The burden of disease in Spain: Results from GBD 2016

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COST action CA18218 burden-eu

Tuesday 18 February 2020, 11:00

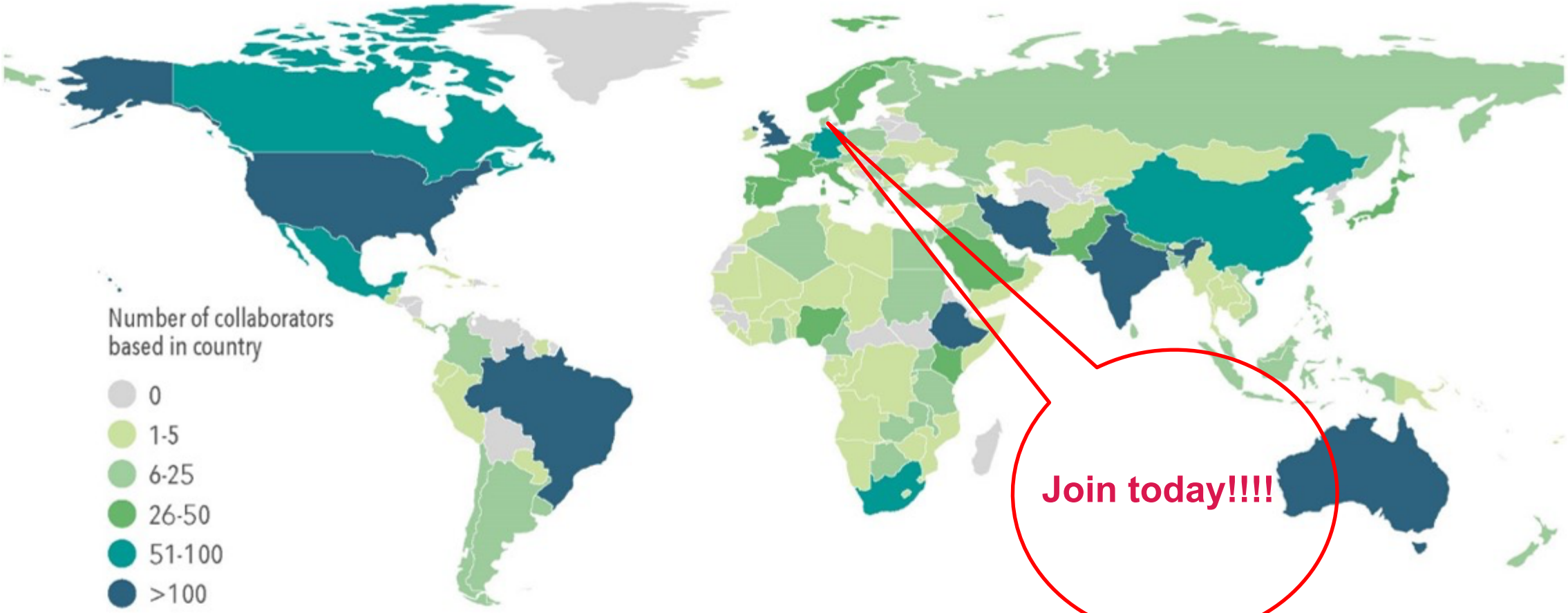
Institute for Health Metrics and Evaluation

Today

- Intro: GBD at the IHME
- GBD Spain 2010, 2016 *and 2019*
- Take-home messages from Spain to COST action CA18218 burden-eu

GBD now has more than 3,000 collaborators in 150+ countries

Strengthening data inputs, quality review, local dissemination



To enroll: http://www.healthdata.org/gbd/call-for-collaborators

De: **Brecht Devleesschauwer** info@burden-eu.net
Asunto: [burden-eu] Global Burden of Disease (GBD) Technical Workshop
Fecha: 14 de febrero de 2020, 9:12
Para: Joan B Soriano jbsoriano2@gmail.com

BD

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european burden-eu of disease network

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Global Burden of Disease (GBD) Technical Workshop

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The Institute for Health Metrics and Evaluation (IHME) will again this year host a Global Burden of Disease Technical Workshop to train learners interested in the data, methods, findings, and implications of the GBD study and to cultivate connections, knowledge sharing, and debate between engaged practitioners and collaborators.

The workshop will be held May 24-29, 2020, at the Negroponte Resort in Greece and registration is now open. The IHME offers a limited number of scholarships to support attendance at the workshop.

Read more about the workshop here.

COST Action CA18218–European Burden of Disease Network

“Twit from Brecht” on 14th February 2020

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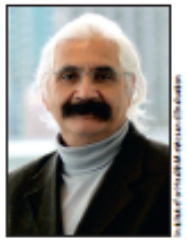
Institute for Health Metrics and Evaluation

Christopher Murray

Theo Vos

Alan Lopez

Majid Ezzati


Rafael Lozano

Harvey Whiteford

Catherine Michaud

Abraham Flaxman

Kenji Shibuya

Aaron Cohen

Jarbas Barbosa da Silva

The story of GBD 2010: a "super-human" effort

What has working on the international, multi-investigator Global Burden of Disease 2010 been like? Pamela Das and Udani Samarasekera asked the researchers involved.

Das P, Samarasekera U. Lancet 2012.

Articles

Global, regional, and national deaths, prevalence, disability-adjusted life years, and years lived with disability for chronic obstructive pulmonary disease and asthma, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015

Soriano JB, et al. Lancet RM 2018.

DALYs vs. Dalí's

DALY = disability-adjusted life year

The number of years of healthy life lost due to premature death, disabling illness, or injury

DALYs = YLL + YLD

ES LÓGICO TEMER DE
GANARSE A LOS MERCADOS
RECORTANDO EN EDUCACIÓN Y
SANIDAD, SIENDO LES SERÁ
MÁS FÁCIL SAQUEAR UN PAÍS
IGNORANTE Y ENFERMO

Haro et al. BMC Medicine 2014, 12:236
http://www.biomedcentral.com/1741-7015/12/236

Medicine for Global Health

BMC Medicine

RESEARCH ARTICLE Open Access

The burden of disease in Spain: results from the global burden of disease study 2010

Josep Maria Haro[1,2*], Stefanos Tyrovolas[1,2], Noe Garin[1,2], Cesar Diaz-Torne[3], Loreto Carmona[4], Lidia Sanchez-Riera[5,6], Fernando Perez-Ruiz[7] and Christopher JL Murray[8]

Abstract

Background: We herein evaluate the Spanish population s trends in health burden by comparing results of two Global Burden of Diseases, Injuries, and Risk Factors Studies (the GBD studies) performed 20 years apart.

Methods: Data is part of the GBD study for 1990 and 2010. We present results for mortality, years of life lost (YLLs), years lived with disability, and disability-adjusted life years (DALYs) for the Spanish population. Uncertainty intervals for all measures have been estimated.

Results: Non-communicable diseases accounted for 3,703,400 (95% CI 3,648,270 3,766,720) (91.3%) of 4,057,400 total deaths, in the Spanish population. Cardiovascular and circulatory diseases were the main cause of mortality among non-communicable diseases (34.7% of total deaths), followed by neoplasms (27.1% of total deaths). Neoplasms, cardiovascular and circulatory diseases, and chronic respiratory diseases were the top three leading causes for YLLs. The most important causes of DALYs in 2010 were neoplasms, cardiovascular and circulatory diseases, musculoskeletal disorders, and mental and behavioral disorders.

Conclusions: Mortality and disability in Spain have become even more linked to non-communicable diseases over the last years, following the worldwide trends. Cardiovascular and circulatory diseases, neoplasms, mental and behavioral disorders, and neurological disorders are the leading causes of mortality and disability. Specific focus is needed from health care providers and policy makers to develop health promotion and health education programs directed towards non-communicable disorders.

Keywords: Disability-adjusted life years, Global Burden of Diseases, Injuries, and Risk Factors Studies, Spain, Mortality, Years lived with disability, Years of life lost

Background

The impact of diseases and injures on population health is usually assessed with measures of mortality and non-fatal health outcomes [1]. These estimates are used to signal the most relevant public health problems, allow comparison between different populations and different health conditions, and assess changes over time. The only comprehensive effort to date to estimate summary measures of the global population health, by cause and by world region, is the ongoing Global Burden of Diseases, Injuries, and Risk Factors (GBD) initiative [2,3].

The first GBD study analyzed data from 1990 [4] and was published in 1993. Since then, a number of updates have been published [5]. The Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010) has updated and expanded previous efforts to include 1,160 diseases and injury sequelae from the previous analysis, which included 483 diseases. The most important limitation of previous GBD studies is that results were not estimated with uncertainty [6]. Specifically, uncertainty can come from many sources, including heterogeneity in the empirical data that are available and uncertainty in the indirect estimation models used to make predictions for populations with little or no data. However, this

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GBD 2010

Haro JM, *et al*. BMC Med 2014.

Med Clin (Barc). 2018;151(5):171–180

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Original

La carga de enfermedad en España: resultados del Estudio de la Carga Global de las Enfermedades 2016

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INFORMACIÓN DEL ARTÍCULO

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Palabras clave:
Años de vida ajustados por discapacidad
Años de vida perdidos

RESUMEN

Antecedentes y objetivo: El estudio de la carga global de las enfermedades, conocido como GBD por sus siglas en inglés (*global burden of disease*), mide la salud poblacional en todo el mundo de forma anual y sus resultados están disponibles por país. Utilizamos las estimaciones GBD para resumir el estado de salud poblacional en España en 2016 y describir las tendencias en morbimortalidad de 1990 a 2016.
Material y métodos: GBD 2016 estima la carga debida a 333 enfermedades y lesiones, y a 84 factores de riesgo. La lista de causas de GBD es jerárquica e incluye 3 categorías de nivel superior: 1) enfermedades transmisibles, maternas, neonatales y nutricionales; 2) enfermedades no transmisibles (ENT), y 3) accidentes. Se presentan la mortalidad, los años de vida ajustados por discapacidad (AVAD), los factores de riesgo y el progreso hacia los objetivos de desarrollo sostenible (ODS) a partir de los datos de GBD 2016 en España.

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[b] Los nombres de los colaboradores de GBD en España constan en el Anexo.

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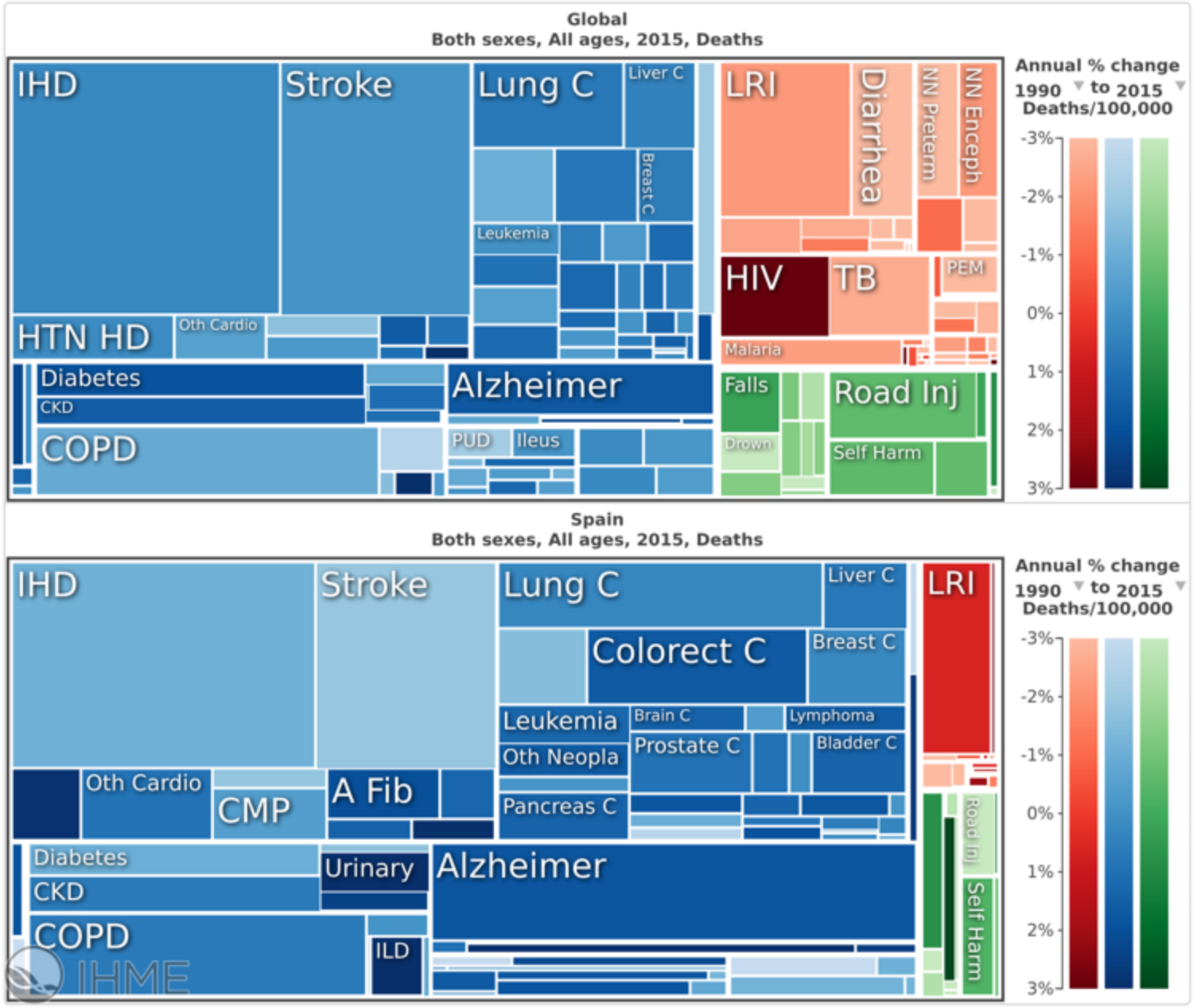
GBD 2016

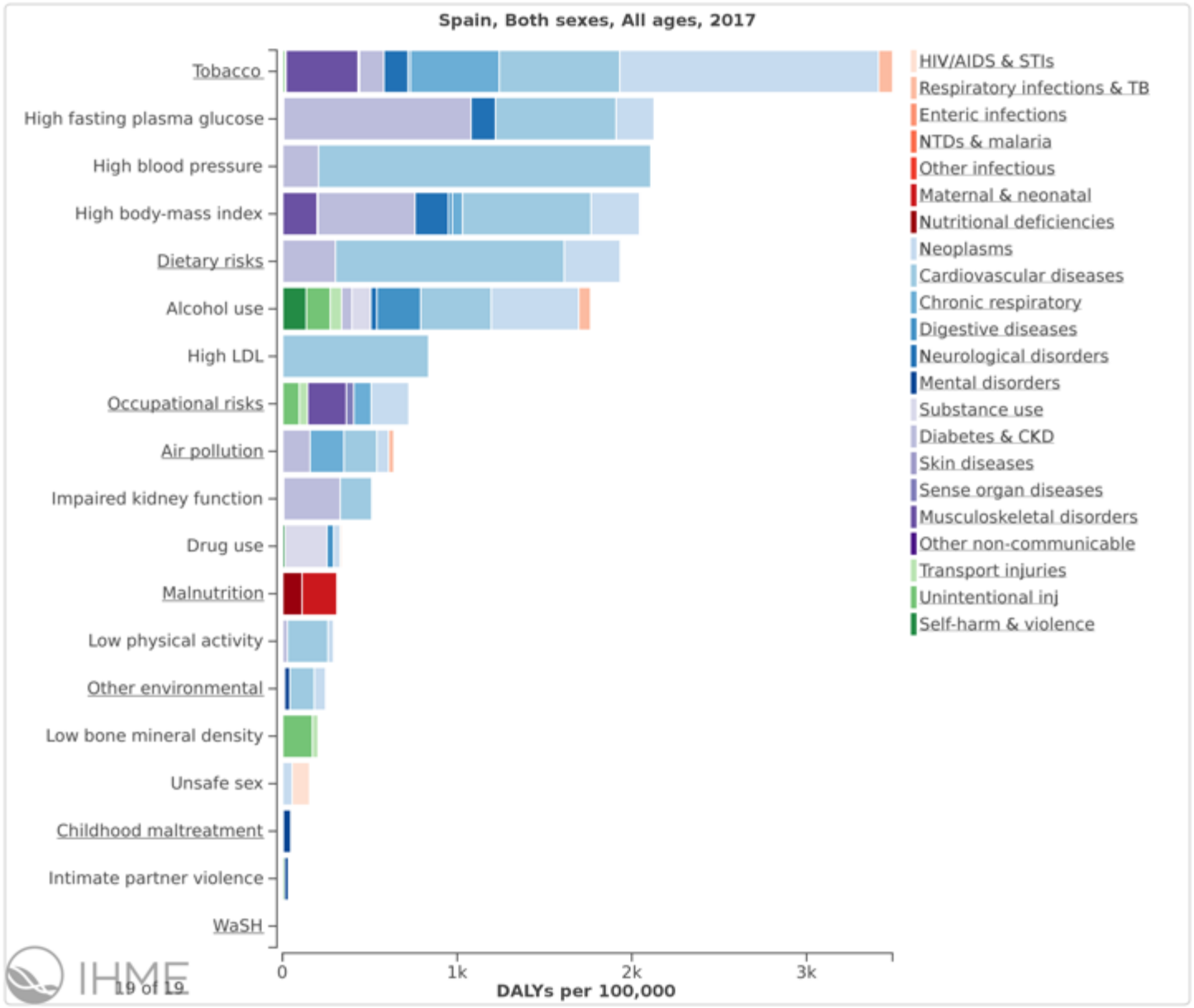
Soriano JB, *et al*. Med Clin 2018.

GBD 2019

May 2020...


Global
Both sexes, All ages, 2015, Deaths
IHD
Stroke
Lung C
Liver C
Breast C
Leukemia
LRI
Diarrhea
NN Preterm
NN Enceph
HIV
TB
PEM
Malaria
HTN HD
Oth Cardio
Diabetes
CKD
COPD
Alzheimer
PUD
Ileus
Falls
Drown
Road Inj
Self Harm
Annual % change
1990 to 2015
Deaths/100,000
-3%
-2%
-1%
0%
1%
2%
3%
Spain
Both sexes, All ages, 2015, Deaths
IHD
Stroke
Lung C
Liver C
Colorect C
Breast C
Leukemia
Brain C
Lymphoma
Prostate C
Bladder C
Oth Neopla
Pancreas C
LRI
Road Inj
Self Harm
Oth Cardio
CMP
A Fib
Diabetes
CKD
Urinary
COPD
ILD
Alzheimer
Annual % change
1990 to 2015
Deaths/100,000
-3%
-2%
-1%
0%
1%
2%
3%
IHME

Main risk factors for DALY in Spain in 2016



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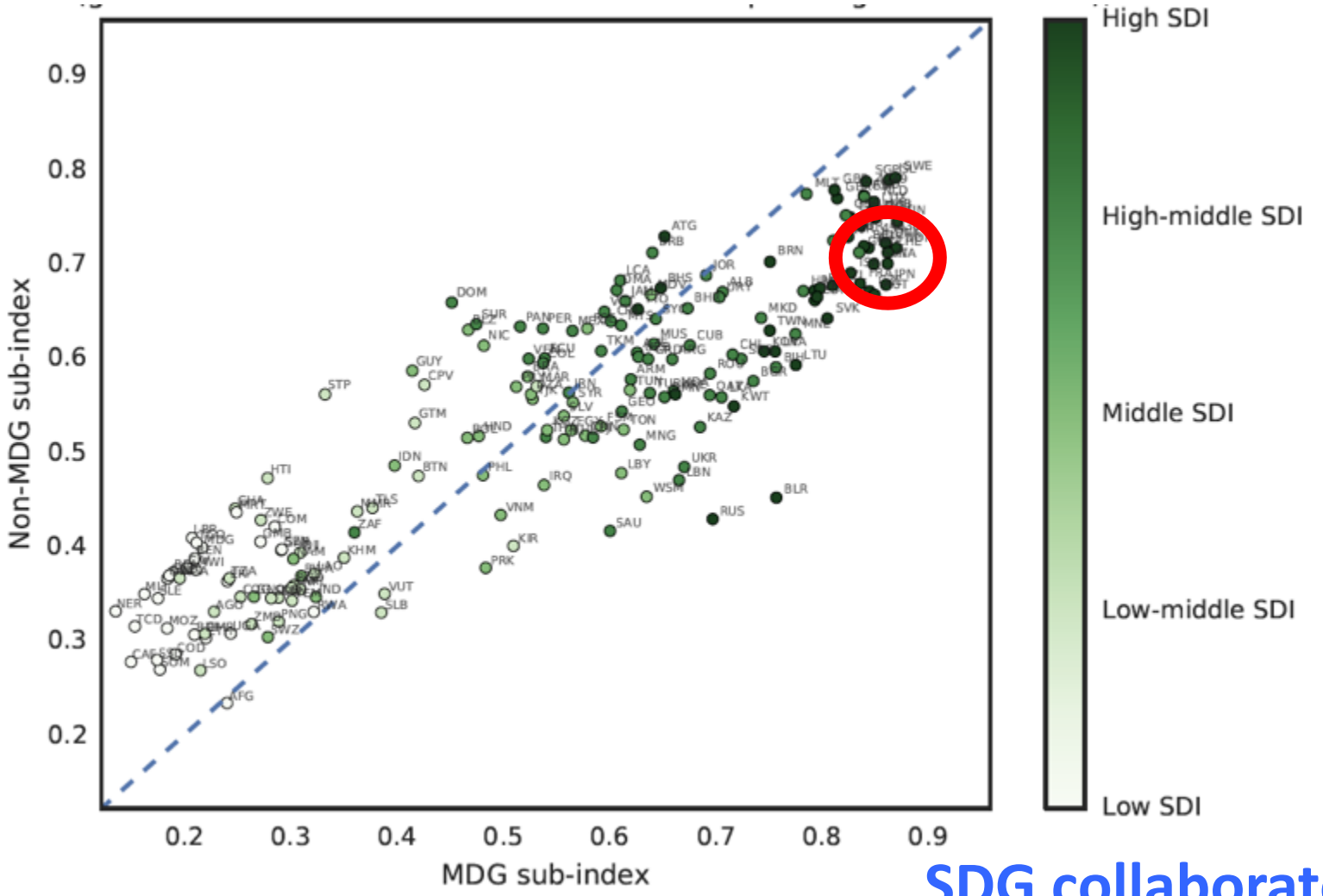
Sustainable Development Goals (SDGs) 2015

United Nations Summit
25-27 September 2016

Whitmeere S, *et al*. Lancet 2015.

"In September 2015, the UN General Assembly established the SDGs specify 17 universal goals, 169 targets, and 230 indicators leading up to 2030 …"



SDG collaborators. Lancet 2016.

Ten top/bottom countries by SDG ranking

- **Top 10**
- 1. Iceland (85)
- 2. Singapore (85)
- 3. Sweden (85)
- 4. Andorra (83)
- 5. United Kingdom (82)
- 6. Finland (82)
- 7. Spain (82)
- 8. Netherlands (82)
- 9. Canada (81)
- 10. Australia (81)

- **Bottom 10**
- 1. Central African Republic (20)
- 2. Somalia (22)
- 3. South Sudan (22)
- 4. Niger (23)
- 5. Chad (24)
- 6. Dem. Rep. of the Congo (24)
- 7. Burundi (26)
- 8. Mali (26)
- 9. Afghanistan (26)
- 10. Sierra Leone (27)

SDG collaborators. Lancet 2016.

		SDG index	MDG index	Non-MDG index	Disaster mort	Child stunting	Child wasting	Child overweight	MMR	SBA	Under-5 mort	NN mort	HIV incid	Tuberculosis incid	Malaria incid	Hep B incid	NTD prev	NCD mort	Suicide mort	Alcohol use	Road injury mort	FP need met, mod	Adol birth rate	UHC index	Air poll mort	WaSH mort	Poisoning mort	Smoking prev	Vaccine cov	Int partner viol	Water	Sanitation	Hygiene	HH air poll	Occ burden	Mean $PM_{2.5}$	Homicide	Conflict mort	Violence prev	Child sex abuse	Cert death reg
1	Singapore	87	91	84	100	96	85	59	89	100	100	100	54	63	100	87	100	90	53	88	98	80	94	95	74	78	100	86	95	99	96	99	97	100	74	50	99	100	97	42	100
2	Iceland	86	96	79	100	100	99	32	100	100	100	100	60	88	100	100	100	94	43	56	95	94	88	100	98	93	85	63	90	98	100	100	100	100	68	91	95	100	94	47	95
3	Sweden	86	95	81	100	100	98	53	98	100	97	95	62	93	100	100	100	94	38	40	99	88	84	98	100	85	68	77	96	95	100	99	100	99	88	100	84	100	75	29	90
4	Norway	84	95	80	56	100	99	53	98	100	96	92	63	96	100	100	100	92	47	54	98	90	82	99	97	83	87	61	93	98	100	100	100	100	86	88	93	100	94	52	88
5	Netherlands	83	94	79	100	100	99	67	89	100	88	80	66	98	100	98	100	86	49	49	94	92	95	97	82	87	100	54	86	98	100	100	100	100	70	66	90	100	82	39	89
6	Finland	83	97	78	100	100	98	64	99	100	100	98	71	98	100	100	100	92	32	22	94	98	80	100	100	100	85	53	96	97	100	100	100	100	91	96	77	100	84	50	100
7	Israel	82	90	78	100	99	98	48	90	99	90	88	58	100	100	92	100	92	57	84	70	84	72	87	84	80	89	53	93	87	99	98	99	100	97	59	68	72	84	24	84
8	Malta	81	85	77	70	100	98	25	91	99	77	63	49	95	100	97	100	88	77	64	99	76	54	88	81	96	97	51	93	96	100	99	100	100	76	74	83	100	98	44	96
9	Switzerland	80	94	75	55	100	98	61	92	100	88	77	56	95	100	70	100	98	40	44	98	93	100	100	96	96	100	44	85	99	100	100	100	100	66	78	94	100	94	43	92
10	UK	80	89	77	89	97	99	53	86	99	84	78	55	84	100	96	100	82	56	39	97	98	62	88	82	86	84	44	93	97	100	100	100	100	73	75	97	100	91	36	96
11	Australia	80	91	75	77	96	98	54	92	99	88	82	63	100	100	74	100	94	44	23	79	100	62	96	100	90	85	64	94	98	96	99	97	100	78	96	80	100	94	47	96
12	Canada	79	89	74	100	98	99	47	84	99	80	72	57	100	100	82	100	87	43	36	74	94	68	92	98	83	75	65	60	97	100	97	100	100	61	90	76	100	94	41	96
13	Germany	78	92	73	100	100	99	54	83	99	90	86	60	94	100	98	100	81	44	34	89	91	80	92	82	87	100	38	74	100	100	99	100	100	71	70	93	100	91	34	90
14	Italy	78	92	70	49	100	98	35	97	99	93	86	54	96	100	79	100	91	69	38	69	81	84	94	87	100	96	43	93	98	98	99	99	100	76	65	92	100	90	44	94
15	Denmark	77	93	71	100	100	99	44	96	99	87	79	61	95	100	97	100	82	46	21	93	90	92	92	86	84	90	51	91	98	100	100	100	100	54	79	91	100	83	51	90
16	Belgium	77	91	73	100	100	98	69	87	99	88	84	54	90	100	93	100	82	27	34	70	91	75	93	79	83	83	46	96	96	100	100	100	100	71	64	80	62	83	44	85
17	Antigua and Barbuda	76	69	79	100	89	91	44	55	99	64	57	53	83	100	84	97	65	100	79	67	91	37	61	77	59	63	100	100	84	63	80	77	99	87	66	46	100	92	75	79
18	Cyprus	76	91	70	85	100	98	45	80	99	92	88	55	88	100	92	100	83	77	46	58	90	86	89	75	87	96	26	94	95	100	99	100	100	72	60	71	100	99	44	70
19	Slovenia	75	91	69	59	89	84	40	88	100	99	92	93	93	100	93	100	82	27	37	80	67	98	93	77	96	77	35	95	98	88	95	99	97	69	60	87	100	100	73	92
20	Ireland	75	91	69	100	100	98	46	92	100	88	81	54	93	100	89	100	86	46	11	90	91	73	93	87	94	77	44	90	98	100	99	100	100	86	83	93	100	93	33	98
21	Japan	75	93	69	19	95	95	81	90	99	97	100	78	83	100	75	100	100	24	61	94	66	93	98	97	82	74	32	96	100	96	99	97	100	69	71	99	100	95	39	88
22	Austria	74	93	69	54	100	98	64	98	100	91	86	54	92	100	100	100	86	37	24	87	92	80	98	85	100	97	25	88	100	100	98	100	100	80	66	94	100	100	44	99
23	Spain	74	92	67	100	100	96	36	92	94	92	88	51	89	100	94	100	92	67	10	89	87	75	98	94	97	94	25	97	100	100	100	100	100	98	80	97	100	100	49	91
24	[illegible]																																								
25	Brunei	74	76	74	66	86	87	69	56	99	68	64	49	53	100	67	100	59	76	99	47	83	49	65	90	77	63	68	97	88	96	98	97	100	30	95	80	100	91	42	86
26	France	73	92	68	82	100	98	64	85	100	88	84	64	92	100	99	100	86	29	20	78	95	72	94	98	87	83	28	90	97	100	99	100	100	63	74	88	100	82	74	84
27	Barbados	73	68	77	100	89	75	62	46	99	58	43	46	83	100	80	100	64	75	53	60	90	40	61	77	59	78	97	83	85	75	81	78	100	93	61	31	100	90	75	85
28	South Korea	72	90	65	73	96	94	40	78	100	90	92	74	50	80	74	98	89	9	55	51	91	100	95	77	80	60	46	98	94	96	99	97	100	79	44	77	100	91	42	88
29	Czech Republic	72	89	67	86	97	87	55	90	100	96	94	85	98	100	88	100	68	40	21	74	68	72	86	64	80	79	29	98	95	88	96	99	99	63	58	83	100	93	70	92
30	Slovakia	72	83	70	68	89	85	60	86	100	78	74	95	93	100	89	100	56	44	26	70	72	51	75	56	88	68	44	98	89	88	95	99	99	81	56	66	100	87	74	97

Sara Brecht

España cae 16 puestos en el ranking mundial de salud por malos hábitos

CELESTE LÓPEZ
Madrid

Fuerte varapalo al tipo de vida de los españoles. El tabaquismo, la obesidad infantil y, sobre todo, el elevado consumo de alcohol han desbancado a España de los primeros puestos del ranking mundial de salud de las Naciones Unidas: del puesto 7 al 23 sobre un total de 188 países. Así lo indica el Estudio Global de la Carga de Enfermedades (GBD) 2016 publicado ayer por la revista *The Lancet* y más de 2.500 colaboradores de 130 países. El ranking lo encabezan Singapur, con 87 puntos sobre 100, e Islandia y Suecia, empatadas con 86. Lo cierran Somalia, la República Centroafricana y Afganistán, con once puntos cada uno.

Este trabajo tiene como fin monitorizar los avances en salud de cara a los Objetivos de Desarrollo Sostenible para el año 2030 y la conclusión en el caso español es clara, los hábitos de vida perjudiciales pasan factura a los españo-

A escala global, España logra 74 puntos, ocho menos que en 2016, y la peor puntuación, un diez, la obtiene en lo que se refiere al consumo de alcohol (el año pasado obtuvo un ligero aprobado, 57 puntos, pero se ha modificado la manera de medir este factor). La segunda y tercera peores notas se refieren al consumo de tabaco (25) y la obesidad infantil (36). En la incidencia del VIH y los abusos infantiles, España apenas pasa del aprobado.

Por contra, los sobresalientes

Efe, 16-Sept- 2017.

INFORME SALUD

Alcohol y obesidad relegan a España al puesto 23 del ránking de salud mundial

España sigue disfrutando de una de las más altas expectativas de vida en el mundo pero ciertos hábitos, como el consumo de alcohol, tabaco o azúcar, nos han relegado de manera fulminante del séptimo al vigésimo tercer puesto del ránking mundial de salud de Naciones Unidas (ONU).

EFEFUTURO MADRID | VIERNES 15.09.2017

GBD 2016 SDGs. Lancet 2017.

IHME | UNIVERSITY of WASHINGTON

Institute for Health Metrics and Evaluation

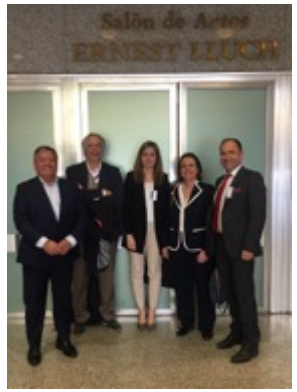
GBD Spain Collaborators

- Hospital Universitario de la Princesa
- Instituto de Salud Global de Barcelona
- IMIM-Institut Hospital del Mar d'Investigacions Mèdiques
- Universitat Pompeu Fabra
- Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBERESP)
- Centre for Research in Environmental Epidemiology (CREAL)
- Hospital Germans Trias i Pujol, Badalona
- Centro de Investigación Biomédica en Red de Enfermedades Respiratorias (CIBERES)
- Universitat Autònoma de Barcelona
- Institut Català d'Oncologia
- Universitat de Barcelona
- Centro de Investigacão em Saúde de Manhica (CISM), Maputo, Mozambique
- Amsterdam Institute for Global Health and Development (AIGHD), Países Bajos
- Institute of Health Metrics and Evaluation, University of Washington, Seattle, WA, EE.UU.
- Hospital Universitario Doctor Peset
- Universitat de Valencia
- Universida Cardenal Herrera
- Hospital Sant Joan de Dèu
- Instituto de Salud Carlos III
- Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM)
- Fundación Jiménez Díaz
- Universidad Autónoma de Madrid

Granularity of GBD

- Level 1
- Level 2
- Level 3
- Level 4
- Level 5
- Level 6

- World
- Western Europe
- United Kingdom
- England
- London
- Ealing



April 6, 2017

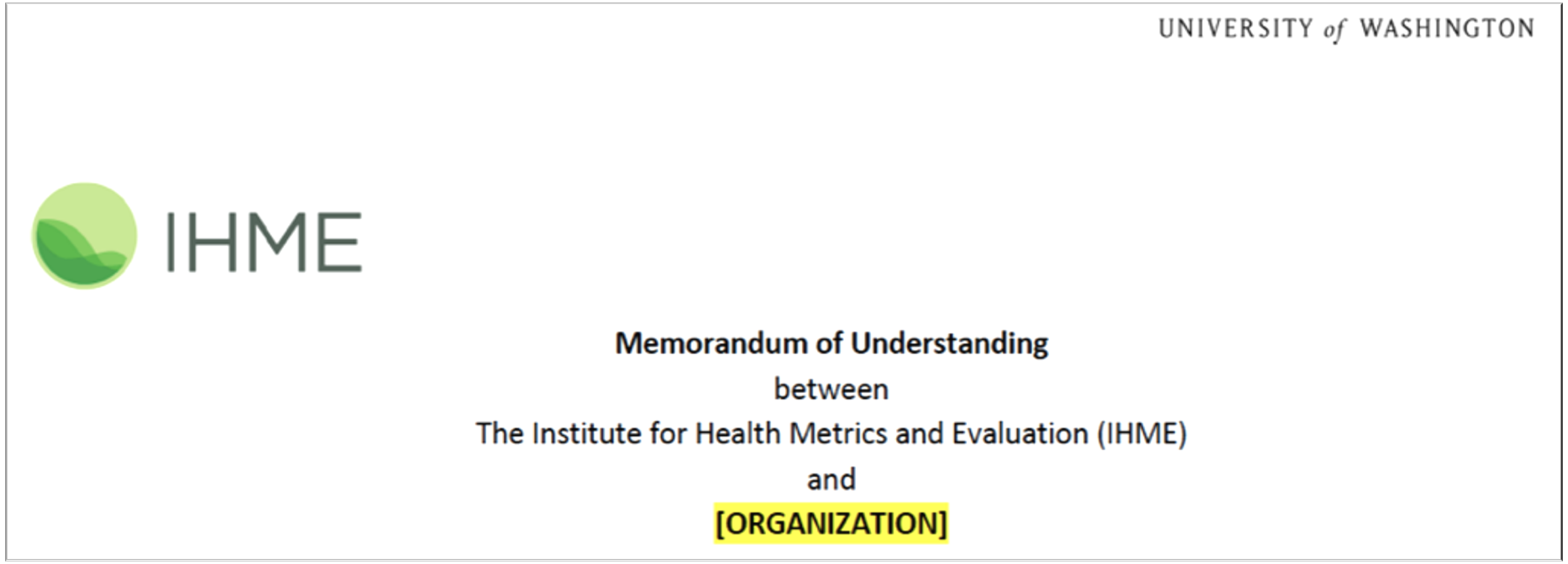
June 2, 2017

- Spain
- 17 CC.AA.
- City
- Districts

Our calendar for GBD 2019 Spain Collaborators

#	Date	Action
1	5 Febr.	Propuesta V1 a colaboradores GBD 2016 Spain ***DONE***
2	7 Febr.	TC/VC del petit writing committee para distribuir tareas ***DONE***
3	14 Febr.	Primer listado de tablas y figuras ***DONE***
4	25 Febr.	Primer borrador de todas las secciones
5	2 March	Circulación a TOD@S colaboradores GBD 2019 via GBD Secretariat
6	16 March	Versión pre Final
7	1 April	Versión final a enviar

Memorandum of Understanding



UNIVERSITY of WASHINGTON

IHME

Memorandum of Understanding
between
The Institute for Health Metrics and Evaluation (IHME)
and
[ORGANIZATION]

Estimation of the global prevalence and burden of obstructive sleep apnoea: a literature-based analysis

Adam V Benjafield, Najib T Ayas, Peter R Eastwood, Raphael Heinzer, Mary S M Ip, Mary J Morrell, Carlos M Nunez, Sanjay R Patel, Thomas Penzel, Jean-Louis Pépin, Paul E Peppard, Sanjeev Sinha, Sergio Tufik, Kate Valentine, Atul Malhotra

Summary

Background There is a scarcity of published data on the global prevalence of obstructive sleep apnoea, a disorder associated with major neurocognitive and cardiovascular sequelae. We used publicly available data and contacted key opinion leaders to estimate the global prevalence of obstructive sleep apnoea.

Lancet Respir Med 2019; 7: 687-98

Published Online July 9, 2019 http://dx.doi.org/10.1016/

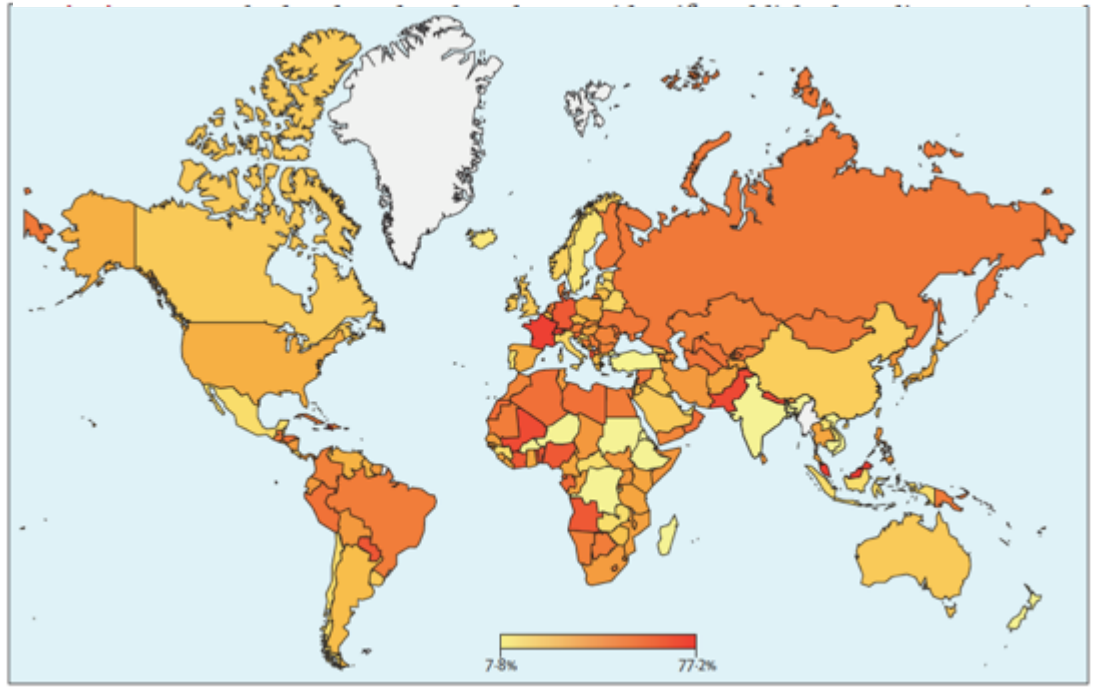
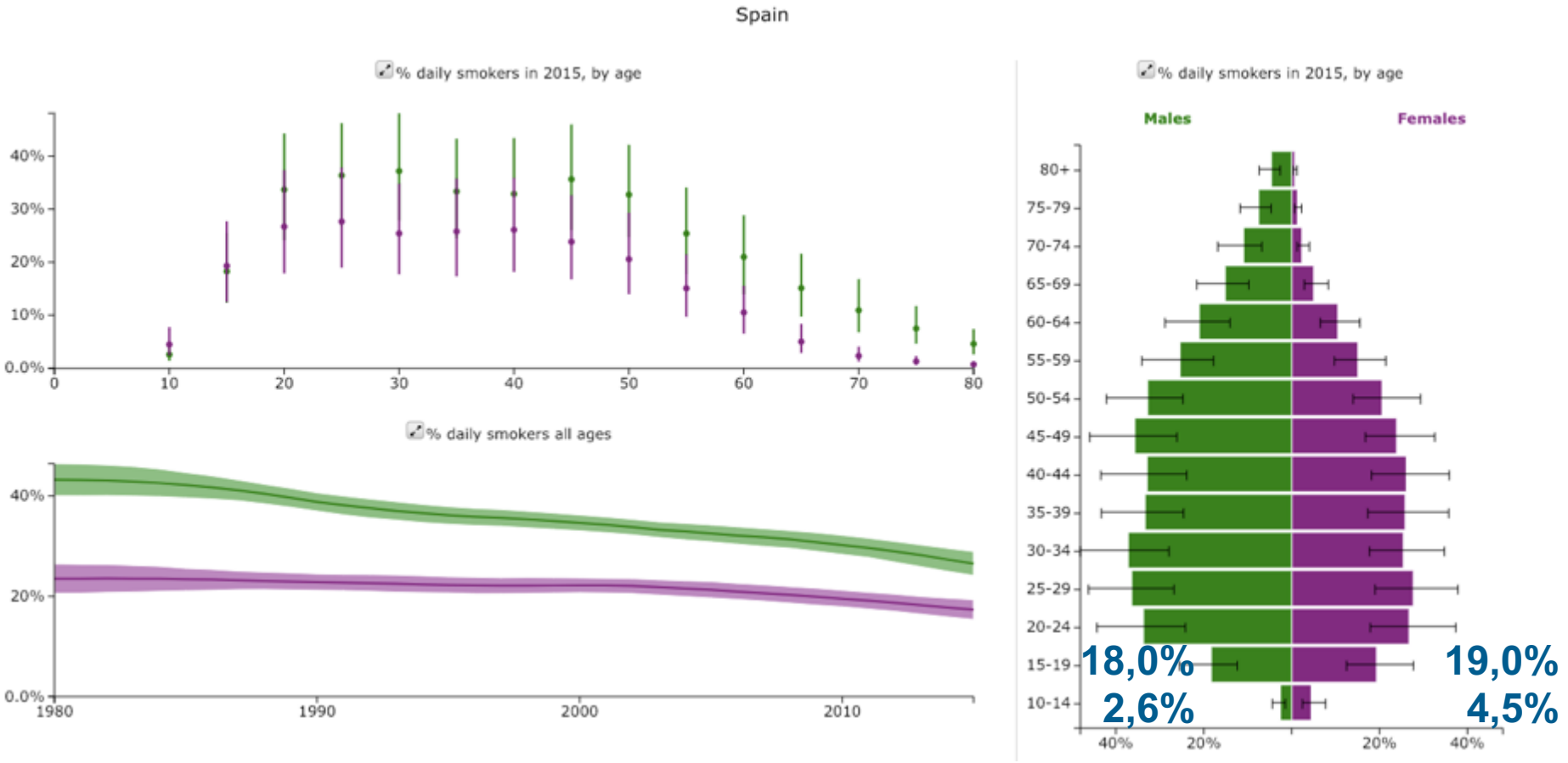


Figure 3: Global heat map of estimated prevalence of obstructive sleep apnoea (AHI five or more events per h) for each country
AHI=apnoea-hypopnoea index.

"We estimated that **936 million** (95% CI 903–970) **adults aged 30–69 years** (men and women) have mild to severe OSA …
and **425 million (399–450)** have moderate to severe OSA globally!!!!!.

Benjafield EV, *et al*. Lancet Respir Med 2019.

An example of Poisson Meta-regression: Tobacco trends in Spain with GBD 2017



Take-home messages

- Become a GBD collaborator
- Try to attend the GBD Technical Workshop in Negroponte
- Plan a GBD 2019 paper about your country (or disease of choice)
- Be ready to working with “zero” budget: doodle, skype, midnight webinars, …
- Consider a sabbatical at the IHME
- Get endorsement from Bill Gates (or equivalent) to further fund COST action CA18218 burden-eu
- Happy to be a “bridge” to liaise with GBD’s IHME