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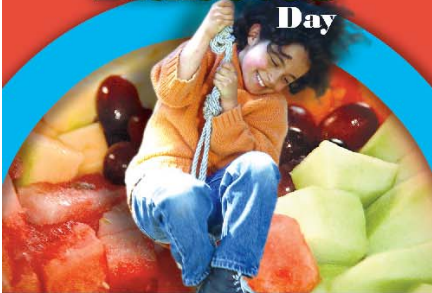
Regional Office of the
World Health Organization

Regional Strategy and
Plan of Action on an
Intergrated Approach
to the Prevention and Control
of Chronic Diseases

The Management of
Chronic Diseases

Alberto Barceló
Silvana Luciani
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World Diabetes Day



Diabetes affects children & adolescents
 Manage & prevent diabetes
 Be active,
 eat healthy

Children and adolescents can be affected by both types 1 and 2 Diabetes.

Type 1 Diabetes can be controlled with:

- Education
- Medical follow-ups, and
- Insulin

Type 2 Diabetes can be prevented through:

- Weight control
- Medical follow-ups, and
- Tablets



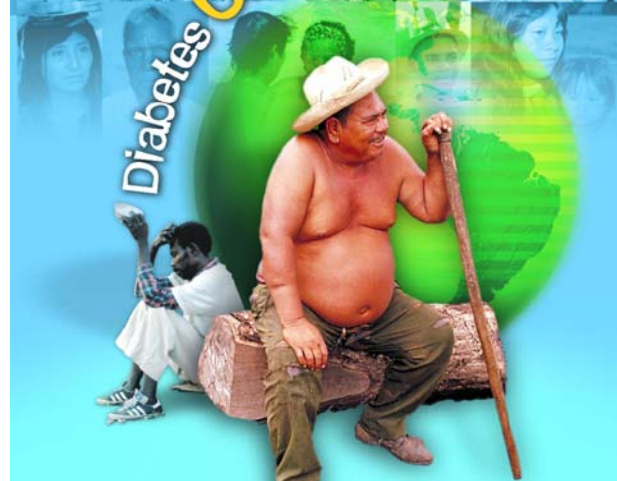
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 Regional Office of the World Health Organization



Over 200 Million people worldwide have Diabetes
 Many do not receive the care they need.



Diabetes Care for Everyone



World Diabetes Day November 14



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 Regional Office of the World Health Organization

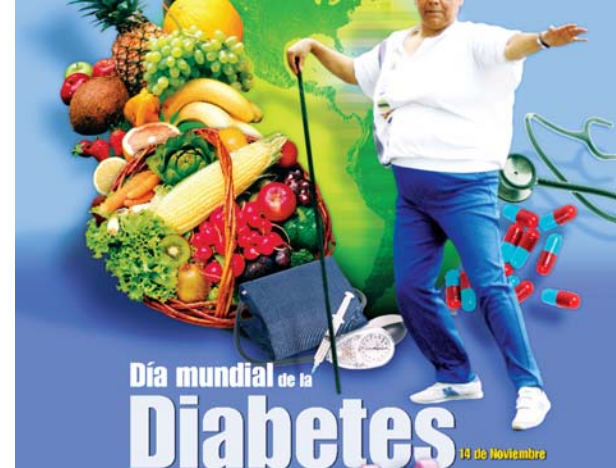
www.paho.org



Más de 200 millones de personas en el mundo tienen diabetes.
 Muchas no reciben la atención que necesitan.



Cuidados para todos



Día mundial de la Diabetes 14 de Noviembre



Organización Panamericana de la Salud
 Oficina Regional de la Organización Mundial de la Salud

www.paho.org



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Conclusions of the 2005 CARMEN Meeting: Integrated NCD Management

- Needs to strengthen primary care to address chronic disease control and prevention
- Develop interventions to improve care for chronic conditions
- Incorporate screening and primary prevention to health systems
- Promote adequate NC disease management



Evaluations of Quality of Diabetes Care in Clinics in Latin America and the Caribbean

Country	No. Patients	(%) Good Control*	(%) Foot Exam	(%) Eye Exam
Bahamas	119	39	58	24
Costa Rica	450	42	40	77
El Salvador	475	36	59	63
Guatemala	700	31	2	5
Honduras	603	30	30	18
Jamaica	297	25	23	17
Mexico	783	31	40	8
Nicaragua	752	39	19	3

Source: PAHO (IRDC, CAMDI, VIDA)

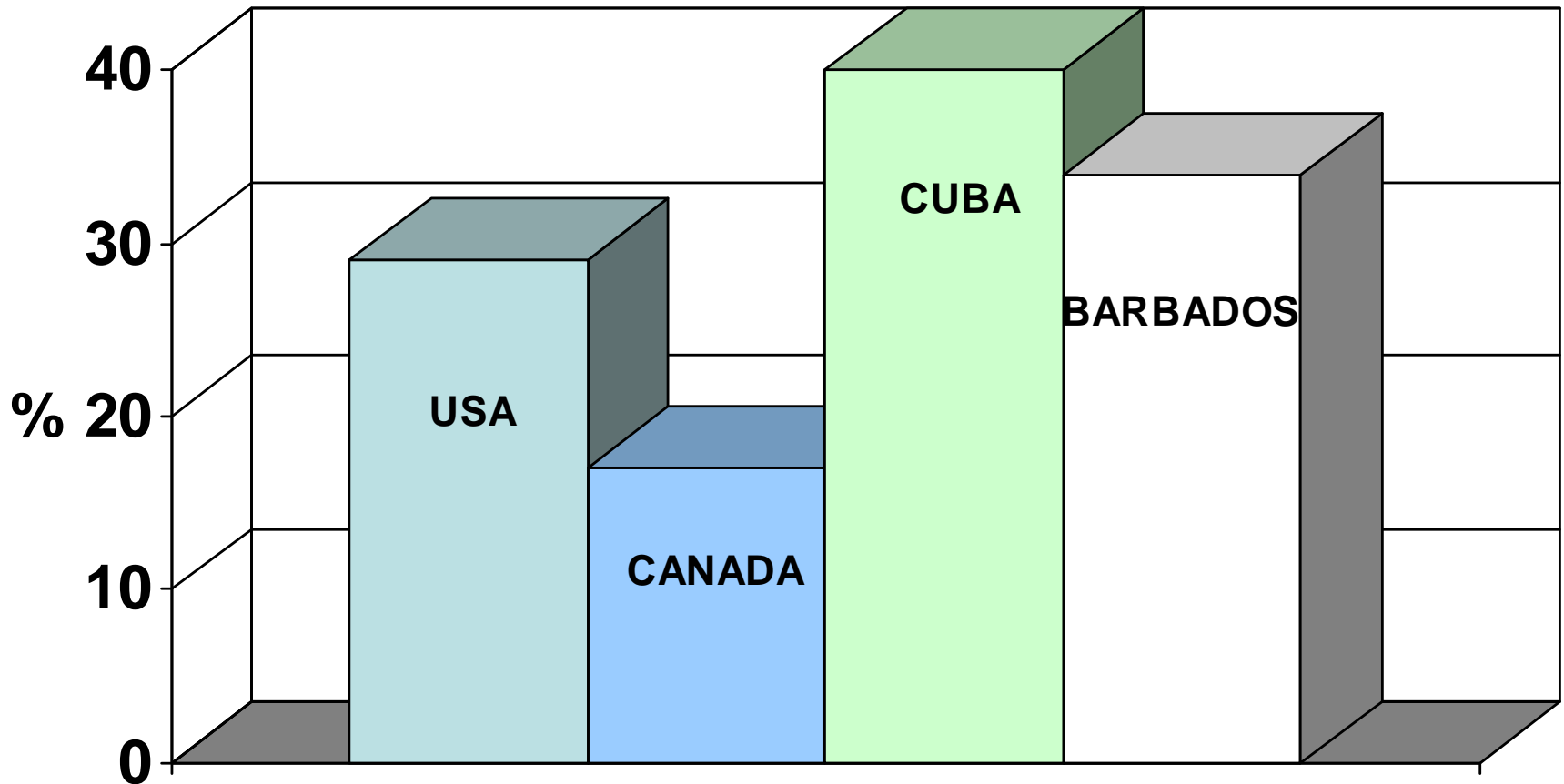
* Glycated hemoglobin (A1c) < 7% or Fasting Blood Glucose < 130 mg/dl



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Proportion of People with Hypertension Achieving Goals (<140/90hg) in Population-Based Surveys



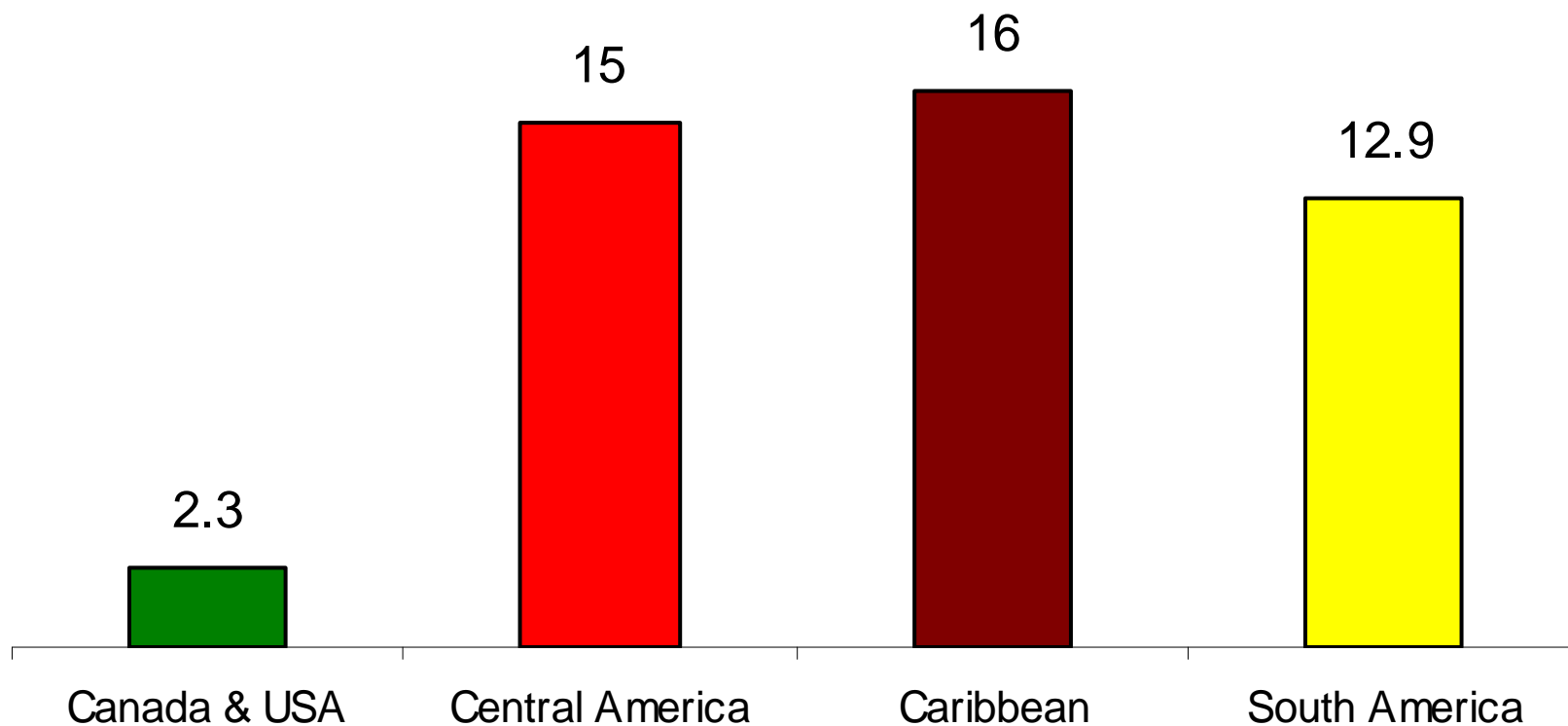
Source: USA (Berlowitz 1998); Canada (Joffres 1997);
Cuba (Orduñez 2007); Barbados (Hennis 2002)



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Age-Adjusted Mortality Rate (X100,000) for Cervical Cancer (2000)



Source: Globocan



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The National Capacity Survey: Number of Countries (n=28) Reporting NO

	Monitory system	Indicators	Strategy for improvement
<i>Hypertension</i>	23	24	25
<i>Diabetes</i>	21	21	24
<i>Heart disease</i>	25	27	27
<i>Stroke</i>	25	27	28
<i>Cancer</i>	23	26	26
<i>Chronic respiratory disease</i>	25	27	28



Number of Countries Reporting (total = 28) Not Having National Guidelines

Hypertension	10
Diabetes	8
Heart diseases	16
Stroke/CVA	18
Cancer	15
Chronic respiratory disease	20
Smoking cessation	20
Weight control	22
Dietary	14
Physical activity	21



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Integrated Management of NCDs



Goal

To facilitate and support the strengthening of the capacity and competencies of the health system for the integrated management of chronic diseases and their risk factors.



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Objectives



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To provide **technical assistance** to countries in the development, strengthening, implementation, and evaluation of their chronic disease programs for conditions including: coronary heart disease, stroke, hypertension, diabetes, major cancers (including palliative care), obesity, asthma, and hypercholesterolemia.



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To facilitate the
**strengthening and/or
reorientation of health
systems** to optimally
manage chronic diseases
and their risk factors.



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To foster the development, dissemination, and implementation of integrated, **evidence-based guidelines and protocols** for the prevention and control of chronic diseases and their risk factors.



To foster the development and improvement of **competencies in the health work force** to appropriately and effectively manage chronic disease prevention and control.



To facilitate the creation and utilization of **health information systems** for adequate patient and program management and evaluation, as an integrated part of the surveillance system.



To empower
self-management
among people with
chronic conditions and
risk factors and their
families



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To ensure improved
**access to technologies and
essential medicines**
for chronic disease and
risk-factor management and
ensure their rational use.



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Implementation of the Disease Management Plan throughout the CARMEN Network



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Disease Management through the CARMEN Network

1. Provide direct technical advice and stimulate Country-to-Country cooperation
2. Identify partners with the necessary expertise to provide technical collaboration
3. Facilitate collaboration with partners such as PACT, IDF, CDC, PHAC, NHLBI
4. Maximize effective work of PAHO/WHO collaborating centers in the area of disease management
5. Help countries to mobilize resources for disease management-related activities



Planned and Ongoing Activities

- Program development & evaluation
 - Strengthen national capacity survey
 - Conduct needs assessments & evaluations
 - Produce & disseminate program guides
- Reorientation of Health System
 - Disseminate the Chronic Care Model
 - Promote tools & lessons learned to improve quality of care



Disease-Specific Implementation Plans



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Planned and Ongoing Activities

- *Evidence-Based Guidelines*: Provide Advice to Create/ Evaluate/Disseminate Guidelines (Diabetes, Hypertension, Cervical Cancer, Breast Cancer)
- *Health Care Workforce*: Provide Support for Training and create Internet-based training programs
- *Information System*: Identify Indicators to Monitor Diseases (Diabetes, Hypertension) and promote model information system (cervical cancer)



Planned and Ongoing Activities

- **Self-Management**
Design and disseminate self-management materials
- **Access to Medication**
Coordinate efforts to improve access to medicines (revolving fund?)



Disease-Specific Implementation Plans



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Examples of Goals of Implementation Plan

DIABETES

CANCER

CVD

- Prevent type 2 diabetes
- Decrease diabetes-related morbidity
- Decrease diabetes-related premature mortality
- Prevent diabetes chronic complications
- Improve quality of life of people living with diabetes



Examples of Goals of Implementation Plan

CVD

CANCER

DIABETES

- Decrease CVD mortality:
Stroke, Heart Disease, Hypertension
- Prevent Hypertension
- Improve management of Hypertension



Examples of Goals of Implementation Plan

CANCER

DIABETES

CVD

Reduce cancer mortality and morbidity by improving: primary prevention, screening & early detection, diagnosis, treatment and palliative care.



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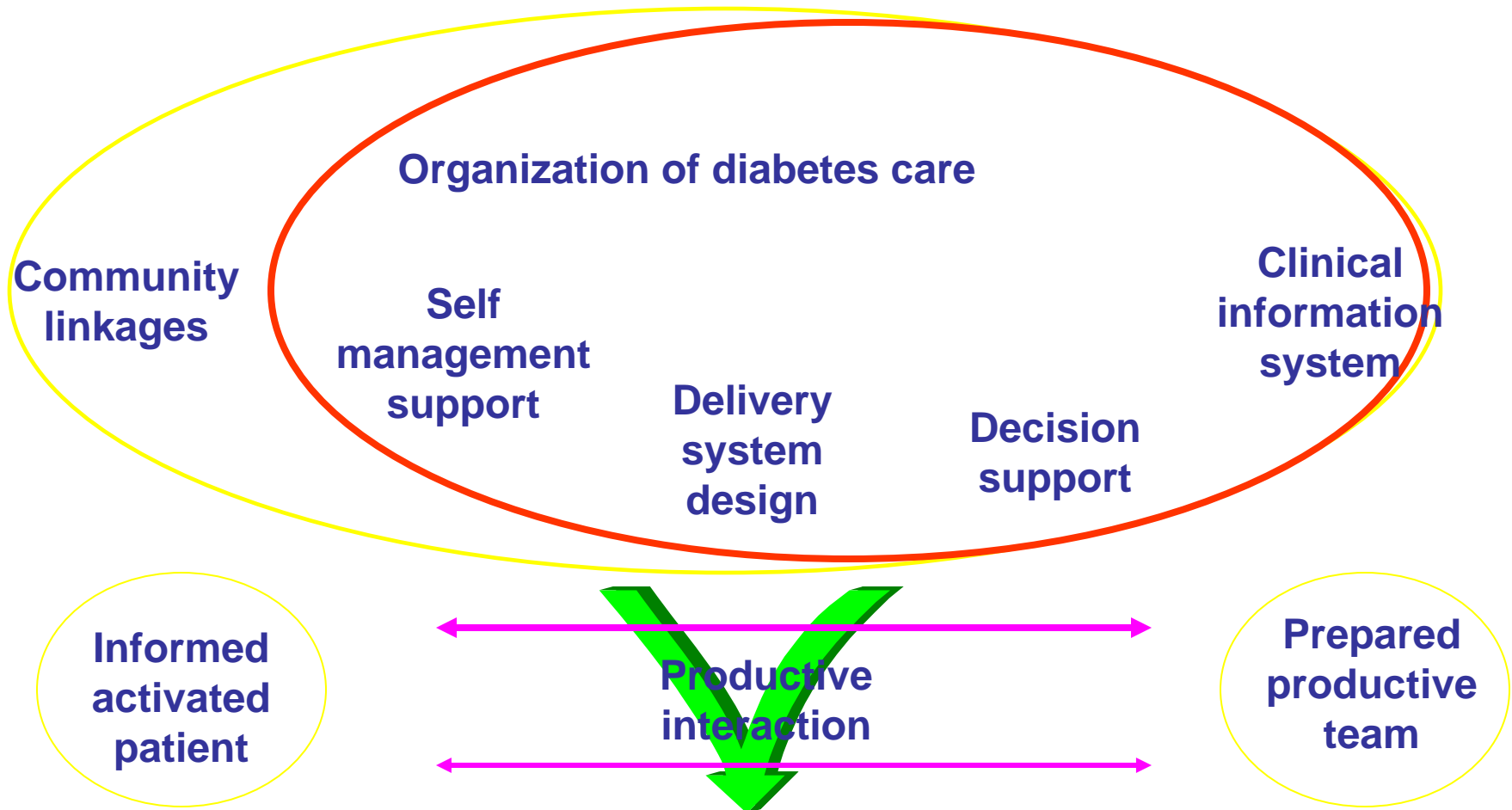


Conclusions

- The available information indicates that there is a need for technical cooperation in the area of disease management.
- PAHO will contribute by providing technical advice or coordinating the collaboration with partners in the area of disease management.
- CARMEN will provide the necessary vehicle for organizing the technical cooperation for the implementation of the Chronic Disease Strategy and Action Plan.



Chronic Care Model



Functional & clinical outcomes



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CARMEN

Areas of PAHO Technical Cooperation in Cancer Control

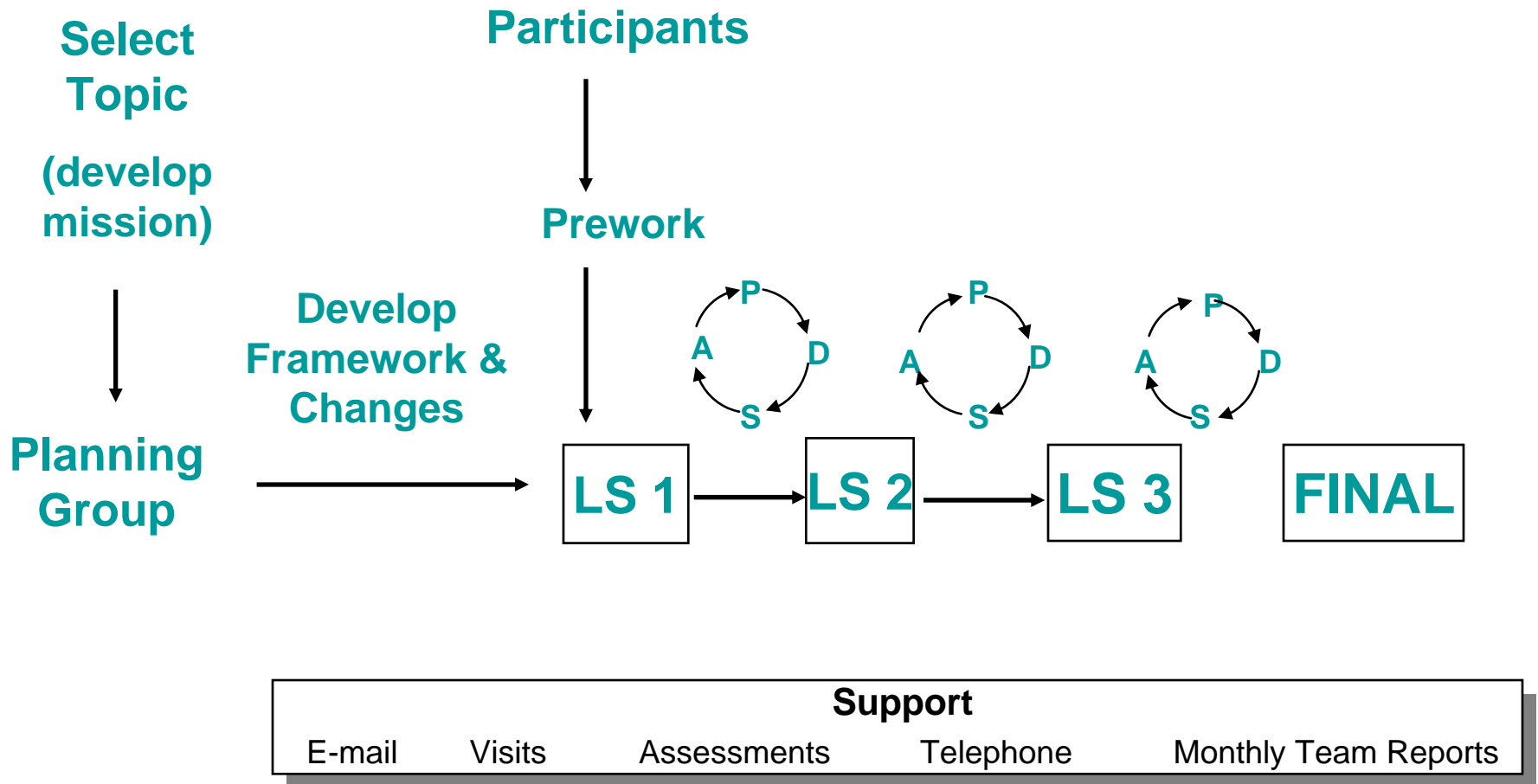
1. Comprehensive cancer programs
2. Cervical cancer prevention and screening
3. Tobacco control
4. Radiology and radiation therapy
5. Essential drugs



This plan will allow countries and the region to achieve goals and objectives that are specific to certain diseases or conditions. It is recommended to emphasize those activities proven to be cost-effective, such as blood pressure control in the prevention of heart diseases, glycemic control and foot care for people with diabetes, and screening for the prevention of cervical and breast cancer.



Breakthrough Series for the Improvement of Chronic Care (6- to 13-month timeframe)

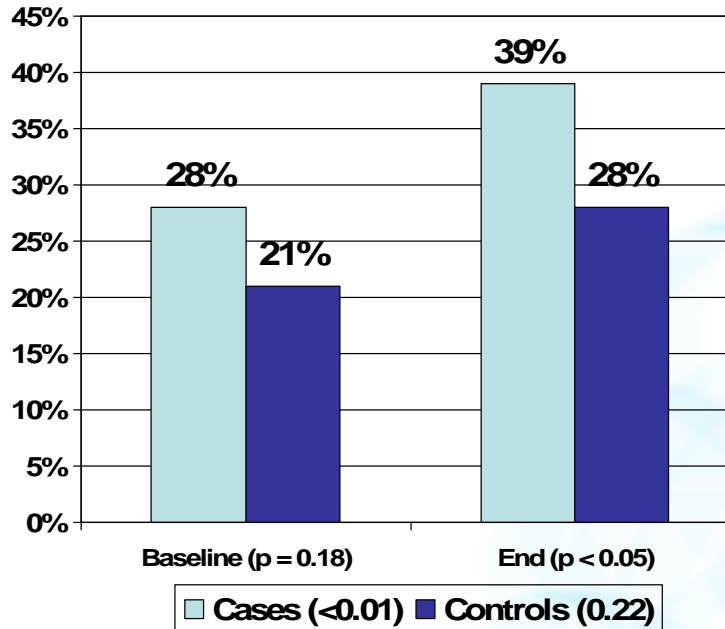


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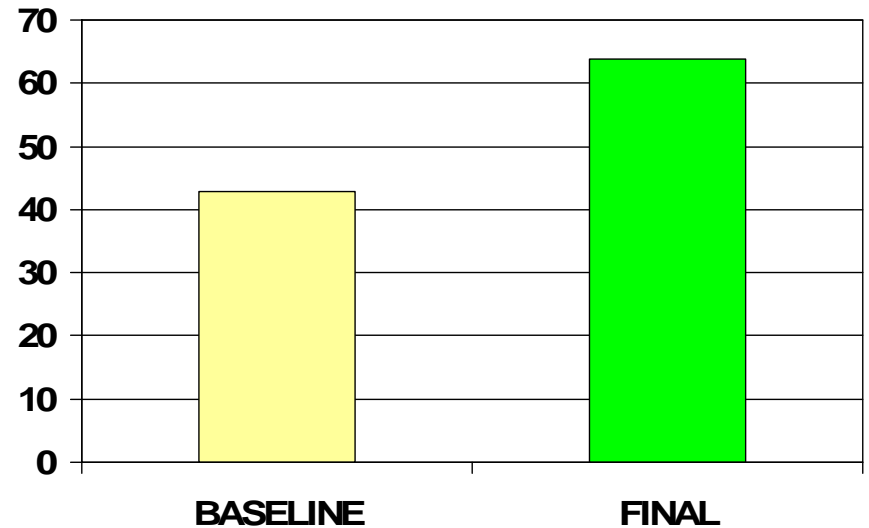


Results in Mexico & Costa Rica

MEXICO: HbA1c < 7%

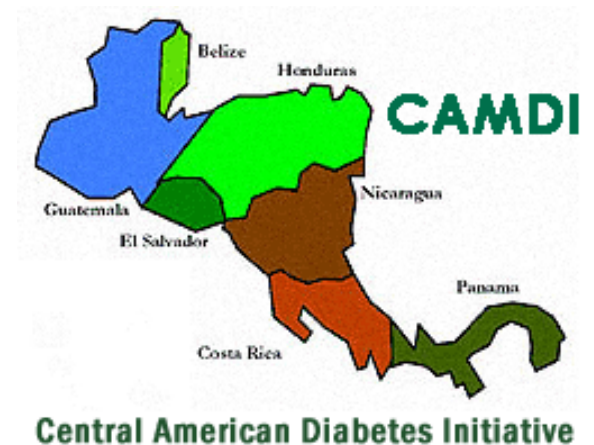


COSTA RICA A1c < 7



Stages of CAMDI

1. Survey of diabetes, hypertension, and risk factors
2. Intervention to improve the quality of diabetes care
3. Epidemiological surveillance for diabetes and other chronic diseases

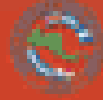




Central America Diabetes Initiative (CAMDI)

Survey of Diabetes, Hypertension and Chronic Disease Risk Factors

Villa Nueva, Guatemala 2006



Iniciativa centroamericana de diabetes (CAMDI)

Encuesta de diabetes, hipertensión y factores de riesgo de enfermedades crónicas

Villa Nueva, Guatemala 2006



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Sample Size, Number of Participants, and Laboratory Test, by country: CAMDI 1 Study

Country	Sample Size	Number Surveyed	%	Laboratory	%
Guatemala	1,700	1,397	82	966	57
Nicaragua	2,400	1,993	83	1,694	71
Honduras	2,400	1,696	71	1,237	52
El Salvador	1,870	1,870	100	1,156	62
Costa Rica	2,133	1,427	67	1,139	53
Belize	2,442	2,442	100	1,629	67
Panama	4,100				
TOTAL*	12,945	10,825	84	7,821	60



Sample Size, Number of Participants, and Laboratory Test, by country: CAMDI 1 Study

Country	Sample Size	Number Surveyed	%	Laboratory	%
Guatemala	1,700	1,397	82	966	57
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Costa Rica	2,133	1,427	67	1,139	53
Belize	2,442	2,442	100	1,629	67
Panama	4,100				
TOTAL*	12,945	10,825	84	7,821	60



Country	Year	Age (years)	Raw			Standardized*		
			M	F	T	M	F	T
DIABETES MELLITUS								
Belize	2006	20+	8.56	16.29	12.41	10.57	20.24	15.34
Costa Rica	2005	20+	8.02	7.52	7.76	11.52	9.97	10.67
El Salvador	2004	20+	7.68	7.09	7.37	10.79	9.05	9.85
Guatemala	2003	20+	8.84	7.72	8.23	11.30	10.05	10.65
Honduras	2004	20+	6.41	5.88	6.12	8.79	7.35	8.00
Nicaragua	2004	20+	8.93	9.02	8.98	11.63	12.03	11.91



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Country	Year	Age (years)	Raw			Standardized*		
			M	F	T	M	F	T
DIABETES MELLITUS								
Belize	2006	20+	8.56	16.29	12.41	10.57	20.24	15.34
Costa Rica	2005	20+	8.02	7.52	7.76	11.52	9.97	10.67
El Salvador	2004	20+	7.68	7.09	7.37	10.79	9.05	9.85
Guatemala	2003	20+	8.84	7.72	8.23	11.30	10.05	10.65
Honduras	2004	20+	6.41	5.88	6.12	8.79	7.35	8.00
Nicaragua	2004	20+	8.93	9.02	8.98	11.63	12.03	11.91



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Country	Year	Age (years)	Raw			Standardized*		
			M	F	T	M	F	T
HYPERTENSION								
Belize	2006	20+	27.11	30.73	28.91	31.76	38.33	33.54
Costa Rica	2005	20+	26.13	25.04	25.57	28.57	28.05	28.30
El Salvador	2004	20+	21.20	21.17	21.18	24.61	24.44	24.52
Guatemala	2003	20+	11.97	13.92	12.96	17.99	21.86	19.96
Honduras	2004	20+	23.62	21.56	22.48	25.29	24.23	24.70
Nicaragua	2004	20+	24.02	25.09	24.59	30.62	33.51	32.18



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Country	Year	Age (years)	Raw			Standardized*		
			M	F	T	M	F	T
HYPERTENSION								
Belize	2006	20+	27.11	30.73	28.91	31.76	38.33	33.54
Costa Rica	2005	20+	26.13	25.04	25.57	28.57	28.05	28.30
El Salvador	2004	20+	21.20	21.17	21.18	24.61	24.44	24.52
Guatemala	2003	20+	11.97	13.92	12.96	17.99	21.86	19.96
Honduras	2004	20+	23.62	21.56	22.48	25.29	24.23	24.70
Nicaragua	2004	20+	24.02	25.09	24.59	30.62	33.51	32.18



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Country	Year	Age (years)	Raw			Standardized*		
			M	F	T	M	F	T
OVERWEIGHT (BMI ≥ 25)								
Belize	2006	20+	58.64	74.56	66.57	59.93	76.15	67.99
Costa Rica	2005	20+	63.77	56.68	60.18	67.16	58.69	62.66
El Salvador	2004	20+	69.56	63.09	66.17	70.93	65.12	67.89
Guatemala	2003	20+	54.77	63.94	59.73	55.07	66.49	61.21
Honduras	2004	20+	51.94	59.95	56.36	52.69	61.48	57.57
Nicaragua	2004	20+	59.04	71.40	65.61	63.08	74.40	69.19



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Country	Year	Age (years)	Raw			Standardized*		
			M	F	T	M	F	T
OVERWEIGHT (BMI \geq 25)								
Belize	2006	20+	58.64	74.56	66.57	59.93	76.15	67.99
Costa Rica	2005	20+	63.77	56.68	60.18	67.16	58.69	62.66
El Salvador	2004	20+	69.56	63.09	66.17	70.93	65.12	67.89
Guatemala	2003	20+	54.77	63.94	59.73	55.07	66.49	61.21
Honduras	2004	20+	51.94	59.95	56.36	52.69	61.48	57.57
Nicaragua	2004	20+	59.04	71.40	65.61	63.08	74.40	69.19



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CAMDI-2



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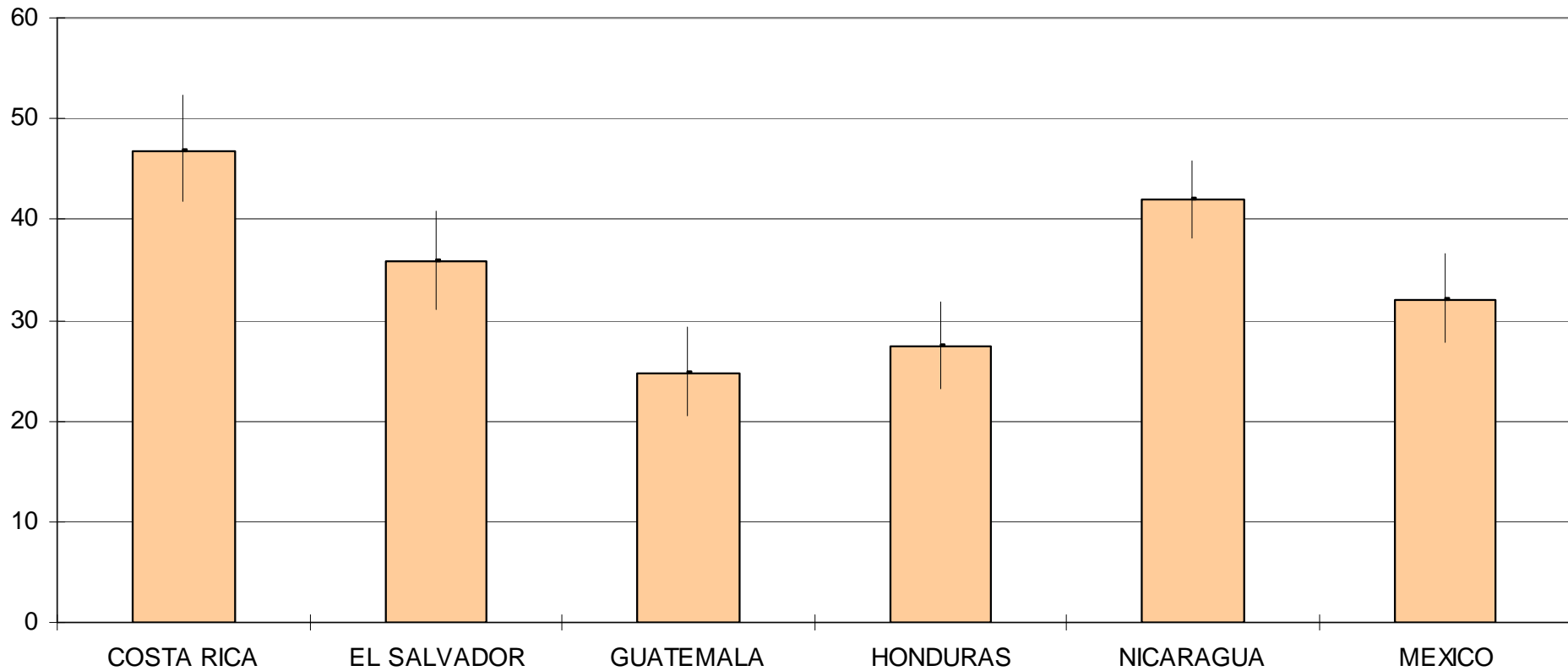


Files Sampled by Care Area and by Country

País	No.	Primary	Secondary	Terciary
Costa rica	450	100.0%		
El salvador	475	11.8%	47.8%	40.4%
Guatemala	700	5.3%		94.7%
Honduras	603	37.3%		62.7%
Nicaragua	752	80.2%		19.8%
<i>Total</i>	<i>2,981</i>	<i>46.0%</i>	<i>7.6%</i>	<i>46.4%</i>



Figure 1. Adjusted* proportion of patients with good glycemic control by country



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CAMDI-3



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Purpose

- To contribute to increasing national capacity for public health research through sustainable development of a surveillance system for diabetes, its complications, and other chronic diseases and risk factors.



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Sentinel Surveillance

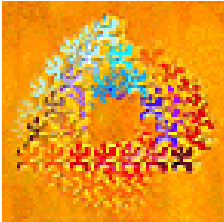


of NCDs and Risk Factors



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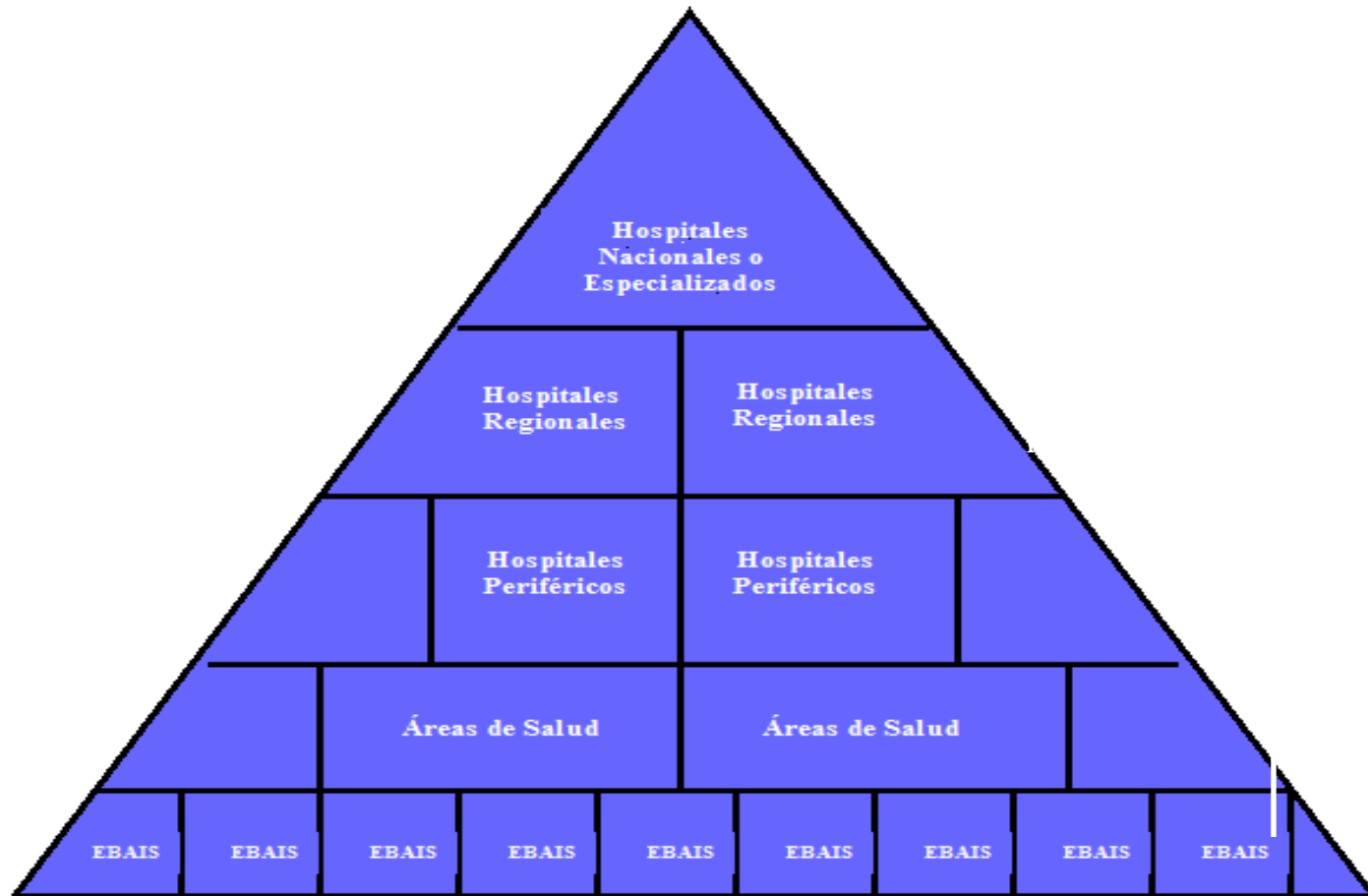


History of Risk-Factor Surveillance at PAHO

Instrument	Logo	Cities and Countries
CARMEN toolkit (1996-2000)		Valparaíso, Chile Ciefuegos, Cuba Cartago, Costa Rica
CAMDI/Pana SuRF (2001-2006)		Cd. Guatemala, Guatemala Managua, Nicaragua San José, Costa Rica San Salvador, El Salvador Tegucigalpa, Honduras Belize (CAMDI-1)
STEPS Panamericano (2006)		Toluca, Mexico Uruguay, Panama? CAMDI-3



Operational Organization of Health Services in Costa Rica



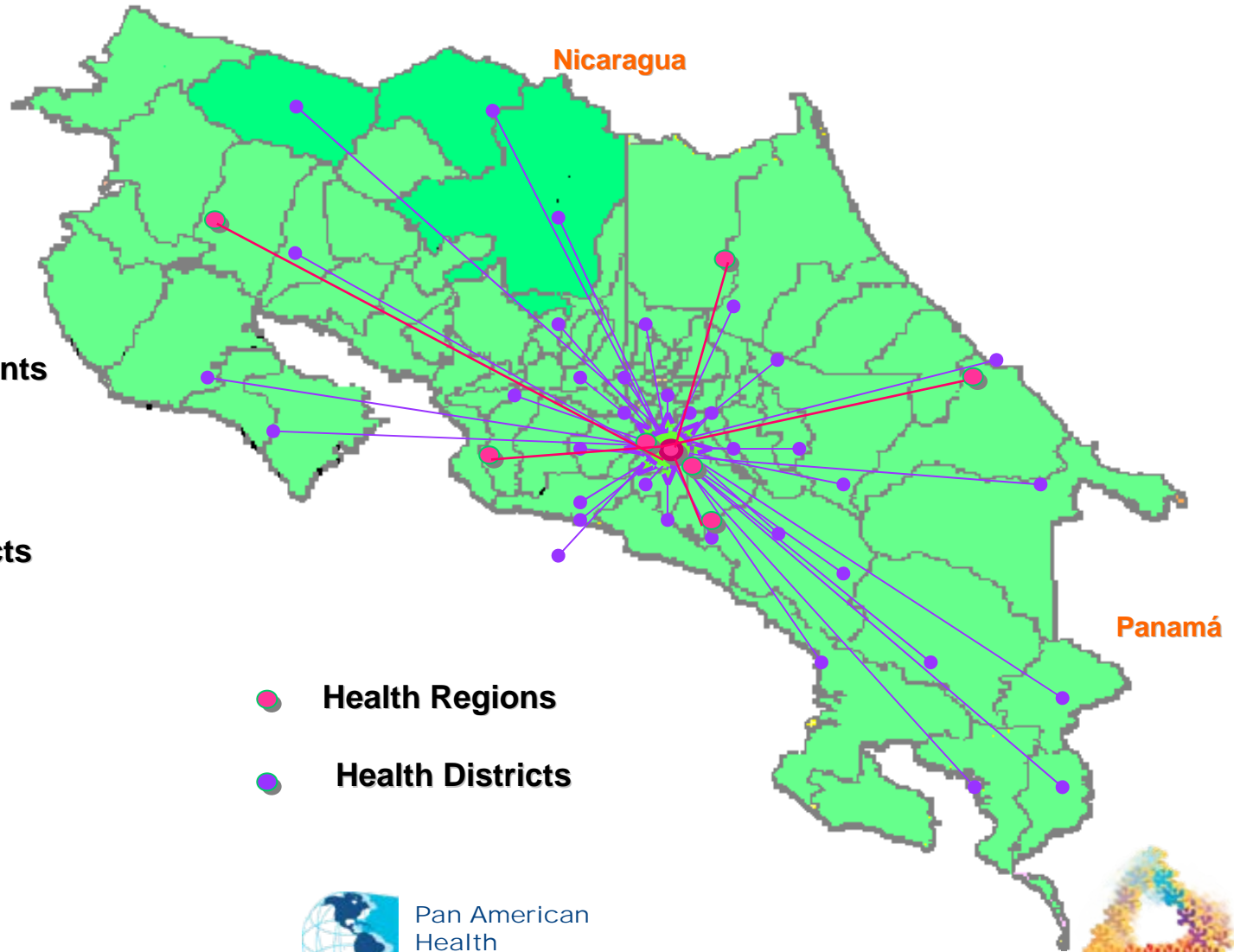
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National Epidemiology Network of Costa Rican Social Security, 2007

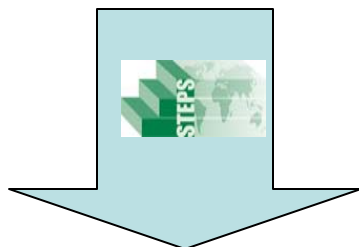
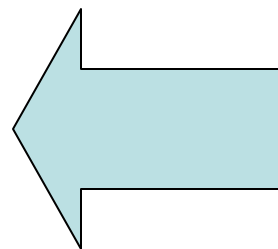
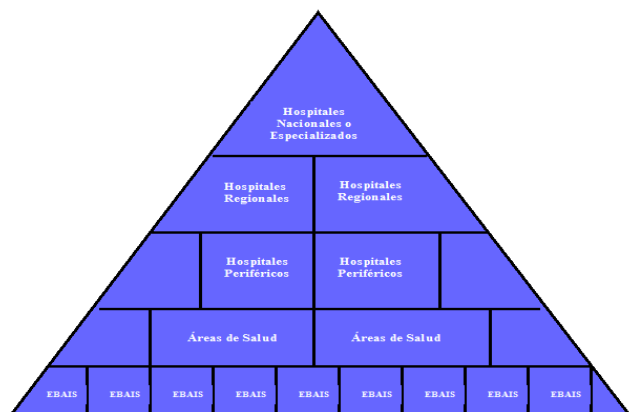
Population:
4,327,000 inhabitants

Infrastructure:
29 Hospitals
103 Health Districts
+ 900 EBAIS



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Sentinel EBAIS



	<i>Sample</i>	<i>EBAIS</i>	<i>Date</i>	<i>Level</i>
Survey (annual?)	2,400	300	AGO 08	National
Pilot	80	8	NOV 07	GOICOCHE



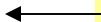
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CAMDI-3 Survey
Central American STEPS
(STEPS-CA)



Questionnaire
STEPS-CA-ATAPS
Anthropometry



Routine Laboratory Test

YES

NO

<1 year to transcribe them

>1 year

Glucose with casual glucometry
Glucose and lipid profile in lab



Impact of the CAMDI Project at the Country Level

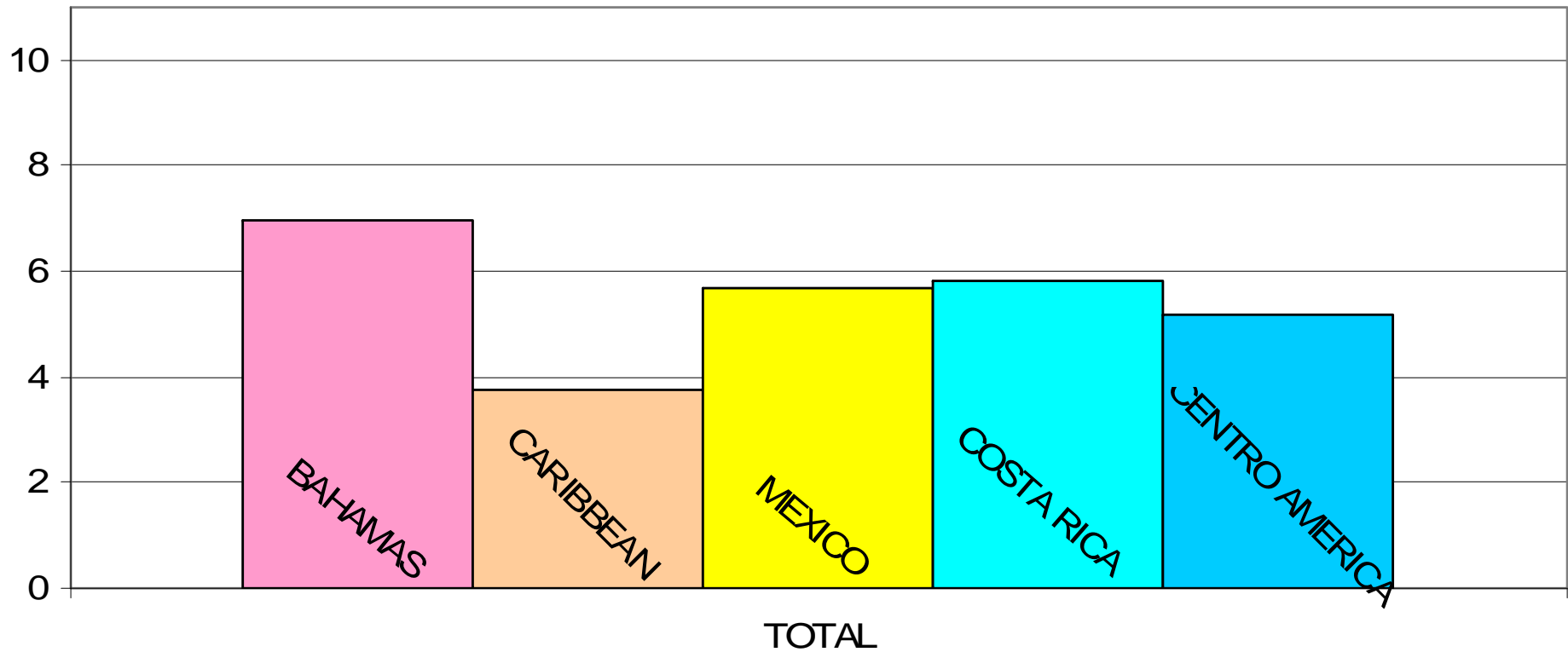
- Increase awareness about NCDs and risk factors, political will for cancer prevention and control
- Creation of NCD programs and national coordination (national commissions)
- Foster the design and implementation of NCD strategies
- Improvement of coverage of diagnosis and treatment of chronic diseases
- Creation of NCD surveillance systems
- Production of NCD situation analysis
- Creation of quality improvement, and self-management programs



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Total Scores for Country Exercises



Caribbean: Saint Lucia, Jamaica, Bahamas, Barbados, Aruba, Suriname, Trinidad and Tobago

Central America: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua

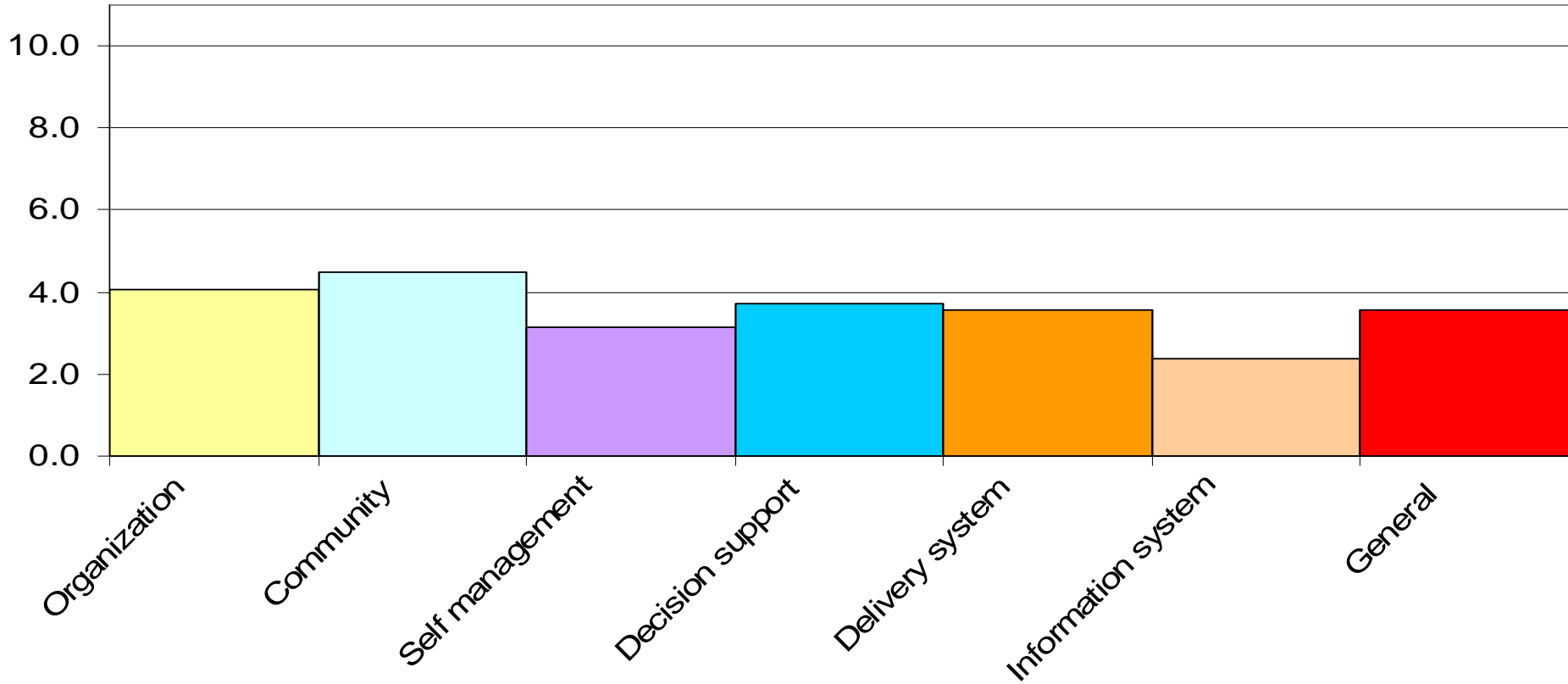


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Total Scores for Focal Point Exercises

Region



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CARMEN

Other Projects



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THE CENTRAL AMERICA DIABETES INITIATIVE:
BELIZE, COSTA RICA, EL SALVADOR, HONDURAS, GUATEMALA,
NICARAGUA & PANAMA



INTEGRATED MANAGEMET
OF CHILDHOOD ILLNESS

DIABATES & OBESITY MODULES



APRENDIZAJE ELECTRONICO

CHILE
COSTA RICA
CUBA
MEXICO

DIABETES



Canadian International
Development Agency

Agence canadienne de
développement international



International Diabetes Federation



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