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# Breakthroughs in Laboratory Diagnostics for Chronic Diseases

Report by FIME

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## Global Laboratory Diagnostics Market for Chronic Diseases

**C**hronic diseases, or non-communicable diseases (NCDs), are persistent medical conditions that deteriorate over time. The illness lasts at least a year, impedes daily activities and requires continuous medical attention. The global healthcare landscape is grappling with a surge in chronic diseases like diabetes, cardiovascular disorders, and cancer. Consequently, the Laboratory Diagnostics market for Chronic Diseases is expanding to meet the escalating demand for accurate, rapid, portable, automated, and integrated laboratory tests tailored to diverse population demographics. The global market's growth propelled by technological advancements, reached USD 207.5 billion in 2024 with a 9.5% compound annual growth rate (CAGR) and an estimated USD 275.39 billion by 2028 with a 7.3% CAGR.

Key drivers include an aging population, sedentary lifestyles, stressful occupations, and evolving consumer preferences. The industry is set to embrace innovations like precision medicine, telemedicine, remote monitoring, genetic testing, and regulatory transformations. Anticipated trends gaining mainstream acceptance encompass point-of-care testing (POCT), artificial intelligence (AI) and telepathology.

### Key Highlights

NCDs kill 41 million individuals annually, accounting for 74% of all deaths globally.

Furthermore, 17 million people die from NCDs before the age of 70, with 86% of these fatalities happening in low- and middle-income nations.

Cardiovascular illnesses cause the most mortality (17.9 million per year), followed by cancer (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (2.0 million, including diabetes-related kidney disease deaths). The four illnesses account for more than 80% of all premature NCD fatalities.

Tobacco use, physical inactivity, alcohol abuse, and poor nutrition all contribute to NCD casualties.

## Relevance of Breakthroughs in Diagnostics for Chronic Diseases

Breakthroughs in diagnostics are pivotal in modern medicine, as they play a vital role to precisely identify disorders and guide treatment decisions.

- **Early Detection Saves Lives:** Diagnostic tests aid in early detection of illnesses, enabling healthcare providers to respond quickly and offer patients better treatment options, potentially saving lives.
- **Tailoring Treatment Plans:** Techniques such as genetic testing assist healthcare providers to come up with personalized therapy by identifying hereditary dispositions and potential adverse reactions to medications.
- **Monitoring Disease Progression:** Long-term management of chronic conditions requires regular check-ups to enable healthcare providers to monitor progression and ensure patient well-being.
- **Controlling Disease Spread:** Quick diagnosis is the hallmark of any effort to contain outbreaks of infectious diseases like influenza, COVID-19, and sexually transmitted infections to prevent further transmission.
- **Advancing Medical Research:** Advancements in technology have enabled healthcare professionals to identify previously undetectable conditions, leading to innovative treatments and medical breakthroughs.

## Limitations of Traditional Diagnostic Methods

Traditional diagnostic methods face limitations in terms of precision, speed, and portability, unlike newer diagnostic

approaches that offer broader applicability. Molecular diagnostic techniques, exemplified by Nucleic Acid Amplification (NAA), have significantly enhanced disease surveillance by providing healthcare professionals with powerful tools. NAA allows for the identification of pathogens, detection of treatment resistance, and insights into pathophysiologic aspects at a more fundamental level compared to traditional methods.

- **Traditional vs. Molecular and genomic approaches:** Molecular / genomic technologies have transformed medical microbiology by enabling faster and more precise diagnostics for infectious illnesses. Traditional methods, such as bacterial growth and biochemical tests, are time-consuming and may not effectively identify antibiotic resistance. Moreover, traditional approaches rely on organism viability, making the culture of certain types challenging.
- **Transition to Molecular Methods:** Laboratory molecular tests have replaced culture tests in various areas, including MRSA Surveillance, Gastrointestinal Pathogen Panels, and Blood Culture Panels. Most laboratories have shifted from viral cultures to molecular methods for tests related to Influenza, Respiratory syncytial virus, Herpes simplex virus, Varicella zoster virus, Cytomegalovirus, and Enterovirus. Additionally, molecular methods have replaced manual parasitology processes, incorporating parasites on Gastrointestinal Pathogen Panels and offering Malaria Speciation Panels.

Diagnostic Technique	Pros	Cons
Traditional diagnostic techniques	Common and frequently used	Inadequate specificity and sensitivity
	Inexpensive	Longer processing periods
	Compatible in resource-limited situations	Potential failure to detect early-stage illnesses
	Offers visual details through basic imaging and microscopy	Insufficient capability to identify antibiotic-resistant strains
Molecular and genomic approaches	High accuracy and precision	Demands specific tools and expertise
	Rapid identification and diagnosis	Surge in expense than traditional approaches
	Competence to spot early-stage illnesses	Interpreting and analyzing data can be challenging
	Prospects for focused medicines and personalized medicine	Uniformity problems across many platforms/methods
	Quick detection of antibiotic-resistant strains	Concerns about ethics regarding genetic data



# The United States and the LATAM Laboratory Diagnostics Market

## Market Overview of US Laboratory Diagnostics Market

The United States (US) laboratory diagnostics market is one of the most competitive across the world, involving hospital-based, point-of-contact testing (POCT) and independent pathology labs. In recent years, the laboratory diagnostics testing industry in the US has advanced rapidly with the incorporation of new technology such as robots, AI, machine learning (ML), cloud computing and other patient data management systems.

- **Market Size:** The US laboratory diagnostics market was worth USD 82 billion in 2023. Between 2024 and 2030, revenue is expected to grow at a CAGR of 9%, reaching USD 149.90 billion. The market is expected to consolidate with key players leveraging influence to expand in semi-urban areas. The Clinical Laboratory Improvement Amendments

(CLIA) regulates human laboratory tests in the US, excluding research, by the Centres for Medicare & Medicaid Services (CMS). The Division of Clinical Laboratory Improvement & Quality, part of the Quality, Safety, and Oversight Group, executes the CLIA Program. The enrollment of Laboratories Registered (Exempt/Non-Exempt) under CLIA includes 318,814 labs.

- **Top chronic health conditions impacting population health in US:** Chronic disease affects 6 in 10 US adults, with 4 in 10 living with multiple conditions. It is a leading cause of disability and contributes to USD 4.1 trillion in annual healthcare spending. Major ailments include heart disease, cancer, stroke, diabetes, and kidney disease. Lifestyle risk factors include tobacco use, poor nutrition, physical inactivity, and excessive alcohol intake.



### Stroke

Stroke is the number five cause of death and a leading cause of disability in the US

The US experiences 795,000 strokes annually, resulting in over 140,000 deaths, with 40% of these occurring in males and 60% in females, according to statistics.

12.63%

Average readmission rate

2X

Non-Hispanic Black adults are twice as likely to have a stroke than White adults

7.31%

Average readmission rate

### Top 3 Co-Morbidities

- High cholesterol
- Contact with & (suspected) exposure to Covid-18
- High blood pressure



### Cancer

Breast, Colorectal, Lung and Prostate Cancers account for almost 50% of all new cancer cases in the US

Cancer in the US is the second leading cause of death, with over 1.7 million people diagnosed annually and nearly 600,000 deaths

### In 2023

2M

Roughly 2 million people were diagnosed with cancer



Breast cancer was most common among females (297,000)



Prostate cancer was most common among males (288,300)



Lung cancer was third most common (120,790 among female & 117,550 among males)



### Diabetes

More than 1 million Americans are newly diagnosed with diabetes each year

Over 37 million Americans suffer from diabetes, while 96 million have prediabetes, a condition that increases risk for Type 2 diabetes.

16.53%

Average readmission rate



1 in 4 adults don't know they have diabetes

6.02%

Average length of stay in days

### Top 3 Co-Morbidities

- High cholesterol
- Contact with & (suspected) exposure to Covid-18
- High blood pressure



## Chronic obstructive pulmonary disease (COPD)

COPD is the name for a group of lung diseases including chronic bronchitis, emphysema, and some types of asthma.

**COPD, the fourth leading cause of death in the US, affects 6.4% of the population, with over 50% of adults afflicted with low pulmonary function unaware of it.**

**17.19%**

Average readmission rate



The medical cost of COPD is \$24B each year among adults 45 and older

**3.82%**

Average length of stay in days

### Top 3 Co-Morbidities

- Contact with and (suspected) exposure to covid-18
- High cholesterol
- Personal history of nicotine dependence



## Heart Disease

Heart diseases cause **860,000 deaths** and cost the healthcare system approximately **\$2.16 billion** each year.

**In the US, over 1 in 10 adults are affected by heart disease, which is the leading cause of death for most racial and ethnic groups.**

**18%**

Average readmission rate



Death from heart disease contributes to \$147B in lost job productivity

**6.42%**

Average length of stay in days

### Top 3 Co-Morbidities

- Hyperlipidemia, unspecified
- Contact with and (suspected) exposure to COVID-19
- Atherosclerosis

### Top 3 Cardiovascular Disease in Tropical Latin America

Cardiovascular Disease Type	Prevalent Cases	Deaths
Ischemic heart disease	5,142,923	170,517
Other cardiovascular and circulatory diseases	3,547,974	9,057
Rheumatic heart disease	3,047,102	2,823

### Top 3 Cardiovascular Disease in Southern Latin America

Cardiovascular Disease Type	Prevalent Cases	Deaths
Ischemic heart disease	2,609,524	57,655
Other cardiovascular and circulatory diseases	1,700,581	8,696
Lower extremity peripheral arterial disease	983,138	567





### Market Overview of LATAM Laboratory Diagnostics

**Market** In the US, over 1 in 10 adults are affected by heart disease, which is the leading cause of death for most racial and ethnic groups.

The LATAM laboratory diagnostics service market is expanding due to increased disease prevalence across the region. Industry players are introducing innovative services like biochips, microarrays, and companion diagnostics to boost early disease detection. Biochips process DNA, RNA, or protein samples on a single chip, while companion diagnostics help physicians identify suitable treatment options, reducing healthcare costs.

The LATAM laboratory market is expected to reach USD 17.59 billion by 2030, with a 3.6% CAGR. New technologies such as multiplex diagnostic cassettes, high-throughput analyzers, and automated devices have ramped up the diagnostic capacity of labs like Diagnosticos da America SA to attain a milestone of 10 million tests per day. Diabetes prevalence in Latin America is increasing, with the condition ranking among the top five causes of death in Mexico and Puerto Rico. The overall incidence of diabetes in Mexico was close to 17% in 2021. By 2045, the illness is likely to impact more than 21 million individuals. Puerto Rico ranks second in Latin America with 17.7% of adults living with Type 2 diabetes in 2022.

- **Cancer:** Latin America's nine most populous nations are projected to experience a 64% rise in annual cancer diagnoses by 2040. Brazil alone is likely to face 1 million new cases yearly. Elevated Body Mass Index (BMI) heightens the risk of various cancers. High BMI increases the risk of breast, colorectal, oesophageal, kidney, gallbladder, pancreatic, and liver cancers. Carcinogens like tobacco, secondhand smoke (SHS), and alcohol are

leading preventable risk factors in Latin America and the Caribbean. Although smoking and SHS exposure have decreased since 2000, alcohol consumption remains high.

In 2022, the American Association for Cancer Research (AACR) introduced the AACR MONARCA Grant for Latin America to cultivate the next generation of cancer researchers. Predicted age-standardized death rates for all cancers are anticipated to decrease across Latin America, excluding Venezuelan women. Mexico has the lowest expected overall cancer mortality rates at 69.8/100,000 for men and 62.5/100,000 for women, contrasting with Cuba, which has the highest rates at 133.4/100,000 for men and 90.2/100,000 for women. Stomach cancer leads among men in Chile (14.3/100,000) and Colombia (11/100,000). Colorectal cancer rates, albeit decreasing, remain elevated in Argentina (14/100,000 men). Breast cancer rates are globally declining, yet remain high in Argentinean women (16.5/100,000). Lung cancer mortality rates are expected to decrease, but Cuba maintains significantly higher rates than Mexico. Cervical cancer rates, while decreasing, persist at high levels in Argentina, Cuba (10/100,000 women), and Venezuela (13/100,000 women) due to insufficient screening and control measures.

- **Cardiovascular Disease (CVD):** In Tropical Latin America, age-standardized cardiovascular disease (CVD) mortality rates surged 1.3-fold in 2021, notably marked by a substantial increase in endocarditis. Conversely, strokes experienced a significant decline. Hypertensive heart disease emerged with the highest age-standardized Disability-adjusted life years (DALY) rate at 222.5, primarily attributed to elevated systolic blood pressure. The risk of CVD was heightened by factors such as obesity, smoking, aging, unhealthy diets, and sedentary lifestyles.

# Segmental Overview

Clinical Chemistry and Immunology Testing present significant growth opportunities. Immunochemistry testing, vital for identifying antibodies and assessing immune health, is crucial in diagnosing conditions like diabetes and cardiovascular diseases. The clinical chemistry segment dominated the Latin America diagnostic lab services market in 2022, particularly in

early cancer screening domain. Government initiatives in the region and increased application of healthcare practices are expected to further boost the growth of the market. In the U.S., the bioanalytical testing services market, valued at USD 1.56 billion in 2023, is anticipated to reach USD 3.40 billion by 2032, growing at a CAGR of 9%.

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## Benefits of Early Detection of Chronic Disease

Early detection of chronic diseases offers a spectrum of benefits. In Latin America, Ecuador, Honduras, Nicaragua, and Venezuela are pioneering localized therapies with meglumine antimoniate and thermotherapy for cutaneous cases, supported by the Pan American Health Organization (PAHO). This innovative approach aims to enhance treatment efficacy and outcomes. The Global Diabetes Compact (GDC), initiated by the World Health Organization (WHO), focuses on improving diabetes prevention and care, targeting a one-third reduction in premature mortality due to NCDs by 2030.

Early detection not only improves treatment options but also contributes to a better quality of life for those with chronic conditions. Proactive management of symptoms, supported by initiatives like the GDC, ensures a holistic approach to healthcare. Moreover, it proves to be more cost-effective, preventing the need for intensive treatments associated with

advanced disease stages. St. Jude Children's Research Hospital implements a pediatric early warning system (PEWS) in Latin America, identifying severe complications and guiding clinical teams to optimize therapy.

Prevention of complications is a key outcome of early detection, reducing the risk of severe health issues. St. Jude's Proyecto Escala de Valoración de Alerta Temprana (EVAT) has implemented PEWS in nearly 100 hospitals across Latin America and Spain to reduce childhood cancer rates. Additionally, early detection initiatives contribute to improved awareness and education about chronic diseases. Everly Health's partnership with the National Kidney Foundation focuses on educating Americans about kidney health, promoting early detection, and fostering better health outcomes. These initiatives collectively shape a proactive and informed approach to managing chronic diseases, ultimately benefiting individuals and communities.







## Technological Advancements in Diagnostics

Technological advancements in diagnostics have ushered in a transformative era in medical detection and monitoring.

Key developments include the revolutionary Next-Generation Sequencing (NGS), a powerful technology that analyzes genetic characteristics comprehensively. NGS can sequence an individual's entire genome or focus on specific regions like the exome, identifying genetic variations linked to inherited diseases. It is pivotal in oncology for tumor profiling, enabling personalized treatment plans by studying genetic alterations in tumor cells. NGS also plays a crucial role in infectious disease testing, categorizing pathogens for swift and reliable diagnoses.

The Latin America NGS market is projected to reach USD 765.2 million by 2031, with a 13.9% CAGR from 2024 to 2031. Key drivers include government initiatives, sequencing innovations, cost reductions, rising cancer rates, and NGS integration in therapy.

MGI Tech and Pensabio are teaming up for a genomic database in Brazil to tackle hereditary cancers, a significant move as the country could face 800,000 cancer cases by 2030. Major global NGS providers like Illumina and Thermo Fisher Scientific likely play a significant role in meeting the region's demand.

Liquid biopsy technologies have emerged as potent non-invasive tools in cancer diagnostics. Circulating Tumor Cells (CTCs) detached from the primary tumor provide insights into tumor characteristics, while Circulating Tumor DNA (ctDNA) in blood samples aids in monitoring treatment response and detecting residual disease. Exosomes, small vesicles carrying biomolecules released by cells, offer a molecular profile of tumors, aiding clinicians in understanding characteristics, drug resistance, and monitoring biomarkers.

Illumina, a leading U.S. genomics company, has unveiled an upgraded version of its liquid biopsy assay, the TruSight Oncology 500 ctDNA v2 (TSO 500 ctDNA v2). This advanced assay offers faster molecular analysis, increased sensitivity,

and a more efficient workflow, especially for profiling solid tumors. With a turnaround time of less than four days, Illumina's innovation provides rapid insights for treatment decisions, setting it apart from the lengthier timelines of typical ctDNA comprehensive genomic profiling (CGP) assays, which often take a week or more.

Advanced imaging techniques play a vital role in modern diagnostics, providing detailed visualization of internal structures. Magnetic Resonance Imaging (MRI) uses magnetic fields and radio waves to detect tumors and injuries in the brain, spine, and joints. Computed Tomography (CT) scans integrate X-rays for high-resolution cross-sectional images, identifying fractures and abnormalities. PET (Positron Emission Tomography) scans use radioactive tracers to depict metabolic activity, aiding in detecting cellular abnormalities. Ultrasound, employing high-frequency sound waves, is non-invasive and widely used for cardiovascular diseases and pregnancy complications. Nuclear Medicine Imaging techniques like SPECT and PET/CT use radioactive tracers to visualize metabolic processes and detect abnormalities in organs and tissues. These advancements, backed by cutting-edge technology, ensure precise diagnostics, enhancing medical capabilities for effective patient care.

The advanced diagnostic imaging market in Latin America is projected to reach USD 3.38 billion by 2029, growing at a 6.3% CAGR from 2024 to 2029. This expansion is attributed to factors such as a rapidly increasing aging population, the prevalence of cardiovascular ailments, cancer, neurological disorders, musculoskeletal injuries, and advancements in diagnostic techniques. Brazil holds the largest share in the LATAM market, with diagnostic imaging constituting 46.4% of government healthcare expenditure, followed by Argentina at 22.5%. Novarad Corporation achieved a milestone by utilizing the VisAR augmented reality surgical navigation system to biopsy an intraventricular tumor at MAC CDMX Hospital in Mexico, marking the first surgical procedure involving augmented reality in Latin America.

# Breakthroughs in Laboratory Testing

The rise in genomic data and bioinformatics has led to the development of tumor biomarkers, revolutionizing cancer care by enabling early detection, personalized treatment, and improved prognoses. In 2023, the US dominated the North American market, while Latin America experienced increased adoption.

AI has reshaped medical diagnostics, with the in vitro segment expected to lead in 2023 due to the rising adoption of AI solutions. Eden Creator, an AI-powered radiology solution in Latin America, utilizes advanced language models and 175 billion parameters to deliver precise, personalized conclusions based on medical studies, minimizing human errors and enhancing treatment efficacy.

Chinese sequencing service provider BGI Genomics has collaborated for precision medicine in Brazil, Argentina, and Chile, introducing prenatal screening and genetic testing innovations. The revolutionary CRISPR-Cas9 gene editing technology has transformed genetic testing, allowing precise modifications to DNA sequences, opening avenues for diagnosing genetic disorders and developing personalized treatments. Latin America's contribution to the global healthcare landscape is evident in the rise of CAR T-cell therapy, exemplified by the Nutera Advanced Therapy Center. As the region's first cellular product manufacturing plant, supported by FAPESP, it will supply advanced cell therapies like CAR T-cells to Brazil's public healthcare network, SUS.

In January 2024, Swiss medicine software company Sophia Genetics partnered with Brazil-based biotech firm Bioma4me (Brazil) to enhance genetic testing capability in Brazil and the overall LATAM region. Sophia Genetic also partnered with Dutch diagnostics company Qiagen N.V. to pair QIAseq reagent technology with Sophia's DDM platform and develop tumor analysis via NGS.

Researchers from Brazilian biotech research institute Fiocruz Rondônia in partnership with Fundação Hospital Estadual do Acre, Centro de Infectologia Charles Mérieux and the Federal University of Acre have come up with a molecular method for quantifying the viral load of individuals with hepatitis delta virus (HDV). The test is important in the public health context as molecular diagnosis of HDV is not included among routine procedures in laboratories across Brazil.

Patient involvement is a key focus in modern healthcare, with mHealth technology such as smartphone apps helping to enhance motivation. Personal Health Records (PHR) systems enhance care delivery by promoting a connected and patient-centered healthcare ecosystem. These advances highlight the healthcare landscape's dynamic nature, which is driven by technological advancements and global collaboration.





## Market Restraints and Challenges

- 1. Declining Reimbursement Rates:** The anticipated changes in the 2023 Physician Fee Schedule in the U.S. are expected to lead to a decline in Provider Reimbursement Rates, potentially resulting in a 3.37% cut for doctors in 2024. Concurrently, the median health system witnessed a substantial 28% decrease in cash reserves, measured in days, dropping from 173 days in January 2022 to 124 days in June 2023.
- 2. High Out-of-Pocket Expenditures:** Between 2023 and 2024, health insurance rates in the U.S. surged by 4%, with 35 states witnessing an increase. This rise has the potential to escalate out-of-pocket (OOP) expenditures due to unaffordable premiums, particularly affecting those with chronic conditions, whose healthcare coverage costs an average of USD 6,032 in 2023 — five times more than those without chronic conditions. The top 1% of the population accounted for a disproportionate 27% of all OOP spending for healthcare in 2021, paying an average of USD 24,487 annually.
- 3. Impact on Small Businesses:** Chronic diseases impose a substantial economic burden on small businesses, costing U.S. employers USD 530 billion annually in health-related productivity losses. The economic impact encompasses both direct healthcare costs, estimated at USD 4.3 trillion, and indirect costs. Small businesses bear a disproportionate burden compared to larger companies, lacking resources and often without a business continuity plan.
- 4. Insufficient Availability of Medical Services:** Latin America faces challenges in healthcare accessibility, with around 30% of the population lacking access due to economic reasons and 21% facing geographical barriers. Concentration of healthcare services in capital cities marginalizes groups outside these areas, significantly increasing the burden of chronic diseases. Disparities in doctor-to-patient ratios in urban versus rural areas, such as in Brazil and Uruguay, underscore the regional healthcare challenges.

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## Enhancing Early Detection with POCT

Point-of-Care Testing (POCT) not only enhances early detection but also improves patient engagement and treatment plan adherence. The adoption of POCT kits in Covid-19 diagnosis has surged, offering advantages like compact size, mobility, simplicity, and accurate results. The current trend in the POCT market is leaning towards smart devices and mobile healthcare, accelerating the progress of personalized healthcare monitoring plus management.

Various mobile healthcare technologies, including cell phone-based point-of-care solutions, are gaining popularity.

Rice University is spearheading an international collaboration to develop cost-effective POCT technology for early cancer detection. The institute, named the Institute for Innovation and Translation of Point-of-Care Technologies for Equitable Cancer Care (CITEC), aims to create diagnostics for oral, cervical, along with gastrointestinal cancer. North America leads the POCT market, driven by technological advancements, such as Abbott's i-STAT 1 POC blood analyzer and Roche Diagnostics' cobas Liat PCR System, reflecting the accelerated development of point-of-care tests during the COVID-19 pandemic.

# Healthcare Policies and Regulatory Landscape

The U.S. Chamber of Commerce's Health Policy Division actively supports legislative / regulatory improvements to expand coverage and services, with a particular focus on regional policies targeting chronic diseases. The US FDA plays a critical role in overseeing diagnostic tests, classifying them based on patient risk under the CLIA program and FD&C Act for in vitro diagnostic tests.

The WHO's Global NCD Compact 2020–2030 is a flagship initiative that aims to accelerate progress in preventing and controlling NCDs. It encourages Member States to adopt policies outlined in the Global Action Plan (GAP) for the Prevention and Control of NCDs 2013–2030, serving as a crucial component of the global NCD architecture.

PAHO provides strategic guidance through the Policy on Prevention and Control of NCDs in Children, Adolescents, and Young Adults. This policy focuses on evidence-based interventions for this demographic, addressing critical areas and proposing strategies for cost-effective and culturally relevant interventions. The policy outlines the current situation of NCDs and risk factors among children, adolescents, plus young adults in the Americas, highlighting critical areas, challenges, and opportunities. It proposes strategies for cost-effective, evidence-based interventions that are developmentally appropriate, equitable, inclusive, together with culturally relevant, addressing social

determinants of health. Mental health, integral to the global NCD agenda, is not covered here; a separate 2022 policy from the 30th Pan American Sanitary Conference addresses mental health. A distinct strategy on mental health and suicide prevention is set for presentation to PAHO's Governing Bodies in 2023.

Mecklenburg County's Chronic Disease Policy & Prevention Action Plan FY24–28 targets heart disease and cancer, aiming to make healthy choices easier. The UCLA Center for Health Policy Research's Chronic Disease Program serves as a leading source of data plus research on chronic diseases and related health promotion issues. The reorganization of NCCDPHP and the merger of the Department of Health Behavior and Policy underscore efforts to enhance healthcare delivery and reduce health disparities. The Chronic Disease Self-Management Program, supported by CDC grants, assists adults in managing chronic diseases through community-based workshops. Since 2006, over 400,000 participants have participated in these programs.

Minnesota's Cancer Control and Prevention/Sage Programs focus on decreasing the cancer burden through prevention and early detection. In Latin America, Brazil's regulatory landscape for biosimilars sets the pace, implementing distinct pathways for complex and simpler molecules, influencing regional regulatory standards.



# Looking Ahead for a More Sustainable Tomorrow

The landscape of Non-Communicable Diseases (NCDs) is evolving, encompassing genetic, digital health, and environmental factors. Addressing challenges requires a comprehensive strategy involving genetic medicine, digital health interventions, environmental stewardship, education, and improved healthcare access. By prioritizing health equity and understanding the intricate causes of future NCDs, communities can work together to eliminate these diseases plus foster global well-being.

Curbing the incidence of NCDs requires robust policies targeting risk factors, especially tobacco control and obesity prevention. Investments in primary care, telemedicine, along with community health workers are vital for ensuring continuous, quality care. Strengthening health data, clinical information systems, in addition to disease surveillance is

imperative, considering the limited data on NCDs and the impact of COVID-19 in the Americas region.

Harnessing modern scientific advancements is crucial for promoting nutrition and positive health outcomes. Governments / international organizations should raise awareness about health and the environment, fostering a safe plus healthy world. Supporting research in food biotechnology and developing rapid diagnostic platforms for NCDs is essential. Innovations, including lifestyle projects, healthy eating habits, regular activity, tobacco avoidance, and limited alcohol intake, can address the growing NCD crisis. To envision a future without NCDs, prevention-focused interventions require coordinated efforts from all stakeholders to address the issue at scale and create a healthy living environment.



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