

Diabetes and Obesity in Latin America: Current Trends and Case Studies of Best Practices



Presenters (alphabetical order):

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- Cristina Palacios
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Disease burden of diabetes and NCDs



Health economics of diabetes and NCDs



Systematic review of initiatives in the region



Detailed analysis of best practices

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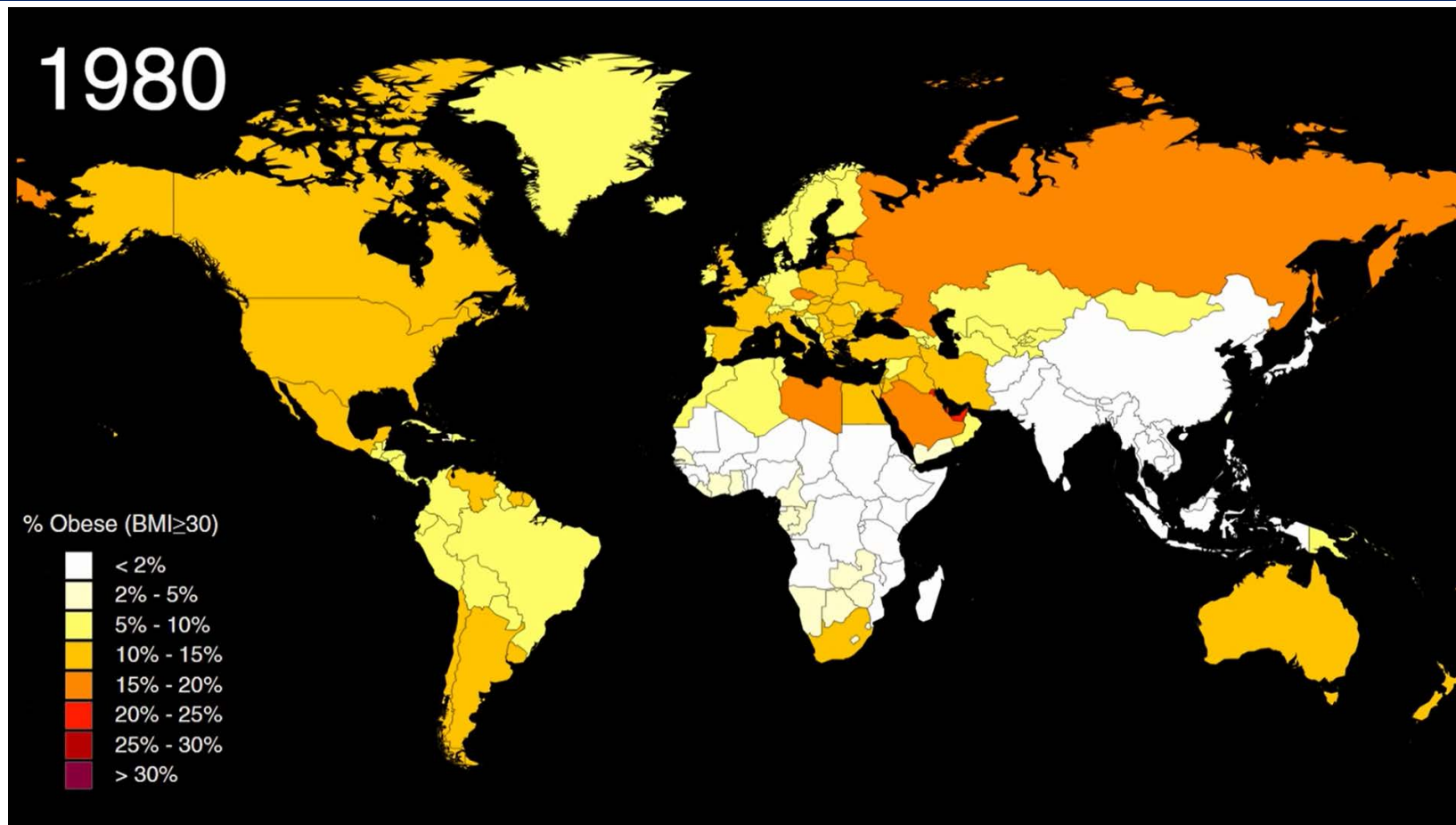


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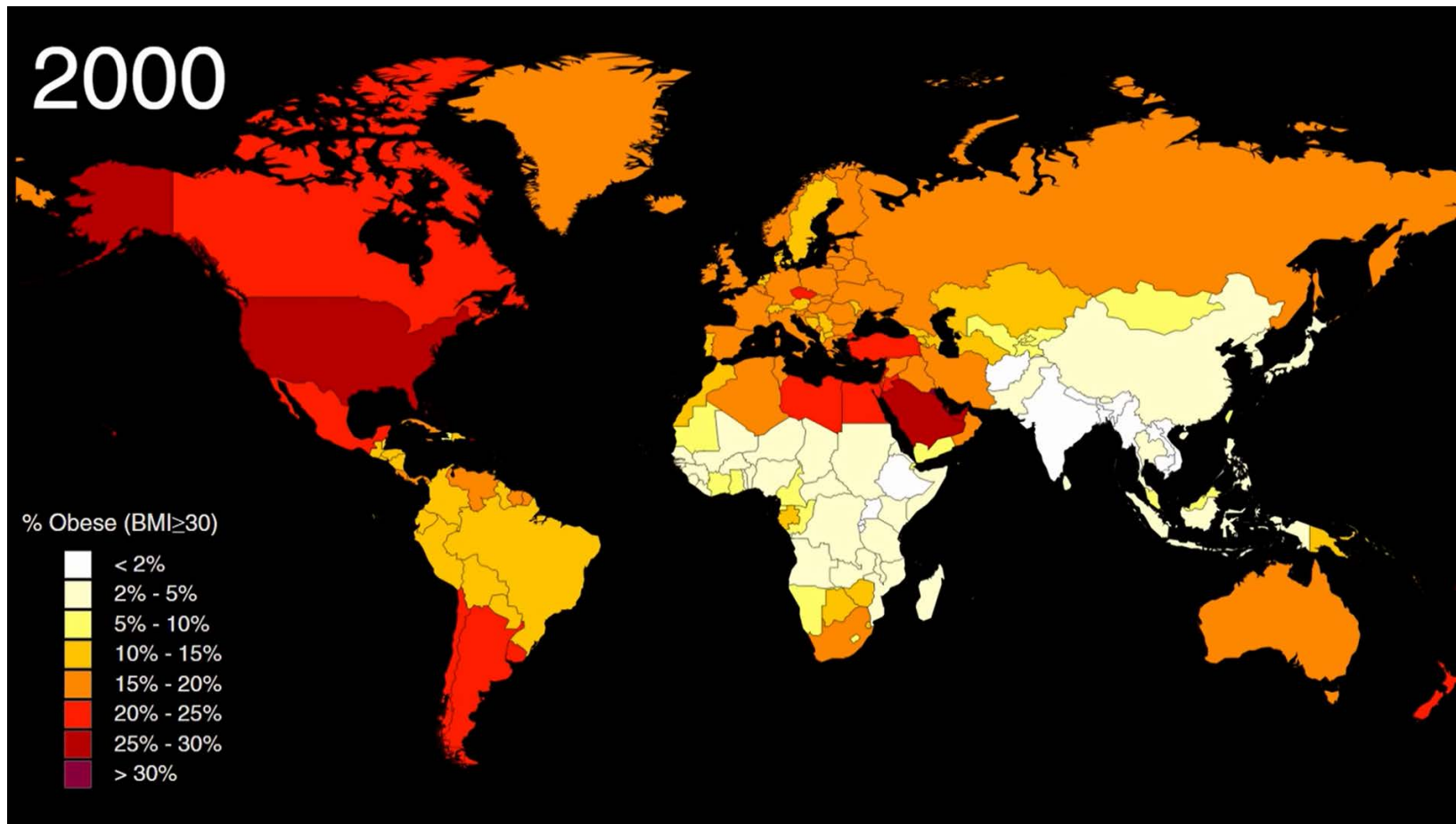


Detailed analysis of best practices

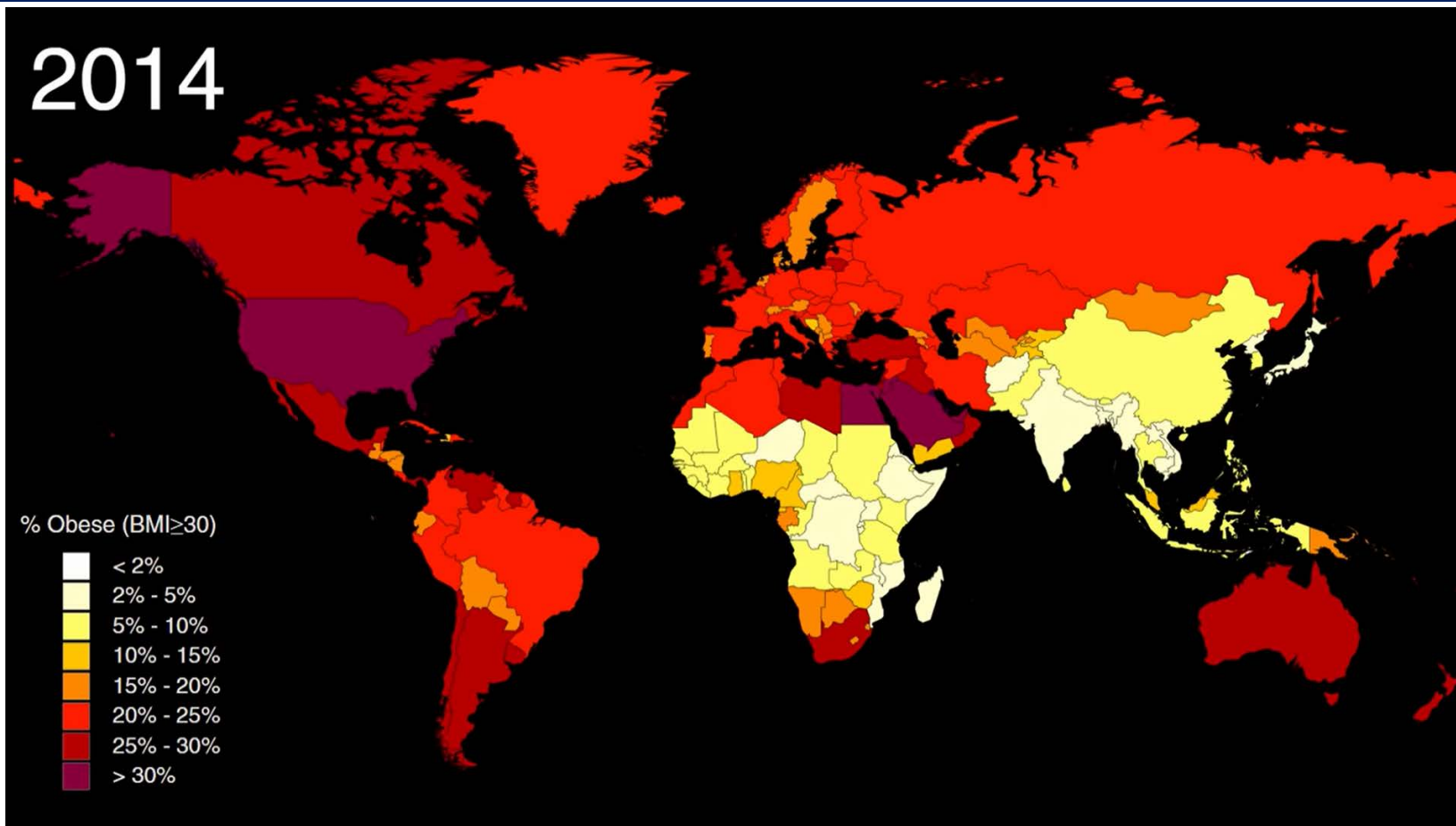
Trends in obesity



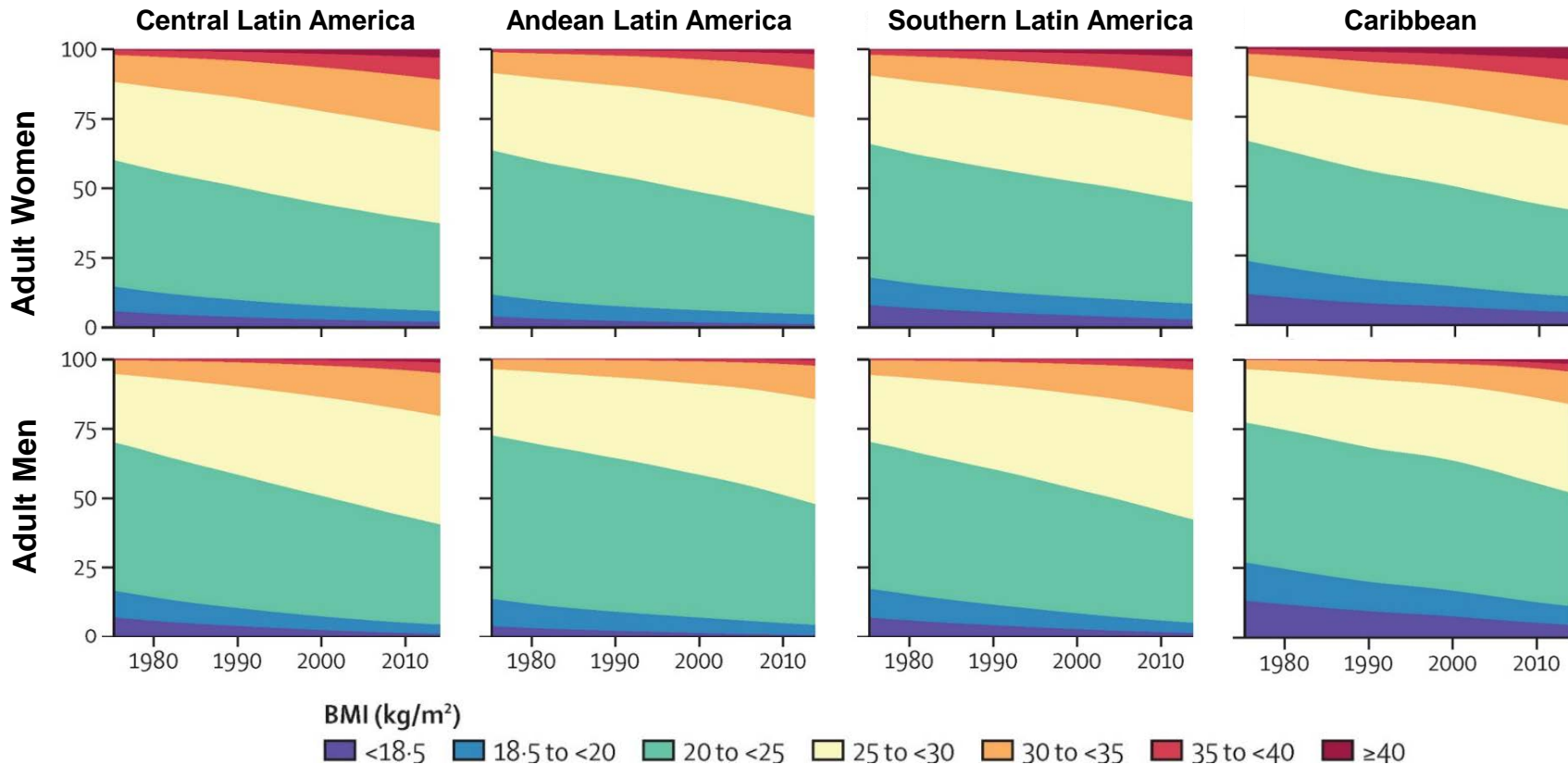
Trends in obesity



Trends in obesity

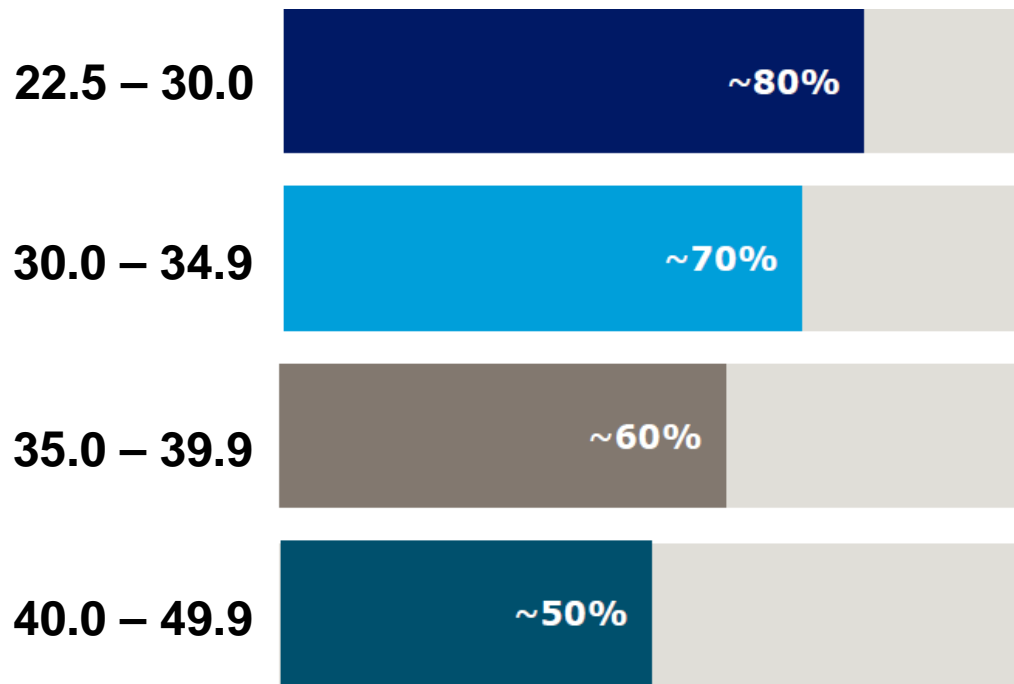


Trends in obesity in Latin America and the Caribbean

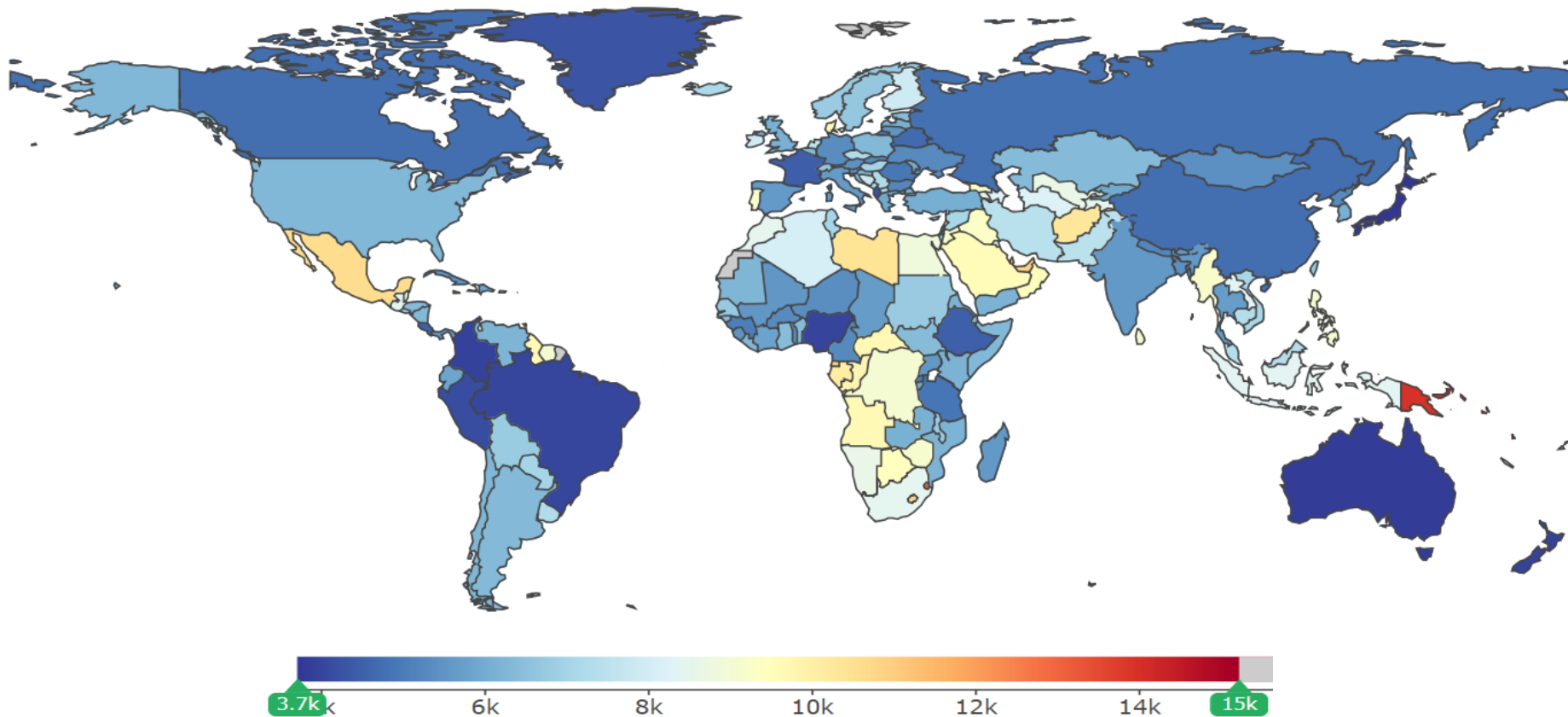


Obesity decreases life expectancy

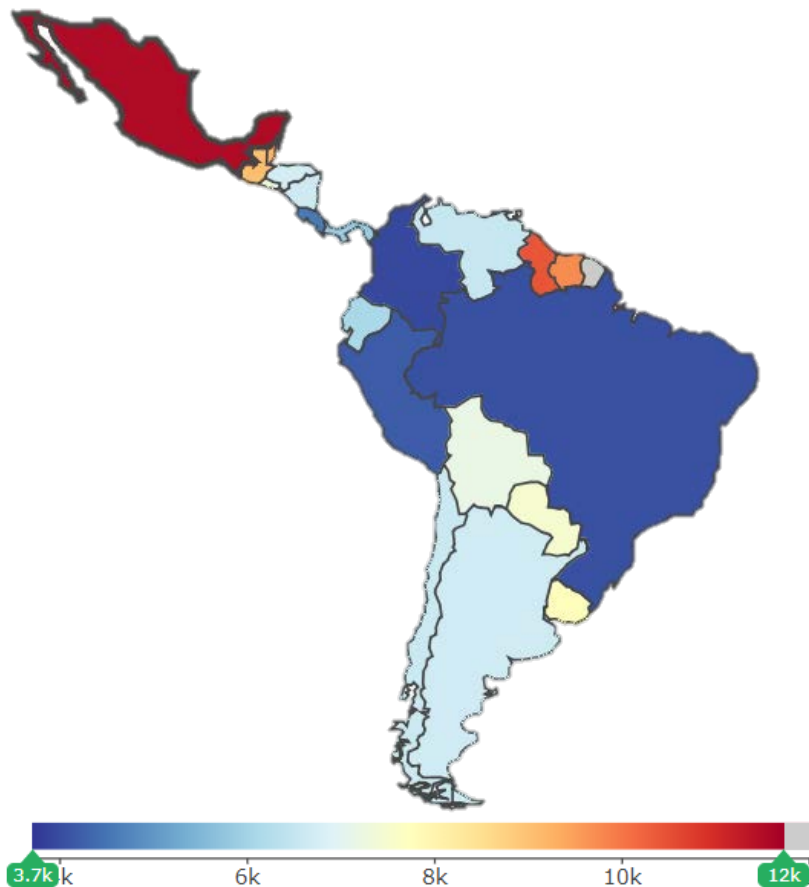
Likelihood of reaching 70 years old



Diabetes mellitus , both sexes, age-standardized rate in 2017, prevalent cases per 100,000



Diabetes mellitus , both sexes, age-standardized rate in 2017, Central Latin America region prevalent cases per 100,000



The countries with the highest prevalence are at the Caribbean:

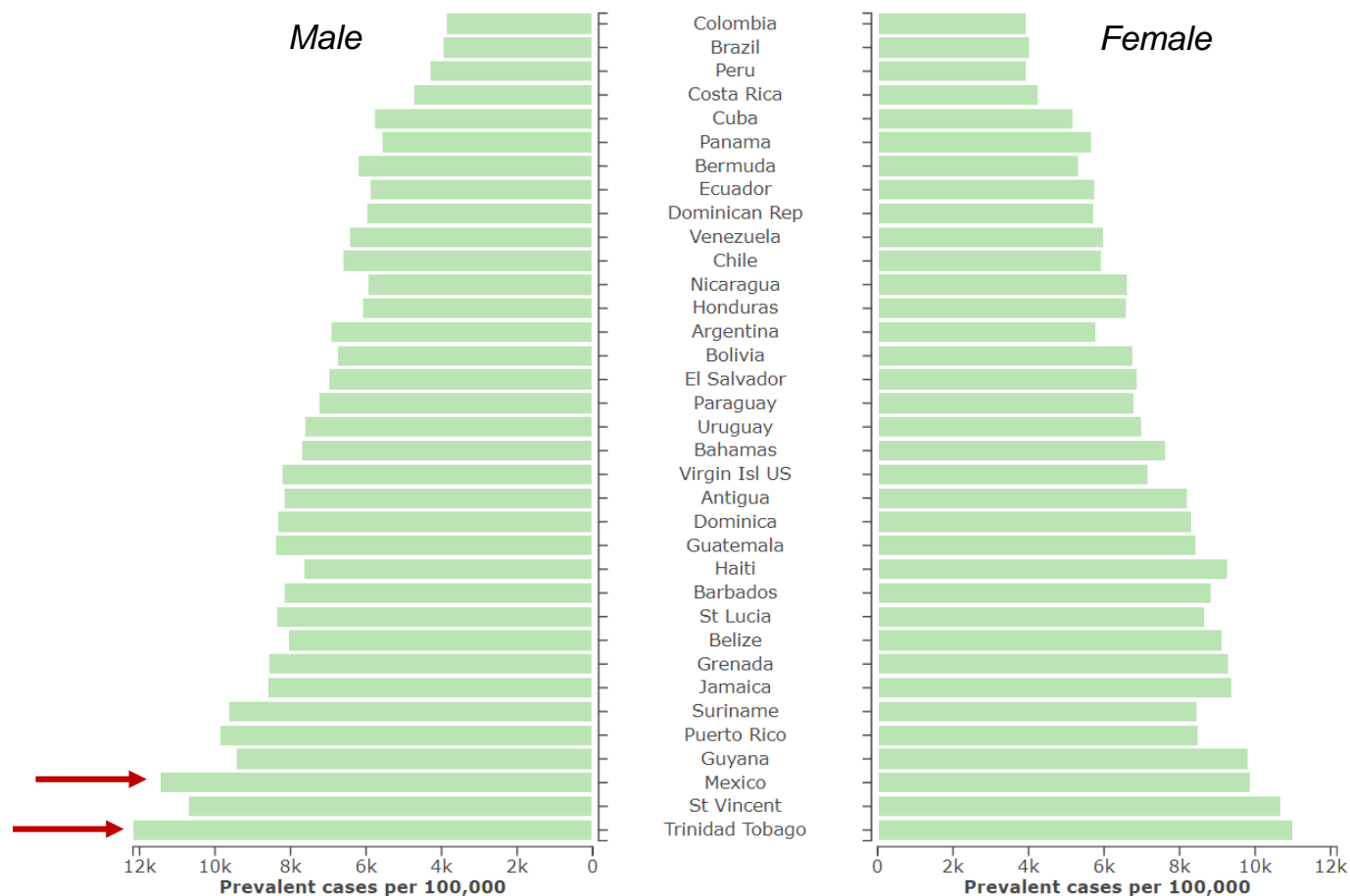
1	Trinidad and Tobago	11,564 (10,530-12,778)
2	St. Vincent and the Grenadines	10,701 (9,784-11,743)
3	Mexico	10,620 (9,732-11,671)
4	Guyana	9,631 (8,792-10,557)
5	Puerto Rico	9,111 (8,355-10,048)

The countries with the highest number of people with diabetes are located on the mainland of Latin America: Brazil and Mexico.

On a second plane are Colombia, Argentina, Venezuela & Chile.

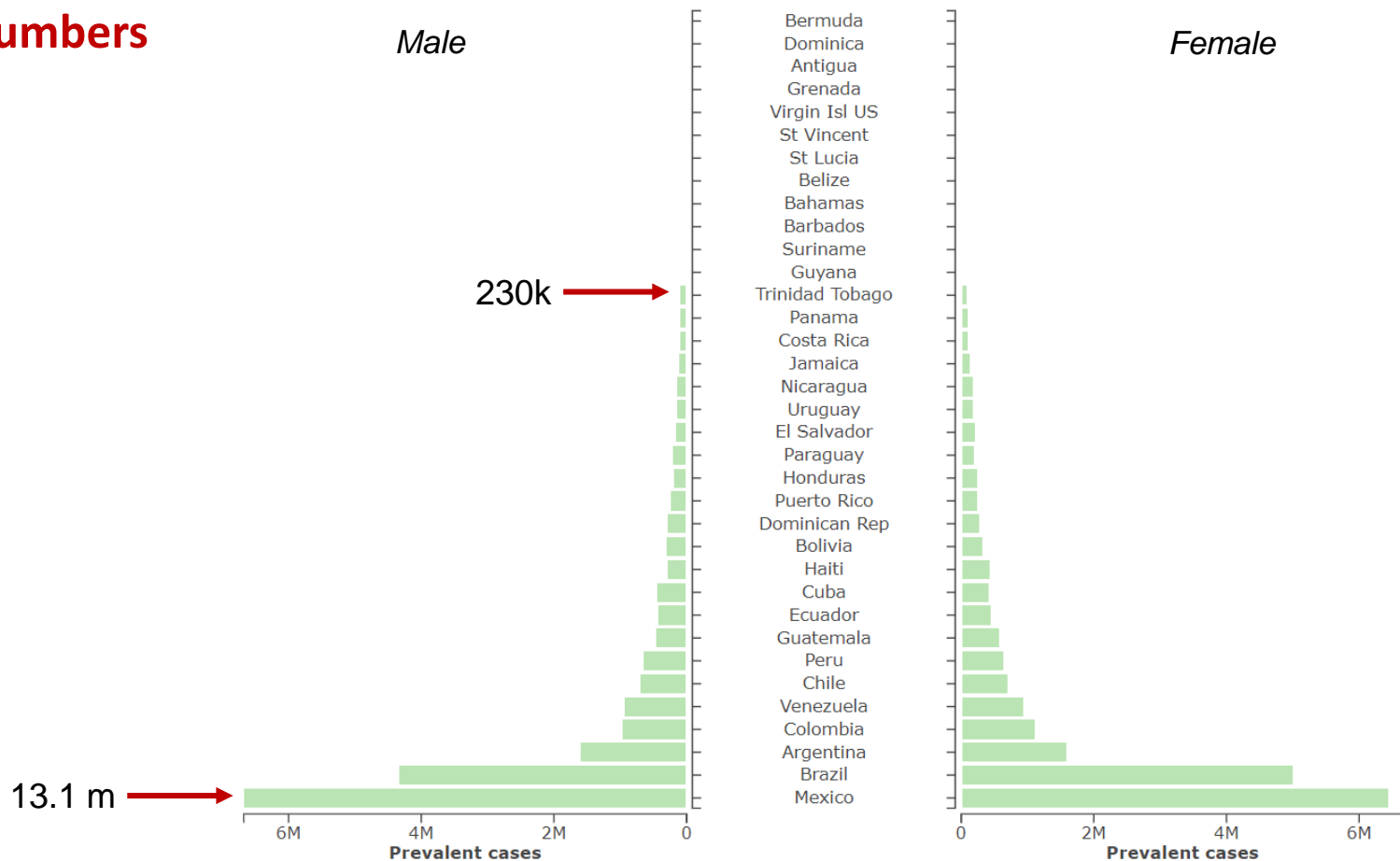
Diabetes mellitus, Latin America and Caribbean, Age-standardized rate 2017

Rate

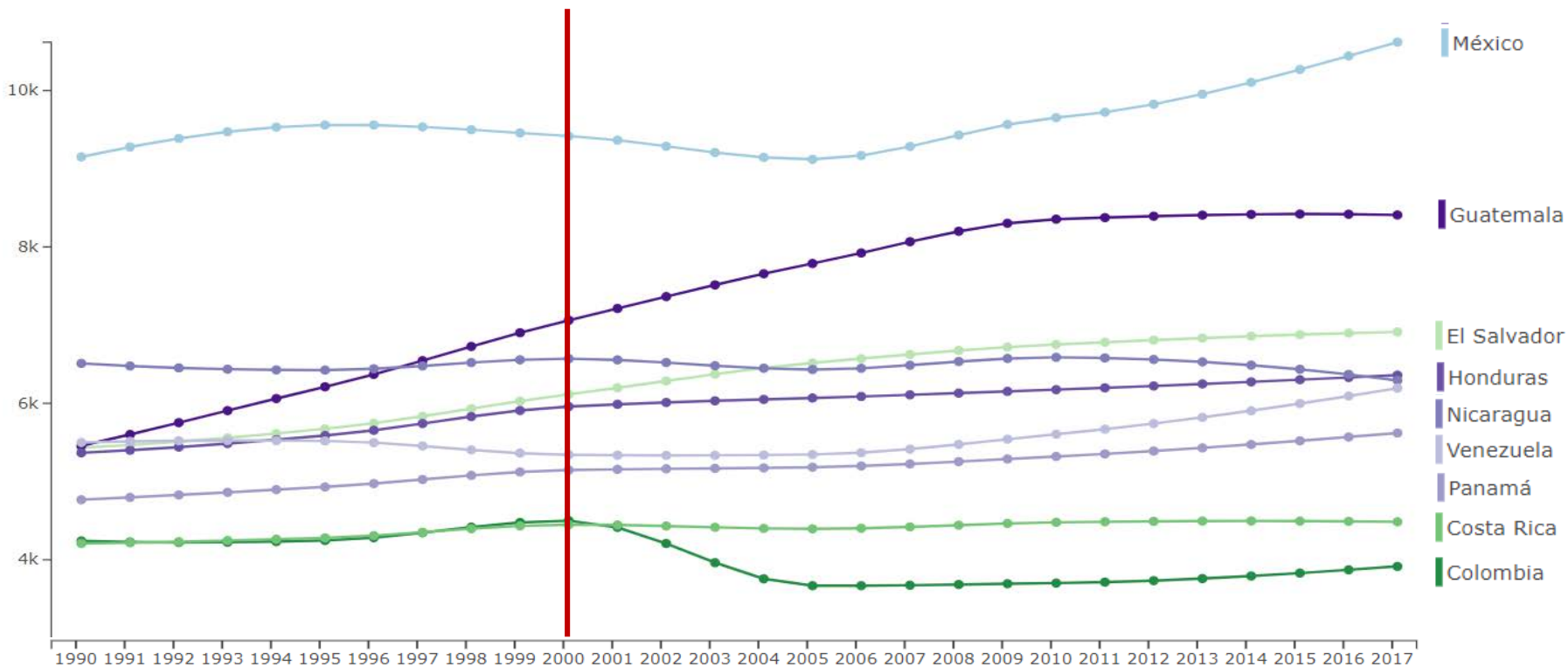


Diabetes mellitus, Latin America and Caribbean, Age-standardized 2017

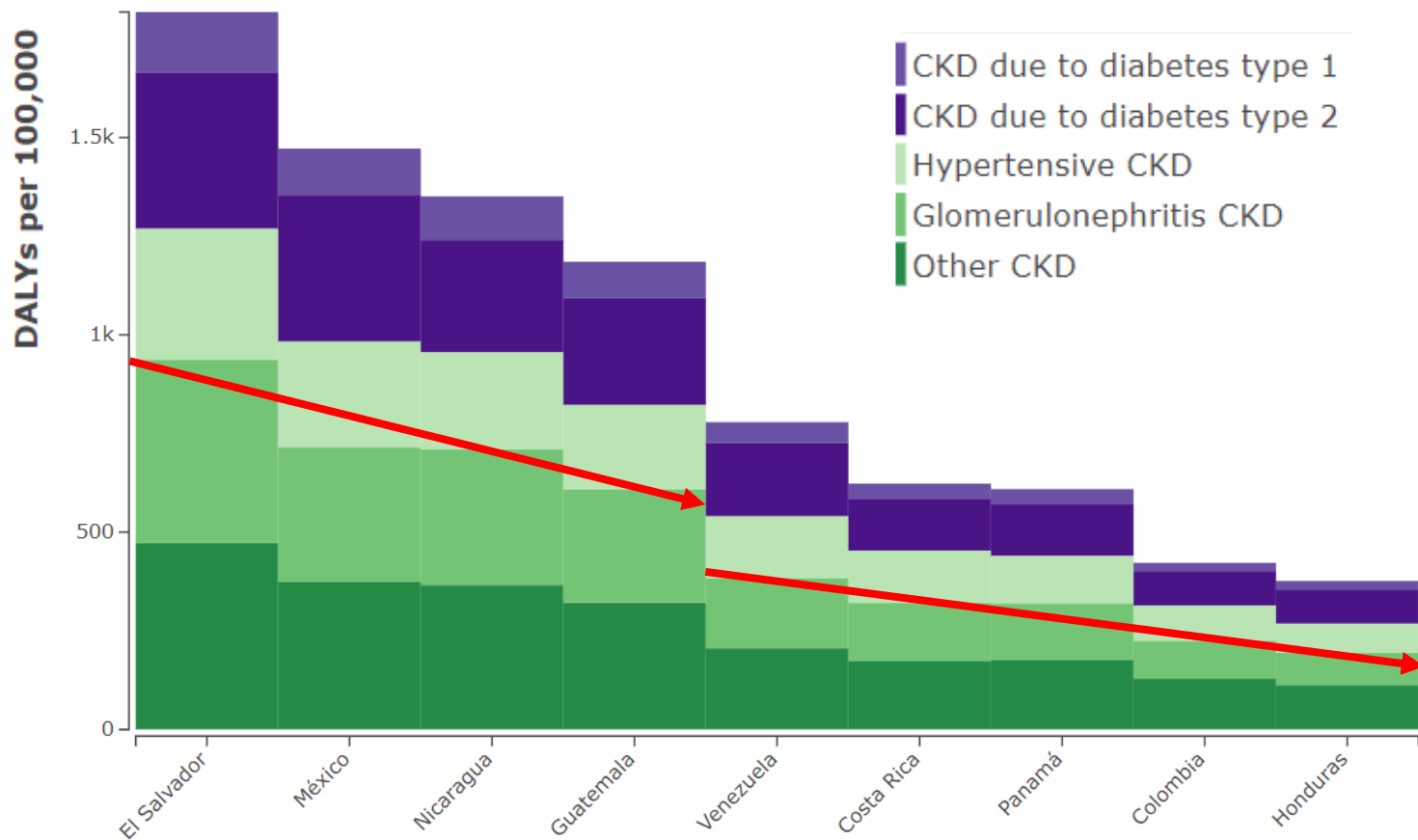
Numbers



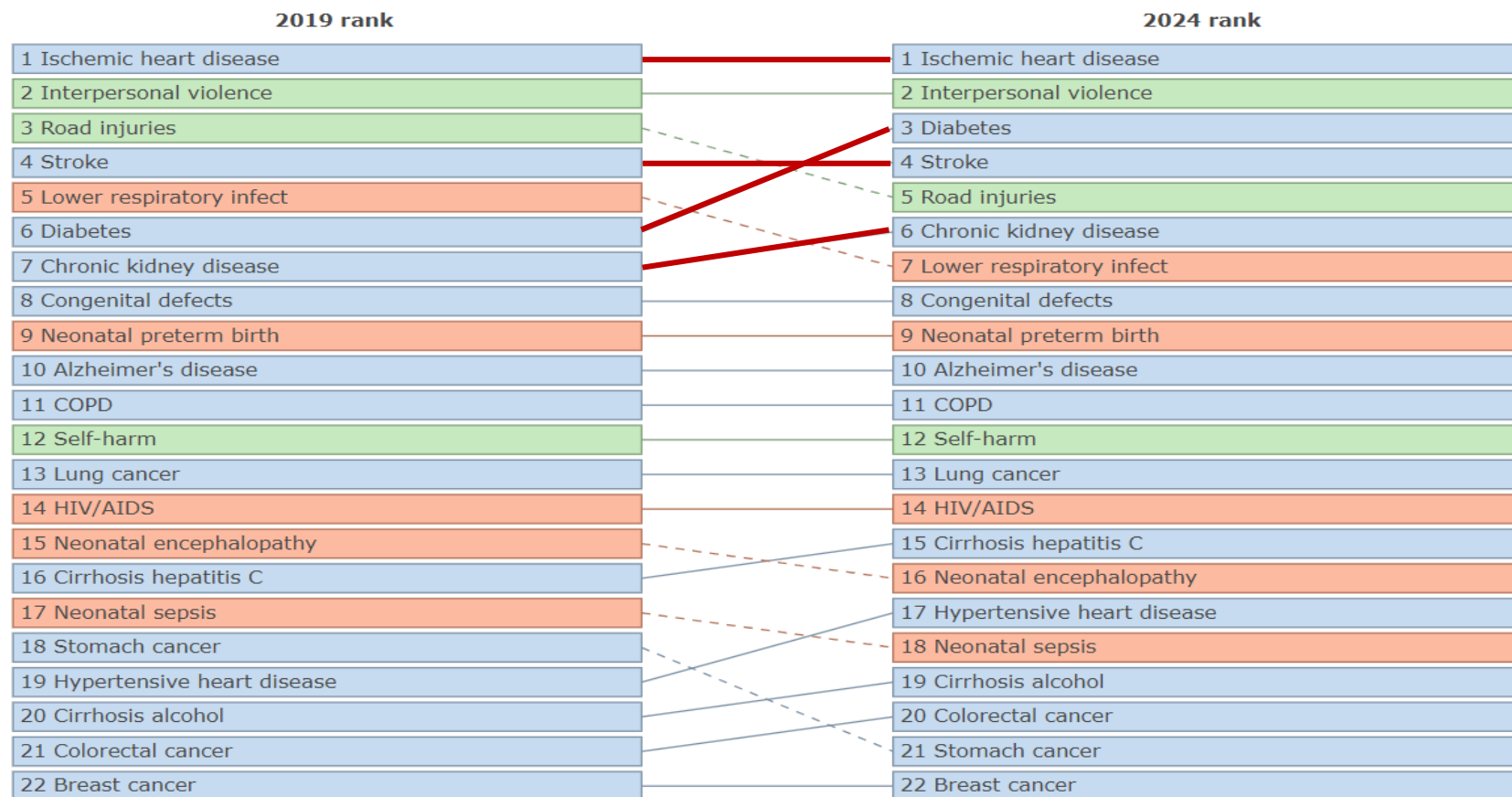
Diabetes mellitus , both sexes, age-standardized rate 1990-2017, Central Latin America region, prevalent cases per 100,000



CKD, both sexes, age-standardized rate in 2017, Central Latin America region DALYs per 100,000



Forecasting of main causes of years of life lost, both sexes, age-standardized rate in 2019-2024, Latin America and Caribbean region, YLLs per 100,000



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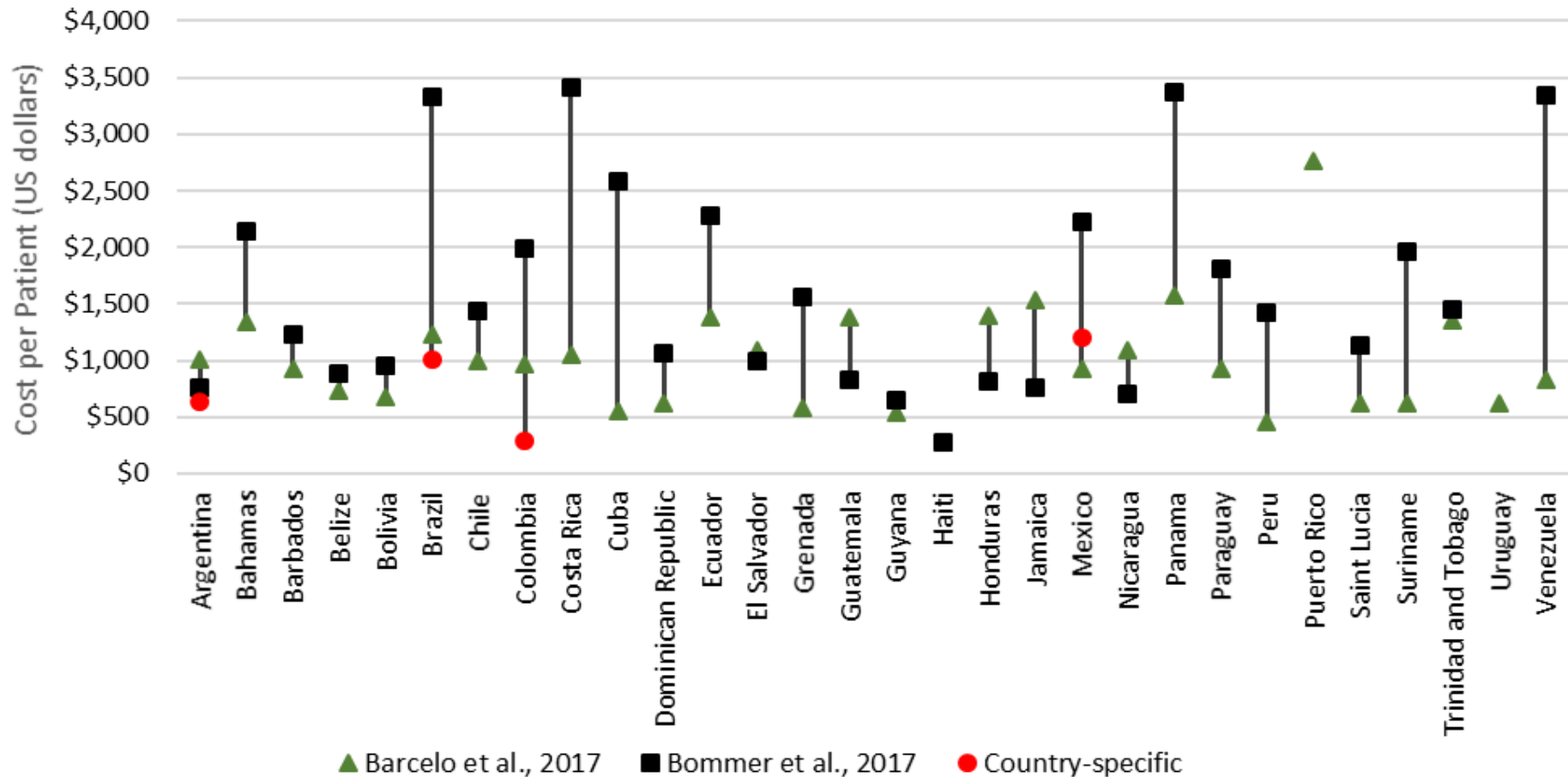


Systematic review of initiatives in the region

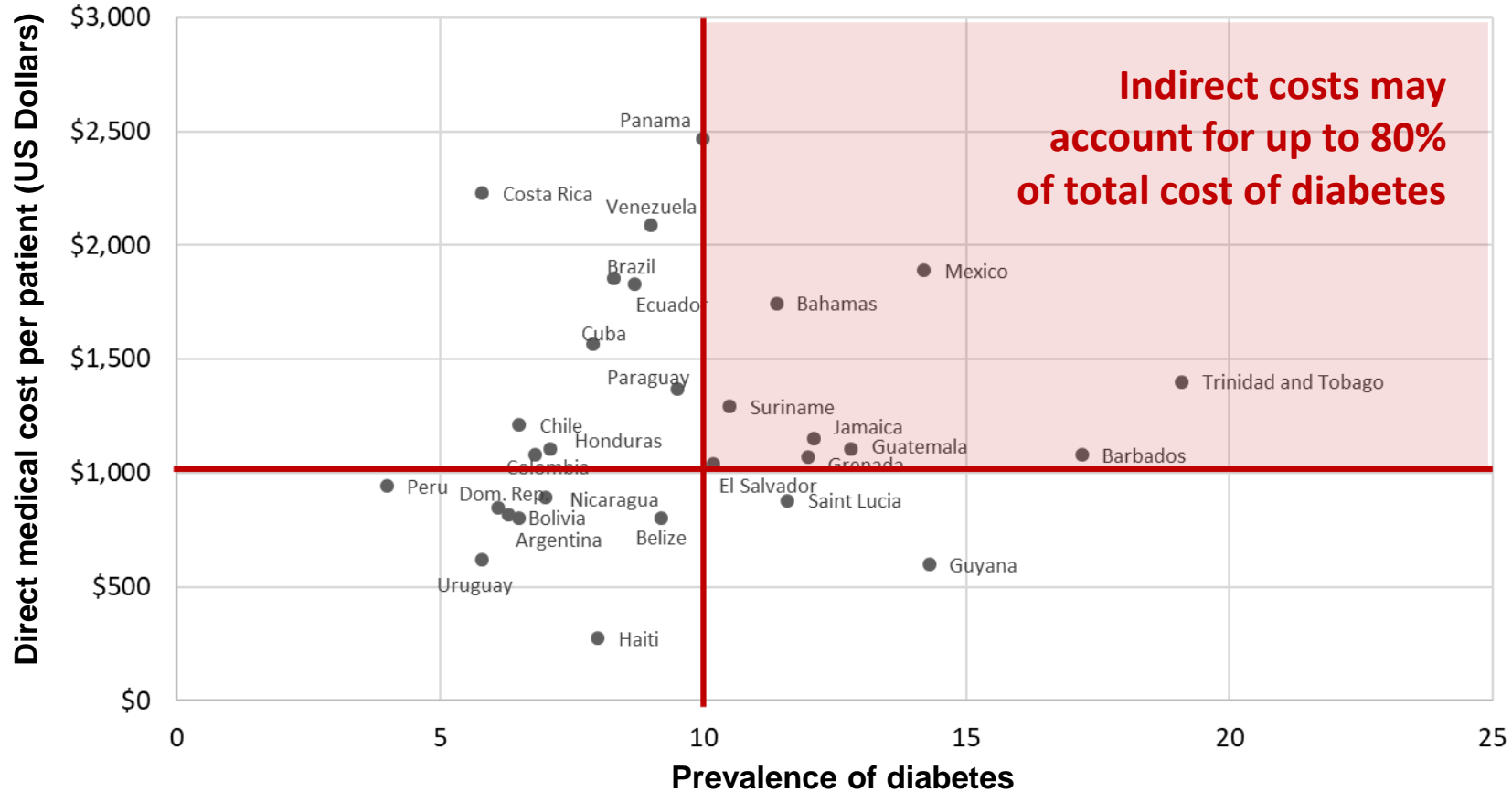


Detailed analysis of best practices

.Direct Medical Cost of Diabetes by Country



Prevalence of diabetes and direct medical cost per patient (USD)



Challenges in access to healthcare in Latin America and the Caribbean

Least equality in healthcare access

- Haiti
- Guatemala
- Bolivia
- Venezuela
- Honduras
- Guatemala

Most equality in healthcare access

- Cuba
- Argentina
- Uruguay
- Chile
- Mexico (*High inequality between states and regions within the country*)
- Brazil

Gaps and obstacles in prevention of obesity and NCDs

Dual burden of obesity
and undernutrition

Large socio-economic
disparities

Rapid growth
and urbanization

Lack of food industry
regulations

Lack of research on the
evaluation of policies,
programs and initiatives.

Lack of resources,
infrastructure and skills

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Disease Burden of Diabetes and NCDs



Health Economics of Diabetes and NCDs



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Detailed analysis of best practices

Frameworks reviewed

World Health Organization (2016)

Translational

Promote high quality R&D

National

National capacity to prevent and control NCDs:
Accord greater priority to, and scale up integrated NCD prevention and control

Strengthen and orient health systems to address NCDs

Monitor trends and determinants to evaluate progress

Create, sustain, and expand health-promoting environments

State/ Local

Individual/
Neighborhood

Pan-American Health Organization (2018)

Food chain policies:
Inclusive productive systems; facilitating the commercialization of produce; storage of produce to avoid waste; packaging and labeling; supplementation and fortification

Food environment policies:
Availability and physical access; economic access; promotion, publicity and information; food safety

Consumer behavior policies:
Nutritional education to select which food products to purchase, prepare, store, and consume

International Diabetes Federation

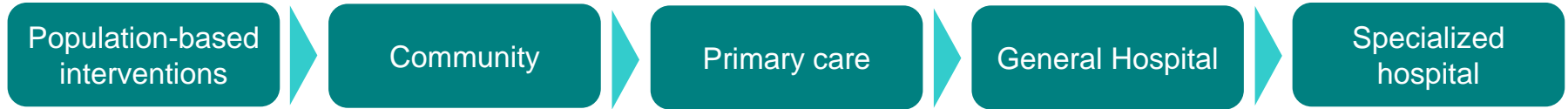
Standardize and integrate data systems, monitoring, and research across regions

Expand NCD prevention out of the health sector:
Health in all policies, urban planning, food systems, schools, nutritional education

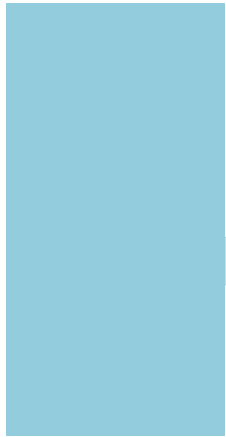
Strengthen and adapt the health sector to detect, diagnose, and manage NCDs:
Co-responsibility, continued medical education, technological support

The continuum of care in NCDs

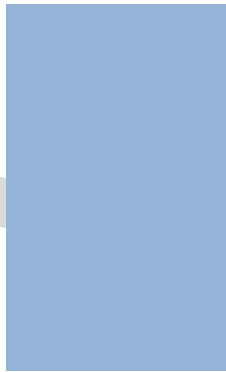
Continuum of physical spaces or platforms where services can be provided¹



Identification of population



Systematic assessment of risk factors



Personalized profiling



Confirmation of diagnosis



Incorporation into treatment



Integrated management of NCDs



Timely referral



Continuum of the interventions to be provided²

Availability of national plans for the prevention of obesity



12 countries

- Argentina
- Brasil
- Chile
- Colombia
- Ecuador
- El Salvador
- Honduras
- México
- Panama
- Paraguay
- Uruguay
- Venezuela

Guidelines on obesity prevention and/or treatment



7 countries:

- Argentina
- Brazil
- Chile
- Colombia
- Mexico
- Nicaragua
- Paraguay

Front-of-package food labeling



Implemented

Bolivia
Chile
Ecuador
Mexico
Peru
Uruguay

Proposed

Argentina
Brazil
Costa Rica
El Salvador
Guatemala
Honduras
Nicaragua
Panama
Paraguay

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Disease Burden of Diabetes and NCDs



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Detailed analysis of best practices

Systematic review of initiatives in the region

In the Caribbean:

No health impact data from most diabetes interventions:

- Water-only policy in schools (1997, Bermuda)
- Annual Caribbean Wellness Day since 2008 (regional)
- Juvenile diabetes camps (Jamaica 1992, Barbados 2002)

Quality diabetes care ...

- 1993 “sub-optimal”
- 2001 “major cause for concern”
- In 2014, a 5-country study:
 - 25% PWD referred to diet counseling,
 - 49% received diabetes education,
 - 31% received exercise counseling,
 - 25% received foot exam.

Systematic review of initiatives in the region

In the Caribbean (*cont.*):

- **Unknown** current quality of diabetes care
- **Unimplemented** National Nutrition Plans of Action or Country NCD Action Plans in all Caribbean countries, except for Montserrat
- 4 National Nutrition Plans of Action are more than 10 years old:
 - Dominica (1983)
 - Grenada (2007)
 - Bermuda (2008)
 - Barbados (2008)
- **Unknown** health impact of most diabetes interventions

Best practices identified to date in Latin America



Cases described here:

- Disease surveillance and reporting systems
- Innovation to facilitate diagnosis and improve patient access
- Community participation
- Communication strategies
- CME for healthcare professionals
- Proactive prevention & disease management

Institutional consolidation

- Creation of a special secretariat dedicated exclusively to disease surveillance, the **Health Surveillance Secretary** or SVS for its initials in Portuguese.
- SVS consolidated several studies into one system, denominated Health Information System (HIS)
- HIS **brings together data** from the universal public healthcare system: all authorizations for “highly complex procedures”, the database on basic care procedures, population registries of cancer, hospital registries of cancer, and Brazil’s mortality information system.

Main benefits

- HIS was used to evaluate “Health Gym” movement, a country-wide **community exercise** program.
- HIS enabled **tracking of Brazil’s** progress toward international goals, such as SDGs.
- Brazil was recognized in 2015 as one of the most promising countries in **NCD monitoring**.

Peru | Innovation to facilitate diagnosis and improve patient access

Pharmacy-based NCD diagnosis

- Implementation of a pharmacy-based NCD care, through the **training of pharmacists** and pharmacy technicians to build capacity for identification of risk factors, patient education, point-of-care testing, and referral for abnormal results.
- Pharmacy technicians were able to achieve the same level of competency in NCD care as pharmacists, and both increased their knowledge and skills in a significant way.

Pharmacy-based hypertensive management

- Over **80% of individuals indicated** they would be interested in pharmacy-based hypertension services, particularly discounts on anti-hypertensive medications and free blood pressure screenings.
- Another 80% indicated they would be interested in purchasing a monthly health plan through a **pharmacy that provided** access to hypertension services each month.

Sources: Point-of-Care Testing for Anemia, Diabetes, and Hypertension: A Pharmacy-Based Model in Lima, Peru. Saldarriaga EM, Vodicka E, La Rosa S, Valderrama M, Garcia PJ. Ann Glob Health. 2017 Mar – Apr;83(2):394-404.

Patient acceptability of and readiness-to-pay for pharmacy-based health membership plans to improve hypertension outcomes in Lima, Peru. Vodicka E, Antiporta DA, Yshii Y, Zunt JR, Garcia PJ. Res Social Adm Pharm. 2017 May – Jun;13(3):589-601.

Impact of mobile phone reminders for NCDs

Background

- Cohort study in Manizales, a medium-sized city in central Colombia, with 90 participants, who agreed to receive text messages on healthy lifestyles.
- Text messages were free, with memorable educational content on medication adherence, physical activity, healthy diet, and stress management.
- The messages were sent three times per week for the first month, four times a week for the following three months, and finally, once a week for the last month.

Benefits

- 100% of the patients **who confirmed receiving the** messages perceived an improvement in their self-care; especially in terms of changes in the diet (95.16%) and improvement in the adherence to medication (59%). 61.5% of participants rated the service as “excellent”.
- However, **no statistically** significant changes in clinical and laboratory variables were identified.

DIAPREM (Diabetes Primary Care, Registry, Education and Management Intervention)

Background

- Integrated diabetes care program that includes system changes, **education**, registry (clinical, metabolic and therapeutic indicators), physician and nurse education and disease management.
- sample of 15 primary care centers from a total of 40 primary care centers in the area.

Benefits

- After the completion of the 12-month program, significantly fewer participating patients **were lost-to-follow-up** than regular patients of those primary health centers.
- Additionally, DIAPREM patients saw significant decreases in HbA1c, blood pressure and lipid profile levels, while regular patients did not.
- There is evidence that provider education had an impact on prescribing decisions, and the participating physicians prescribed fewer regimens of oral monotherapy.

Mexico | CASALUD MODEL of Care

Integrated model for the reengineering of primary care

- Leverages its work on a **robust digital platform**.
- It is part of Mexico's national policy.
- Outreach of 12.5k primary care clinics

Effective management
Continuous improvement of performance

Corresponsibility
of the person and her family

Strengthening of human capital
continuous training of health professionals and community health workers

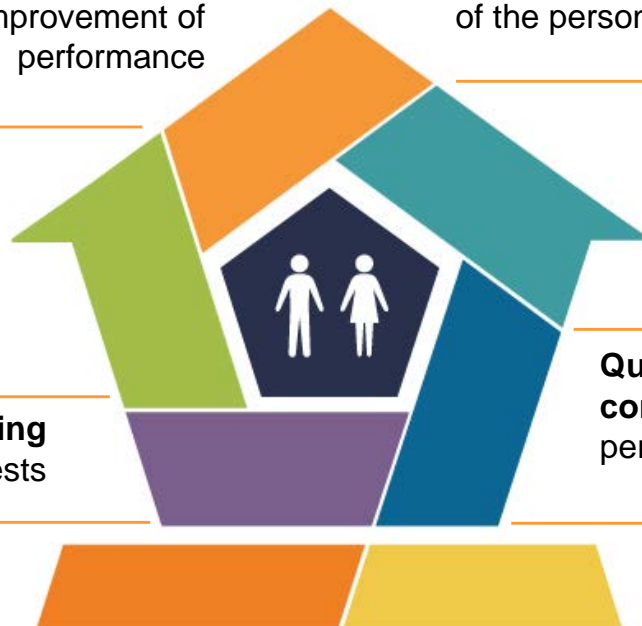
MIDO | Proactive prevention and timely detection of NCDs
sistematization in primary care clinics and public spaces

Stock monitoring
medicines and lab tests

Quality of care throughout the continuum
personalized patient follow-up

Infrastructure assessment
validation of capacity

Support of the operation
Virtual coaching



Mexico | National's NCD dash board

1,852,613

en

12,447

pacientes con diagnóstico de una enfermedad crónica y al menos una consulta

centros de salud

Distribución por sexo:

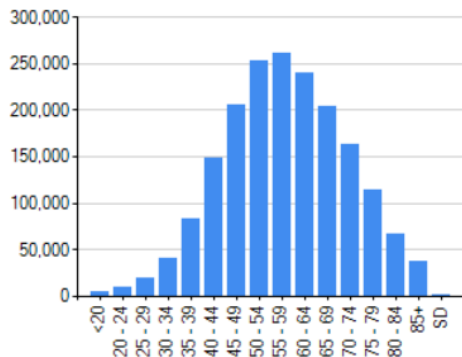


72.0%



28.0%

Distribución por edad:



Del total de pacientes registrados en el SIC:



1,090,912

con diabetes



52.7%

con medición de A1c*



44.4%

con A1c < 7



1,217,384

con hipertensión



77.4%

con medición de presión arterial (TA)



65.5%

con TA < 140/90



702,054

con obesidad



78.8%

con medición de peso y estatura



16.4%

con IMC < 30



519,952

con dislipidemia



77.4%

con medición de colesterol total



54.4%

con Colesterol total < 200

* A1c es un examen de laboratorio que muestra el nivel promedio de azúcar (glucosa) en la sangre durante los últimos tres meses. Este examen muestra qué tan bien está controlada la diabetes.

Mexico | CASALUD Model Health impact

Model of reference in international reviews:

- Broadband Commission (Addressing NCDs to Accelerate Universal Health Coverage in LMICs)
- GSMA | CASALUD: A suite of digital health services for the prevention and management of NCDs
- Deloitte | High-value health care innovative approaches to global challenges

Effective management

- 1,100 virtual sessions
- 14k health professionals

Corresponsibility

- 140k visits to “Gánale a la Diabetes”
- 420k visits to “Niñas y Niños Sanos y Listos”

Strengthening of human capital

- 20k Health professionals trained
- Graduation rate between 80-85%

Stock monitoring

- Patients with T2D: from 10% to 54% with A1c test

MIDO | Proactive prevention and timely detection of NCDs

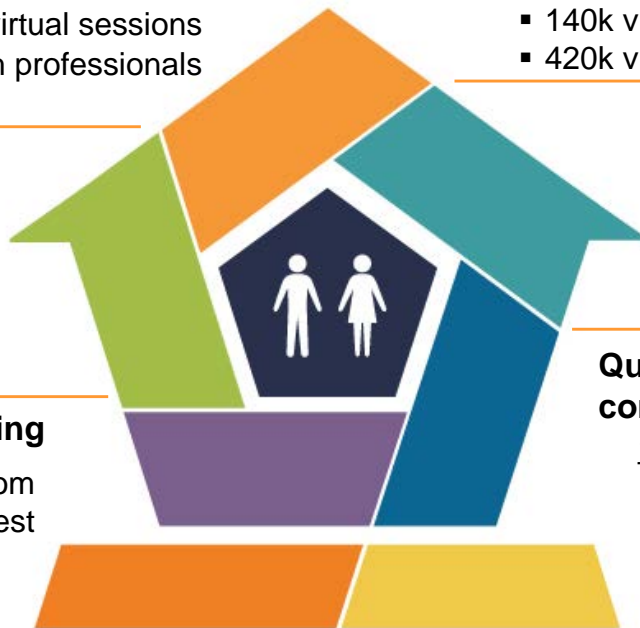
1.3 million people screened

- 11% with prediabetes
- 12% with T2D

Quality of care throughout the continuum

1.8 million people living with NCDs

- Patients with T2D: from 36 to 45% in control
- Quality of care: from 54.7 to 67.8 in ICAD



**World Health Organization
(2016)**

**Pan-American Health Organization
(2018)**

International Diabetes Federation

Translational

**Promote
high
quality
R&D**

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**Individual/
Neighborhood**