From EHLEIS to HEXnet: European Cooperation on health expectancies
18th February, 2021

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Participants

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I. Welcome – Herman Van Oyen

Almost one year has passed since the last EHLEIS group meeting. Happy to meet again.

Introduction to InfAct, see presentation slides here.

The Joint Action on Health Information aims to build a sustainable research infrastructure for population health. InfAct is a 36 months project funded by the European Commission that includes 40 partners in 28 EU and associated countries (AC). It builds on the BRIDGE Health project and other initiatives in health information. Through country collaboration, InfAct streamlines health information activities across Europe. It builds towards a sustainable and solid infrastructure on EU health information and strengthens its core elements based on capacity building, health information tools and political support.

The main aim of InfAct is to bring together different research networks across Europe such as EHLEIS and national structures (national nodes) to help researchers to find data and have access to it. During the project, health information systems across Europe were strengthened. This meeting is a milestone within the InfAct project. The link with EHLEIS is to try to bring countries to the same level and provide capacity building. Systems are not always able to talk to each other. Interoperability is important. We have baseline tools but we also need to think about innovation.

II. Introduction - Jean Marie Robine

When we created REVES in 1989, we were convinced that if we did not succeed in harmonising our health measures, health expectancy had no future. 20 researchers from 6 countries met in Canada at that time. The network has been extraordinary and successful. We had a meeting every year. Over the years we have been successful in convincing national agencies and international agencies how important it is to compute health expectancy and to harmonise health measures. More importantly, we convinced the European Commission (EC) which has been the main funder of our research since 1989. Most of the work has been contributed through REVES Eurohex. The EC was the leading institution to make use of health expectancy. We reached a summit at 4 years ago. Now we lost a bit of the comparability.

III. EHLEIS & recent trends - Emmanuelle Cambois

For a long time we had European projects. Now we want to promote more globally what was done in Europe. Everything is accessible through www.Eurohex.eu . We hope that the COST project will be successful. You can find a lot of documentation on what was done in every country on the website. It shows how the methodology is used in countries with frequent updates. I hope we will be able to continue the work.

IV. Recent country experience in health expectancy estimations & use in policy

The session consisted of presentations from different countries working on health expectancies.

A. Wilma Nusselder - State of work in the Netherlands

See presentation slides here.

The presentation focuses on providing an overview of topics that have been addressed in the Netherlands since the last EHLEIS meeting. References are provided for more details in the slides.

Health expectancy in the Netherlands has received a lot of research and policy interest. The Netherlands has many different institutes involved in health expectancy namely: Amsterdam University Medical Centers (AUMC), Erasmus MC (EMC), National Institute for Public Health and the Environment (RIVM), Statistics Netherlands (CBS). Research has been conducted on trends of health expectancy by gender, by socioeconomic position, future trends by education and for different indicators (AUMC, EMC).

Research was also conducted on risk factors and health expectancy such as behavioral risk factors, income and fathers' occupation and educational inequalities in (un)health expectancy (EMC), occupational exposures and health expectancy (AUMC), social engagement and health expectancy (AUMC) and social participation and health expectancy (AUMC, in progress). The topic has a lot of attention. Method developments have also been explored. This provides new insights into the future.

A lot of information can also be found on the websites of Statistics Netherlands (CBS) specifically for health expectancy by gender, and period (1981-2019), health expectancy by age, gender and projection of health expectancy by gender. On the website of the National Institute for Public Health and the Environment (RIVM) information can be found regarding health expectancy by gender (based on other data sources) and future health expectancy.

Questions

Are trends correlated to trends in healthcare consumption? On how these groups consume care?

- We have not looked at this specifically for the Netherlands.

B. Martina Otavova - Potential impact of reduced tobacco use on life and health expectancies in Belgium

Please email Martina.Otavova@sciensano.be for the presentation slides.

We know that smoking is the leading risk factor for preventable and premature mortality. The harmful impact of smoking is mainly seen in late adulthood, but children, adolescents and young adults are also affected in terms of quality of life or its length. For years, there has been only little evidence on how a reduction in tobacco use may contribute to an increase in life expectancy (LE), healthy life years (HLY) and to a decrease in and unhealthy life years (ULY).

The article under discussion was published in 2019 in the International Journal of Public Health. The goal of the study was to quantitatively compare the potential impacts of various reduced tobacco use scenarios on total life expectancy and health expectancies (healthy and unhealthy life years). The DYNAMOHIA tool was used. It is a partial micro-simulation modelling tool. Three scenarios were explored: business as usual, policy/intervention scenario and what-if scenario. The results of the study provided a better understanding of how a reduction in tobacco use may affect HLY, ULY, and LE. This translate in valuable guidance for policy makers as it highlights that new anti-smoking strategies or stricter enforcement of existing policies potentially gain more HLY and reduce ULY in Belgium and can contribute to achieving the EU policy goal of increasing the number of HLYs.

Questions

Why does the life expectancy only increases by one year or less? For women almost one year. Usually we estimate the gain of a smoke free life being much higher.

- The community effect over long time was much more. This is also something we should look into in the future.

- We do not have an immediate reason for this.

- There was a big difference between males and females.

C.   Metka Zaletel - Challenges and opportunities in Slovenia

See presentation slides here.

Healthy life years in Slovenia went down in 2010. After investigating what was the possible cause for the decrease in healthy life expectancy in Slovenia, we noticed that there was a minor change in the wording of the questions in 2010 which could have had a high impact on the numbers.

In 2018, Slovenia was at the bottom of the list of European countries regarding healthy life years indicators. We then started to look around to what other countries were doing and in 2015 and 2016, it was quite clear that some countries were changing their questions (e.g. Italy, Germany and Sweden). These changes caused major impacts on the value of healthy life years.

In 2017-2019, the following tests were performed: splitting of initial single question into three questions and change in the order of the questions in the questionnaire. The results showed that from 55 healthy life years Slovenia went up to 69 years. With the new results, Slovenia was the 4th country in EU with the highest score in healthy life years. Germany experienced a similar shift. Conclusions: important to discuss between institutes. The major shift was in low education population because they did not fully understand the question.

Questions

Did the change in wording change the health or just change what is measured?

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- The self-perceived health did not change much over time in the survey. We are planning on doing more analysis on this.

A paper on how changing the wording can change the GALI prevalence can be found here.

D.   Joao Vasco Santos - Health expectancies in Europe

Please email jvasco.santos@gmail.com for the presentation slides.

Healthy life expectancies (HLE) are "indicators of current health and mortality conditions". They have been used for multiple purposes such as performance assessment for policy aims as in the Netherlands, for planning, retirement and budget.

The study and the presentation focused on IHME's disability weight based HLE (yearly) and EC's self-perceived health HLE (yearly). We looked if the same concept is being measured, are there differences in the interpretation and if they do (un)systematically differ across countries and over time.

The results showed that there is not a positive or negative systematic difference in the average values. When you compare HLE between both methods (self-perceived and disability one) we see a clear relation. The proportion spend in good health were as expected. "Good performance" for correlation, reliability and disagreement between both HLE methods. The Bland and Altman plots suggest a high variability HLE range: 6 years (±3 years) and that the variability is higher for females than males.

Herman: it is important to look at the duration in ill health. Wilma published good papers on that. It does not always give you the same picture.

Comments

The paper can be found here. Feel free to contact Joao Vasco Santos for more information.

E.   Henrik Henrik Brønnum-Hansen (Denmark)

See presentation slides here.

The presentation focused on some studies from the last year on social inequalities in Denmark.

The first study focused on occupational inequality in health expectancy in Denmark. We can link individual data SHARE with Register data. We used partial life expectancy. The social gradient is much deeper when you look at life years without activity mutations than partial life expectancy. It is not enough to look at Life Expectancy (LE). Attention should be paid to healthy life expectancy when discussing how to define the differential pension age.

The second study focused on income inequality in life expectancy and disability free expectancy. The riches 20% has an income 4 times higher than the 20% poorest. The gap is increasing. This is also recognized when we look at LE. In the future the pension age will be 72 in Denmark.

The last study focused on overweight and obesity. If we reduce overweight in those with short education compared to those with long education the benefit in life expectancy will be 3 months. Almost one year reduction in LE with diabetes for women, 7 months for men. The effects of having diabetes on the excess risk has more details in the study.

Three more studies were mentioned in the meeting that can be found in the slides.

Comments

For new comers, an article exploring the 3 questions of the minimum health module **here**.

V. EU Cost Action HEXnet - Aida Solé-Auro

See presentation slides **here**.
HEXnet COST proposal addresses 3 basic needs:
1. Pool of countries including eastern European countries.
2. Strongly link potential users.
3. Mentoring environment and new health measures.

In order to understand the health of ageing populations across Europe we need to have a standard set of best practices for measuring health expectancies. Key scientific challenges:
- A uniform and internationally comparable approach to measuring health expectancies
- Methodological advances are unevenly dispersed across countries and across scientific disciplines.

To understand national level trends in HE it is important to design studies that employ the same variables and methodologies in an internationally comparative setting. HEXnet will build a platform that will be methodologically based and dissemination and training focused which is crucial to extend collaboration.

Addressing which type of health indicator should be used is a prerequisite to address which (and how) factors moderate health expectancies differently in different places. Therefore, there are three issues that need to be accounted for:
1. the health measure on which HE is computed,
2. from which data source the measure is derived, and
3. the method used to compute health expectancy.

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HEXnet is therefore needed to effectively and efficiently integrate cross-disciplinary methodologies and coordinate the dissemination of country-specific data and findings.

Comments

Herman: the network is getting 30 years old. It gets into a new phase in its life. It is important that we have this continuation. The networks works well in the Distributed Infrastructure on Population Health (DIPoH). You have to cover EU countries. You have to know which data you need to use. This to link the different domains together.

VI. Distributed Infrastructure on Population Health (DIPoH) – Petronille Bogaert

See presentation slides **here**.

We developed in InfAct and in BRIDGE Health in which the EHLEIS network was involved, the concept of a distributed infrastructure on population health which we named DIPoH - distributed infrastructure on population health. The aim is to facilitate research across Europe to make sure data can be shared between countries and that we can support each other. We chose the term population health because in our perception, it covers quite broad area of different types of health data and health information e.g. health status, determinants of health and the health care system. So any data or information or guidelines that are produced in this area for us fall into the frame of DIPoH.

DIPoH has been designed in a compatible way to allow the integration of different types of research networks, the European Health Data Space and to include national nodes. A national node is a group that brings together the different stakeholders in the country to talk about different aspects within health information. The central office and a governance structure which facilitates the different activities and tries to bring them together through one point of entry is the Health Information Portal. On this portal, we want to highlight the research networks e.g. different COST actions that are ongoing so that if people are looking for who is working across Europe on healthy life expectancies such information can be easily reached. Thus, the purpose of DIPoH is to provide a single point of entry where you can find all different types of data sources available and different networks that are operating in specific themes.

In terms of some of the achievements of InfAct, we've developed a business case, we've set up the Health Information Portal, which will soon become public, we strengthened Health Information Systems, we looked at interoperability, and we piloted some aspects of setting up this infrastructure of sharing data across countries. But one of the elements that most important for today is that we create a network of networks e.g. by supporting countries in setting up a national health information group. The added value for a research network to become part of DIPoH is the opportunity to share data and expertise at EU level. The advantage of DIPoH is that we're setting the infrastructure in a sustainable way so that future projects can add information to it.

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The commission picked up on the concept of DIPoH and when COVID-19 hit, they asked if we could implement DIPoH for COVID-19. We did and we called it PHIRI, the population health information research infrastructure for COVID-19. PHIRI is the implementation of the research infrastructure on population health information to facilitate and generate the best available evidence for research on health and well-being of populations as impacted by COVID-19. PHIRI will allow for better coordinated European efforts across national and European stakeholders to generate the best COVID-19 population health knowledge.

VII. Conclusions - Herman van Oyen

It is important that we as a group of research networks find a new drive. The COST proposal and DIPoH can provide us with new opportunities. We also have to take into account the EU evolution. The EHDS and EOSC are important elements to take into consideration. To be interconnected with other domains. The next REVES meeting will be in Brussels 26-28 May 2021. However, registration for the meeting is not yet available. COVID-19 might have an impact on HE. We will set up the abstracts submission by the end of the month.

The Joint Action on Health Information
InfAct

18/02/2021

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Contact: infact.coordination@sciensano.be

This project is funded by the Health Programme of the European Union

InfAct partners

40 institutions in 28 countries:

Austria, Bosnia Herzegovina, Belgium, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, United Kingdom

➔ 20 public health or research institutes, 13 ministries, 3 universities and 4 others

InfAct goals

InfAct's goals are to strengthen national and EU health information systems by:

1. Establishing a sustainable research infrastructure which will support population health and health system performance assessment.

2. Strengthening European health information and knowledge bases and health information research capacities to reduce health information inequalities,

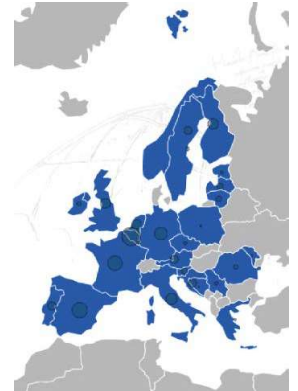3. Supporting health information interoperability and innovative health information tools and data sources.

Integration into national policies and sustainability

Status of health information systems in the EU

Strengthen health information capacity

Proof of concept for sustainable structure

Assessing and piloting interoperability for public health policy

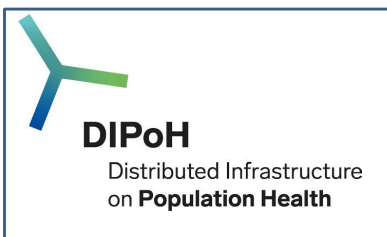Tools and methods for health information support

Innovation in health information for public health policy development

Website: www.inf-act.eu
Twitter: @JA_InfAct

To conceptualize a sustainable Research Infrastructure and carry out a proof of concept:

DIPoH
Distributed Infrastructure on **Population Health**

sciensano

This project is funded by the Health Programme of the European Union

Health expectany in the Netherlands

Wilma Nusselder, Erasmus MC

From EHLEIS to HEXnet: European research cooperation on health expectancies. Online presentation, February 18, 2021

Health expectancy in the Netherlands

In hands different institutes who contribute to this overview:

▶ Amsterdam University Medical Centers (AUMC, Dorly Deeg)

▶ Erasmus MC (EMC, Wilma Nusselder)

▶ National Institute for Public Health and the Environment (RIVM, Coen van Gool)

▶ Statistics Netherlands (CBS, Jan-Willem Bruggink)

Research papers: health expectancy

▶ Trends in health & health expectancy:
  ▶ By gender (AUMC, EMC)
  ▶ By socioeconomic position (e.g. education 50-70, EMC)
  ▶ For different indicators (AUMC, EMC)
  ▶ Future trends by education (age 50-70, EMC)

▶ Risk factors and health expectancy:
  ▶ Behavioral risk factors, income and fathers occupation and educational inequalities in (un) health expectancy (EMC)
  ▶ Occupational exposures and health expectancy (AUMC)
  ▶ Social engagement and health expectancy (AUMC)
  ▶ Social participation and health expectancy (AUMC, in progress)

Research: health expectancy in context

▶ International comparisons (EMC, RIVM)

▶ Health expectancy and working life expectancy (AUMC)

▶ Health expectancy (inequalities) and increasing pension age (EMC)

Broader audience publications

▶ Trends HLY (AUMC&EMC):
  https://nidi.nl/demos/is-langer-leven-ook-gezonder-leven/
  https://www.ag-ai.nl/view/38980-25-6-art.Deeg.pdf
  https://research.vumc.nl/en/publications/unequal-chnces-on-healthy-ageing

▶ Education, health expectancy and pension age (EMC):
  https://www.netspar.nl/publicatie/opleiding-levensverwachting-en-pensioenleeftijd/

▶ International comparisons (RIVM):
  https://www.volksgezondheidenzorg.info/onderwerp/gezonde-levensverwachting/regionaal-internationaal/internationaal#!node-internationale-vergelijking-gezonde-levensverwachting-bij-geboorte-naar-geslacht

Method developments

▶ Health expectancy by education, particular older ages (CBS)

https://www.cbs.nl/nl-nl/longread/diversen/2020/gezonde-levensverwachting-naar-onderwijsniveau

▶ GALI indicator: comparison across surveys (EMC)

▶ EMC (icw university Tilburg):

Projection mortality and life expectancy by education, e.g. used for projection health expectancy (50-70 years) by education (in progress)

Health expectancy on public websites

▶ Statistics Netherlands (CBS):
  ▶ Health expectancy by gender, and period (1981-2019): https://www.cbs.nl/nl-nl/cijfers/detail/71950ned
  ▶ Health expectancy by age, gender, SEP and period:
    ▶ Education
      https://opendata.cbs.nl/statline/#/CBS/nl/dataset/84842NED/table?dl=4506F
    ▶ Income: https://www.cbs.nl/nl-nl/maatwerk/2020/08/gezonde-levensverwachting-naar-inkomen
  ▶ Projection of health expectancy by gender: https://www.cbs.nl/nl-nl/maatwerk/2018/12/projecties-gezonde-levensverwachting-2018-2040

▶ National Institute for Public Health and the Environment (RIVM)
  ▶ Health expectancy by gender (based on other data sources): https://www.volksgezondheidenzorg.info/onderwerp/gezonde-levensverwachting
  ▶ Future health expectancy: https://www.vtv2018.nl/en/life-expectancy

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Health expectancy in policy

Centrale missie
In 2040 leven alle Nederlanders tenminste vijf jaar langer in goede gezondheid, en zijn de gezondheidsverschillen tussen de laagste en hoogste sociaal-economische groepen met 30% afgenomen[14]

Core mission

In 2020 all inhabitants of the Netherlands live at least 5 years longer in good health, and health inequalities between lowest and highest socioeconomic gropes will be decreased by 30 percent.

Health expectancy-related publications

Deeg DJH, Boertje M-L, Galenkamp H. Healthy life years and social engagement. In: Walker A. The future of ageing in Europe. Making an asset of longevity. Singapore: Palgrave Macmillan, 2019: 143-176.

Deeg DJH, Comijs HC, Hoogendijk EO, van der Noordt M, Huisman M. 23-Year Trends in Life Expectancy in Good and Poor Physical and Cognitive Health at Age 65 Years in the Netherlands, 1993-2016. Am J Public Health 2018; 108(12): 1652-1658. doi: 10.2105/AJPH.2018.304685

Dieteren CM, Faber T, Van Exel NJA, Brouwer V, Mackenbach J, Nusselder W. Mixed evidence for the compression of morbidity hypothesis for smoking elimination-a systematic literature review. Mixed evidence for the compression of morbidity hypothesis for smoking elimination-a systematic literature review. EJPH, 2020

de Wind A, van der Noordt M, Deeg DJH, Boot CRL. Working life expectancy in good and poor self perceived health among Dutch workers aged 55-65 years with a chronic disease over the period 1992-2016. Occup Environ Med 2018; 75(11): 792-797. doi:10.1136/oemed-2018-105243.

de Wind A, Sewdas R, Hoogendijk EO, van der Beek AJ, Deeg DJH, Boot CRL. Occupational Exposures Associated with Life Expectancy without and with Disability. Int J Environ Res Public Health 2020; 17(17): E6377. doi: 10.3390/ijerph17176377.

Fussenich K, Nusselder WJ, Lhachimi SK, Boshuizen HC, Feenstra TF. Potential gains in health expectancy by improving lifestyle: an application for European regions. Popul Health Metr. 2019;17(1):1.

Hoogendijk EO, van der Noordt M, Onwuteaka-Philipsen BD, Deeg DJH, Huisman M, Enroth L, Jylhä M. Sex differences in healthy life expectancy among nonagenarians: A multistate survival model using data from the Vitality 90+ study. Exp Gerontol 2019; 116: 80-85. doi: 10.1016/j.exger.2018.12.015.

Health expectancy-related publications

Nusselder WJ, Rubio Valverde J, Bopp M, Bronnum-Hansen H, Deboosere P, Kalediene R, et al. Determinants of inequalities in years with disability: an international-comparative study. Eur J Public Health. 2020.

Otavova M, Van Oyen H, Yokota RTC, Charafeddine R, Joossens L, Molenberghs G, et al. Potential impact of reduced tobacco use on life and health expectancies in Belgium. International Journal of Public Health. 2020;65(2):129-38.

Timmermans EJ, Hoogendijk EO, Broese van Groenou MI, Comijs HC, van Schoor NM, Thomése FCF, Visser M, Deeg DJH, Huisman M. Trends across 20 years in multiple indicators of functioning among older adults in the Netherlands. Eur J Public Health 2019;29(6):1096-1102. doi: 10.1093/eurpub/ckz065.

Rubio-Valverde JR, Nusselder WJ, Mackenbach JP. Educational inequalities in Global Activity Limitation Indicator disability in 28 European Countries: Does the choice of survey matter? Int J Public Health. 2019;64(3):461-74

Rubio-Valverde JR, Nusselder WJ, Bopp M, Bronnum-Hansen H, Deboosere P, Kalediene R, et al. Determinants of inequalities in disability-free life expectancy: an international comparative study. SSM Population Health (in press)

van der Noordt M, van der Pas S, van Tilburg TG, van den Hout A, Deeg DJH. Changes in working life expectancy with disability in the Netherlands, 1992-2016. Scand J Work Environ Health 2019; 45(1): 73-80. doi:10.5271/sjweh.3765.

Health expectancy-related publications

In Dutch

Deeg DJH. Werkcapaciteit na de 65? Trends over 23 jaar in lichamelijk en cognitief gezonde en ongezonde levensverwachting van 65-74-jarigen in Nederland [Employability after age 65? Trends across 23 years in physical and cognitive healthy and unhealthy life expectancy of 65-74-year-olds in the Netherlands]. De Actuaris 2018; 25(6): 19-21.

Deeg D, de Breij S, de Wind A. Ongelijke kansen om gezond ouder te worden [Unequal chances on healthy ageing]. De Actuaris, december 2020: 45-47.

Deeg D, Nusselder W. Is langer leven ook gezonder leven? [Is living longer also living in better health?] Demos 2020; 36(1): 4-7.

Mackenbach J, Rubio Valverde J, Nusselder W. Opleiding, levensverwachting en pensioenleeftijd. Netspar Design Paper 2019.

Nusselder W, Rubio Valverde J, Mackenbach J. Opleidingsverschillen in levensverwachting: De bijdrage van acht risicofactoren. Netspar Industry Paper 2020 .

Slide 1

Contact: w.nusselder@erasmusmc.nl

Healthy Life Years – challenges and opportunities in Slovenia

Metka Zaletel, Tatjana Kofol Bric
National Institute of Public Health

Slide 2

HLY, Slovenia, 2005-2018

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Slide 3
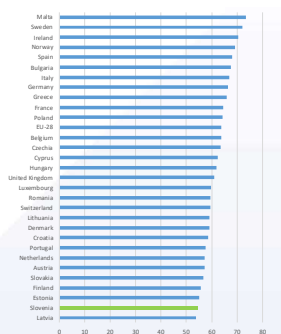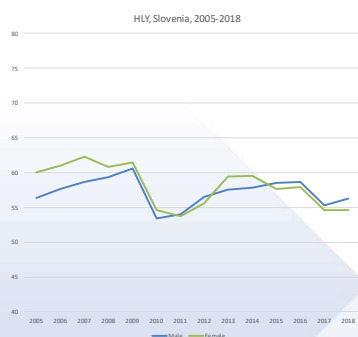
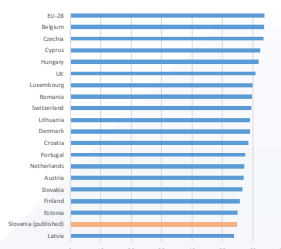- In 2017-2019, the following tests were performed:
  - Position in the EU-SILC questionnaire
  - Splitting of initial single question into three questions

OLD WORDING (translation)

For at least the past 6 months, to what extent have you been limited because of a health problem in activities people usually do?

NEW WORDING (translation)

1. Are you permanently suffering from a health problem that restrict everyday activities?
2. How long have these restrictions been in place?
3. How strong are you limited in your daily the activities?

NIJZ Nacionalni inštitut za javno zdravje

Slide 4

HLY, female, 2018 – original and pilot version
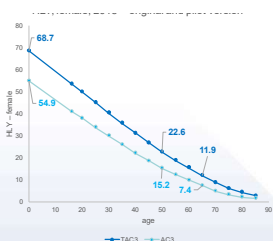
EU/SILC 2018		Pilot			
		Severe limitation	Moderate limitation	Without limitation	Total
Original	Severe limitation	65,4%	12,7%	21,9%	100,0%
	Moderate limitation	8,1%	34,0%	57,9%	100,0%
	Without limitation	0,3%	1,6%	98,1%	100,0%
	Total	9,1%	11,8%	79,2%	100,0%

NIJZ Nacionalni inštitut za javno zdravje

Slide 5

- Importance of strong cooperation of NSI and National Institute of Public Health
- National discussion of results (2021)
  - Major shift in low educated population
- EU-SILC 2020 collected data with new wording.
- Dissemination of new results in 2022.
- Major impact on many strategic documents.

NIJZ Nacionalni inštitut za javno zdravje

Thank you for your attention!

metka.zaletel@nijz.si

6

Recent health expectancy studies in Denmark

Occupational inequality in health expectancy in Denmark
Brønnum-Hansen H, et al. Scandinavian Journal of Public Health, 2020; 48: 338–345
https://doi.org/10.1177/1403494819882138

Income inequality in life expectancy and disability-free life expectancy in Denmark
Brønnum-Hansen H, et al. Journal of Epidemiology and Community Health 2021;75:145–150
http://dx.doi.org/10.1136/jech-2020-214108

A health inequality impact assessment from reduction in overweight and obesity.
Bender et al. BMC Public Health (2020) 20:1823
https://doi.org/10.1186/s12889-020-09831-x

Occupational inequality in health expectancy in Denmark
Brønnum-Hansen H, et al. Scandinavian Journal of Public Health, 2020; 48: 338–345

Partial life expectancy (age 50 to 75), expected lifetime without and with activity limitations because of a health problem by occupational group, Denmark 2013-2014

Data source: REGLINK-SHAREDK: Linking Danish SHARE Survey Data with data from Danish national registers

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Income inequality in life expectancy and disability-free life expectancy in Denmark
Brønnum-Hansen H, et al. Journal of Epidemiology and Community Health 2021;75:145–150
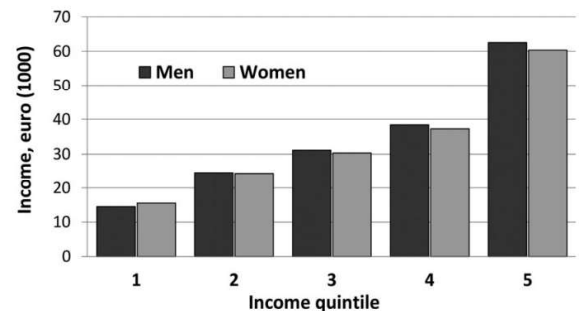
Figure 1   Mean annual equivalised disposable household income (in 1000 euros) among Danes aged 50 or older in 2015–2016.
Data source: REGLINK-SHAREDK: Linking Danish SHARE Survey Data with data from Danish national registers

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Income inequality in life expectancy and disability-free life expectancy in Denmark
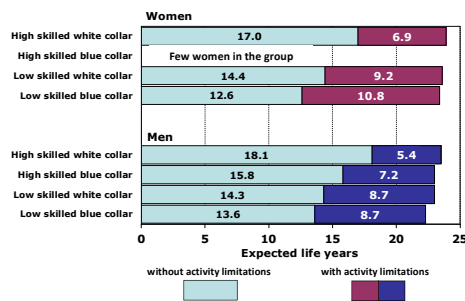Brønnum-Hansen H, et al. Journal of Epidemiology and Community Health 2021;75:145–150

Figure 3   Life expectancy, expected lifetime without and with activity limitations at age 65 and proportion (in percent) of life years without limitations by income quintile, Denmark, 2013–2014 (details in online appendix table).

Data source: REGLINK-SHAREDK: Linking Danish SHARE Survey Data with data from Danish national registers

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A health inequality impact assessment from reduction in overweight and obesity.
Bender et al. BMC Public Health (2020) 20:1823

A DYNAMO-HIA simulation project

A counterfactual scenario was created where the prevalence of overweight and obesity in the population with short and medium education was similar to the population with long education.

A health inequality impact assessment from reduction in overweight and obesity.
Bender et al. BMC Public Health (2020) 20:1823

Simulated life expectancy (LE) and life years with disease at age 30

	Short education	Medium education	Long education	Difference compared to steady weight scenario, years (%)				Long education
				Short education		Medium education		
Men								
Total LE	43.83	45.88	50.17	0.28	(0.65)	0.29	(0.63)	ref.
LE with IHD	6.13	6.37	6.41	-0.30	(-4.95)	-0.34	(-5.32)	
LE with diabetes	5.71	5.59	4.76	-0.61	(-10.71)	-0.63	(-11.22)	
LE with stroke	4.26	4.66	4.86	-0.11	(-2.60)	-0.12	(-2.62)	
Women								
Total LE	48.61	50.17	53.50	0.27	(0.56)	0.20	(0.41)	ref.
LE with IHD	5.08	4.68	4.76	-0.36	(-7.18)	-0.29	(-6.29)	
LE with diabetes	5.63	5.15	3.73	-0.99	(-17.62)	-0.83	(-16.14)	
LE with stroke	4.92	5.11	5.14	-0.20	(-4.09)	-0.19	(-3.68)	

Benefit of intervention:
· **3 months increase in total LE**
· **Almost one year reduction in LE with diabetes for women, 7 months for men**
· Less impact on LE with IHD and stroke

Recent health expectancy studies in Denmark

Occupational inequality in health expectancy in Denmark
Brønnum-Hansen H, et al. Scandinavian Journal of Public Health, 2020; 48: 338–345

Income inequality in life expectancy and disability-free life expectancy in Denmark
Brønnum-Hansen H, et al. Journal of Epidemiology and Community Health 2021;75:145–150
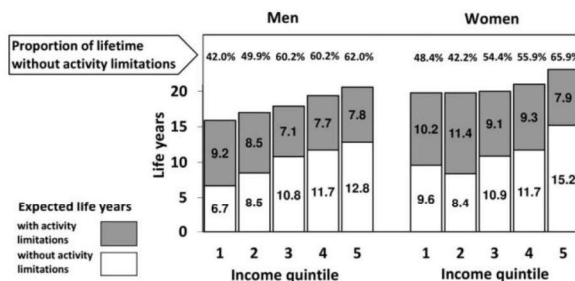
A health inequality impact assessment from reduction in overweight and obesity.
Bender et al. BMC Public Health (2020) 20:1823

Recent comparative health expectancy studies in Europe

Determinants of inequalities in years with disability: an international-comparative study
Nusselder WJ et al. European Journal of Public Health 2020

Determinants of educational inequalities in disability-free life expectancy between ages 35 and 80 in Europe
Valverde et al. SSM – Population Health 2021

Occupational groups

Low skilled blue collar:
Elementary occupations
Plant and machine operators and assemblers
High skilled blue collar:
Craft and related trades workers
Skilled agricultural and fishery workers
Low skilled white collar:
Service workers and shop and market sales workers
Clerks
High skilled white collar:
Technicians and associate professionals
Professionals
Legislators, senior officials and managers

Additional information

Occupational inequality in health expectancy in Denmark
Brønnum-Hansen H, et al. Scandinavian Journal of Public Health, 2020; 48: 338–345

Table I. Pension scheme in Denmark 2018.

Birth date (DD-MM-YY)	Age at state pension
Before 1954	65
01-01-1954 to 30-06-1954	65.5
01-07-1954 to 31-12-1954	66
01-01-1955 to 30-06-1955	66.5
01-07-1955 to 31-12-1962	67
01-01-1963 to 31-12-1966	68
01-01-1967 to 31-12-1970	69
01-01-1971 to 31-12-1974	70
01-01-1975 to 31-12-1978	71
01-01-1979 or later	72

HEXnet

COST Proposal
(European Cooperation in Science & Technology)

EHLEIS meeting
FEB 18th,2021

upf. Universitat Pompeu Fabra Barcelona | DemoSoc

Aïda SOLÉ-AURÓ
aida.sole@upf.edu

Health Expectancy Network

The **HEXnet** will focus on addressing <u>three needs</u>:

1. *Involving* researchers particularly from Eastern European countries who are under-represented in the existing networks;

2. maintaining strong links with *potential users*; and

3. providing a unique *mentoring environment* and promoting *new health measures* in this field

Why HEXnet?

In order to understand the health of ageing populations across Europe we need to have a standard set of best practices for measuring health expectancies. <u>Key scientific challenges</u>:

1. **A uniform and internationally comparable approach to measuring health expectancies**

2. **Methodological advances are unevenly dispersed** across countries and across scientific disciplines.

National Level Trends in HE

To understand national level trends in HE it is important to design studies that employ the <u>same variables and methodologies</u> in an **internationally** comparative setting.

• HEXnet will build a platform that will be **methodologically based** and **dissemination and training focused**

Health Indicators & National Contexts

Addressing which type of health indicator should be used is a prerequisite to address which (and how) factors moderate health expectancies differently in different places. Therefore, there **are three issues that need to be accounted for:**

1) the **health measure** on which HE is computed,
2) from which **data source** the measure is derived, and
3) the **method used** to compute health expectancy.

Health Expectancy Network

HEXnet is therefore needed to effectively and efficiently *integrate* <u>cross-disciplinary methodologies</u> and *coordinate the dissemination* of <u>country-specific data and findings</u>

Aïda SOLÉ-AURÓ
Associate Professor at UPF
Coordinator of the HEXnet COST Proposal

INFACT
Joint Action on Health Information

The Distributed Infrastructure on Population Health- DIPoH
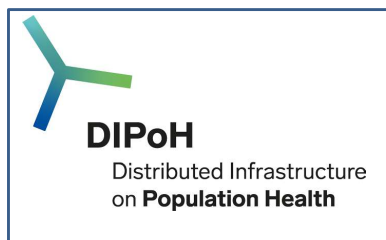
18/02/2021

Name: Linda Abboud, Petronille Bogaert and Herman Van Oyen
Institution: Sciensano, Belgium
Contact: infact.coordination@sciensano.be

This project is funded by the Health Programme of the European Union

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To conceptualize a sustainable Research Infrastructure and carry out a proof of concept:

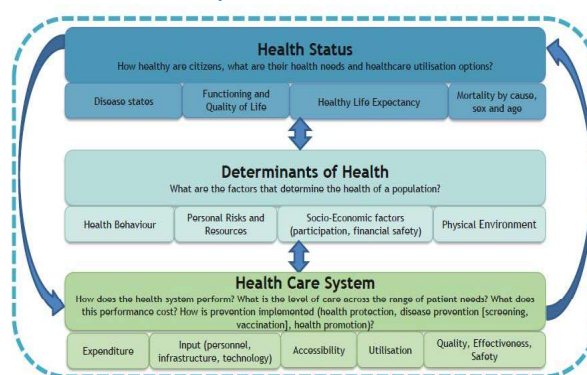**DIPoH**
Distributed Infrastructure on **Population Health**

The Concept

Aim: facilitate the identification, access, assessment, and reuse of population health data and information across Europe
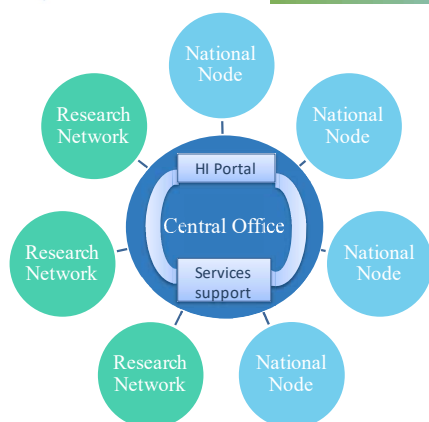

- Connect networks and stakeholders
- Enable top level research (linked data, access systems, processes and capabilities, ...)
- Policy change
- Practice change
- Improved health and other outcomes
- Achievement of outcomes at lower costs
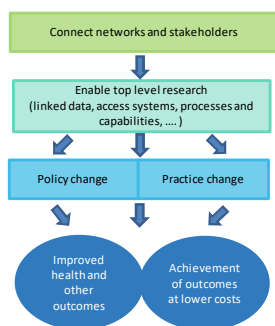
The Framework

Population Health

Health Status
How healthy are citizens, what are their health needs and healthcare utilisation options?
- Disease states
- Functioning and Quality of Life
- Healthy Life Expectancy
- Mortality by cause, sex and age

Determinants of Health
What are the factors that determine the health of a population?
- Health Behaviour
- Personal Risks and Resources
- Socio-Economic factors (participation, financial safety)
- Physical Environment

Health Care System
How does the health system perform? What is the level of care across the range of patient needs? What does this performance cost? How is prevention implemented (health protection, disease prevention [screening, vaccination], health promotion)?
- Expenditure
- Input (personnel, infrastructure, technology)
- Accessibility
- Utilisation
- Quality, Effectiveness, Safety

The Structure

National Node
Research Network
HI Portal
Central Office
Services support

- **National Nodes** (NN) units within MSs representing national network,

- **Research Networks** (RN) and their research communities,

- A **Central office and** governance structure,

- A **Health Information (HI) portal** as gateway to data, services and tools on population health

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The Services of DIPoH

1. **One-stop shop for EU health information research**
Find the data, expert, network, guidelines or tool you are looking for

2. **Innovative research in health information**
Be the first to know and use the latest developments and methodologies

3. **Capacity building in health information**
Get expert support and training on collection, analysis, reporting and transformation

4. **Knowledge translation research for evidence based decision-making**
Know your (health) policies are based on proper evidence

Achievements InfAct

1. Development of the business case and roadmap for implementation of the DIPoH including governance and management structures, services, and cost models
2. Setup of a Health Information portal functioning as a one-stop shop for European data sources, expertise and knowledge
3. **Creating network of networks**: supporting the setup of National Nodes in partner countries, and connecting with EU health information Research Networks
4. Strengthening the efficiency of the health information system for public health policy and research through piloting innovative ways of using health and non-health data sources and indicators
5. Assessing Interoperability of health data instruments and sources
6. Piloting the distributed infrastructure for sharing data cross borders

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Added value for Research Networks

Sharing data and expertise at EU level:
- Research at EU level provides strength in numbers by increasing the capacity to detect population determinants with a cumulative impact on health

Fostering stronger collaborations:
- Solution-oriented research by extending hypotheses to relevant (the social and environmental) determinants of health
- Testing innovative research designs across disciplines

Long term continuity in a stable structure to accommodate EU knowledge and research expertise,
Attract European funding and pooled research opportunities

DIPoH support

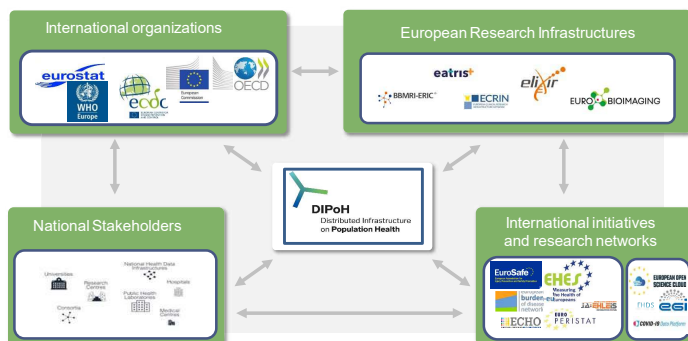Map by: http://philarcher.org/diary/2013/euromap/

- A total of 10 countries have provided Political support
  - 8 of which also signed MoU through partner institutes
- A total of 12 institutes signed MoU
- 1 MoU pending from France (HDH and SPF)

Research Networks

32 JA:EHLEIS HEALTH & LIFE EXPECTANCY INFORMATION SYSTEM

31 EURO PERISTAT

7 ECHO EUROPEAN COLLABORATION FOR HEALTHCARE OPTIMIZATION

22 EuroSafe European Association for Injury Prevention and Safety Promotion

137 european burden-eu of disease network

35 EHES Measuring the Health of Europeans

HealthSystemIntelligence

9

15 ICCONIC: INTERNATIONAL COLLABORATIVE ON COSTS, OUTCOMES AND NEEDS IN CARE

European and global interactions

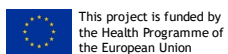
PHIRI: practical use case of DIPoH

Population Health Information Research Infrastructure (PHIRI) aims to:

Identify, access, assess and reuse for research population health and non-health data in Member States and across Member States that can underpin public health policy decisions relevant to COVID-19

→ Building transversal RI design as a base for DIPoH
→ Strengthening Nodes and Research Networks as elements of RI
→ Continuing work on the Health Information Portal

PHIRI Population Health Information Research Infrastructure

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@JA_InfAct