Differences across region in diabetes prevention and care

How to interpret them and tailor the actions accordingly

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Vice-President - SPD – Portuguese Society for Diabetology

apdp Associação Protectora dos Diabéticos de Portugal

NOVA MEDICAL SCHOOL FACULDADE DE CIÊNCIAS MÉDICAS

Key points for today

- From global to local
  - Is just the focus ?
- The process of care
  - Quality circle
  - Integrated care
  - Indicators
  - Data analysis
    - What for ?
    - To whom ?
    - Emotional reactions
  - Assessment
    - Reporting
  - Examples

GLOBAL REPORT ON DIABETES

World Health Organization

BOX 1. VOLUNTARY GLOBAL TARGETS FOR PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES TO BE ATTAINED BY 2025

(1) A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases

(2) At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context

(3) A 10% relative reduction in prevalence of insufficient physical activity

(4) A 30% relative reduction in mean population intake of salt/sodium

(5) A 30% relative reduction in prevalence of current tobacco use

(6) A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances

(7) Halt the rise in diabetes and obesity

(8) At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes

(9) An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities

United Nations

General Assembly

Political declaration of the third high-level meeting of the General Assembly on the prevention and control of non communicable diseases

Time to deliver: accelerating our response to address non communicable diseases for the health and well-being of present and future generations

third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases on 27 September 2018

United Nations

General Assembly

- Recognize that action to realize the **commitments** made for the prevention and control of non-communicable diseases **is inadequate** and that the **level of progress and investment to date is insufficient** to meet target 3.4 of the Sustainable Development Goals and that the world has yet to fulfil its promise of implementing, at all levels, measures to reduce the risk of premature death and disability from non-communicable diseases;
- Express grave concern that the huge human and economic cost of **non communicable diseases contributes to poverty and inequities** and threatens the health of peoples and the development of countries, …

third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases on 27 September 2018

United Nations

General Assembly

- Strengthen health systems and reorient them towards the achievement of universal health coverage and improvement of health outcomes, and **high-quality, integrated and people-centred** primary and specialized health services for the prevention, screening and control of non-communicable diseases and related mental health disorders and other mental health conditions throughout the life cycle,
- including access to safe, affordable, effective and quality essential **diagnostics, medicines, vaccines and technologies, and palliative care**, and understandable and high-quality, patient-friendly **information** on their use, as well as **health management information systems** and an adequate and well-trained and equipped **health workforce**

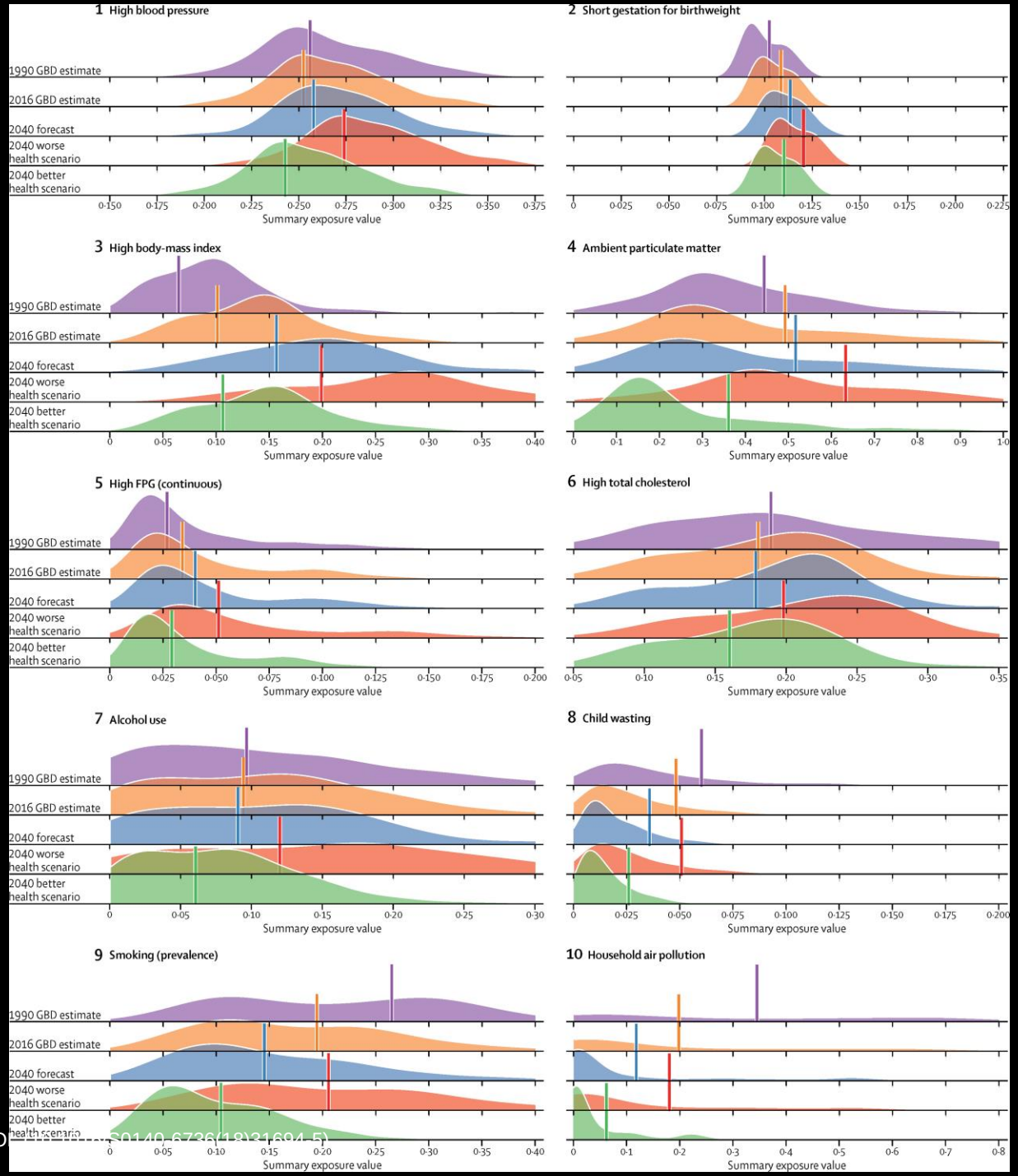
third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases on 27 September 2018

Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016–40 for 195 countries and territories

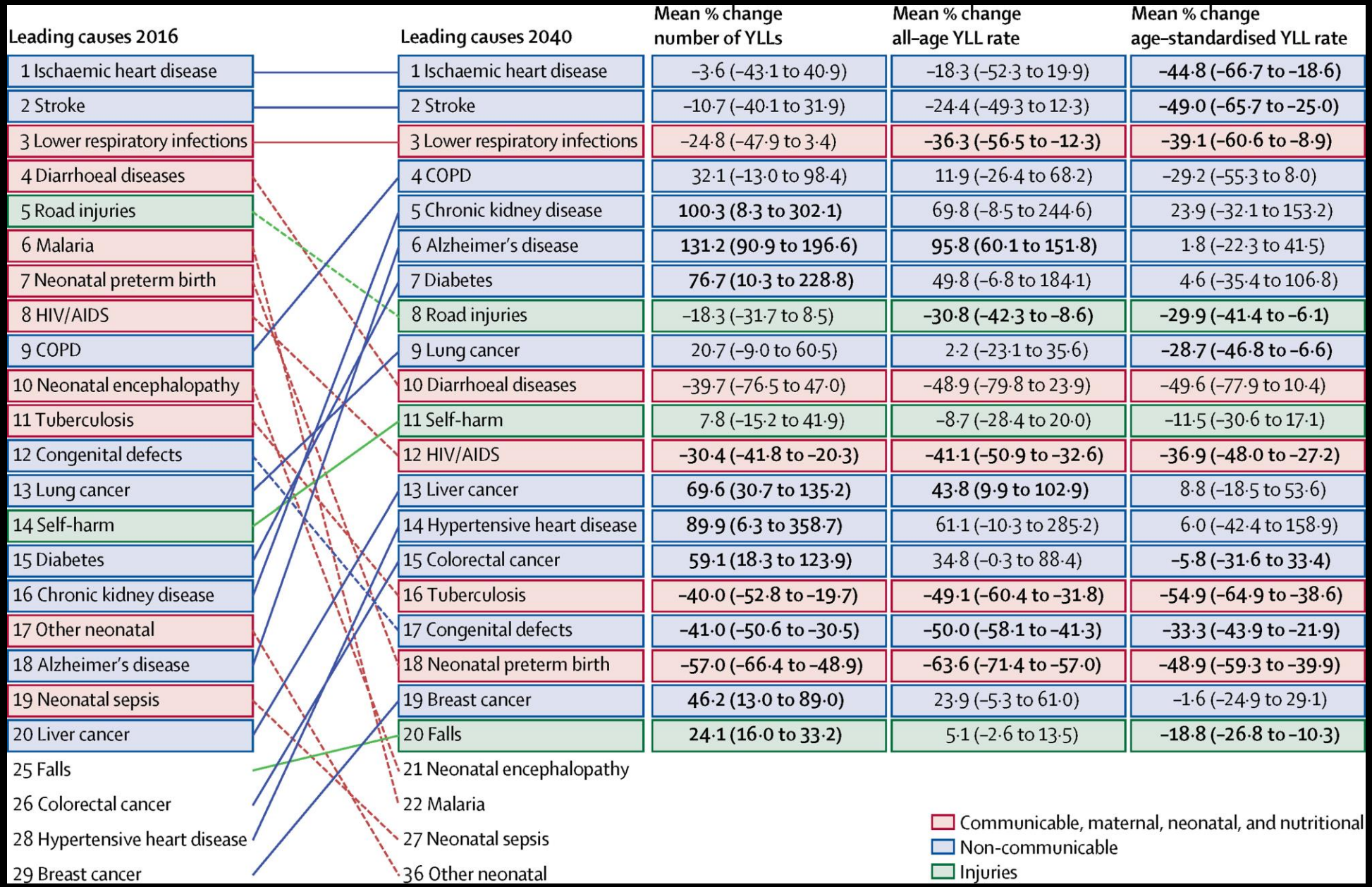
Kyle J Foreman, PhD, Neal Marquez, BA, Andrew Dolgert, PhD, Kai Fukutaki, BA, Nancy Fullman, MPH, Madeline McGaughey, BA, Martin A Pletcher, BS, Amanda E Smith, MPA, Kendrick Tang, BS, Chun-Wei Yuan, PhD, Jonathan C Brown, MAIS, Joseph Friedman, MPH, Jiawei He, MS, Kyle R Heuton, MPH, Mollie Holmberg, BS, Disha J Patel, MPH, Patrick Reidy, MPH, Austin Carter, MPH, Kelly Cercy, BS, Abigail Chapin, BA, Dirk Douwes-Schultz, BS, Tahvi Frank, BS, Falko Goettsch, BA, Patrick Y Liu, MPH, Vishnu Nandakumar, BSc, Marissa B Reitsma, BS, Vince Reuter, BS, Nafis Sadat, MA, Reed J D Sorensen, MPH, Vinay Srinivasan, BA, Rachel L Updike, AB, Hunter York, BA, Prof Alan D Lopez, PhD, Prof Rafael Lozano, PhD, Prof Stephen S Lim, PhD, Prof Ali H Mokdad, PhD, Prof Stein Emil Vollset, DrPH, Prof Christopher J L Murray, DPhil

The Lancet

DOI: 10.1016/S0140-6736(18)31694-5



The Lancet DO[illegible]S0140-6736(18)31694-5)



The Lancet DOI: (10.1016/S0140-6736(18)31694-5)

Data for data...

Diabetes: A global emergency

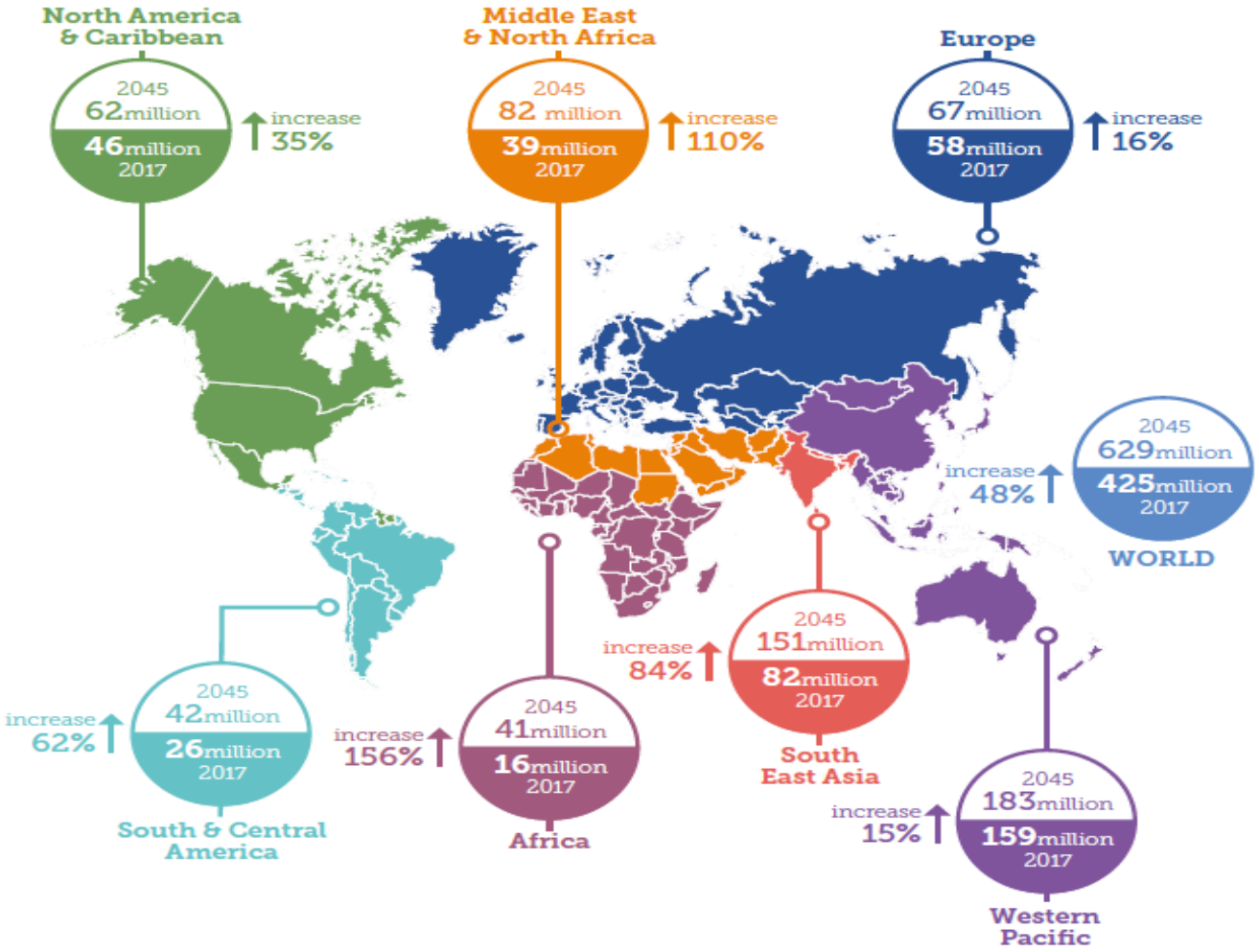
Number of people with diabetes worldwide and per region in 2017 and 2045 (20-79 years)

Zooming in ...

International Diabetes Federation

Diabetes: A global emergency

Number of people with diabetes worldwide and per region in 2017 and 2045 (20-79 years)

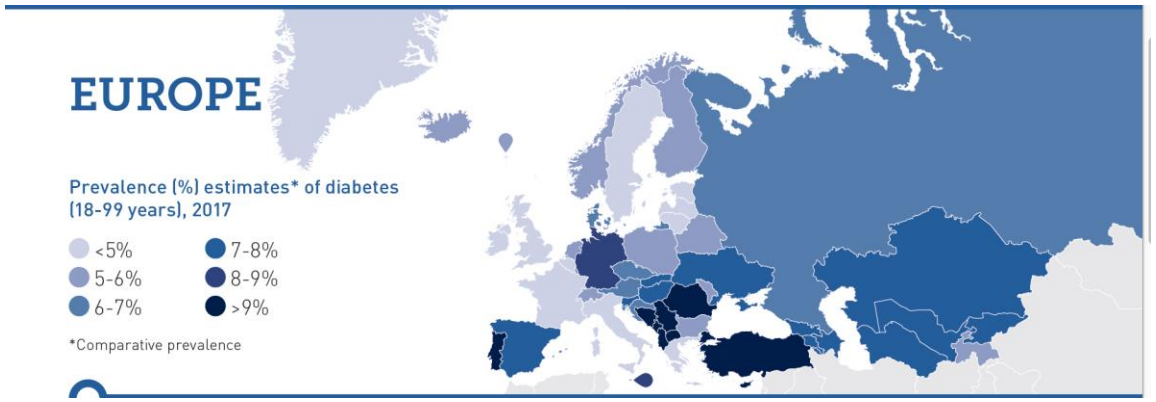


Is this level enough ?

International Diabetes Federation

Europe

At a glance	2017	2045
Adult population (18-99 years)	721 million	748 million
Diabetes (18-99 years)		
Regional prevalence	9.1%	10.8%
Age-adjusted comparative prevalence	6.7%	6.7%
Number of people with diabetes	66 million	81 million
Number of deaths due to diabetes (20-99 years)	693,351	-
Health expenditure due to diabetes (18-99 years)		
Total health expenditure, USD	207 billion	214 billion
Impaired glucose tolerance (18-99 years)		
Regional prevalence	5.6%	6.6%
Age-adjusted comparative prevalence	4.5%	4.7%
Number of people with impaired glucose tolerance	41 million	49 million
Type 1 diabetes (0-19 years)		
Number of children with type 1 diabetes	286,000	-
Number of newly diagnosed children each year	28,200	-



Ir
Diabetes
Federation

Portugal

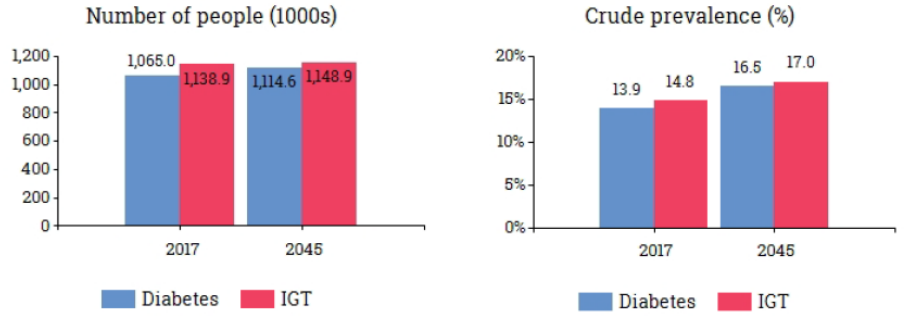
Portugal At a Glance	2017	2045
Diabetes estimates (20-79 years)	Confidence intervals in brackets	
Country prevalence, %	13.9 (10.2-17.2)	16.5 (12.2-20.0)
Age-adjusted comparative prevalence, %	9.8 (6.9-13.2)	9.9 (6.9-13.3)
Number of people with diabetes, in 1,000s	1,065.0 (784.5-1,320.5)	1,114.6 (824.4-1,352.8)
Number of people with undiagnosed diabetes, in 1,000s	464.3 (342.0-575.6)	485.9 (359.4-589.7)
Proportion of undiagnosed cases, %	43.6	43.6
Number of deaths due to diabetes, in 1,000s	5.8 (4.3-6.7)	
Proportion of deaths due to diabetes in people under 60 years, %	39.4	
Impaired glucose tolerance (20-79 years)		
Country prevalence, %	14.8 (7.8-18.5)	17.0 (8.2-19.9)
Age-adjusted comparative prevalence, %	11.3 (6.3-15.1)	11.3 (6.3-14.6)
Number of people with impaired glucose tolerance, in 1,000s	1,138.9 (596.5-1,421.9)	1,148.9 (556.7-1,344.0)
Healthcare expenditure due to diabetes (20-79 years)		
Total health expenditures, million USD*	2,351.1	2,113.6
Health expenditures per person with diabetes, USD*	2,230.1	1,896.2
Type 1 diabetes (0-19 years)		
Number of children and adolescents with type 1 diabetes	2,200.0	
Number of newly diagnosed children and adolescents each year, per 100 000 children	12.1	
Hyperglycemia in pregnancy		
Number of life births affected by hyperglycemia in pregnancy, in 1,000s		

*People with diabetes have average two times higher healthcare expenditure than than people without diabetes

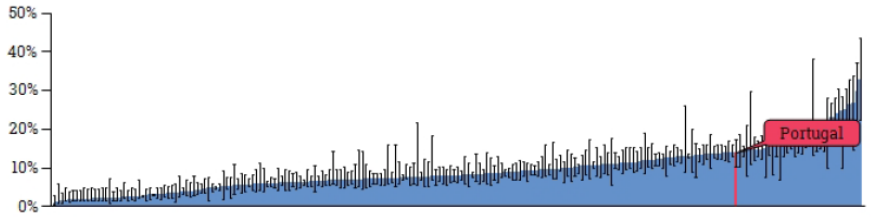
International Diabetes Federation

Portugal
Country report 2017 & 2045

Diabetes and IGT in adults (20-79 years), 2017 and 2045



Prevalence of diabetes compared to other countries, 2017

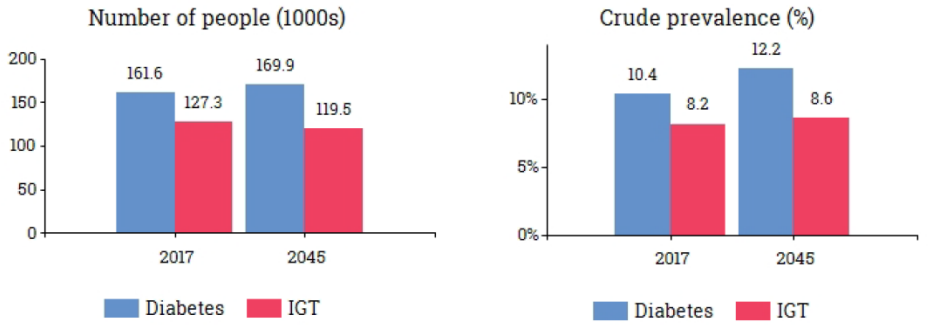


Slovenia At a Glance	2017	2045
Diabetes estimates (20-79 years)	Confidence intervals in brackets	
Country prevalence, %	10.4 (7.0-13.4)	12.2 (7.6-15.8)
Age-adjusted comparative prevalence, %	7.3 (5.2-9.6)	7.3 (5.2-9.6)
Number of people with diabetes, in 1,000s	161.6 (108.5-208.1)	169.9 (105.2-218.9)
Number of people with undiagnosed diabetes, in 1,000s	57.8 (38.8-74.4)	60.7 (37.6-78.3)
Proportion of undiagnosed cases, %	35.8	35.8
Number of deaths due to diabetes, in 1,000s	0.9 (0.7-1.2)	
Proportion of deaths due to diabetes in people under 60 years, %	33.4	
Impaired glucose tolerance (20-79 years)		
Country prevalence, %	8.2 (7.4-9.5)	8.6 (7.6-10.1)
Age-adjusted comparative prevalence, %	7.3 (6.6-8.5)	7.3 (6.6-8.5)
Number of people with impaired glucose tolerance, in 1,000s	127.3 (114.7-148.1)	119.5 (105.6-139.6)
Healthcare expenditure due to diabetes (20-79 years)		
Total health expenditures, million USD*	401.4	362.4
Health expenditures per person with diabetes, USD*	2,520.4	2,133.1
Type 1 diabetes (0-19 years)		
Number of children and adolescents with type 1 diabetes	554.0	
Number of newly diagnosed children and adolescents each year, per 100 000 children	12.2	
Hyperglycemia in pregnancy		
Number of life births affected by hyperglycemia in pregnancy, in 1,000s		

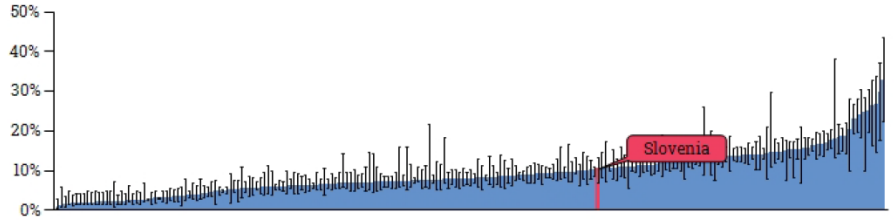
*People with diabetes have average two times higher healthcare expenditure than than people without diabetes

Slovenia
Country report 2017 & 2045

Diabetes and IGT in adults (20-79 years), 2017 and 2045



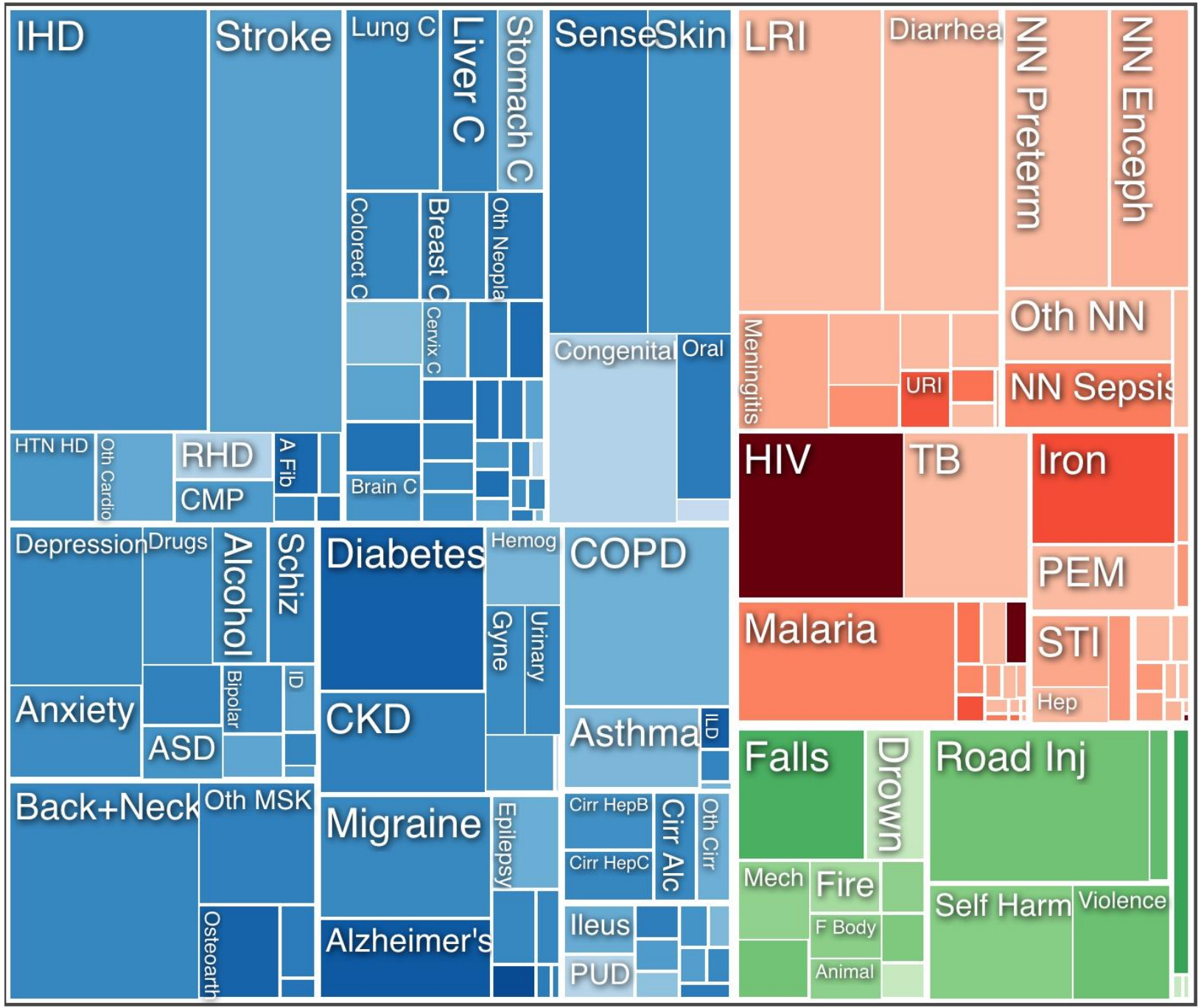
Prevalence of diabetes compared to other countries, 2017



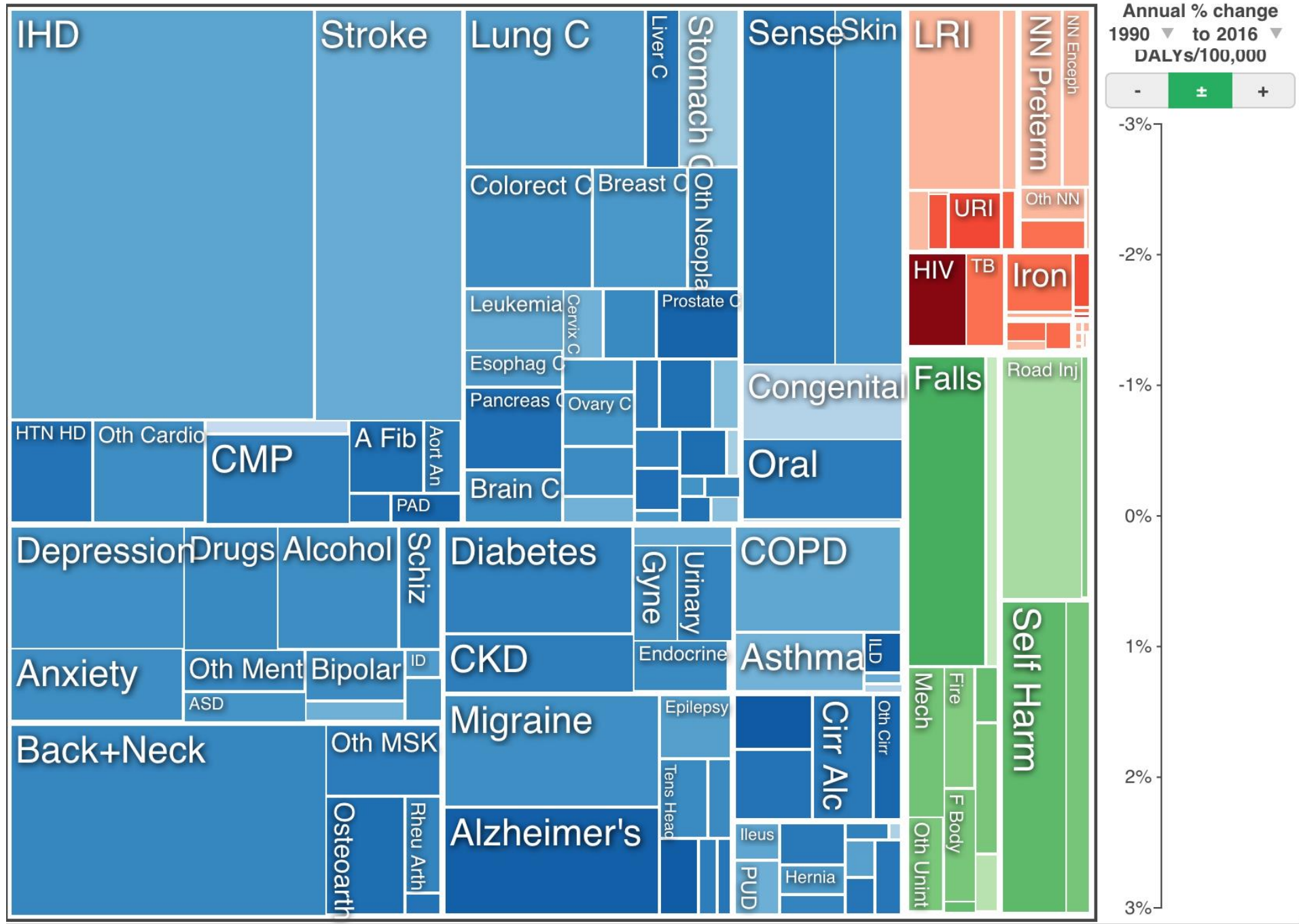
Slovenia

Federation

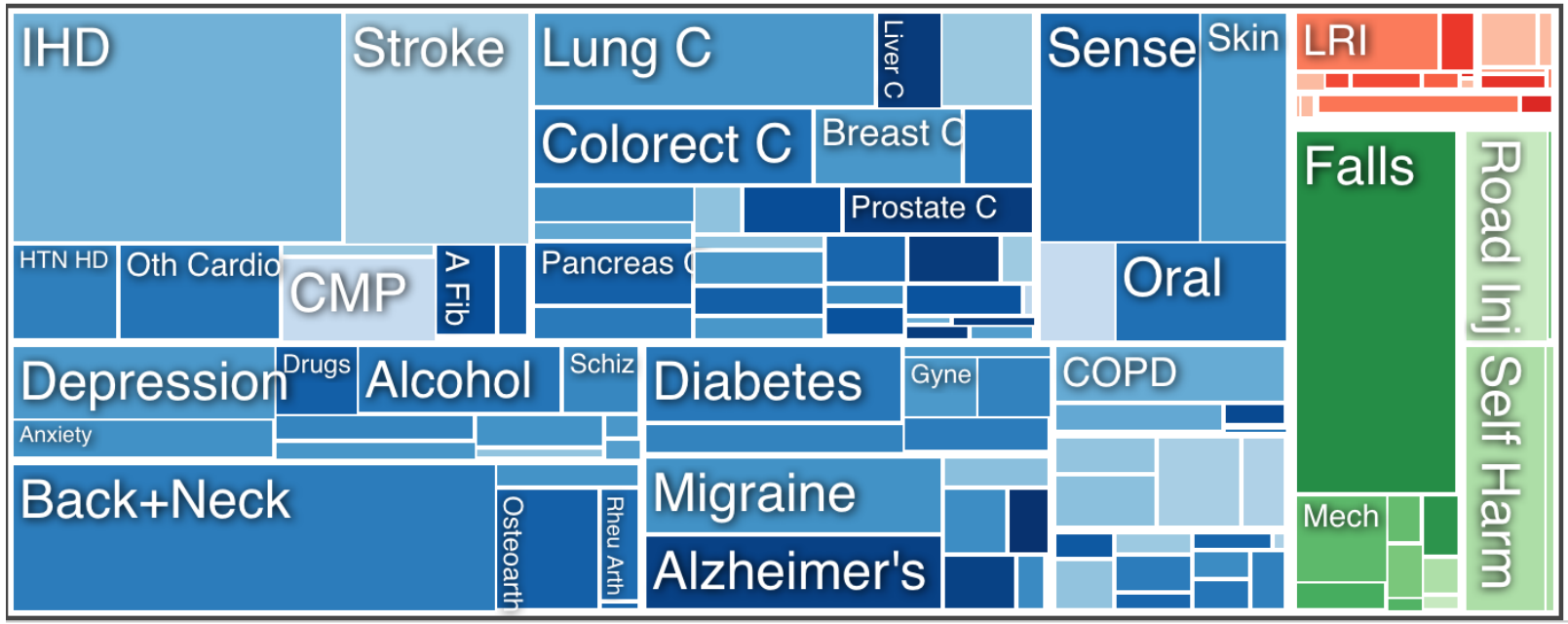
Global
Both sexes, All ages, 2016, DALYs



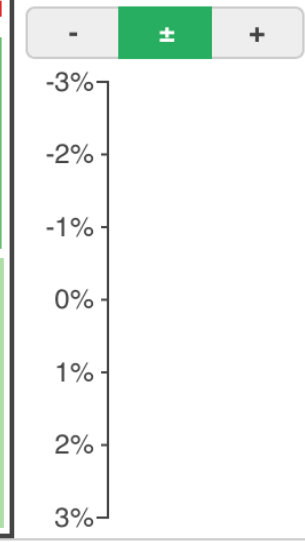
European Region
Both sexes, All ages, 2016, DALYs



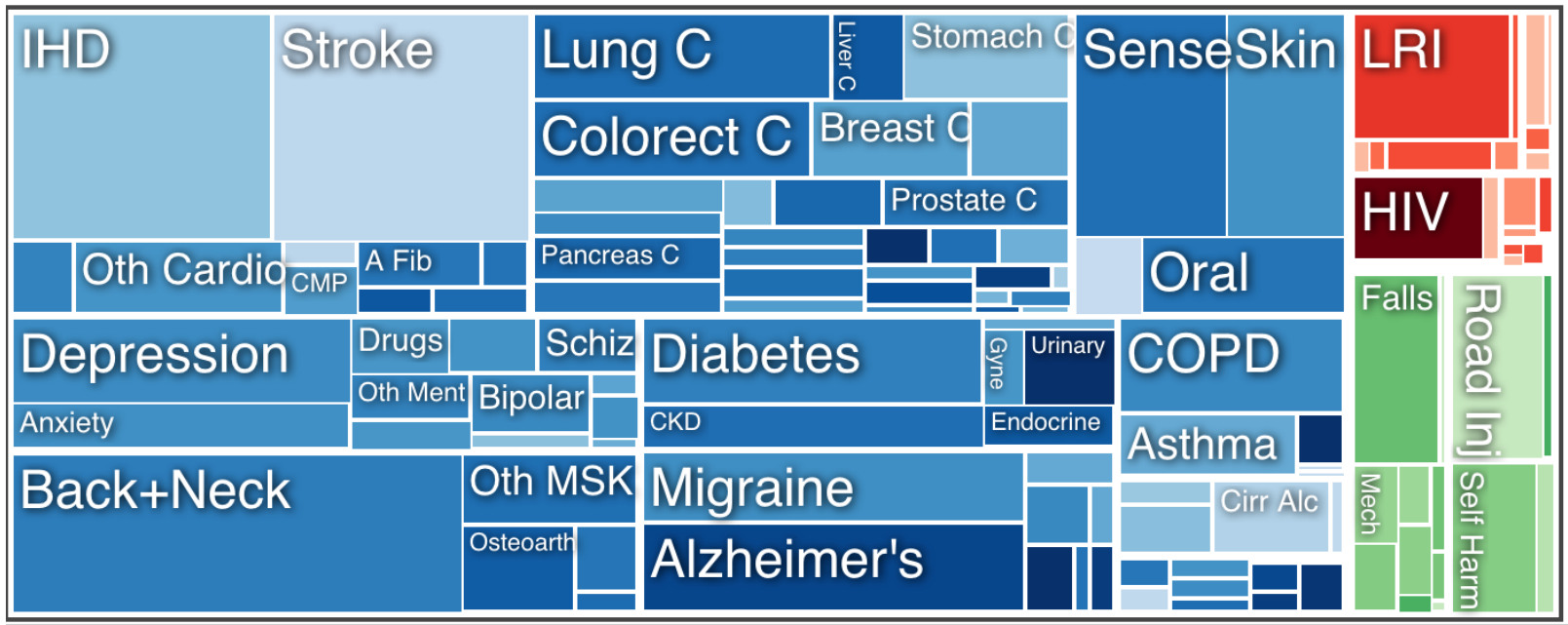
Slovenia
Both sexes, All ages, 2016, DALYs



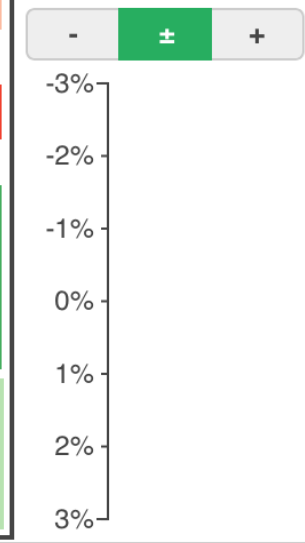
Annual % change
1990 to 2016
DALYs/100,000



Portugal
Both sexes, All ages, 2016, DALYs



Annual % change
1990 to 2016
DALYs/100,000



IHME | GHDx | Viz Hub

Financing Global Health I Viz Hub

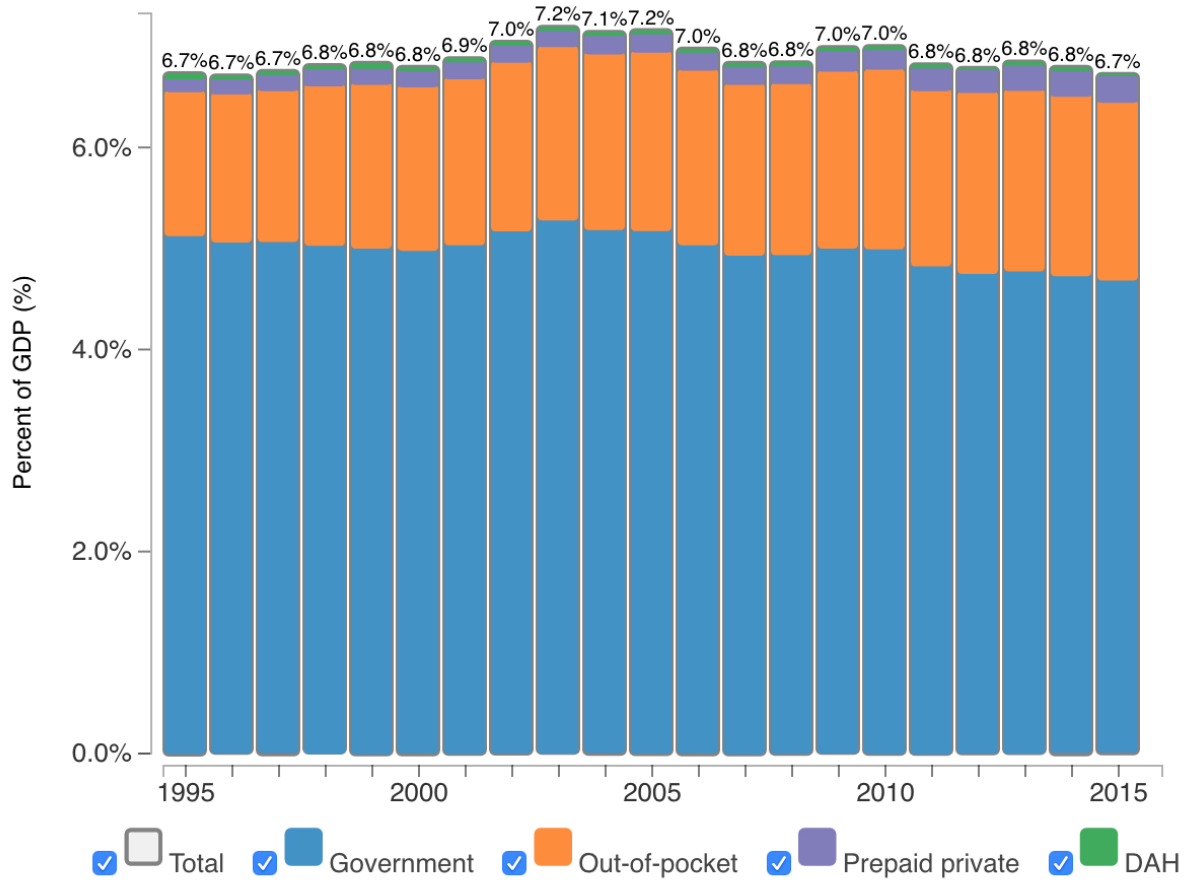
Visualizations ▼ | Help ▼ | Share

Spending | DAH

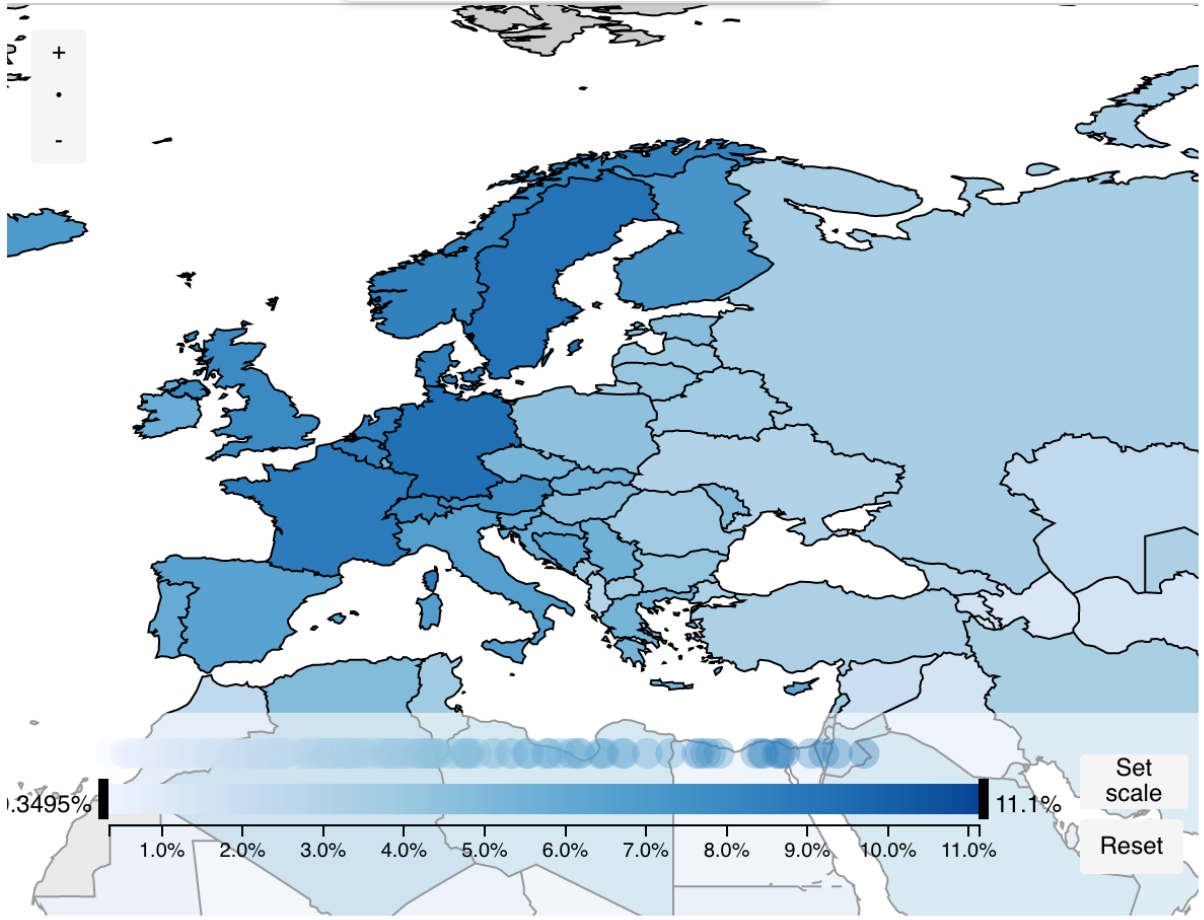
Source Composition | Trends

All cause ▼ spending per GDP ▼

Central Europe ▼ 1995 ▼ to 2015 ▼



All cause **government health spending ▼** in **2015 ▼**



Data is useless without purpose

International Diabetes Federation

What do we do in Public Health ?

- **Assessment**
  - **Scoping public health problems**
  - Priorities and ethics in health care
  - **Assessing health status**
  - **Assessing health nee**ds
  - Assessing health impacts
  - Economic assessment
- **Data and information**
  - **Understanding data, information, and knowledge**
  - Information technology and informatics
  - Qualitative methods
  - Epidemiological approach and design
  - Statistical understanding
  - Inference, causality, and interpretation
  - **Finding and appraising evidence**
  - Surveillance
  - **Investigating clusters**
  - **Health trends: registers**
- **Direct action**
  - Communicable disease epidemics
  - **Environmental health risks**
  - Protecting and promoting health in the workplace
  - **Engaging communities in participatory research and action**
  - Emergency response
  - Assuring screening programmes
  - Genetics
  - **Health communication**
  - **Public health practice in primary care**
- **Policy arenas**
  - **Developing healthy public policy**
  - **Translating evidence to policy**
  - **Translating policy into indicators and targets**
  - **Translating goals, indicators, and targets into public health action**
  - Media advocacy for policy influence
  - Influencing international policy
  - Public health in poorer countries
  - Regulation

In Oxford Handbook of Public Health Practice, 2013

What do we do in Public Health ?

- **Health care systems**
  - **Planning health services**
  - **Funding and delivering health care**
  - Commissioning health care
  - Controlling expenditures
  - Using guidance and frameworks
  - Health care process and patient experience
  - Evaluating health care technologies
  - **Improving equity**
  - **Improving quality**
  - **Evaluating health care systems**
- **Personal effectiveness**
  - Developing leadership skills
  - Effective meetings
  - Effective writing
  - Working with the media
  - Communicating risk
  - Consultancy in a national strategy
  - Improving your professional practice
  - Activism
  - Innovation
- **Organizations**
  - **Governance and accountability**
  - **Programme planning and project management**
  - Business planning
  - Partnerships
  - **Knowledge transfer**
  - Health, sustainability, and climate change
  - Workforce
  - **Effective public health action**

In Oxford Handbook of Public Health Practice, 2013

A health system-based definition (WHO-Europe)

- **Integrated health services delivery:**
  - an approach to strengthen **people-centred health systems** through
  - the promotion of the **comprehensive delivery of quality services** across the life-course,
  - designed according to the **multidimensional needs** of the **population and the individual** and
  - delivered by a **coordinated multidisciplinary team of providers** working across **settings and levels of care.**
- It should be effectively **managed** to
  - ensure **optimal outcomes** and
  - the **appropriate use of resources** based on the **best available evidence**, with **feedback loops** to continuously **improve performance** and to tackle upstream causes of ill health and to promote well-being
  - **through intersectoral and multisectoral actions**

Indicators

DELSA/ELSA/WD/HTP(2004)15

OECD OCDE

Selecting Indicators for the Quality of Diabetes Care at the Health Systems Level in OECD Countries

Sheldon Greenfield, Antonio Nicolucci and Soeren Mattke

Area	Indicator Name
Processes of diabetes care	Annual HbA1c testing
	Annual LDL cholesterol testing
	Annual screening for nephropathy
	Annual eye exam
Proximal outcomes	HbA1c control
	LDL cholesterol control
Distal outcomes	Lower Extremity Amputation Rates
	Kidney Disease in Persons with Diabetes
	Cardiovascular mortality in patients with diabetes

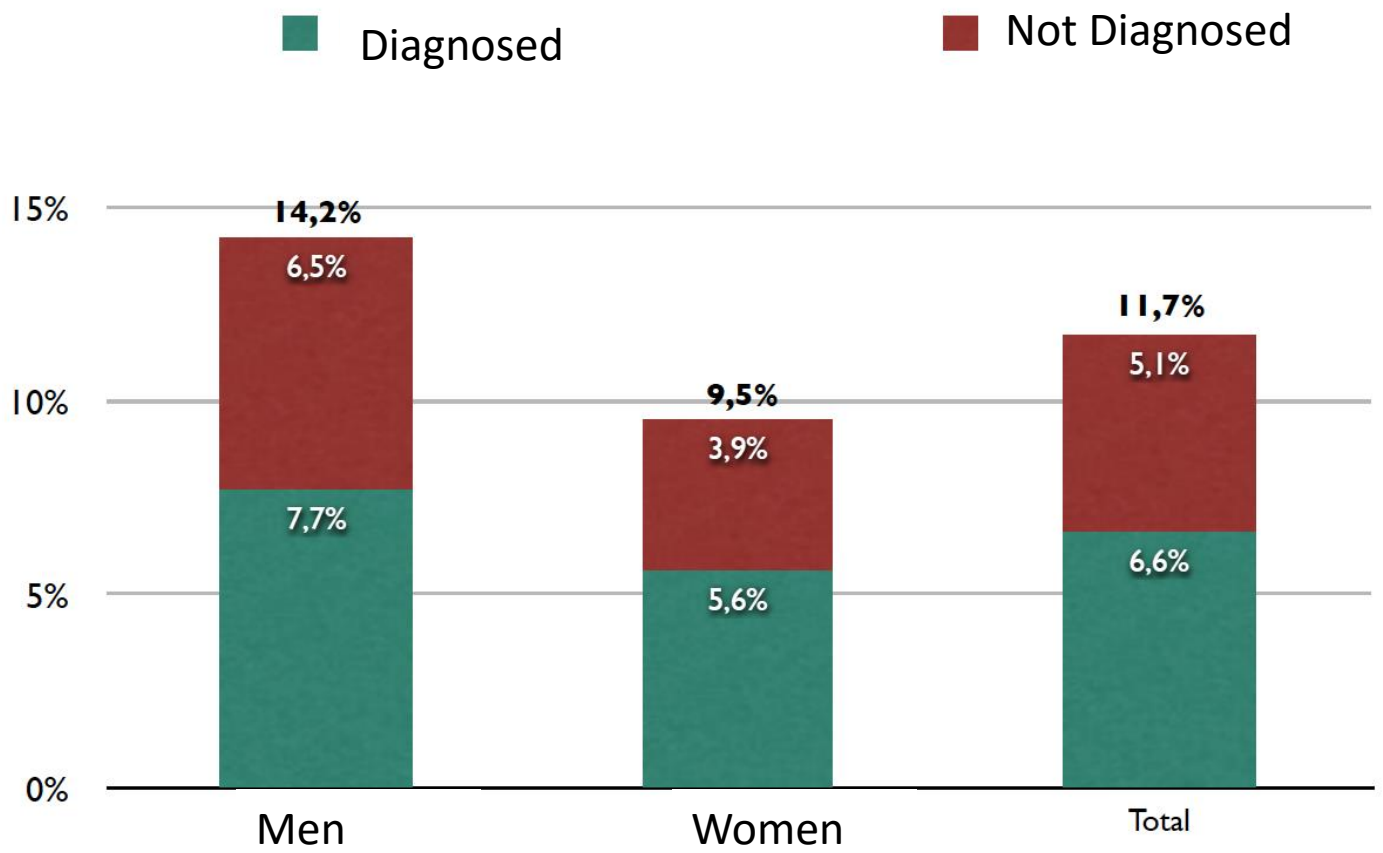
Diabetes indicators in primary care (Portugal, 2017)

1. Proportion of people with DM with flu vaccination
2. Proportion of people with DM with yearly foot observation
3. Proportion of people with DM, with therapeutic registries (3 items)
4. Proportion of people with DM with nursing consultation
5. Proportion of people with DM with 2 A1c
6. Proportion of people with DM with A1c <8.0%
7. Proportion of people with DM with eye exam
8. Proportion of people with T2D on insulin
9. Proportion of people with T2D on metformin
10. Proportion of people with DM with adequate follow-up
11. Proportion of people with T2DM with follow-up commitment
12. Proportion of people with DM with A1c < 6.5% (age <65 yrs)
13. Ratio expenses DPP4i/oral drugs in T2DM
14. Proportion of people with DM with microalbuminuria
15. Proportion of people with diabetes with foot ulcer risk assessment
16. Proportion of people with risk assesssment for T2DM (last 3 yrs)
17. Proportion of people with T2DM with indication for insulin
18. Proportion of newly diagnosed T2DM starting metformin
19. Ratio DDD DPP4i/oral drugs
20. Cost on medication per person with T2DM
21. Cost on medication per person with controlled T2DM
22. Hospitalization rates per non-controlled diabetes
23. Hospitalization rates for acute complications
24. Hospitalization rates for chronic complications
25. Hospitalization rates for mputations

Total: 365 indicators

What have we been doing with data ?

National Diabetes Prevalence



Diabetes **11,7%** *(IC a 95%: 10,8% a 12,6%)*

H - Diabetes **14,2%** *(IC a 95%: 12,5% a 15,5%)*

M - Diabetes **9,5%** *(IC a 95%: 8,5% a 10,6%)*

PREVADIAB 2009

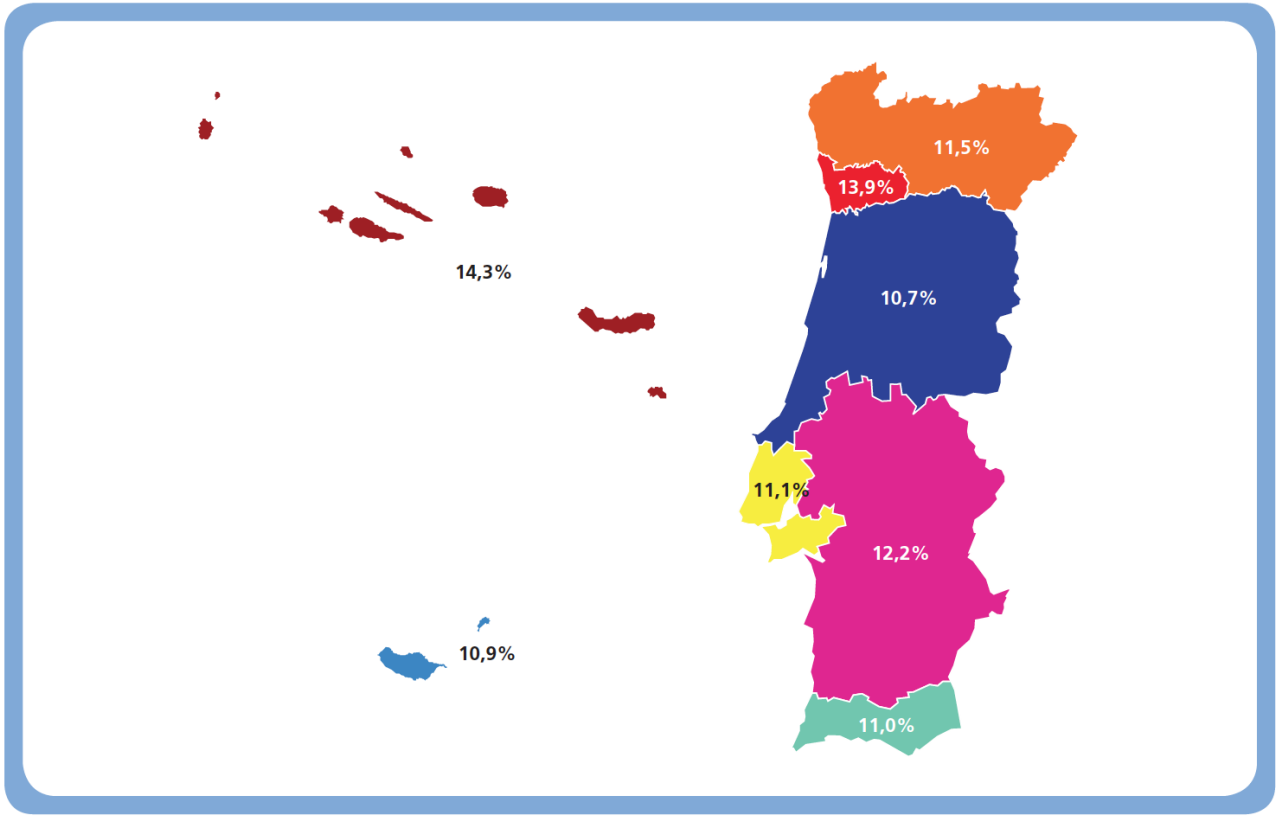
Estudo da Prevalência da Diabetes em Portugal

Diabetes: Factos e Números 2009

Relatório Anual do Observatório Nacional da Diabetes

Portugal

- Diabetes Prevalence
- Pre-Diabetes Prevalence
- Pre-Diabetes and Diabetes Prevalence
- Diabetes Incidence
- Diabetes Mortality
- Diabetes - Hospitalization
- Diabetes - Complications
- Diabetes – Direct costs



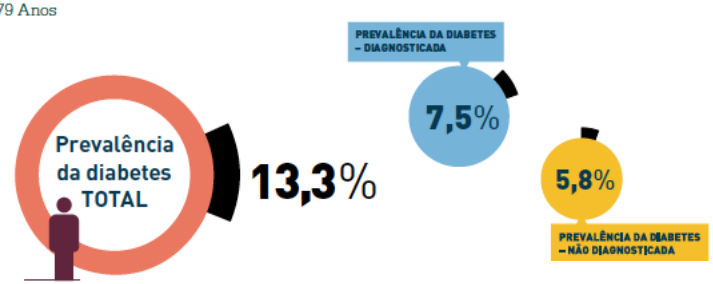
Fonte: PREVADIAB – SPD

DIABETES
Factos e Números
O ANO DE 2015

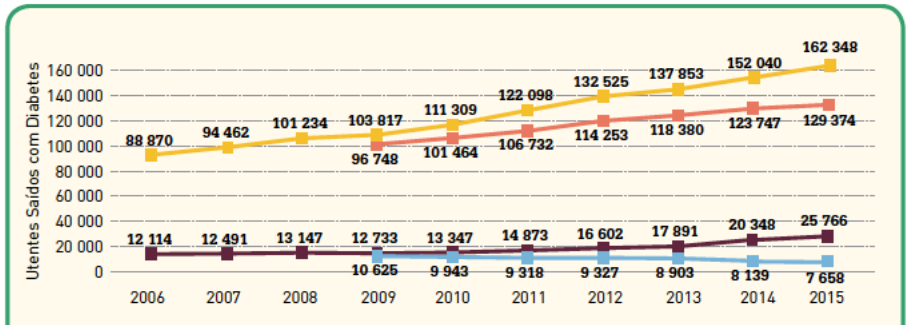
Relatório Anual do Observatório Nacional da Diabete
– Edição de 2016

Observatório da Diabetes

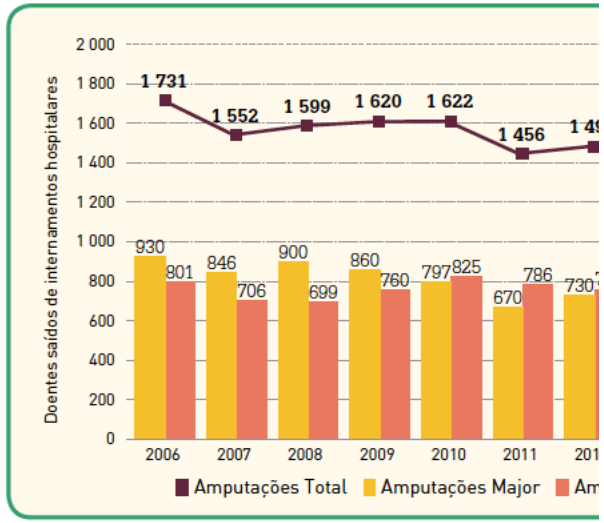
Prevalência da Diabetes em Portugal – 2015
População 20-79 Anos



Utentes Saídos dos Internamentos com Diabetes dos Hospitais do SNS

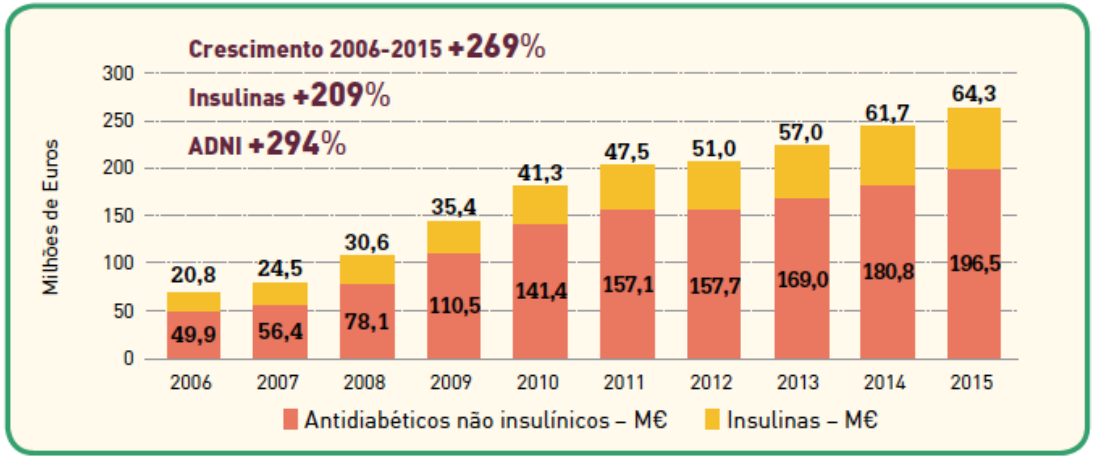


Amputações dos membros inferiores por motivo de Diabetes



FONTE: GDH' – ACSS/DGS; N.º Internamentos (Utentes Saídos) – DM – Diagnóstico Principal
Amputação major – amputação de todo o pé ou o membro inferior; Amputação minor – amputação de parte do pé ou do membro inferior

Vendas (em valor) em Ambulatório de Insulinas e Antidiabéticos não insulínicos no âmbito do SNS em Portugal Continental
Por SubClasses Terapêuticas

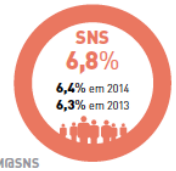


Cuidados Primár

Em 2015 na Rede de Cuidados de Sa
Continental encontravam-se regista
(dos quais 55,4% nas Unidades de C
e 44,6% nas Unidades de Saúde Fan
utentes registados (dos quais 52,2%

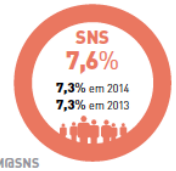
Prevalência da Diabetes Diagnostica

Taxa de Prevalência da Diabetes Total – Di



FONTE: SPMS – SIM@SNS

Taxa de Prevalência da Diabetes 20-79 Anc



FONTE: SPMS – SIM@SNS

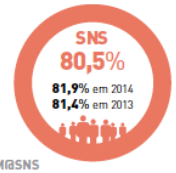
ACESSIBILIDADE

Em 2015 na Rede de Cuidados de Sa
número de utentes com Diabetes qu
registada em sistema) foi de 681 68

Número Total de Consultas de Diabetes (2

FONTE: SPMS – SIM@SNS

Utentes com Diabetes com Consulta Regist



FONTE: SPMS – SIM@SNS

A repre
realiza
último
represe
diabete

Represer

FONTE: SI

Em 201
(com 2
Primár
de 565

Número

FONTE: SI

Taxa de

FONTE: SI

CON

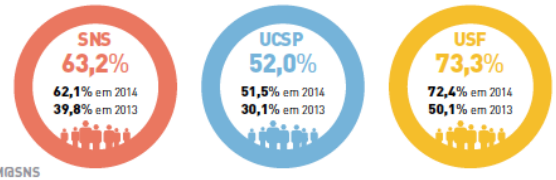
Utentes

FONTE: SI

Utentes com Diabetes com registo de Colesterol LDL com resultado <100mg/dl (2015)

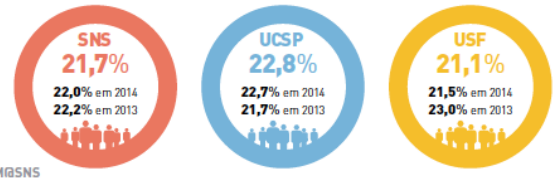
FONTE: SPMS – SIM@SNS

Utentes com Diabetes (com consulta registada) com microalbuminúria registada (2015)



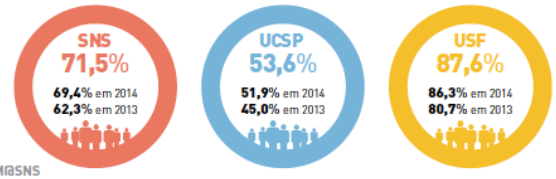
FONTE: SPMS – SIM@SNS

Utentes com Diabetes com microalbuminúria registada >30 mg/24h (2015)



FONTE: SPMS – SIM@SNS

Utentes com Diabetes (com consulta registada) com registo de observação do pé (2015)

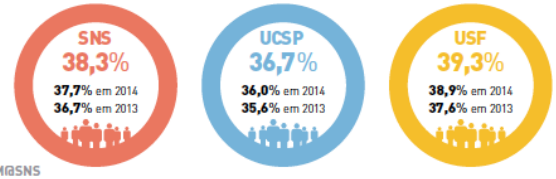


FONTE: SPMS – SIM@SNS

Utentes com Diabetes com registos de Pressão Arterial (2015)

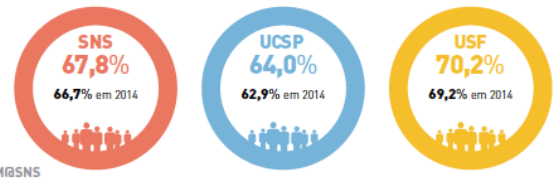
FONTE: SPMS – SIM@SNS

Registos de Pressão Arterial <130/80 em utentes com Diabetes (2015)



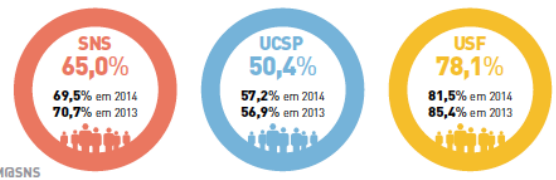
FONTE: SPMS – SIM@SNS

Registos de Pressão Arterial <140/90 em utentes com Diabetes (2015)



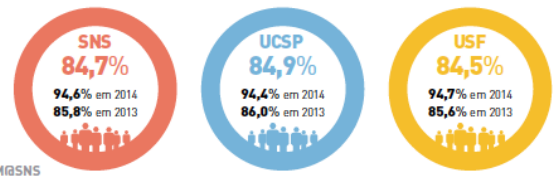
FONTE: SPMS – SIM@SNS

Utentes com Diabetes (com consulta registada) com registo de IMC (2015)



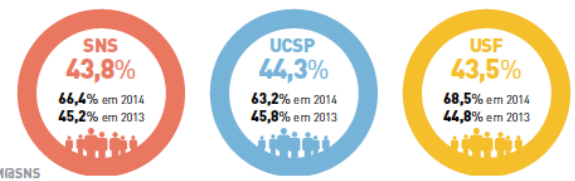
FONTE: SPMS – SIM@SNS

Utentes com Diabetes (com consulta registada) com registo de IMC> 25 (2015)



FONTE: SPMS – SIM@SNS

Utentes com Diabetes (com consulta registada) com registo de IMC> 30 (2015)



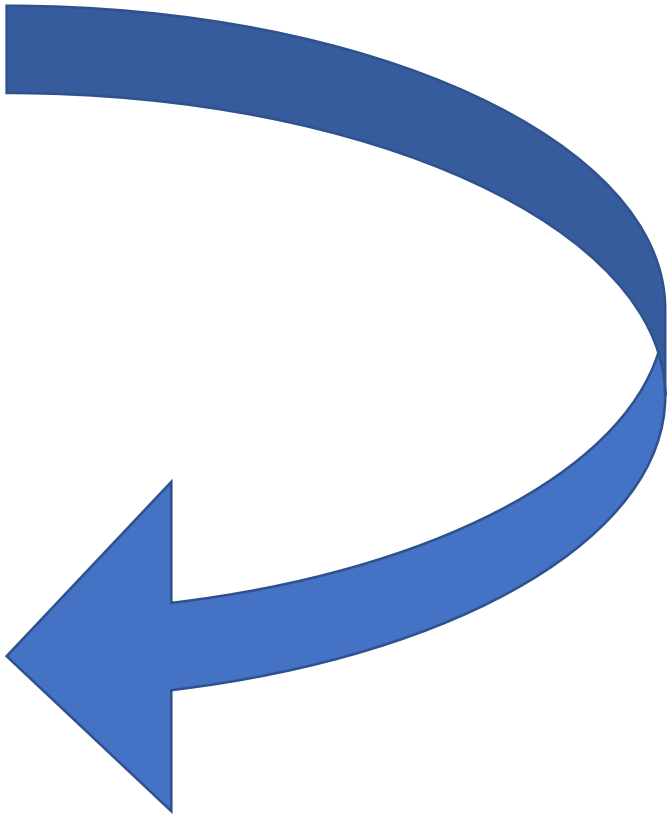
FONTE: SPMS – SIM@SNS

Planning Actions:

Distribuição Regional dos Internamentos (Utentes Saídos) por Descompensação/Complicações da Diabetes com Amputações nos Hospitais do SNS – 2015

	Norte	Centro	LVT	Alentejo	Algarve	SNS
Amputação Minor	183	103	333	48	38	**705**
Amputação Minor por 100 000 habitantes	5,1	6,2	9,1	9,9	8,6	**7,2**
Amputação Major	123	98	231	55	38	**545**
Amputação Major por 100 000 habitantes	3,4	5,9	6,3	11,4	8,6	**5,5**

FONTE: GDH – ACSS/DGS; N.º de Internamentos DM – Diagnóstico Principal – Continente – SNS; Tratamento OND



REPÚBLICA PORTUGUESA
SAÚDE

40 ANOS SNS SERVIÇO NACIONAL DE SAÚDE 1979-2019

DGS desde 1899 Direção-Geral da Saúde

Diabetes Foot intervention programme for Alentejo region

AVISO N.º 31/2018

NÚCLEO DE GESTÃO DOS PROGRAMAS DE APOIO FINANCEIRO

Abertura do Processo de Candidatura a Financiamento Público a projetos no âmbito do Programa Nacional para a Diabetes

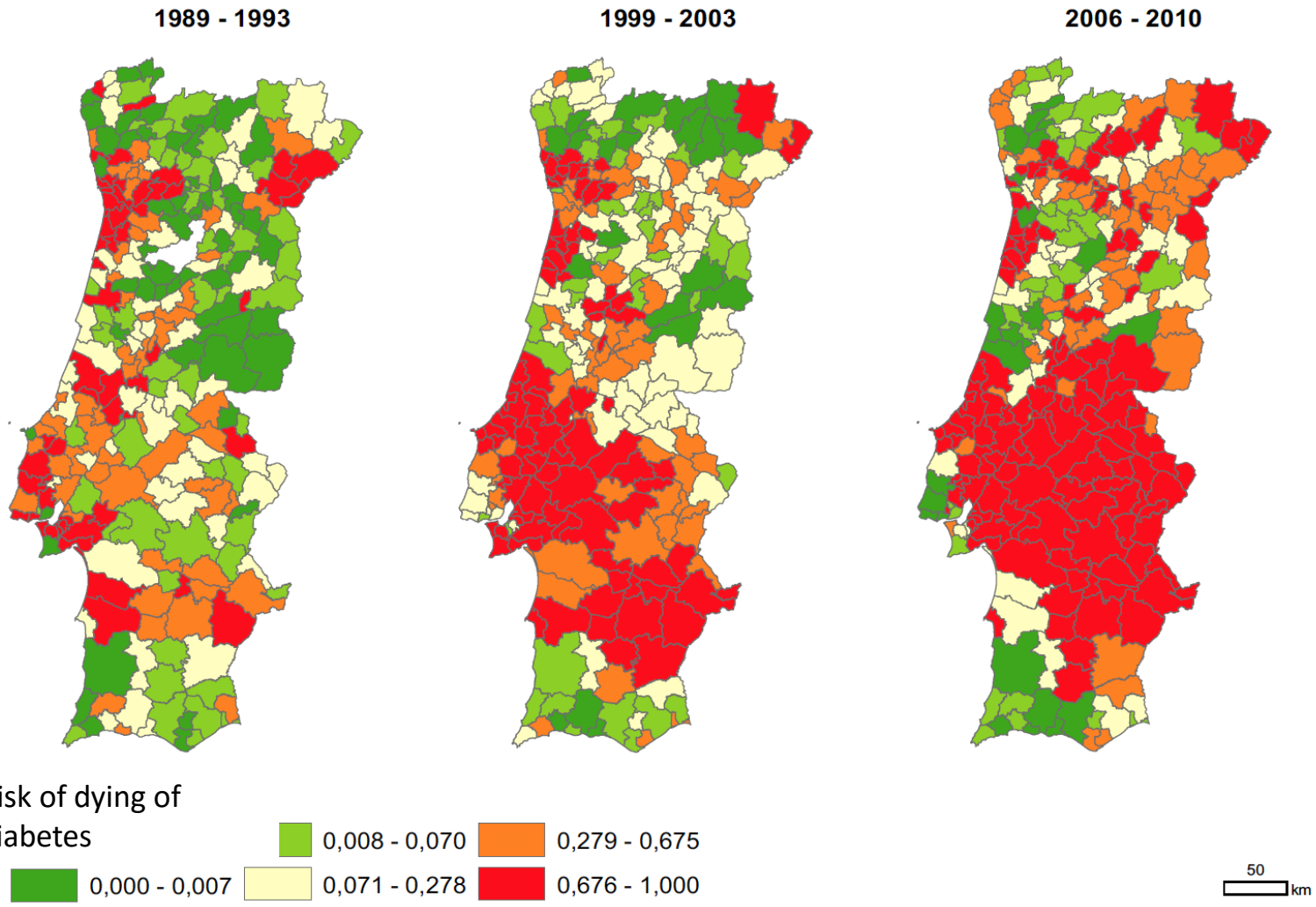
Geografias da Diabetes Mellitus em Portugal: Como as Condições do Contexto Influenciam o Risco de Morrer

The Geography of Diabetes Mellitus in Portugal: How Context Influence the Risk of Dying

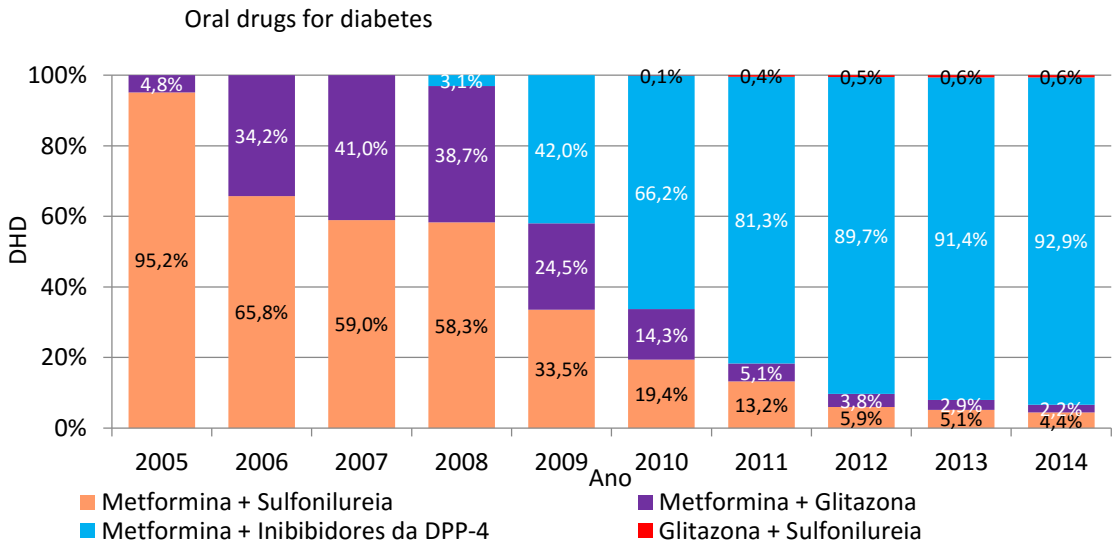
Paula SANTANA[1], Cláudia COSTA[1], Adriana LOUREIRO[1], João RAPOSO[2], José Manuel BOAVIDA[3]

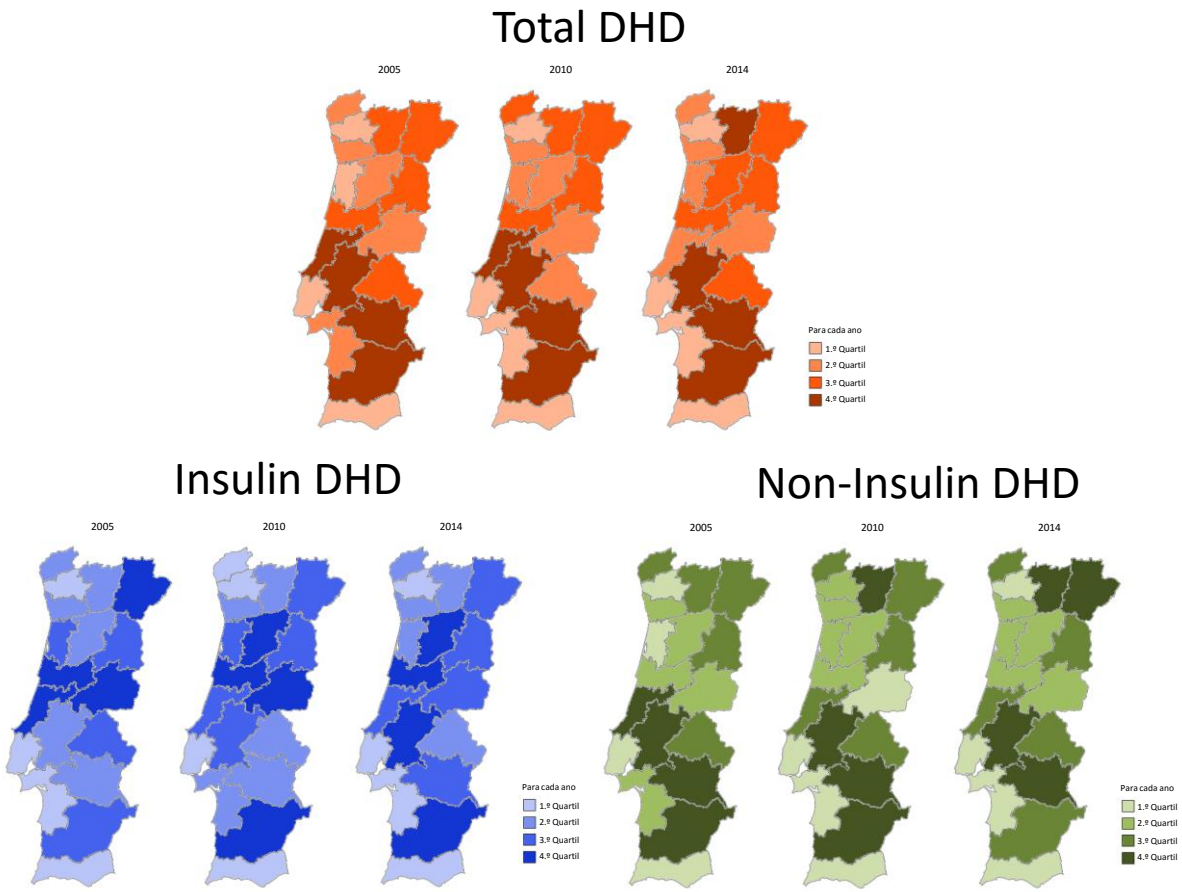
Acta Med Port 2014 May-Jun;27(3):309-317

From data to context explanations:



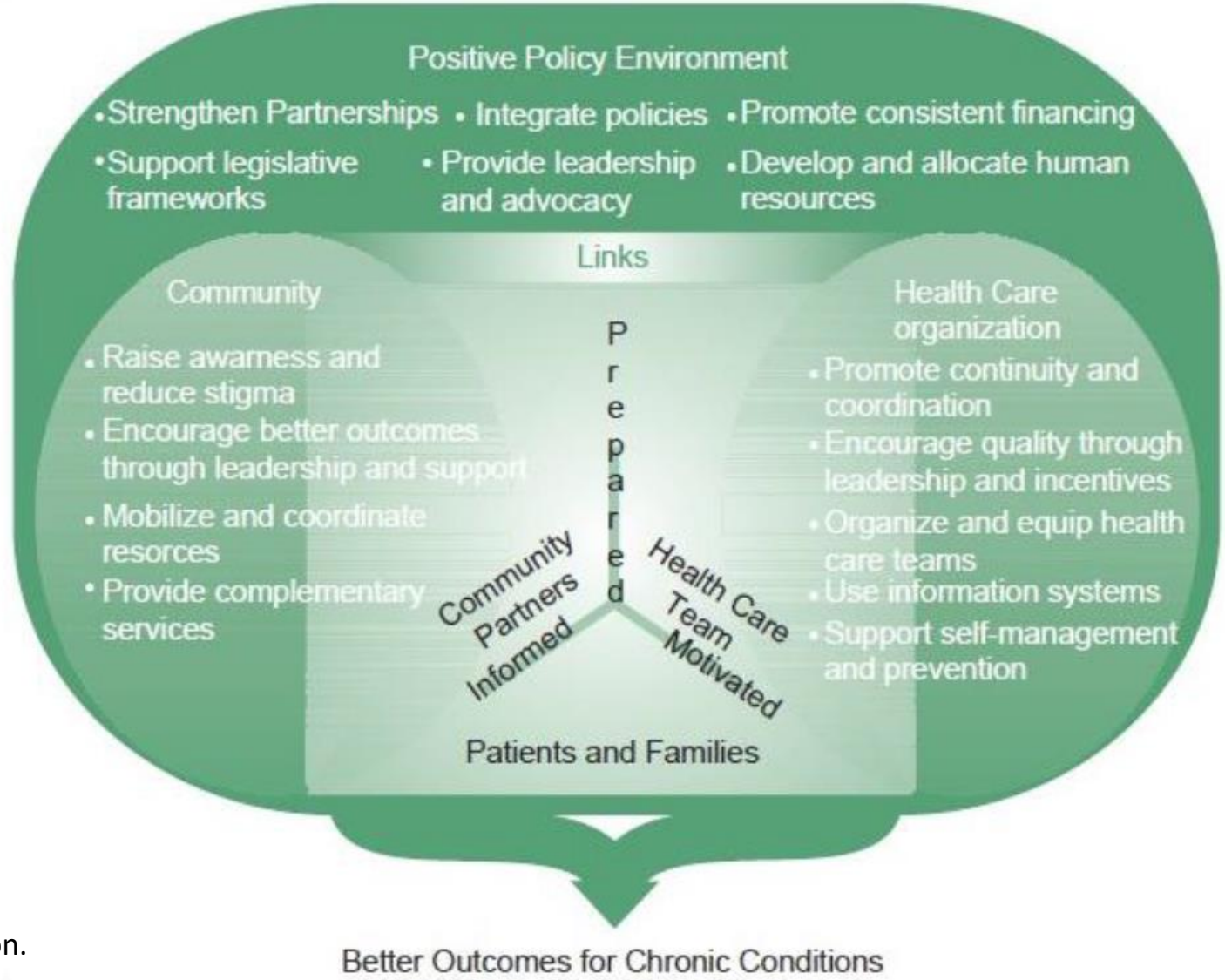
And the use of medications…



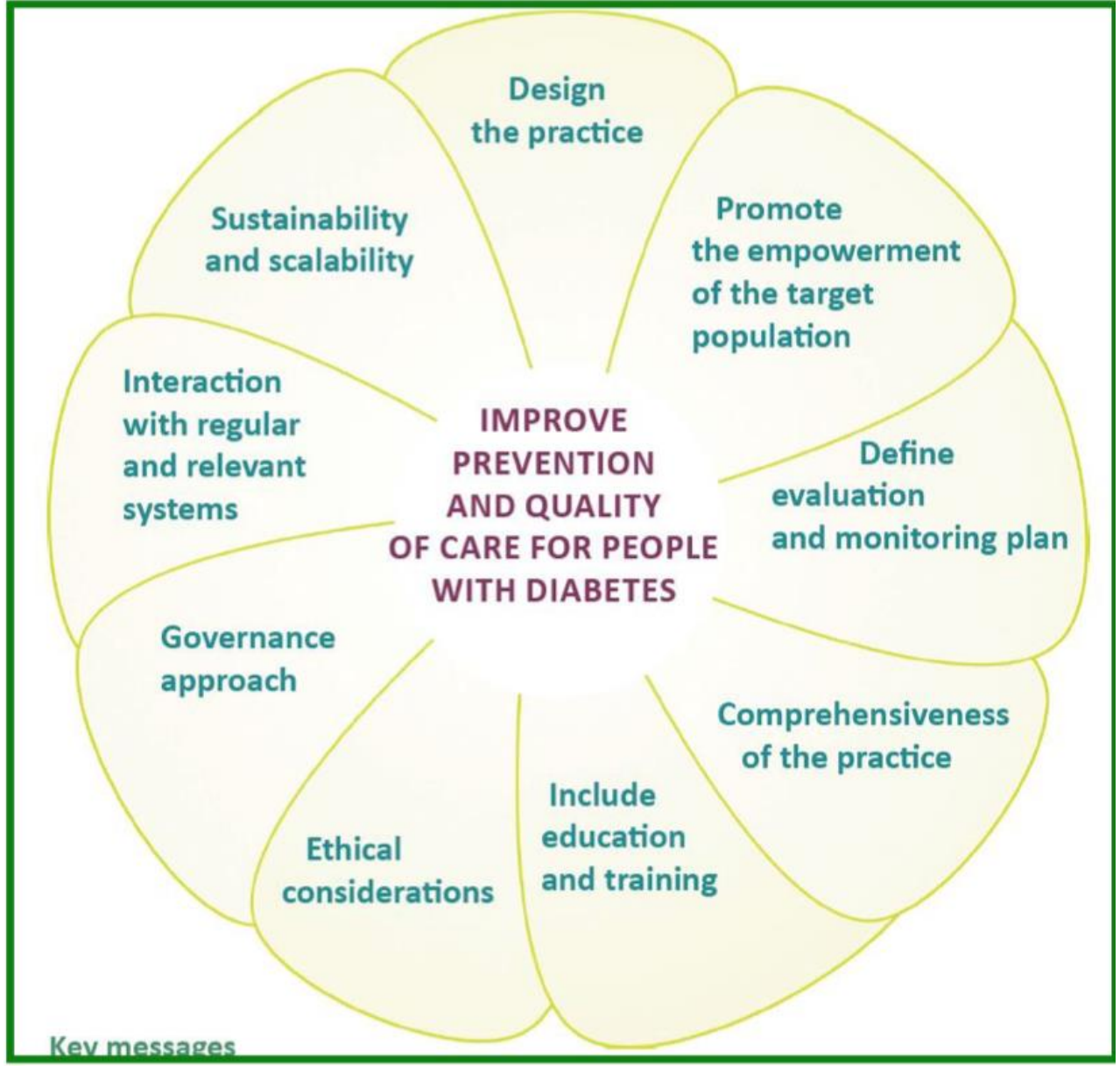


When planning...

The Innovative Care for Chronic Conditions Model



WHO. Innovative Care for Chronic Conditions: Building Blocks for Action. 2002



CHRODIS
ADDRESSING CHRONIC DISEASES & HEALTHY AGEING ACROSS THE LIFE CYCLE

Key points for today

- From global to local
  - Is just the focus ?
- The process of care
  - Quality circle
  - Integrated care
  - Indicators
  - Data analysis
    - What for ?
    - To whom ?
    - Emotional reactions
  - Assessment
    - Reporting
  - Examples
- Q&A

Thank you !!!

filipe.raposo@apdp.pt