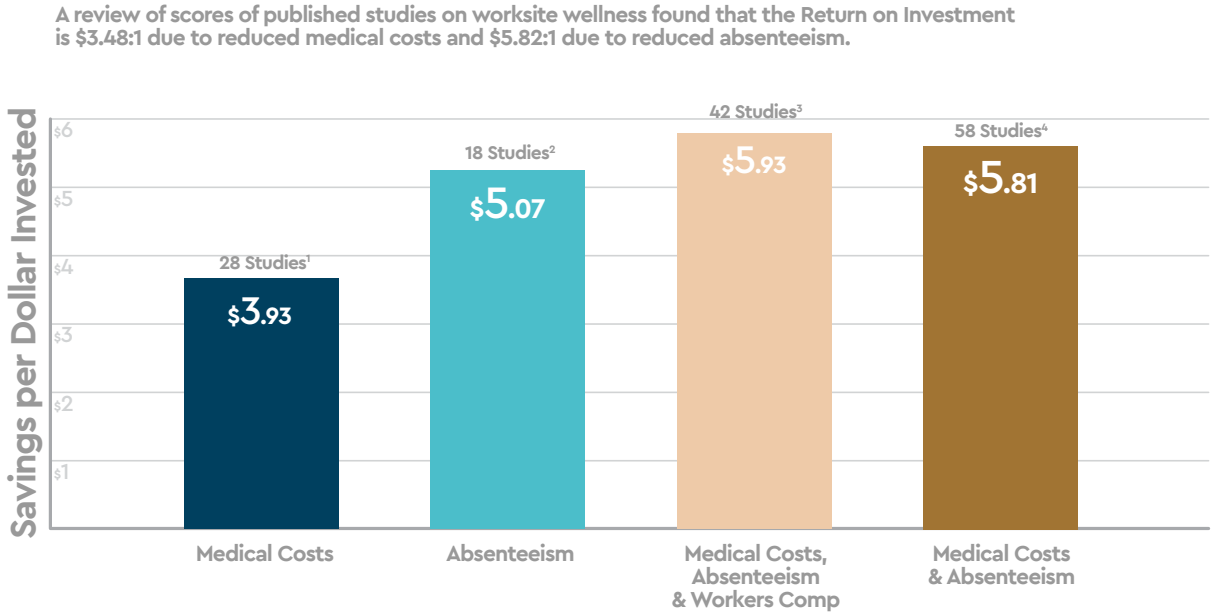
Return on Investment **(ROI)**

There is good evidence, for both incremental and comprehensive programs, that many chronic care and health promotion programs work, if designed and implemented correctly[56].

Workplace health promotion programs have shown even stronger returns on investment. A review of 73 published studies of worksite health promotion programs showed an average $3.50 to $1 savings-to-cost ratio in reduced absenteeism and health care costs[57]. Another review of workplace wellness programs in mostly large companies with more than 1,000 workers found a return-on-investment of $3.27 to $1 for medical costs and $2.73 to $1 for absenteeism[58].

Finally, in a review of over 100 studies, the ROI was $3.48 saved on medical costs per dollar invested and $5.82:1 due to reduced absenteeism (Figure 19).

Figure 19. Return on Investment in Worksite Health Promotion



1 Source: Aldana, SG, Financial impact of health promotion programs: a comprehensive review of the literature, American Journal of Health Promotion, 2001, volume 15:5: pages 296–320.
2 Source: Aldana, SG, Financial impact of health promotion programs: a comprehensive review of the literature, American Journal of Health Promotion, 2001, volume 15:5: pages 296–320.
3 Source: Chapman, LS, Meta-evaluation of worksite health promotion economic return studies, Art of Health Promotion, 2003, 6:6, pages 1–16.
4 Source: Chapman, LS, Meta-evaluation of worksite health promotion economic return studies: 2005 Update Art of Health Promotion, 2005, p. 1–16.

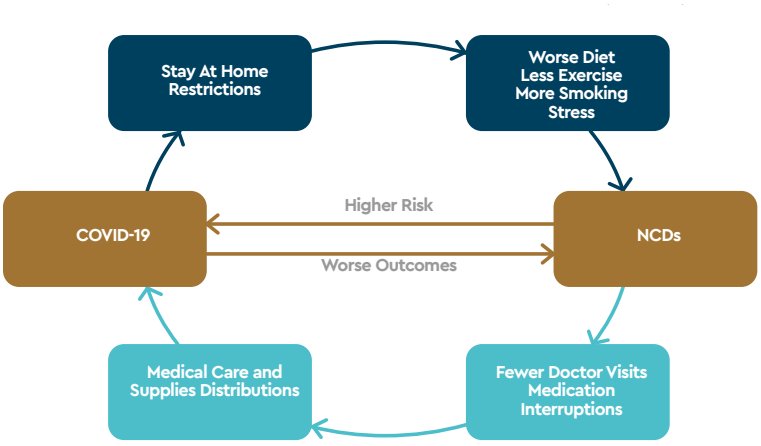
[56] McKinsey Quarterly. How to Design a Successful Disease-Management Program. 2010. https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/how-to-design-a-successful-disease-management-program.
[57] Aldana SG. Financial impact of health promotion programs: a comprehensive review of the literature. Am J of Health Promot. 2001;15(5): 296-320
[58] Baicker K, Cutler D, Song Z. Workplace Wellness Programs Can Generate Savings. Health Affairs. 2010; 29(2): 1-8.

COVID-19
& Chronic Disease

COVID-19 has made managing and preventing chronic disease in Latin America even more challenging and urgent.

As shown in Figure 20, there is a synergistic relationship between COVID-19 and chronic, noncommunicable diseases. Simply put, this means that the presence of each makes the effects of the other worse.

Figure 20. Synergistic Effects of COVID-19 and Chronic Noncommunicable Diseases (NCDs)



Most directly (Figure 20, Red Arrows) people with underlying, chronic conditions like diabetes, kidney disease and hypertension often have suppressed immune function and are therefore at higher risk for getting COVID-19[59].

Conversely, people with NCDs that get COVID-19 often have more severe cases of COVID-19, worse outcomes and higher risk of death[60].

> "This situation is very troubling because it puts people living with NCDs at greater risk of becoming critically ill or dying if they have COVID-19,"
>
> Anselm Hennis, Director of the Department of Noncommunicable Diseases and Mental Health at PAHO, during a media teleconference organized by the NCD Alliance, the Healthy Latin America Coalition, and Mexico Salud-Hable

[59] Sheldon TA. Twin epidemics of covid-19 and non-communicable disease BMJ 2020; 369 doi: https://doi.org/10.1136/bmj.m2618

[60] Hernández-Galdamez DR, González-Block MÁ, Romo-Dueñas DK, et al. Increased Risk of Hospitalization and Death in Patients with COVID-19 and Pre-existing Noncommunicable Diseases and Modifiable Risk Factors in Mexico. Arch Med Res. 2020;51(7):683-689. doi:10.1016/j.arcmed.2020.07.003

In addition, the stay-at-home orders and restrictions associated with the COVID-19 pandemic have substantively changed people's behaviors (Figure 20, Blue Arrows). They have caused people to: eat less healthy diets and gain weight[61]; become more sedentary/less physical active[62]; and consume higher amounts of tobacco and alcohol [63].

The COVID-19 pandemic has also significantly increased people's levels of stress, anxiety and depression[64].

As we reviewed earlier, all of these habits and behaviors are associated with increased risk and severity of chronic, noncommunicable diseases.

325 million
(3 out of 10) people

in the Americas, are at increased risk of developing severe COVID-19 illness due to underlying health conditions.

43 million
people

in the Americas, are high risk, "which means they would require hospitalization due to their underlying health conditions. And within this group, men are twice as likely as women to be at high risk of developing severe COVID-19,"

Finally, services for the prevention and treatment of noncommunicable diseases (NCDs) have been critically affected since the onset of the COVID-19 pandemic in the Region of the Americas (Figure 20, Green Arrows). In June 2020, The Pan-American Health Organization (PAHO) reported that the COVID-19 pandemic was having very significant negative impact on the availability and operations of health services for people with noncommunicable chronic diseases[66].

For example, the region wide survey of the Americas found that: outpatient services were partially interrupted in 18 surveyed countries (64%), two countries (7%) closed their NCD services completely, and in seven countries (25%) they have remained open. These disruptions have affected all types of care for people with NCDs, but more so for diabetes, hypertension, dental care, and rehabilitation services.

The main reasons cited for disruption of NCD services include cancellation of elective care services (58%, 14/24), clinical staff being reassigned to COVID response (50%, 12/24), and patients not keeping their appointments (50%, 12/24).

In sum, there is a real fear by many experts that the changes in key behaviors like diet and physical activity, along with these disruptions in medical care, screenings and proper treatment due to COVID-19, are sowing the seeds for an explosion of chronic disease for years to come.

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Summary and Conclusion

The human toll and costs associated with chronic diseases in Latin America and the Caribbean are at a breaking point and require us to act. The good news is that decades of experimentation with disease management programs have given us the tools and knowledge of how to better prevent, manage and treat of these conditions.

Change for the better is possible, but will require a coordinated, collaborative effort.

We at Pan-American Life Insurance Group are committed to this effort. We look forward to working with our medical, employer and broker communities, and most importantly, our members, to implement solutions that lead to longer, less costly, and healthier lives.

EXHIBIT 1

MANAGEMENT INTERVENTIONS FOR THE LEADING NONCOMMUNICABLE DISEASES (NCDS)

		Primary health care interventions		
NCD	**Disease management objectives**	**Counseling, patient education, and prevention**	**Screening and early detection**	**Traeatment**
Cardiovascular diseases (CVDs)	Assess risk and reduce risks for developing CVD. Diagnose CVD early and accurately. Control high blood pressure. Prevent acute events and complications. Improve self-cure for CVD.	Assess risk for CVD. Educate about risk factor reduction. Educate about healthy lifestyle.	Measure and monitor blood pressure, body mass index (BMI), and blood lipid profile.	Drug therapy for those who have had or are at risk for heart attack and stroke. Hypertension medication. Treatment of new cases of acute myocardial infarction with either: acetylsalicylic acid and clopidogrel, or thrombolysis, or primary percutaneous coronary interventions. Treatment of congestive cardiac failure with ACE inhibitor, beta-blocker, and diuretic.
Diabetes type 2	Prevent diabetes, Including gestational diabetes. Assess risk for developing diabetes. Improve quality of care and outcome in people with type 2 diabetes. Reduce and maintain a healthy body weight. Control blood sugar. Reduce complications from poor diabetes management. Improve self-care diabetes.	Lifestyle educatIon to prevent type 2 diabetes. Prenatal care and intensive glucose management among pregnant women to prevent gestational diabetes. Advice to overweight people to reduce weight by reducing food intake and increasing physical activity. Education on diabetes self-management, including foot care and eye care.	Measure blood sugar. Screen for diabetic retinopathy.	Drug therapy to control blood sugar. Drug therapy to prevent progression of renal disease.
Cancer	Prevent cancer. Detect cancer at early stages. Screen men and women for cancers amenable to early detection (cervix, breast colorectal cancers). Ensure prompt diagnosis, treatment, and supportive and palliative care.	Health education on cancer prevention and healthy lifestyles Hepatitis B vaccination for the prevention of liver cancer HPV vaccination for the prevention of cervical cancers	Examinations for early signs and symptoms of common cancers (lung, prostate, colorectal, breast, cervix, stomach, leukemia, etc.) Breast cancer clinical breast exam and/or mammogram, according to national guidelines. Cervical cancer - pap test, HPV, DNA test, visual inspection with acetic acid (VIA), cryotherapy for treatment of precancerous lesions, according to national guidelines. Oral cancer - screen in high-risk groups such as tobacco smokers. Colorectal cancer - fecal occult blood test or colonoscopy, according to national guidelines.	Refer to secondary level care for diagnosis and treatment, including surgery, chemotherapy, and radiotherapy. Provide post treatment, follow up care. Offer supportive care and palliative care.
Chronic respiratory diseases	Control asthma and COPD. Improve quality of care for persons living with asthma and COPD.	Health education on self-management for persons with asthma and COPD.	Assess asthma control using severity and frequency of symptoms.	Drug therapy to manage stable asthma and COPD, as well as exacerbated asthma and COPD.

Source: https://www.paho.org/salud-en-las-americas-2017/?p=51

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ABOUT PALIG

Pan-American Life Insurance Group is a leading provider of insurance and financial services in the Americas. Pan-American Life Insurance Company, based in New Orleans, is the main member of the group and has provided trusted financial services since 1911. The Group employs more than 2,100 worldwide and offers top-rated life, accident and health insurance, employee benefits and financial services in 49 states, the District of Columbia (DC), Puerto Rico, the U.S. Virgin Islands. The companies that make up this group offer individual or group health, accident and life insurance throughout Latin America and the Caribbean. The Group has branches and affiliates in Costa Rica, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, and 13 Caribbean markets, including Barbados, Cayman Islands, Curacao and Trinidad and Tobago.

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