Update en diabetes: dónde estamos hoy en la region?

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EndoDrChen.com

Conflictos de interés

- Ninguno para la presentación actual
- No se discutirán uso de fármacos
- Estudios financiados por la industria:
  - DISCOVER: Astra Zeneca
  - Cohorte centroamericano: Novo Nordisk

Epidemiología e impacto en la región

Costos para América Latina y Caribe en 2015

- Costo indirecto $57.100.000.000
  - $27.500.000.000 por muerte prematura
  - $16.200.000.000 por discapacidad permanente
  - $13.300.000.000 por discapacidad temporal
- Costo directo $45.000.000.000 a $66.000.000.000
  - Tratamiento complicaciones: $26.000.000.000
  - Costo insulina: $6-11.000.000.000
  - Antidiabéticos orales: $4-6.000.000.000

Barcelo A. J Glob Health. 2017;7:201410

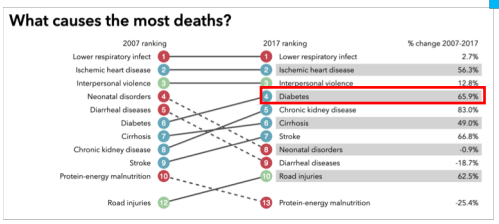
Costos LAC 2015

- Costo total: $102.000.000.000 a $123.000.000.000
- Similar al PIB para toda Guatemala!!!
- En promedio, costo por persona con DM por año es de $1088-1818
- Gasto por sistema nacional de salud $1061 por paciente

Barcelo A. J Glob Health. 2017;7:201410

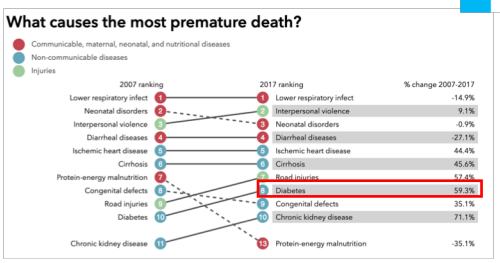
Situación actual por país

Guatemala



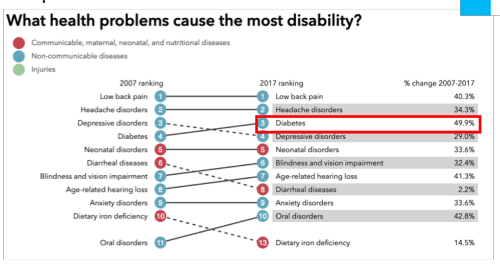
http://www.healthdata.org/guatemala

Muerte prematura

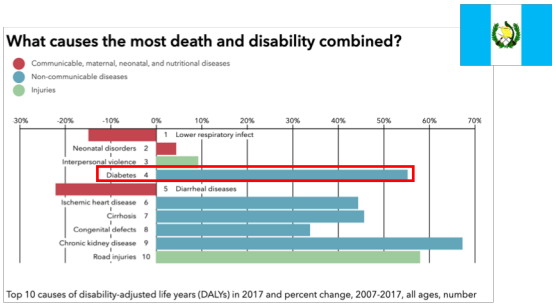


http://www.healthdata.org/guatemala

Discapacidad



http://www.healthdata.org/guatemala



http://www.healthdata.org/guatemala

Guatemala

Total population: 16 343 000
Income group: Lower middle

Mortality*

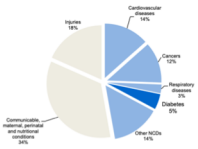
Number of diabetes deaths

	males	*females*
ages 30–69	750	890
ages 70+	760	1 150

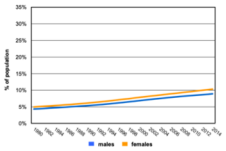
Number of deaths attributable to high blood glucose

	males	*females*
ages 30–69	1 070	1 230
ages 70+	980	1 610

Proportional mortality (% of total deaths, all ages)*



Trends in age-standardized prevalence of diabetes



Prevalence of diabetes and related risk factors

	males	females	total
Diabetes	6.8%	8.2%	7.5%
Overweight	43.1%	52.1%	47.7%
Obesity	11.3%	21.2%	16.4%
Physical inactivity	10.5%	14.1%	12.4%

National response to diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*Yes*
Operational policy/strategy/action plan to reduce overweight and obesity	*Yes*
Operational policy/strategy/action plan to reduce physical inactivity	*Yes*
Evidence-based national diabetes guidelines/protocols/standards	*Available and fully implemented*
Standard criteria for referral of patients from primary care to higher level of care	*Available and fully implemented*
Diabetes registry	*No*
Recent national risk factor survey in which blood glucose was measured	*Yes*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities

Insulin	●
Metformin	●
Sulphonylurea	●

Procedures

Retinal photocoagulation	●
Renal replacement therapy by dialysis	●
Renal replacement therapy by transplantation	○

Basic technologies in primary care facilities

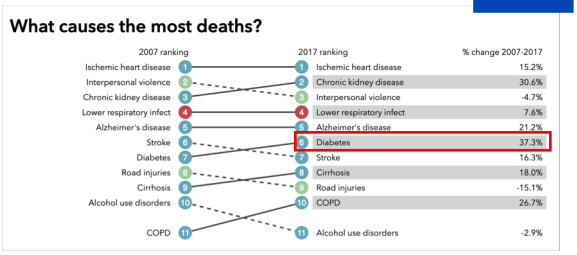
Blood glucose measurement	●
Oral glucose tolerance test	○
HbA1c test	○
Dilated fundus examination	○
Foot vibration perception by tuning fork	○
Foot vascular status by Doppler	○
Urine strips for glucose and ketone measurement	○

* The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data (see Explanatory Notes).

○ = not generally available ● = generally available

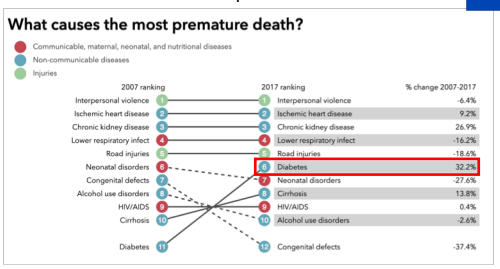
World Health Organization – Diabetes country profiles, 2016.

El Salvador



http://www.healthdata.org/el-salvador

El Salvador: muerte prematura

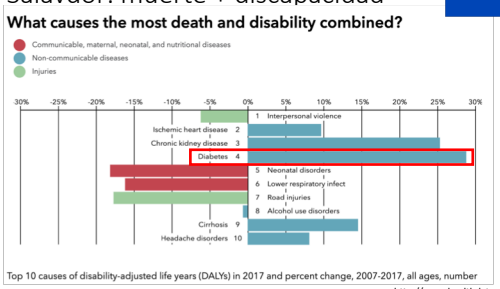


http://www.healthdata.org/el-salvador

El Salvador: discapacidad

http://www.healthdata.org/el-salvador

El Salavdor: muerte + discapacidad



http://www.healthdata.org/el-salvador

El Salvador

Total population: 6 127 000
Income group: Lower middle

Mortality*

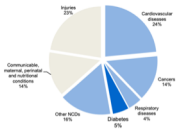
Number of diabetes deaths

	males	females
ages 30–69	380	590
ages 70+	380	720

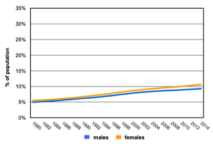
Number of deaths attributable to high blood glucose

	males	females
ages 30–69	720	870
ages 70+	750	1 330

Proportional mortality (% of total deaths, all ages)*



Trends in age-standardized prevalence of diabetes



Prevalence of diabetes and related risk factors

	males	females	total
Diabetes	7.7%	9.7%	8.8%
Overweight	49.2%	57.4%	53.5%
Obesity	14.2%	25.3%	20.1%
Physical inactivity	. . .	. . .	. . .

National response to diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*No*
Operational policy/strategy/action plan to reduce overweight and obesity	*No*
Operational policy/strategy/action plan to reduce physical inactivity	*No*
Evidence-based national diabetes guidelines/protocols/standards	*Available and fully implemented*
Standard criteria for referral of patients from primary care to higher level of care	*Available and fully implemented*
Diabetes registry	*Yes*
Recent national risk factor survey in which blood glucose was measured	*Yes*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities

Insulin	○
Metformin	●
Sulphonylurea	●

Procedures

Retinal photocoagulation	○
Renal replacement therapy by dialysis	●
Renal replacement therapy by transplantation	○

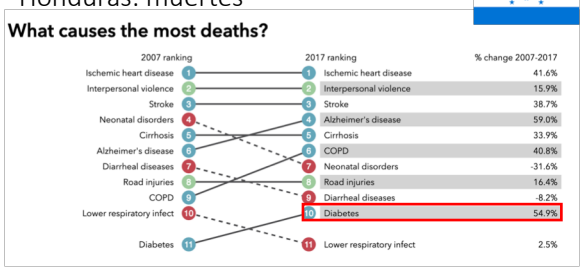
Basic technologies in primary care facilities

Blood glucose measurement	●
Oral glucose tolerance test	○
HbA1c test	○
Dilated fundus examination	○
Foot vibration perception by tuning fork	○
Foot vascular status by Doppler	○
Urine strips for glucose and ketone measurement	○

* The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data (see Explanatory Notes).
. . . = no data available
○ = not generally available ● = generally available

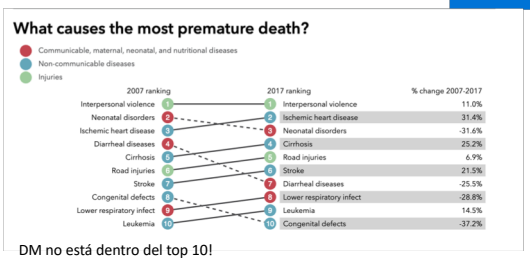
World Health Organization – Diabetes country profiles, 2016.

Honduras: muertes



http://www.healthdata.org/honduras

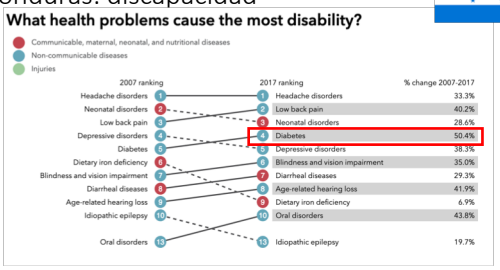
Honduras: muerte prematura



DM no está dentro del top 10!

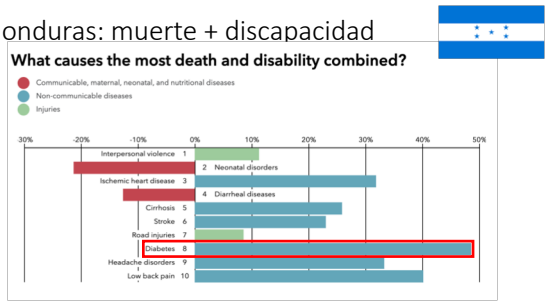
http://www.healthdata.org/honduras

Honduras: discapacidad



http://www.healthdata.org/honduras

Honduras: muerte + discapacidad



http://www.healthdata.org/honduras

Honduras

Total population: 8 075 000
Income group: Lower middle

Mortality*

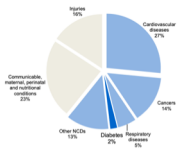
Number of diabetes deaths

	males	*females*
ages 30–69	190	160
ages 70+	160	210

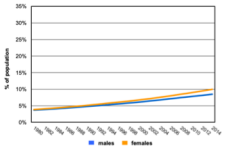
Number of deaths attributable to high blood glucose

	males	*females*
ages 30–69	370	310
ages 70+	280	450

Proportional mortality (% of total deaths, all ages)*



Trends in age-standardized prevalence of diabetes



Prevalence of diabetes and related risk factors

	males	females	total
Diabetes	6.5%	7.9%	7.2%
Overweight	43.3%	52.0%	47.6%
Obesity	11.1%	21.6%	16.3%
Physical inactivity	. . .	. . .	. . .

National response to diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*No*
Operational policy/strategy/action plan to reduce overweight and obesity	*No*
Operational policy/strategy/action plan to reduce physical inactivity	*No*
Evidence-based national diabetes guidelines/protocols/standards	*Available but not implemented†*
Standard criteria for referral of patients from primary care to higher level of care	*Not available*
Diabetes registry	*No*
Recent national risk factor survey in which blood glucose was measured	*No*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities

Insulin	○
Metformin	○
Sulphonylurea	○

Procedures

Retinal photocoagulation	○
Renal replacement therapy by dialysis	○
Renal replacement therapy by transplantation	○

Basic technologies in primary care facilities

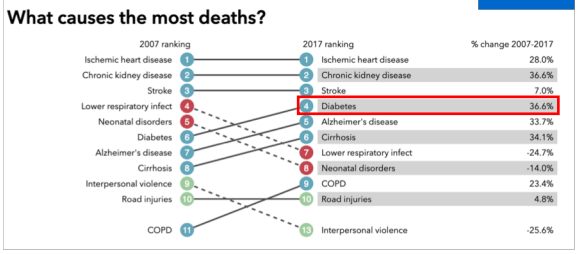
Blood glucose measurement	●
Oral glucose tolerance test	○
HbA1c test	○
Dilated fundus examination	○
Foot vibration perception by tuning fork	○
Foot vascular status by Doppler	DK
Urine strips for glucose and ketone measurement	○

* The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data (see Explanatory Notes).
† = documentation not provided
○ = not generally available ● = generally available

DK = country responded "don't know"
... = no data available

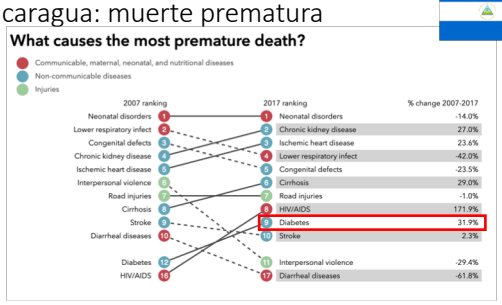
World Health Organization – Diabetes country profiles, 2016.

Nicaragua: muerte



http://www.healthdata.org/nicaragua

Nicaragua: muerte prematura

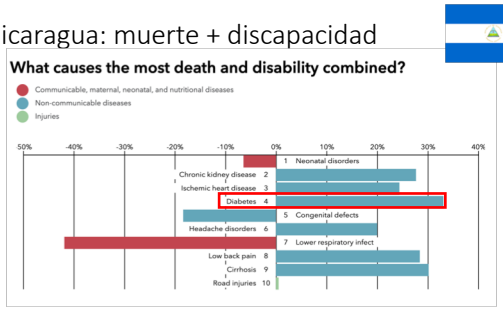


http://www.healthdata.org/nicaragua

Nicaragua: discapacidad

http://www.healthdata.org/nicaragua

Nicaragua: muerte + discapacidad



http://www.healthdata.org/nicaragua

Nicaragua

Total population: 6 082 000
Income group: Lower middle

Mortality*

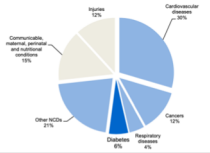
Number of diabetes deaths

	males	females
ages 30–69	420	460
ages 70+	280	450

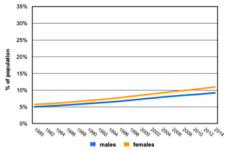
Number of deaths attributable to high blood glucose

	males	females
ages 30–69	730	740
ages 70+	470	880

Proportional mortality (% of total deaths, all ages)*



Trends in age-standardized prevalence of diabetes



Prevalence of diabetes and related risk factors

	males	females	total
Diabetes	7.2%	9.0%	8.1%
Overweight	40.7%	51.3%	46.1%
Obesity	9.7%	21.1%	15.5%
Physical inactivity	. . .	. . .	. . .

National response to diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*No*
Operational policy/strategy/action plan to reduce overweight and obesity	*No*
Operational policy/strategy/action plan to reduce physical inactivity	*No*
Evidence-based national diabetes guidelines/protocols/standards	*Available and fully implemented*
Standard criteria for referral of patients from primary care to higher level of care	*Available and fully implemented*
Diabetes registry	*Yes*
Recent national risk factor survey in which blood glucose was measured	*No*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities

Insulin	●
Metformin	●
Sulphonylurea	DK

Procedures

Retinal photocoagulation	●
Renal replacement therapy by dialysis	●
Renal replacement therapy by transplantation	○

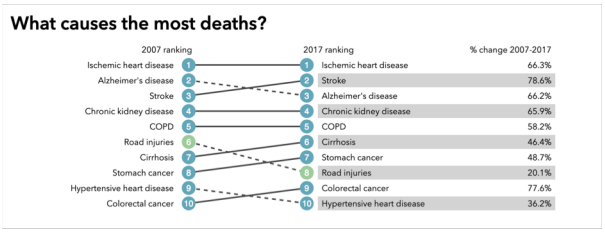
Basic technologies in primary care facilities

Blood glucose measurement	●
Oral glucose tolerance test	●
HbA1c test	○
Dilated fundus examination	○
Foot vibration perception by tuning fork	○
Foot vascular status by Doppler	○
Urine strips for glucose and ketone measurement	●

* The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data (see Explanatory Notes).
DK = country responded "don't know"
○ = not generally available ● = generally available
– = no data available

World Health Organization – Diabetes country profiles, 2016.

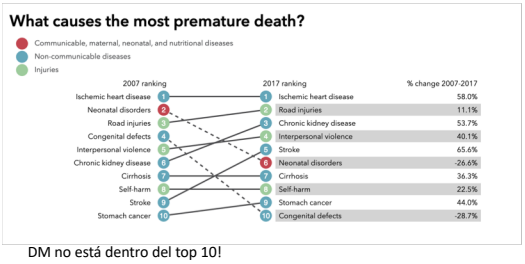
Costa Rica: muerte



DM no está dentro del top 10! Subregistro?

http://www.healthdata.org/costa-rica

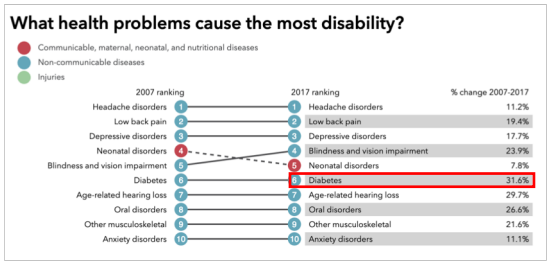
Costa Rica: muerte prematura



DM no está dentro del top 10!

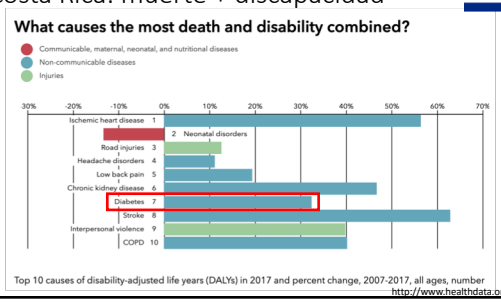
http://www.healthdata.org/costa-rica

Costa Rica: discapacidad



http://www.healthdata.org/costa-rica

Costa Rica: muerte + discapacidad



http://www.healthdata.org/costa-rica

Costa Rica

Total population: 4 808 000
Income group: Upper middle

Mortality

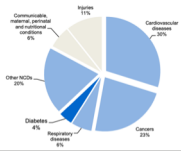
Number of diabetes deaths

	males	*females*
ages 30–69	180	160
ages 70+	200	300

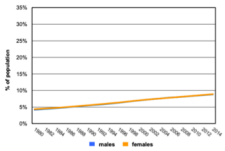
Number of deaths attributable to high blood glucose

	males	*females*
ages 30–69	330	240
ages 70+	370	480

Proportional mortality (% of total deaths, all ages)



Trends in age-standardized prevalence of diabetes



Prevalence of diabetes and related risk factors

	males	females	total
Diabetes	8.4%	8.7%	8.5%
Overweight	58.0%	61.9%	59.9%
Obesity	19.0%	29.2%	24.0%
Physical inactivity	. . .	. . .	. . .

National response to diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*Yes*
Operational policy/strategy/action plan to reduce overweight and obesity	*No*
Operational policy/strategy/action plan to reduce physical inactivity	*Yes*
Evidence-based national diabetes guidelines/protocols/standards	*Available and fully implemented*
Standard criteria for referral of patients from primary care to higher level of care	*Available and fully implemented*
Diabetes registry	*No*
Recent national risk factor survey in which blood glucose was measured	*Yes*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities

Insulin	●
Metformin	●
Sulphonylurea	●

Procedures

Retinal photocoagulation	●
Renal replacement therapy by dialysis	●
Renal replacement therapy by transplantation	●

Basic technologies in primary care facilities

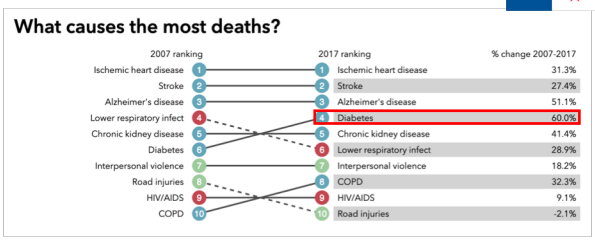
Blood glucose measurement	●
Oral glucose tolerance test	●
HbA1c test	●
Dilated fundus examination	●
Foot vibration perception by tuning fork	●
Foot vascular status by Doppler	●
Urine strips for glucose and ketone measurement	●

. . . = no data available

□ = not generally available ● = generally available

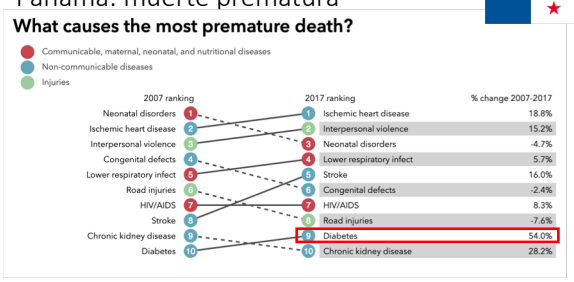
World Health Organization – Diabetes country profiles, 2016.

Panama: muerte



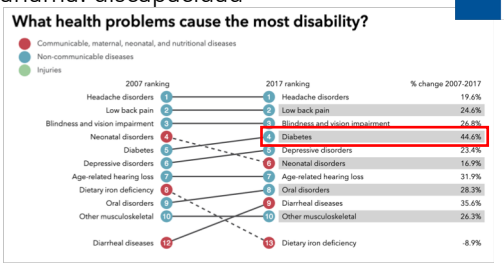
http://www.healthdata.org/panama

Panama: muerte prematura



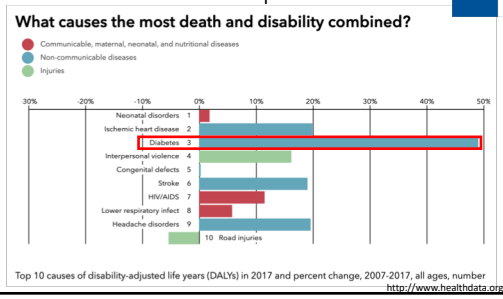
http://www.healthdata.org/costarica

Panama: discapacidad



http://www.healthdata.org/costarica

Panama: muerte + discapacidad



http://www.healthdata.org/costarica

Panama

Total population: 3 929 000
Income group: Upper middle

Mortality

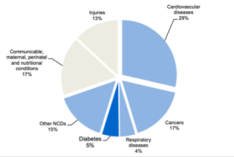
Number of diabetes deaths

	males	*females*
ages 30–69	170	170
ages 70+	260	340

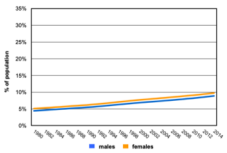
Number of deaths attributable to high blood glucose

	males	*females*
ages 30–69	290	250
ages 70+	450	460

Proportional mortality (% of total deaths, all ages)



Trends in age-standardized prevalence of diabetes



Prevalence of diabetes and related risk factors

	males	females	total
Diabetes	8.4%	9.6%	9.0%
Overweight	58.4%	65.2%	61.7%
Obesity	20.3%	32.8%	26.5%
Physical inactivity	. . .	. . .	. . .

National response to diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*Yes*
Operational policy/strategy/action plan to reduce overweight and obesity	*No*
Operational policy/strategy/action plan to reduce physical inactivity	*Yes*
Evidence-based national diabetes guidelines/protocols/standards	*Available and fully implemented*
Standard criteria for referral of patients from primary care to higher level of care	*Not available*
Diabetes registry	*Yes*
Recent national risk factor survey in which blood glucose was measured	*No*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities	
Insulin	●
Metformin	●
Sulphonylurea	●
Procedures	
Retinal photocoagulation	○
Renal replacement therapy by dialysis	○
Renal replacement therapy by transplantation	○

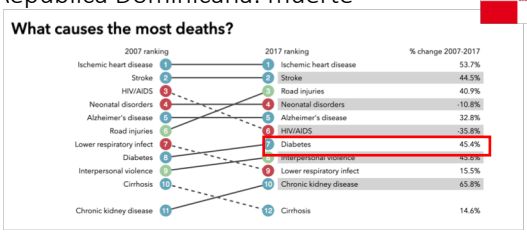
Basic technologies in primary care facilities	
Blood glucose measurement	●
Oral glucose tolerance test	●
HbA1c test	○
Dilated fundus examination	○
Foot vibration perception by tuning fork	○
Foot vascular status by Doppler	○
Urine strips for glucose and ketone measurement	●

– = no data available

○ = not generally available ● = generally available

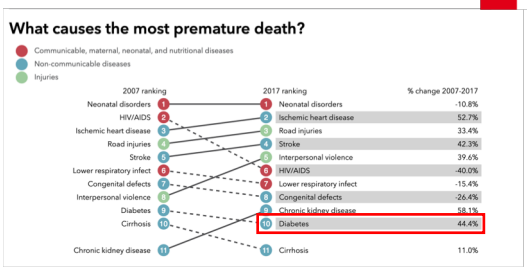
World Health Organization – Diabetes country profiles, 2016.

República Dominicana: muerte



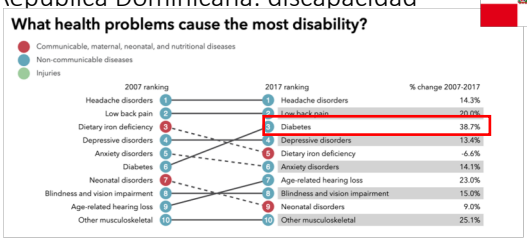
http://www.healthdata.org/dominican-republic

República Dominicana: muerte prematura



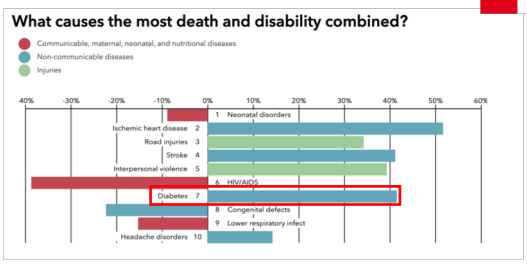
http://www.healthdata.org/dominican-republic

República Dominicana: discapacidad



http://www.healthdata.org/dominican-republic

RD: muerte + discapacidad



http://www.healthdata.org/dominican-republic

Dominican Republic

Total population: 10 528 000
Income group: Upper middle

Mortality*

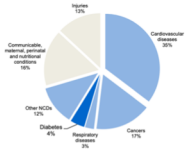
Number of diabetes deaths

	males	females
ages 30–69	360	510
ages 70+	350	810

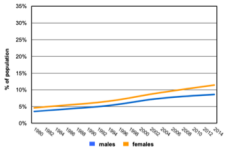
Number of deaths attributable to high blood glucose

	males	females
ages 30–69	620	780
ages 70+	630	1 410

Proportional mortality (% of total deaths, all ages)*



Trends in age-standardized prevalence of diabetes



Prevalence of diabetes and related risk factors

	males	females	total
Diabetes	7.8%	10.6%	9.3%
Overweight	51.2%	58.4%	54.8%
Obesity	17.6%	28.4%	23.0%
Physical inactivity	30.5%	39.4%	35.0%

National response to diabetes

Policies, guidelines and monitoring

Operational policy/strategy/action plan for diabetes	*Yes*
Operational policy/strategy/action plan to reduce overweight and obesity	*No*
Operational policy/strategy/action plan to reduce physical inactivity	*Yes*
Evidence-based national diabetes guidelines/protocols/standards	*Not available*
Standard criteria for referral of patients from primary care to higher level of care	*Available and partially implemented*
Diabetes registry	*Yes*
Recent national risk factor survey in which blood glucose was measured	*No*

Availability of medicines, basic technologies and procedures in the public health sector

Medicines in primary care facilities

Insulin	●
Metformin	●
Sulphonylurea	●

Procedures

Retinal photocoagulation	○
Renal replacement therapy by dialysis	●
Renal replacement therapy by transplantation	●

Basic technologies in primary care facilities

Blood glucose measurement	●
Oral glucose tolerance test	●
HbA1c test	○
Dilated fundus examination	○
Foot vibration perception by tuning fork	○
Foot vascular status by Doppler	○
Urine strips for glucose and ketone measurement	●

* The mortality estimates for this country have a high degree of uncertainty because they are not based on any national NCD mortality data (see Explanatory Notes).

○ = not generally available ● = generally available

World Health Organization – Diabetes country profiles, 2016.

Control glicémico y complicaciones

Conclusiones

- Prevalencia de DM va en aumento en la región igual que en el resto del mundo
- Para la mayoría de los países, está en el top 10 de muerte, muerte prematura discapacidad
- Fuerte impacto económico en la sociedad
- Podemos tratar de mejorar el control metabólico general de nuestra población

Preguntas…

chenku2409@gmail.com

Puede descargar la presentación en:

www.EndoDrChen.com