

**UNITED NATIONS**  
**ECONOMIC COMMISSION FOR EUROPE**

**CONFERENCE OF EUROPEAN STATISTICIANS**

Meeting of the 2016/2017 Bureau  
Ottawa, 11-12 October 2016

ECE/CES/BUR/2016/OCT/19/Add.1  
20 September 2016

For decision
--------------

Item VI (c) of the Provisional  
Agenda

*September 2016*

# **Recommendations on Ageing-related Statistics**

Prepared by the Task Force on Ageing-related Statistics



## Acknowledgements

The present Recommendations were prepared by the UNECE Task Force on Ageing-related Statistics, which consisted of the following members: Emma Wright (Office for National Statistics, chair of the Task Force), David Zago and Caroline Daley (Australian Bureau of Statistics), Hannes Spreitzer (Federal Ministry of Labour, Social Affairs and Consumer Protection, Austria), Zabiha Asgar (State Statistical Committee of the Republic of Azerbaijan), Peter Willemé (Federal Planning Bureau, Belgium), Annie de Wiest (Ministry of the French speaking community, Belgium), Laurent Martel (Statistics Canada), Lucie Vidovičová (Faculty of Social Studies & Research Institute for Labour and Social Affairs, Czech Republic), Ketevan Goginashvili (Ministry of Labour, Health and Social Affairs, Georgia), Eszter Németh (Hungarian Central Statistical Office), Carole Feldmann (Central Bureau of Statistics, Israel), Luciana Quattrocioni, Mauro Tibaldi, and Daria Squillante (Istat, Italy), Pietro Checcucci (Istat, Italy), Arcelia Breceda Solís (INEGI, Mexico), Denise Brown (Statistics New Zealand), Malgorzata Zyra (Central Statistical Office of Poland), Lidija Kozarcanin (Republic Institute for Social Protection, Serbia), Michal Katuša (Statistical Office of the Slovak Republic), Stéphane Cotter (Swiss Federal Statistical Office), Angele Storey (Office for National Statistics, United Kingdom), Jennifer Park (Office of Management and Budget, United States), Robert Hornyak (U.S. Department of Health and Human Services), Ilya Kuznetsov (CIS-Stat), Bernd Marin (European Centre for Social Welfare Policy and Research), Pascal Wolff (Eurostat), Asghar Zaidi (University of Southampton), Joseph Troisi (European Centre of Gerontology, WHO Collaborating Centre for Healthy Ageing, & University of Malta), Andres Vikat, Vitalija Gaucaite Wittich, Fiona Willis-Núñez, Christopher Jones and Heini Salonen (UNECE).

The chapters of the Recommendations were discussed and agreed by the entire Task Force. Some organizations took the primary responsibility of drafting certain chapters, as follows: chapters 1 and 8 were drafted by UNECE and the Office for National Statistics, United Kingdom, chapter 2 by Statistics Canada, chapter 3 by Eurostat and Statistics New Zealand, chapter 4 by University of Southampton, chapter 5 by Office of Management and Budget, United States, chapter 6 by Istat, and chapter 7 by Federal Planning Bureau, Belgium.

# Contents

---

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Policy context.....	1
1.2	Ageing-related statistics.....	2
1.3	Structure of the Recommendations .....	3
1.4	Purpose of the Recommendations.....	4
<b>2</b>	<b>Demographic measures of ageing.....</b>	<b>6</b>
2.1	Introduction.....	6
2.2	Topics that require measurement .....	6
2.3	Identifying key demographic indicators of population ageing.....	6
2.4	Availability, comparability and quality of demographic indicators.....	12
2.5	Addressing data gaps and issues .....	12
<b>3</b>	<b>Longer working life .....</b>	<b>15</b>
3.1	Introduction.....	15
3.2	Topics that require measurement .....	16
3.3	Availability of indicators .....	17
3.4	Data comparability and quality .....	24
3.5	Summary .....	26
3.6	Addressing data gaps .....	27
<b>4</b>	<b>Social inclusion and subjective well-being .....</b>	<b>29</b>
4.1	Introduction.....	29
4.2	Topics that require measurement .....	29
4.3	Availability of suitable data .....	30
4.4	Addressing data gaps and issues .....	32
<b>5</b>	<b>Health and independence in older age.....</b>	<b>34</b>
5.1	Introduction.....	34
5.2	Topics that require measurement .....	34
5.3	Availability of suitable data .....	36
5.4	Assessment of comparability .....	44
5.5	Summary .....	48
5.6	Conclusions.....	49
<b>6</b>	<b>Intergenerational solidarity .....</b>	<b>51</b>
6.1	Introduction.....	51
6.2	Topics that require measurement .....	52
6.3	Availability of suitable data .....	53
6.4	Addressing data gaps and issues .....	55
6.5	Quality and comparability of the data.....	58
6.6	Dissemination and communication.....	58

<b>7</b>	<b>Institutional population.....</b>	<b>60</b>
7.1	Introduction.....	60
7.2	Representativeness issues .....	60
7.3	Sampling issues.....	61
7.4	Practical issues .....	62
<b>8</b>	<b>Dissemination and communication .....</b>	<b>63</b>
8.1	Introduction.....	63
8.2	Improving access to statistical information .....	63
8.3	Developing communication channels and tools.....	69
8.4	Consultative forums .....	79
<b>9</b>	<b>Summary of recommendations.....</b>	<b>81</b>
9.1	Role of national statistical offices .....	81
9.2	Cross-cutting variables.....	81
9.3	Data collection .....	82
9.4	Communicating statistics .....	82
9.5	Further work.....	83
9.6	Indicators.....	85
	<b>References.....</b>	<b>91</b>

## Acronyms

---

AHS	American Housing Survey
CES	Conference of European Statisticians
COPD	Chronic obstructive pulmonary disease
ECV	European Centre for Social Welfare Policy and Research, Vienna
EHIS	European Health Interview Survey
EQLS	European Quality of Life Survey
ESAW	European Statistics on Accidents at Work
ESENER	European Survey of Enterprises on New and Emerging Risks
ESS	European Social Survey
EU	European Union
EU-SILC	EU Statistics on Income and Living Conditions
EWCS	European Working Conditions Survey
G20	Group of Twenty (major economies)
GDP	Gross Domestic Product
GGP/GGS	Generations and Gender Programme/Generations and Gender Survey
HALE	Health-adjusted life expectancy
HIS	Health Interview Survey
HIV	Human Immunodeficiency Virus
ICF	International Classification of Functioning, Disability and Health
ICIDH	International Classification of Impairments, Disabilities and Handicaps
ILO	International Labour Organization
ISCO	International Standard Classification of Occupations
ISTAT	Italian National Institute of Statistics
LFS	Labour Force Survey
MIPAA-RIS	Madrid International Plan of Action on Ageing – Regional Implementation Strategy
NACE	Nomenclature statistique des activités économiques dans la Communauté européenne (statistical classification of economic activities in the European Community)
NHIS	National Health Interview Survey (United States)
NSO	National Statistical Office
OECD	Organisation for Economic Cooperation and Development
ONS	Office for National Statistics (United Kingdom)
SHARE	Survey of Health, Ageing and Retirement in Europe
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNSD	United Nations Statistics Division
WHO	World Health Organization
YPLL	Years of potential life lost

# 1 Introduction

---

1. Population ageing denotes the increase over time in the average age of members of a population, usually with a corresponding increase in the proportion of the population of older age. It results from decreasing mortality and fertility, as well as current and past migration patterns, and is the distinctive trait of population dynamics this century throughout the world. It has a profound impact on a broad range of economic, political and social processes, affecting virtually all domains of society.

## 1.1 Policy context

2. Across the UNECE region, and indeed across most of the world, population ageing has become an increasingly salient policy topic over recent decades. Societies change when more and more of their members live to more advanced ages, as older people form ever greater proportions of total populations, and as the economic, health and social characteristics of older population groups evolve with time. This brings both challenges and opportunities, and requires a carefully devised and evidence-based policy response.

3. In 2002, UNECE member States agreed upon the Regional Implementation Strategy<sup>1</sup> for the Madrid International Plan of Action on Ageing (MIPAA-RIS), in which they committed to action in ten key policy areas. In order to identify benchmarks and monitor trends in these ten areas, as well as to assess the effectiveness of policy interventions, reliable data must be available to provide an evidence base. The ministerial declaration ‘Ensuring a society for all ages: promoting quality of life and active ageing’, adopted at the Ministerial Conference on Ageing in Vienna in September 2012,<sup>2</sup> emphasized the commitment of all UNECE countries to evidence-based monitoring and assessment of their implementation of the strategy.

4. In the Vienna Declaration, member countries consolidated the broad spectrum of potential policy action in response to population ageing into four policy goals that were considered particularly important for the period 2012-2017:

- a) Encourage longer working life and maintain ability to work
- b) Promote participation, non-discrimination and social inclusion of older persons
- c) Promote and safeguard dignity, health and independence in older age
- d) Maintain and enhance intergenerational solidarity.

5. The present Recommendations are prepared through the lens of these four policy areas. Hence it focuses on the personal and interpersonal aspects of ageing. The Recommendations do not address structural issues, such as financial sustainability in pension and health systems and labour market imbalances on the macro level, which are not directly covered in the Vienna Declaration.

---

<sup>1</sup> *Regional Implementation Strategy for the Madrid International Plan of Action on Ageing 2002* ECE/AC.23/2002/2/Rev.6, available at [www.unece.org/population/mipaa](http://www.unece.org/population/mipaa)

<sup>2</sup> *2012 Vienna Ministerial Declaration. Ensuring a society for all ages: Promoting quality of life and active ageing* ECE/AC.30/2012/3, available at [www.unece.org/population/ageing](http://www.unece.org/population/ageing)

## 1.2 Ageing-related statistics

6. While the phenomenon of population ageing is demographic, its consequences cut across all spheres of society. Statistics related to ageing are thus cross-cutting and concern all areas of social and demographic statistics as well as government finance and public sector statistics. Statistics in other domains than demography do not focus on the process of ageing as such. Instead, they provide information about the situation of people at different ages, the timing of important transitions in people's lives and about services and expenditures that target different age groups. Measurement of the demographic parameters is, even so, the core element of ageing-related statistics.

7. Obviously, the statistics needed to inform policymaking go far beyond demographic measures. National statistical offices (NSOs) are recognizing that they must upgrade their statistical products in order to provide policymakers with the information they need to fully understand and plan for these consequences.

### 1.2.1 Initiative by the Conference of European Statisticians

8. Given the growth in attention to ageing-related issues and the increasing call for statistical evidence to inform policymaking, the Bureau of the Conference of European Statisticians decided to conduct an in-depth review of ageing-related statistics in 2012.<sup>3</sup> This review examined the state of existing activities conducted on an international level to collect data and produce statistics on the topics relevant to ageing. It then reviewed the state of internationally coordinated surveys in the UNECE region and relevant initiatives by selected member States.

9. The in-depth review highlighted issues and challenges in the production and dissemination of data by age, the dispersion of ageing-related statistics, data gaps on important issues related to ageing and the need for subjective measures and longitudinal data. One of the principal conclusions was that the production and dissemination of statistics on topics related to ageing is underdeveloped and the degree of harmonization is far less than desirable.

10. Based on the recommendations of the review, the Bureau of the Conference of European Statisticians established the Task Force on Ageing-related Statistics in 2013, "to improve the availability, accessibility and comparability of statistical data in support of ageing-related policymaking in the framework of the UNECE Regional Implementation Strategy for the Madrid International Plan of Action on Ageing".<sup>4</sup>

### 1.2.2 Earlier work

11. The Task Force built its activities on earlier international work on ageing-related statistics. Relevant projects include the UNECE 2012 synthesis report on the implementation of MIPAA-RIS, the development of the Active Ageing Index, the work of Eurostat on a statistical portrait of the EU on active ageing and solidarity between

---

<sup>3</sup> In-depth review of statistics related to population ageing, ECE/CES/2013/9, available at <http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2013/9.pdf>

<sup>4</sup> Terms of reference for the Task Force on Ageing-Related Statistics, ECE/CES/BUR/2013/FEB/13, available at [http://www.unece.org/fileadmin/DAM/stats/documents/ToR\\_misc/13Rev.pdf](http://www.unece.org/fileadmin/DAM/stats/documents/ToR_misc/13Rev.pdf)



generations, the work of OECD in generating statistics and analysis of pensions and long-term care, employment and migration, and the work of the European Centre for Social Welfare Policy and Research, Vienna (ECV) on indicators for monitoring MIPAA-RIS.

12. The Task Force reviewed data availability on ageing-related statistics in their respective countries and organizations, based initially on 84 indicators present in the projects mentioned above. In addition to databases of international organizations, the national data situation was reviewed in the 18 countries represented in the Task Force.

### 1.3 Structure of the Recommendations

13. These Recommendations represent the result of the Task Force's work. They are divided into seven parts. Chapter 2 covers demographic measures of ageing, that is, the fundamental statistics on the number and proportions of older people in a population and the trends in age-structural change that form the basis of the social and economic changes discussed in subsequent chapters. Chapters 3 to 6 cover the four thematic areas of the Vienna Declaration, namely, Longer working life, Social inclusion and subjective well-being, Health and independence in older age, and Intergenerational solidarity. In each case, first, the main topics for measurement were distilled from the corresponding sections of the Vienna Declaration. The presentation then follows with a review of the current state of understanding and international agreement regarding the conceptualization and harmonization of terms, availability of indicators (or feasibility of developing new ones) to measure the identified concepts, and the current availability of data from which to produce these indicators. Indicators were considered in relation to a three-tiered benchmarking framework, as follows:

- a) tier 1. Indicators are conceptually clear, with an agreed international definition, and are produced regularly by countries
- b) tier 2. Indicators are conceptually clear, with an agreed international definition, but are not yet produced regularly by countries
- c) tier 3. Indicators for which international standards still need to be developed and which are not produced regularly by countries.

14. The thematic chapters then consider specific issues and challenges such as data gaps and the need for further data collection.

15. Chapter 7 looks at the issue of institutional population, which is of particular relevance to ageing-related statistics given the systematic bias that can be introduced into surveys as a result of the greater tendency for older people to live in institutions than the average across all members of a population (for example, in care homes or medical facilities). The chapter considers what effects this might have on statistics and how these effects could be mitigated.

16. Chapter 8 examines the dissemination and communication of ageing-related statistics, giving broad recommendations on best practices for NSOs.

17. In conclusion, Chapter 9 presents a summary of recommendations for national statistical offices, accompanied by a table summarizing the domains, topics and indicators discussed throughout this document.

## 1.4 Purpose of the Recommendations

18. These Recommendations represent the outcome of a detailed consideration of the kinds of ageing-related statistics that are needed, what is currently available for countries of the UNECE region, and proposals on what remains to be done to bridge the gaps. They provide guidance to NSOs on the avenues to pursue in improving their collection, production and dissemination of ageing-related statistics.

19. The objectives of the Recommendations are:

- a) to help statisticians and policymakers to appreciate the diversity and complexity of topics and concepts related to ageing
- b) to provide guidance in the selection of indicators which should or could be produced and disseminated by NSOs in relation to ageing
- c) to provide guidance on the manner in which ageing-related statistics are disseminated and communicated
- d) to raise awareness among producers and users of ageing-related statistics about the challenges inherent in the collection of data and in the harmonization of such data across countries.

20. It is hoped that these Recommendations will guide countries in improving the production of ageing-related statistics at all stages of the statistical production cycle, from identification of concepts for measurement, to the communication of results. The Recommendations do not provide guidance on prioritizing ageing-related statistics in relation to other statistics.

21. The Task Force was mandated to identify domains to be covered and to suggest ways to fill gaps, but the provision of a full set of indicators was not within the purview of the group. These Recommendations therefore provide guidance for the selection of indicators. The indicators proposed are thus not exhaustive or definitive. All indicators of the Active Ageing Index<sup>5</sup> are included, however. The differences in the degree of description and specificity of indicators are a reflection of the wide variation in the conceptual and methodological clarity of the topics, as discussed throughout the report.

22. The preparation of these Recommendations is opportune, as it coincides with unprecedented efforts in the use of statistics to monitor sustainable development globally. United Nations Member States have identified 17 Sustainable Development Goals and 169 attendant targets for the next 15 years. The 2030 Sustainable Development Agenda will affect planning, funding and monitoring of development efforts at the global, regional and national levels for years to come.

23. Fundamental to the agenda are two requirements. First, progress against these goals and targets must be measured robustly. Second, progress must be measured for all relevant groups so that “no one is left behind”. The United Nations Statistical Commission has identified a set of global indicators to enable monitoring of progress for all goals and targets established in the agenda, and has been tasked with advising on the disaggregation relevant to monitoring progress among vulnerable groups.

24. Across the multiple dimensions of sustainable development described by the agenda’s goals and targets, the salience of ageing-related statistics in monitoring global well-being is clear. Identifying conceptually clear, commonly and frequently measured

---

<sup>5</sup> <http://www1.unece.org/stat/platform/display/AAI>

indicators that would enable global comparisons, however, is a challenge. The present Recommendations represent a step towards that larger task.

## **2 Demographic measures of ageing**

---

### **2.1 Introduction**

25. This chapter recommends key demographic indicators to describe the age structure of a country's population and to enable monitoring of changes over time in population ageing. The availability, quality and comparability of these indicators for UNECE member States are assessed, and data gaps are considered.

### **2.2 Topics that require measurement**

26. Population ageing has multiple impacts on society and the economy: on public retirement and health care systems, on the labour market and productivity, and on social cohesion. The level, speed and intensity of population ageing in a country are a reflection of past and current mortality rates, fertility rates and migration patterns, which vary widely between countries. For policymakers to respond in appropriate ways to population ageing, it is crucial that national statistical offices provide key demographic measures that describe both the current and projected age structure of the population in a given country, and that allow international comparisons. This is not to disregard the important fact that age alone is not an absolute determinant of many of the outcomes frequently associated with older people, such as economic situation, health status and social integration measures. These outcomes are considered in subsequent chapters of these Recommendations. Even so, there are some policy-relevant areas in which age is the principal determinant, such as pension entitlements; and in a wide variety of other cases, core demographic indicators of ageing provide the simplest, most easily obtainable and most reliable information about current and future resource requirements. For this reason, demographic indicators should be taken as the starting point of any compilation of ageing-related statistics.

27. The dimensions identified for disaggregation are of key importance, but it is not expected that countries produce statistics cross-classified by all these dimensions simultaneously.

### **2.3 Identifying key demographic indicators of population ageing**

#### **2.3.1 Basic demographic measures**

28. The most fundamental demographic indicators of population ageing are current and projected numbers and proportions of older people in a country's population. The starting point of 'old age', based on which we can state the number of older people, is, however, context-specific and much debated. A threshold age of 55 years is considered justified for the present purpose, given its relevance to care-giving (such a threshold helps to incorporate the so-called 'sandwich generation' who provide care

simultaneously to both younger and older generations), older workers and health-related retirement. It is also consistent with the lower age range of several components of the Active Ageing Index.<sup>6</sup> An older population that starts at age 55 will obviously be very diverse in terms of characteristics and needs: there is a great difference between the typical needs and capacities of those in their fifties and those in their nineties, for example. It is therefore very important for there to be sufficient disaggregation by age in all the ageing-related statistics recommended in this document. It is recommended, therefore, that ageing-related statistics across all domains should be available disaggregated by five-year age groups from age 55 to age 85. It is recognized that in some surveys, and for some indicators, issues with sampling and non-response and/or small numbers of cases may make it impossible to produce statistics for five-year age groups. Where this is the case, ten-year age groups should be available as a minimum. In some circumstances (for example employment indicators) it may not be possible to produce statistics for the oldest age groups due to coverage or sample size restrictions, especially in countries with small populations. In those cases the upper age category needs to be lowered (for example to 75+). Consistency in available age groups across sources, and both within and between countries, is of particular importance. It is also essential that all ageing-related statistics be disaggregated by sex.

29. Current and projected numbers of those aged 85 years and older expressed as a proportion of the population aged 65 and over are useful for monitoring the progression of ageing among the older population itself. This is of great policy relevance given that the ‘oldest old’ tend to be proportionately greater users of services than the ‘younger old’.

30. Median age is also useful, providing a single-number summary of the overall age profile of a country that is relatively easy for policymakers to understand. It is widely available, facilitating international comparisons. Complementing the overall median, the median age of the group of population aged 65 and over is useful for identifying ageing within the older age group itself, and may be more relevant for health-related policy analysis.

31. Current and projected sex ratios at older ages are also important measures; although women tend to outnumber men at older ages, the ratio has been falling in many populations as more men survive to older ages. It is important to provide evidence for policymakers and service providers to enable them to plan for a future older population that may no longer be so predominantly female.

32. The projected population estimates are often published in five-year intervals up to 25 years into the future, which is sufficient for most purposes. The time horizon of 25 years approximately corresponds to the generation length, beyond which the uncertainty of projections increases greatly.

### 2.3.2 Dependency ratios

33. Dependency ratios are well-established demographic measures. Two such measures were considered for inclusion in these Recommendations: the Total Dependency Ratio

---

<sup>6</sup> The Active Ageing Index is a composite index designed to measure the untapped potential of older people for active and healthy ageing across countries at the population level. It measures the level to which older people live independent lives, participate in paid employment and social activities as well as their capacity to age actively. For detailed information see <http://www1.unece.org/stat/platform/x/DweMB>

(TDR) – the ratio of the sum of aged 0-14 and those aged 65 and over, to those aged 15-64; and the Old Age Dependency Ratio (OADR) – the ratio of those aged 65 and over to those aged 15 to 64. These measures are widely available across UNECE countries and are often used as a proxy for the ratio of the non-working population to the working population. For this purpose, they are highly over-simplified and therefore often unsatisfactory as a proxy, because they do not take into account current or future inactivity amongst the so-called working age population, which can occur, for example, as a result of early retirement, disability or caring responsibilities. Similarly, some people aged 65 and over will still be working either because of increases in the age at which they are entitled to state pensions (where these exist) and/or because they have chosen to extend their working lives. In Canada, for example, the labour force participation rate of males aged 65 to 69 has doubled from 16 per cent in 2000 to 32 per cent in 2013. At the other end of the scale, many young people remain in full-time formal education until their early- to mid-twenties, delaying their entry into the labour market. The economic dependency ratio – the ratio of the number of people not working to those working, regardless of age – is hence arguably a more relevant measure of dependency. This measure takes account of differences both at the individual level, and across countries and time, in the ages of entry to and exit from the labour market. It is recommended that this measure be included to complement longer working life measures.

34. Despite the limitations referred to above, traditional dependency ratios do provide important demographic information. However, they could be made more relevant if the lower age threshold was raised and the term dependency dropped. The latter is necessary not only because it is misleading, but also because it can inadvertently influence the way in which older people are perceived. It is therefore suggested that modified demographic ratio measures,  $(0-24 + 65 \text{ and older}) \div (25-64)$  and  $(65 \text{ and older}) \div (25-64)$ , should be included in the list of key demographic indicators to be produced in parallel to traditional demographic (dependency) ratios.

### 2.3.3 Life expectancy and survival rates

35. The chance of surviving to older ages has increased for both males and females over recent decades, contributing to population ageing. Life expectancy at birth is a relatively easily understood measure that gives an indication of life span and is easily comparable across countries. Measures of life expectancy at ‘young old age’ (55-65 years) give an approximate indication of forthcoming pension requirements, both at an individual and state level, and measures of life expectancy at ‘older old age’ give an indication of health and social care needs. It is therefore recommended that life expectancy at birth and at ages 55, 65, 75 and 85 be included, where unabridged life tables permit, for women and for men.

36. A measure of life expectancy at retirement would undoubtedly be of policy relevance, but it presents a number of measurement challenges. Retirement age varies across countries and in some, there is no longer an official retirement age. Retirement age is the same for men and women in some countries while in others it is different. In many countries, retirement age is also changing over time (but at different rates). For these reasons, it would be difficult to produce life expectancy at retirement age in any internationally-comparable form. However, in countries with a legally set retirement age,

it is nevertheless recommended that statistical offices should produce this measure regularly, for national rather than international purposes.

37. Survival rates<sup>7</sup> at ages 65 and age 85 are also recommended for inclusion in the demographic measures to give a picture of levels of survival at older ages. An additional measure of the probability of surviving from age 65 to age 85<sup>8</sup> would be useful to policymakers. This gives an indication of the proportion of those who have survived to around retirement age who are likely to survive to the oldest ages when they are likely to be heavy users of health and social care services and, where applicable, to continue to draw a state pension.

### 2.3.4 Prospective measures of ageing

38. Prospective measures of ageing offer a different perspective on population ageing. They are based on the expected number of years people have left to live. It is recommended that at least two such measures should be included, which take differences in life expectancies into account:

- a) the prospective old age threshold, computed as the age at which remaining life expectancy is 15 years
- b) the proportion of the population in age groups above the prospective old age threshold, i.e. the proportion with a life expectancy of 15 years or fewer (prospective proportion 'old').

39. There is a growing movement to use these prospective measures either as a complement to, or as an alternative to, the conventional ones on the grounds that the conventional measures such as life expectancy at age 65 and proportion aged 65 and over can be misleading and can therefore provide inappropriate guidance to policymakers and to the public. They can be considered misleading because they categorize people as 'old' starting on their 65th birthday, even though life expectancies and other characteristics of people at age 65 differ substantially across countries and over time.

40. A 65-year-old person today cannot be considered to be at a comparable stage of his life cycle to a 65-year-old person several decades ago. He or she is on average in better health and can count on many more years of future life than was the case a few decades previously. Because of this, his or her social and economic behaviour will also be different. Both the biological and social dimensions of age are not only a function of time since birth, but depend on many other characteristics of a person, including expected time to death. Consequently, a consensus is growing that the traditional definition of age and traditional measures of population ageing need to be complemented by ones that reflect the changing characteristics of people and societies.

41. The measured extent of ageing in any given country differs markedly depending on whether conventional or prospective measures are used. Policymakers and the public should therefore be able to see both the adjusted and the unadjusted series and decide which is more relevant for their purposes. Prospective measures are particularly useful in looking at changes over time within countries and for cross-country comparisons. They are also valuable in terms of planning health care provision. Research shows that time to

---

<sup>7</sup> Survival rates are the proportion of those born in a given year who have survived to selected ages. They are simple to compute from life tables ( $l_x$  column).

<sup>8</sup> This measure can be computed from life tables as  $1 - ((l_{65} - l_{85})/l_{65})$ .



death may be a better predictor of health expenditure than chronological age. The threshold of 15 remaining years has been chosen as it was roughly the remaining life expectancy at age 65 in many low mortality countries in the 1960s-70s.<sup>9</sup> It should be noted, therefore, that the threshold of 15 years is specifically relevant to the UNECE region but may be less applicable to regions which contain high mortality countries.

42. When recommending the use of relatively new measures such as these, which attempt to redefine a long-established concept, it is especially important to ensure that dissemination and communication practices are geared towards fostering understanding of the measures. NSOs have a duty to promote correct interpretation and use of all the statistics they publish, but this is especially true when there is a significant risk of misinterpretation and consequent erroneous use. Prospective age measures should therefore always be accompanied by clear, simple explanations. When both conventional and new measures are given, the importance of such explanations becomes especially pronounced.

### **2.3.5 Drivers of population ageing**

43. The number of older people in a country's population is largely a result of past and current mortality rates together with past fertility patterns. Recent fertility patterns will influence the relative proportions of younger and older people in the population. These in turn may be affected by recent migration patterns. Inclusion of these 'drivers' of population ageing in the key demographic measures was considered as means of providing context to the overall picture of population ageing. However, it was concluded that fertility and mortality measures do not need to be recommended as key indicators because this information is already captured in population projections in an aggregated way. Migration at older ages, however, is considered to be of interest to policymakers. For example, it is important to know the numbers of people exiting or returning to a country following retirement or returning to their home country because of illness or to be near family. Capturing these migration flows at older ages in a consistent way cross-nationally is difficult. The distinction between native and foreign born in key demographic measures goes some way towards capturing the phenomena of migration and diversity. It is therefore a recommended disaggregation of the demographic indicators.

### **2.3.6 Diversity**

44. Immigration flows are significant in many industrialized countries. This means that the profile of the older population is becoming, and will continue to become, more diverse in the coming decades with a growing proportion of older people being foreign born. These trends have important policy implications, for example for living arrangements, for the availability of caregivers, and for retirement income and wealth. A second and important reason for the inclusion of country of birth (at least at the level of native/foreign-born) in the key demographic indicators, therefore, is to give an indication of this diversity. Diversity also exists in terms of other characteristics than country of birth, such as for example ethnicity, indigenous status, religion, etc. The relevance of

---

<sup>9</sup> Sanderson & Scherbov (2015).



these will vary according to the country in question, as will the feasibility of disaggregating data without compromising statistical accuracy or confidentiality.

### 2.3.7 Urban/rural distribution

45. Despite the continuing urbanization of the older population, in general greater proportions of older people live in rural areas than in urban areas. A measure of the urban/rural distribution of residence of the older population is important for policymakers in the context of assessing older people's ease of access to services and planning to meet their specific needs.

46. Subnational breakdowns of ageing-related statistics can be useful, particularly in relation to geographical variations in the need for ageing-related services, but practical challenges may exist for their production. For one thing, different countries have different types of regions and local areas.

47. A second problem concerns the sample size behind subnational breakdowns of statistics derived from surveys. Some surveys may have a sufficient sample size for certain cross-tabulations to be produced at the national level, but not at lower levels of geographical detail. For data derived from census and administrative sources of data, sample size would not be a constraint, although at lower levels of geographical detail, data may be sparser with higher risk of disclosing confidential personal information.

### 2.3.8 Living arrangements

48. Another key area is living arrangements. The type of household where a person lives carries important information on the extent and type of services a person may require, and on the way resources are shared and consumed. Characteristics such as economic well-being and housing conditions usually pertain to the whole household. The presence of other household members in addition to the nuclear family (a couple with or without children) may constitute either an additional resource, for example, as a provider of childcare, elder care or household work, or add to the responsibilities, for example, through a need for care. From the perspective of older people and population ageing, the issue of living alone or in a household with other people becomes a particularly important determinant of well-being as well as of intergenerational transfers (financial and in-kind) among household members.

49. Older people's living arrangements have strong policy implications as they affect health and well-being, social inclusion, giving and receiving of care (see chapters on Health and independence and on Social inclusion) and the risk of institutionalization. A classification that would simultaneously consider the perspectives of care giving and receipt, intergenerational solidarity and independent living would become rather detailed. For a general description of living arrangements, the distinction of at least the following categories would be necessary: (1) living in institutions (collective dwellings), (2) living alone, (3) living with spouse or partner (regardless of the presence of others), (4) living with other people (relatives or non-relatives). It is important to remember, however, that homelessness also exists among older people and as such, this classification would not cover 100 per cent of the living arrangements of all older people.

## 2.4 Availability, comparability and quality of demographic indicators

50. The availability of population estimates and projections from individual NSOs is high, with most publishing these data annually. This means that many of the recommended demographic indicators are published for UNECE member States as standard or that they could be calculated from available data. Other recommended measures (for example country of birth, marital status, urban/rural distribution) are also widely available from census and survey sources from the individual NSOs.

51. With the exception of the economic support ratio and life expectancy at retirement age, the recommended demographic indicators are available from United Nations data sources either as published figures or in a form that would permit calculation of the indicators from available data. Many of the indicators are also available from the Eurostat website for European Union (EU) countries. One disadvantage of using international data sources is that their data tend to be published less frequently than those published by NSOs. Moreover, some NSOs have misgivings about the extent to which models are used to derive estimates for international databases, preferring to rely upon their empirical estimates instead. Accessing the recommended key demographic indicators from international data sources has the advantage of consistency and cross-country comparability. There may therefore be a trade-off between timeliness and comparability.

## 2.5 Addressing data gaps and issues

52. There are no data gaps as such for the recommended demographic indicators. However, several issues have been identified.

- a) There are some inconsistencies in the age groupings and boundaries selected for published demographic indicators across countries (the lower age boundary, age groupings and upper age cut-offs).
- b) Indicators for older people are not always sufficiently disaggregated by age. Fifty years ago, at a time where life expectancy at birth and at age 65 was much lower than today, the population aged 65 years and over was in many ways more homogeneous than it is now. Today, large differences can be observed in the health and socioeconomic characteristics of, for example, the population aged 65-74 compared to the oldest old, those aged 85 years and over. Published age groups need to reflect the increasing heterogeneity of the older population.
- c) A growing proportion of older people are foreign-born. Key demographic indicators are not always available by country of birth to allow monitoring of the diversity of the older population. Indeed, this issue applies not only to basic demographic measures but also to the ageing-related topics covered in subsequent chapters.
- d) The detailed breakdown of older population by single country of birth and age group could create issues of confidentiality and/or data quality problems (although this could be to some extent mitigated by grouping into geographic regions).

- e) Some of the recommended indicators are not yet published as standard practice (prospective measures, updated demographic ratios). These therefore need to be calculated from existing demographic data.

*Table 1 Recommended demographic indicators*

Indicator	Tier <sup>1</sup>
<b>Population estimates and projections</b>	
Observed and projected numbers and percentage of population at ages 55-59, ..., 80-84, 85+	1
<b>Median age, observed and projected</b>	
Median age of total population	1
Median age of those aged 65+	
<b>Sex ratios, observed and projected</b>	
Ratio of women to men at ages 55+, 65+, 75+ and 85+	2
<b>Demographic ratios, observed and projected</b>	
(0 to 24 and 65+) ÷ (25-64)	
(65+) ÷ (25 to 64)	
(0 to 14 plus 65+) ÷ (15 to 64)	2
(65+) ÷ (15 to 64)	
(85+) ÷ (65+)	
<b>Economic support ratio, observed</b>	
Ratio of the number of people not working to those working (regardless of age)	1
<b>Life expectancy</b>	
Life expectancy at birth and at ages 55, 65, 75 and 85	1
<b>Life expectancy at retirement age</b>	2
<b>Survival rates, observed and projected</b>	
Survival rates at ages 65 and 85, and from age 65 to 85	2
<b>Prospective measures of ageing, observed and projected</b>	
Age at which life expectancy falls to 15 years	2
Proportion of population with a remaining life expectancy of 15 years or fewer	
<b>Diversity</b>	
Country of birth of population at ages 55-59, ..., 80-84, 85+	1
<b>Urban/rural distribution</b>	
Urban/rural distribution of population at ages 55-59, ..., 80-84, 85+	1
<b>Living arrangements</b>	
Living arrangements of population at ages 55-59, ..., 80-84, 85+	1

<sup>1</sup>Tier 1: Indicators conceptually clear with an agreed international definition and regularly produced by countries

Tier 2: Indicators are conceptually clear with an agreed international definition and not regularly produced by countries.

Tier 3: Indicators for which international standards still need to be developed and which are not produced regularly by countries.

## 3 Longer working life

---

### 3.1 Introduction

53. Demographic changes, including declines in fertility and increasing longevity, are resulting in an increasing number and proportion of older people in the populations of UNECE member States. For many countries, the greatest increases will be in the next three decades as large generations born in the post-war decades move into the retirement ages. Over this period, increasingly large numbers of people will retire relative to the number of new labour market entrants replacing them. As a result, economic dependency rates will rise.

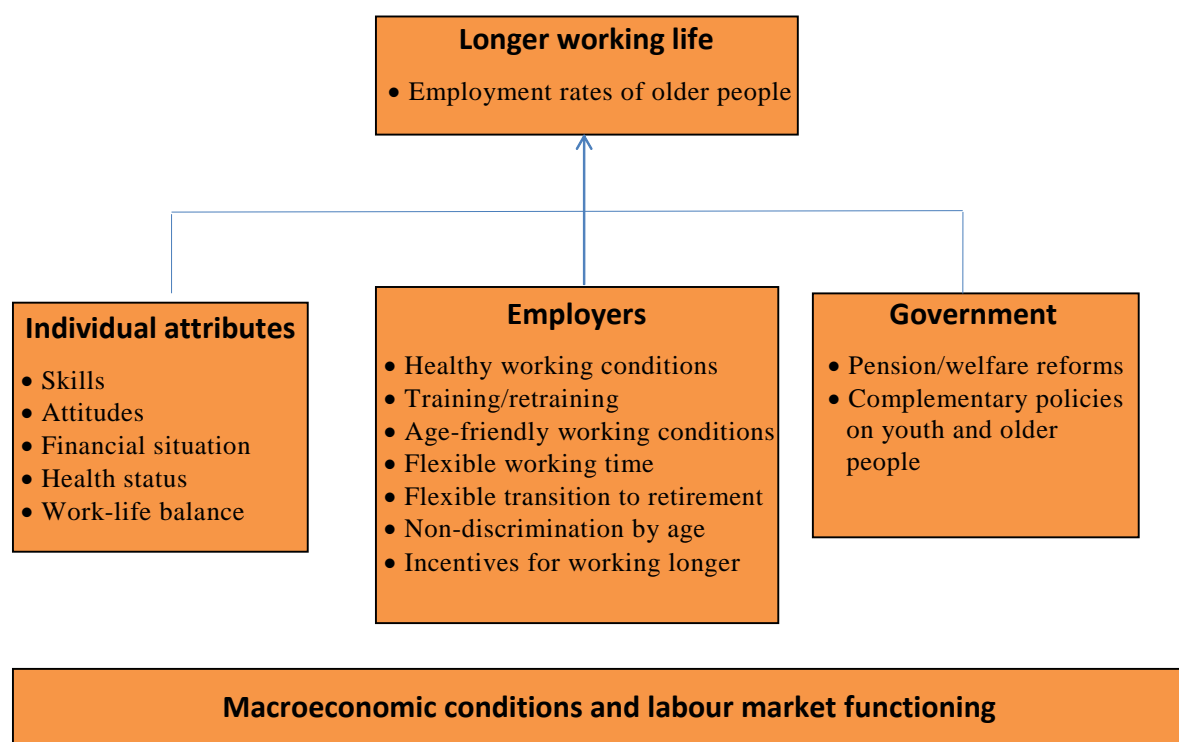
54. These demographic changes are stimulating much discussion and debate about the economic implications of population ageing. There is concern that large increases in the number of retired people per worker will place strains on public finances and reduce growth in standards of living. For example, expenditure on pensions and long-term care is expected to increase significantly as a proportion of GDP in many countries. At the same time, population ageing will contribute to an increase in spending on public health, given that per capita expenditure on health is typically higher at older ages.

55. With a view to addressing the rising ratio of retirees to workers, and reinforced by improvements in the health status of older people, there is in many countries a growing policy push to keep people in the workforce longer. This depends of course on having an adequate supply of jobs for them to work in. The view of policymakers is often that if people are encouraged and enabled to remain in work longer, this will boost labour force growth and offset the negative impact of ageing on economic growth. It will improve public finances through reduced public expenditure associated with early retirement, while simultaneously increasing tax revenues. It may also improve the well-being of older people, as retirement is not always voluntary and may be associated with social exclusion and reduced opportunities to receive an adequate income in retirement.

56. A key factor in addressing the fiscal pressures and economic challenges associated with population ageing is the removal of barriers to older peoples' participation in the labour market. This includes:

- a) removing disincentives for people to work, associated with pensions, taxes and welfare systems
- b) improving incentives for people to work, by improving work conditions and working-time arrangements
- c) changing employers' attitudes with regard to the employment of older people
- d) improving the employability of older people by improving their skills and health status.

57. Figure 1 shows that if work is to be an attractive and rewarding proposition for older workers it will involve changes on a number of fronts – by individuals, employers and governments. For example, at the level of the individual, the human capital (health and skills) of older people strongly influences their ability to participate in employment. Increased employment at older ages may require individuals to upgrade their skills and change their attitudes towards employment.



*Figure 1 Removing barriers and creating incentives to longer working life*

58. At the employer level, negative attitudes about the capacity of older people to adapt to technological and organizational changes, together with poor working conditions and inflexible working time arrangements, can encourage people to exit the workforce early. Changes in employers' attitudes and workplace practices and policies are therefore necessary to encourage older people to remain in employment.

59. Governments can also exert a powerful influence on the continued participation of older people in the labour market. They can do this by removing disincentives to working longer built into pension schemes, and by strengthening financial incentives to stay in work.

60. It is important to note that macroeconomic conditions and the functioning of the labour market provide an important context for understanding the labour market position of older people. For example, in a tight labour market when there is more competition for jobs, older people may have more difficulty finding suitable employment.

## 3.2 Topics that require measurement

61. This section identifies key domains and topic areas that are relevant to longer working life. The topic areas have been distilled from the six goals in the 2012 Vienna Declaration relating to longer working life. The key policy areas relating to longer working life, and associated domains and topics, are shown in Table 2.

*Table 2 Policy areas, domains and topic areas relating to longer working life*

Policy area	Domain	Topic
<b>Health risks and behaviours</b>	1. Healthy lifestyle	1a. Healthy lifestyle
	2. Healthy working environment	2a. Healthy working conditions 2b. Work-life balance
<b>Labour market participation at older ages</b>	3. Labour market participation at older working ages	3a. Labour market participation 3b. Flexible working arrangements 3c. Flexible transition to retirement 3d. Discrimination in the labour market 3e. Incentives for working longer 3f. Pension reforms and statutory retirement age 3g. Participation in lifelong learning (including work-based training) 3h. Educational attainment

### 3.3 Availability of indicators

62. This section describes the availability of indicators on longer working life. The discussion is organized under the key domains and topics shown in Table 2. The discussion covers the sources of data, and categorizes the indicators according to their conceptual clarity and regularity of production using the three-tier categorization common to all chapters of these Recommendations. Several of the indicators discussed are also developed in detail in the UNECE Handbook on Measuring Quality of Employment<sup>10</sup>. The sources mentioned in this section pertain to the countries of the EU<sup>11</sup>. In some cases, other UNECE countries have a similar source, such as the Labour Force Survey or another national survey, but their comprehensive review has not been attempted. Therefore there are some countries for which data may be very scarce, and which may lack the funds and human resources to carry out the necessary surveys.

63. As explained in the introductory chapter and in chapter 2 (Demographic measures of ageing), all indicators should be disaggregated by sex. As was recommended earlier, ageing-related statistics across all domains should be made available disaggregated by five-year age groups from age 55 to age 85 and older<sup>12</sup>. However, for employment indicators it may not be possible to produce statistics for the oldest age groups due to coverage or sample size restrictions: for example, the LFS covers respondents only up to age 74, while registers and administrative sources may include employment data only up to the mandatory age of retirement in a given country. Even where sample surveys do collect data from respondents of older ages, and despite the tendency towards greater

<sup>10</sup> UNECE (2015b)

<sup>11</sup> Plus several other countries which participate in the EU-LFS: Switzerland, Norway, Iceland, the former Yugoslav Republic of Macedonia and Turkey.

<sup>12</sup> As explained in paragraph 28, it is understood that this is not always possible, but it is recommended to aim for five-year age groups to the maximum possible extent.

employment rates at older ages, the sample sizes in the upper age groups usually remain small. In such cases, the upper age category needs to be lowered, for example to 75+.

### 3.3.1 Healthy lifestyle

#### 3.3.1.1 Topic 1a. Healthy lifestyle

64. The indicators relevant for this section are analysed in chapter 5 (Health and independence in older age).

### 3.3.2 Healthy working environment

#### 3.3.2.1 Topic 2a. Healthy working conditions

65. A key factor in helping to retain older workers is the quality of their working conditions and their health and well-being throughout their working lives. This dimension is becoming increasingly important as the labour force ages and a greater number of workers are potentially exposed to health risks and unsuitable working conditions.

66. Two indicators relating to healthy working conditions can easily be derived from Labour Force Surveys:

- a) share of employed persons working during unsocial hours, by economic activity<sup>13</sup>
- b) share of employed persons working during excessive hours of work (more than 48 hours per week).

67. ***Share of employed persons working during unsocial hours, by economic activity.*** Unsocial working hours usually involve work that is done on Saturday and Sunday or at night. The precise definition varies across countries, because of different national interpretations. It is preferable that the indicator is presented by economic activity, because working hours can be very different by sector. It is also preferable that it is based on working during unsocial hours ‘two or more times per week’. It would be possible to build a more stringent indicator by including work that takes place on both Saturday and Sunday. This set of indicators falls into tier 1.

68. ***Share of employed persons working excessive hours*** provides information about the share of employed people whose hours worked exceed 48 hours per week. It is one of the ILO’s Decent Work Indicators,<sup>14</sup> and measures exposure to overwork; that is, people experiencing working time that exceeds the threshold beyond which negative effects on workers become visible – not only on workers’ health, but also on their safety and on work-life balance. This indicator falls into tier 1.

---

<sup>13</sup> NACE (Nomenclature statistique des activités économiques dans la Communauté européenne/statistical classification of economic activities in the European Community), revision 2.

<sup>14</sup> See [http://www.ilo.org/integration/resources/mtgdocs/WCMS\\_115402/lang--en/index.htm](http://www.ilo.org/integration/resources/mtgdocs/WCMS_115402/lang--en/index.htm)



69. A variety of other indicators relating to healthy working conditions are available from the EU Labour Force Survey (EU-LFS)<sup>15</sup> and the EU-LFS' ad hoc module on work-related accidents (1999, 2007 and 2013).<sup>16</sup> These include:

- a) people reporting an accident at work in the last 12 months
- b) people reporting one or more work-related health problems in the last 12 months
- c) exposure to physical health risks at work
- d) exposure to mental health risks at work.

70. The European Working Conditions Survey<sup>17</sup> and the European Survey of Enterprises on New and Emerging Risks<sup>18</sup> are further sources of information on healthy working conditions. The former survey is an established source of information about working conditions and the quality of work and employment, including health and safety. The latter survey provides information about the way in which employers manage health and safety risks in practice, particularly those risks for which indicators are new and emerging such as work-related stress, violence and harassment. It includes a variety of indicators relating to:

- a) management of health and safety e.g. preventative measures taken
- b) management of new psychosocial risks e.g. perceived causes of psychosocial risks and measures taken to manage them
- c) drivers and barriers e.g. what motivates managers to take action and the main barriers they face
- d) worker participation e.g. what arrangements are in place and what effect they have.

71. Statistical information on accidents at work is also available from administrative data sources, and generally covers the type of injury, the economic activity of the employer, and the age, sex, nationality and occupation of the victim. European Statistics on Accidents at Work (ESAW)<sup>19</sup> are compiled mostly from administrative data. The ILO's suite of Decent Work Indicators includes two indicators on workplace accidents that are derived from administrative data. They are the 'occupational injury frequency rate' (for fatal and non-fatal injuries) and 'time lost due to occupational injuries'.

#### **3.3.2.2    *Topic 2b. Work-life balance***

72. Work-life balance is a concept that is particularly relevant to older workers as they approach and plan for their exit from paid work. Achieving a satisfactory balance between work, family and other interests can affect the health, productivity and retirement decisions of older workers. Several indicators on this topic are available from the EU-LFS ad hoc module on reconciliation between work and family life (2005 and 2010).<sup>20</sup> These include the following, among others (although not all indicators are available in both rounds of the ad hoc module):

---

<sup>15</sup> See [http://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_labour\\_force\\_survey](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey)

<sup>16</sup> For details of ad hoc modules see [http://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_labour\\_force\\_survey\\_-\\_ad\\_hoc\\_modules](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_ad_hoc_modules)

<sup>17</sup> See <http://www.eurofound.europa.eu/european-working-conditions-surveys-ewcs>. The upper age boundary of published data from that module is 64.

<sup>18</sup> See <https://osha.europa.eu/en/surveys-and-statistics-osh/esener>

<sup>19</sup> See [http://ec.europa.eu/eurostat/statistics-explained/index.php/Accidents\\_at\\_work\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Accidents_at_work_statistics)

<sup>20</sup> See [http://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_labour\\_force\\_survey](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey). Upper age limit in those modules is 64.

- a) opportunities for varying start and finish times at work for family reasons
- b) ability to organize working life in order to take whole days off for family reasons
- c) time off work in the last 12 months for family sickness or emergencies
- d) desire to change the organization of working life and caring responsibilities.

73. Other sources of information on work-life balance include the European Working Conditions Survey, European Quality of Life Surveys<sup>21</sup> and time-use surveys.

### 3.3.3 Labour market participation at older working ages

#### 3.3.3.1 *Topic 3a. Labour market participation at older working ages*

74. Based on existing frameworks of ageing-related indicators (see chapter 1, Introduction), the following indicators are proposed for the measurement of labour market participation of older workers. They are:

- a) labour market participation (activity rate)
- b) employment rate
- c) unemployment rate
- d) long-term unemployment (rate and incidence)
- e) employment by economic activity (NACE Revision 2)<sup>22</sup>
- f) employment by occupation (ISCO-08)<sup>23</sup>
- g) duration of working life.

75. **Labour market participation** is defined as the total of employed and unemployed persons in a given category, expressed as a percentage of the population in the same category. It provides a measure of the relative size of the supply of labour that is currently available for the production of goods and services in an economy. In many countries, it is only available for those under 75 years of age. Labour Force Surveys are the data source for most countries, with the majority publishing the indicator quarterly or monthly. The indicator thus falls into tier 1.

76. **Employment rates** are defined as employed persons in a given category, expressed as a percentage of the population in the same category. The employed include all persons aged 15 years and over who during the reference week worked for one hour or more for pay, profit or family gain, or who had a job but were temporarily absent from work. In many countries, this indicator is only available for those under 75 years of age but efforts should be made in order to cover the population aged 75-79 appropriately. Several factors affect the employment rate, including the state of the economy, the availability of work, skill levels and pension entitlements. Most countries produce the indicator at least annually, with the majority publishing quarterly or monthly. It can be categorized as a tier 1 indicator.

77. The **unemployment rate** provides a measure of the proportion of people in the labour force who cannot find gainful employment. The unemployment rate gives a sense of the

<sup>21</sup> See <https://www.eurofound.europa.eu/european-quality-of-life-surveys-eqls>

<sup>22</sup> NACE is the acronym for ‘Nomenclature statistique des activités économiques dans la Communauté européenne’, or in English, ‘statistical classification of economic activities in the European Community’. For details see <http://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>

<sup>23</sup> International Standard Classification of Occupations, 2008: for details see <http://www.ilo.org/public/english/bureau/stat/isco/isco08/>

extent to which people who are out of work are willing and available to work. Unemployment can potentially put people at risk of welfare dependence. In many countries, this indicator is only available for those under 75 years of age. It is produced predominantly from Labour Force Survey data, with most countries publishing it quarterly or monthly. It is a tier 1 indicator.

78. The ***long-term unemployment rate*** refers to persons unemployed for one year or longer in a defined age group, as a proportion of the labour force in that age group; while the ***incidence of long-term unemployment*** refers to persons unemployed for one year or longer in a defined age group, as a proportion of all unemployed persons in that age group<sup>24</sup>. Both indicators provide a measure of those who are at risk of loss of skills and well-being. These indicators are derived from Labour Force Survey data. Most countries produce them quarterly or monthly. The indicators are in tier 1.

79. ***Employment by economic activity*** provides a measure of the types of productive activities in which people are engaged in the labour market. The new nomenclature of economic activities (NACE Revision 2) has not yet been implemented across all countries. Most countries produce this indicator from Labour Force Survey data and publish it quarterly. The indicator is in tier 1.

80. ***Employment by occupation*** measures the types of jobs in which workers are employed. Although not all countries have implemented the new classification of occupations (ISCO-08), the level of aggregation needed for monitoring the occupations of older workers should not be an issue, even for countries using the previous version of the classification. The indicator is produced predominantly from Labour Force Survey data, with most countries publishing it quarterly. The indicator is in tier 1.

81. ***Duration of working life*** provides a measure of the average number of years for which a person aged 15 years is expected to be active in the labour market throughout his or her life, under the currently prevailing age-specific participation rates. It can be used to monitor trends towards or away from early retirement. The indicator provides sufficiently accurate and easily understandable data, which is highly stable over time and reacts directly to changes in activity rates and working hours. Most countries produce the indicator by combining data from the Labour Force Survey and from demographic life tables. The indicator falls into tier 2.

#### **3.3.3.2 Topic 3b. Flexible working arrangements**

82. Flexible working arrangements are arrangements wherein employees are given greater scheduling freedom in how they fulfil the obligations of their position. Common examples include working reduced hours or working flexitime. Flexible working arrangements may also involve telecommuting, job sharing and working compressed weeks.

83. Flexible work options can be advantageous to employers and employees alike. The availability of options such as the ability to work full-time on flexible schedules or to

---

<sup>24</sup> While definitions of these indicators vary among organizations, the definitions used here correspond to those used by the ILO and recommended in their *Key Indicators of the Labour Market*, <http://kilm.ilo.org/2015/download/kilm11EN.pdf>. Eurostat distinguishes between the long-term unemployment *rate* (a proportion of those active in the labour market) and the long-term unemployment *share* (a proportion of those unemployed); see [http://ec.europa.eu/eurostat/cache/metadata/en/une\\_esms.htm](http://ec.europa.eu/eurostat/cache/metadata/en/une_esms.htm), section 3.4. OECD defines the long-term unemployment rate as the proportion of long-term unemployed among all unemployed.

work less than full-time can have a significant impact on decisions that older workers make about their participation in the labour market.

84. **Part-time employment** – this indicator measures the proportion of employed people working reduced hours. In most EU countries, the distinction between part-time and full-time work is based on a spontaneous response by respondents. In a number of other countries, including New Zealand, Australia and Canada, part-time is defined as working fewer than 30 or 35 hours per week. However, these various approaches are consistent with the ILO concept (“a part-time worker is an employed person whose normal hours of work are less than those of comparable full-time workers”). Most countries publish this indicator on a regular basis (at least annually). Labour Force Surveys are the main data source for this indicator. The indicator is in tier 1.

85. A range of other indicators relating to flexible working arrangements is available from the EU-LFS ad hoc module on work organization and working time arrangements conducted in 2004 and to be repeated in 2019.<sup>25</sup> They include the following (although not all indicators are available in both rounds of the ad hoc module):

- a) variable working time (employees with variable working hours)
- b) ability to choose to work variable working hours (employees)
- c) ability to choose own work methods and schedules.

### **3.3.3.3    Topic 3c. Flexible transition to retirement**

86. A flexible transition to retirement may provide benefits to employers and to society as a whole. Phased retirements have the potential to help employers retain experienced, older workers who are no longer willing or able to work on a continuous full-time basis. There may be wider social and economic benefits if the availability of flexible work options encourages older workers to remain employed until a later age, extending the period in which they have earnings from employment, and reducing their reliance on government income support.

87. A flexible transition to retirement is also likely to have benefits for older workers, allowing those who are experiencing age-related reductions in fitness or health to reduce their job effort, while retaining some of the financial and social benefits of working.

88. Several indicators relating to the transition from work to retirement are available from the EU-LFS ad hoc module on the transition from work to retirement (2006 and 2012 and planned to be repeated in the future).<sup>26</sup> These include:

- a) economically inactive people who receive a pension who would have liked to stay in employment longer
- b) reason for economically inactive people not staying at work longer
- c) main reason for economically inactive people who receive a pension to stop working
- d) reduced working hours in a move towards full retirement
- e) planned duration of further employment.

---

<sup>25</sup> See [http://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_labour\\_force\\_survey](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey)

<sup>26</sup> See footnote 15

#### **3.3.3.4    Topic 3d. Discrimination in the labour market**

89. People who are discriminated against may not be able to participate fully in the labour market. Discrimination may also have negative effects on mental and physical well-being, with adverse consequences for labour force participation. Discrimination against older workers can result in the loss of valuable knowledge and experience. The cost of training new workers rather than retaining experienced workers can be significant.

90. **Discrimination** is a subjective measure designed to estimate the share of employed persons who, according to their own perception, have been victims of discrimination at work. This could include discrimination in terms of earnings, access to higher positions, working time, or other self-perceived forms of discrimination. The main sources of data are General Social Surveys<sup>27</sup>, Social Cohesion Surveys<sup>28</sup> and the EWCS. Special Eurobarometer surveys on discrimination in the EU were conducted in 2012 and 2015.<sup>29</sup> The frequency of data collection varies, from two-yearly to five-yearly. The indicator is classified in tier 3.

#### **3.3.3.5    Topic 3e. Incentives for working longer**

91. A policy-relevant aspect of pension reform is that of incentives for working longer. Apart from the removal of mandatory retirement ages, this also includes the availability of flexible working arrangements, including the flexibility of working schedules and the availability of reduced working hours/part-time work (see topic 2b).

92. The Eurobarometer on Active Ageing<sup>30</sup> collected some information relevant to this topic, including what would encourage people to work after the official retirement age.

#### **3.3.3.6    Topic 3f. Pension reforms and statutory retirement age**

93. Working longer is strongly influenced by pension reforms and by the statutory retirement age. In view of the decreasing relevance of the concept of ‘pensionable age’, the importance of capturing information about pension reform is growing. Gender differences remain particularly important, given historic differences in male and female retirement ages, and the typically shorter duration of labour force participation of women than of men.

94. **Statutory retirement age.** National legislation is the main source of data for this indicator. The indicator is in tier 3.

95. In addition, the Eurobarometer Survey on active ageing collects information on peoples’ attitudes to an increase in the retirement age, and whether it should be compulsory for people to stop working at a certain age.

---

<sup>27</sup> See <http://www3.norc.org/GSS+Website/> for General Social Surveys.

<sup>28</sup> See, for example, [http://ec.europa.eu/justice/newsroom/discrimination/news/121122\\_en.htm](http://ec.europa.eu/justice/newsroom/discrimination/news/121122_en.htm)

<sup>29</sup> See [http://ec.europa.eu/public\\_opinion/archives/eb\\_special\\_399\\_380\\_en.htm#393](http://ec.europa.eu/public_opinion/archives/eb_special_399_380_en.htm#393) and <http://ec.europa.eu/COMMFrontOffice/PublicOpinion/index.cfm/Survey/getSurveyDetail/instruments/SPECIAL/surveyKy/2077>, respectively.

<sup>30</sup> See report, summary and factsheet at [http://ec.europa.eu/public\\_opinion/archives/eb\\_special\\_379\\_360\\_en.htm#378](http://ec.europa.eu/public_opinion/archives/eb_special_379_360_en.htm#378)

96. It should also be noted that the OECD publishes a report every two years, *OECD Pensions at a Glance*,<sup>31</sup> which contains a comprehensive selection of pension policy indicators, covering:

- a) the design of pension systems
- b) future pension entitlements for men and women at different earnings levels
- c) financing of retirement income systems as a whole
- d) the demographic and economic context in which retirement income systems operate
- e) private pensions and public pension reserve funds.

97. The publication also includes a profile of pension systems for all OECD and G20 countries.

### **3.3.3.7    Topic 3g. Participation in lifelong learning**

98. Lifelong learning enables people of all ages to lead more active, productive and fulfilling lives. It has the potential to extend the careers of older workers, improve their skills and knowledge, and ultimately increase their productivity in the workplace.

99. ***Lifelong learning: those involved in training*** is a measure of the proportion of older people who have participated in regular education or other taught activities (self-learning activities are not included). The most common data sources for this indicator are Labour Force Surveys and population censuses. The majority of countries produce this indicator on an ad hoc basis. The indicator is therefore in tier 1.

### **3.3.3.8    Topic 3h. Educational attainment**

100. A relatively high level of educational attainment can indicate the possession of knowledge and skills that may facilitate employability, enabling older people to remain in the labour market for longer. The indicator ***percentage of older people with upper secondary or tertiary education*** is obtained from Labour Force Surveys and is thus in tier 1.

## **3.4    Data comparability and quality**

101. This section assesses the quality and comparability of data on longer working life. The assessment covers data sources, sex disaggregation, periodicity and coverage of the institutional population.

### **3.4.1 Healthy working environment**

102. Several indicators of healthy working environment are available from a range of different surveys including the Labour Force Surveys, European Survey of Working Conditions, European Quality of Life Survey and time-use surveys. While an assessment of the quality of these indicators and their comparability across countries is beyond the

---

<sup>31</sup> See, for example, the 2013 edition at <http://www.oecd.org/pensions/pensionsataglance.htm>



scope of this exercise, they should be considered before collecting new data and indicators on healthy working environment.

103. Some indicators on work-related injuries can be sourced from administrative data. There are problems comparing these indicators between countries because of differences in coverage (e.g. some countries exclude self-employed and family workers) and differences in reporting arrangements which reflect differences in health care systems.

## **3.4.2 Labour market participation at older working ages**

### **3.4.2.1 *Conceptual clarity of indicators***

104. Nine out of 13 of the indicators relating to longer working life are in tier 1; that is, they are conceptually clear, with an agreed international definition and are regularly produced by most countries.

105. One indicator is categorized as tier 2, which means that it is conceptually clear but not yet produced by countries. This is the indicator ‘duration of working life’. ‘Average duration of working life’ is a standard indicator in all EU countries, Norway and Switzerland. However, it is not regularly produced outside of Europe.

106. There are three indicators where international standards need to be developed and the indicators are not regularly produced. They are:

- f) discrimination in the labour market
- g) incentives for working longer
- h) pension reforms and statutory retirement age.

### **3.4.2.2 *Source***

107. Data on indicators relating to the labour market circumstances and experiences of older people are obtained from Labour Force Surveys in most countries. Other sources include Household Budget Surveys and the Current Population Survey (United States).

### **3.4.2.3 *Age/sex disaggregation***

108. Although indicators on longer working life are disaggregated by age and sex in most countries, there is variation between countries in the age groups that are used. The use of standard age groups would facilitate comparisons across countries.

### **3.4.2.4 *Periodicity***

109. The data are collected at least annually in most countries, with the majority producing quarterly data.

### **3.4.2.5 *Institutions***

110. Almost all countries exclude the institutional population in the calculation of the indicators. The only exception in the case of the EU-LFS is Switzerland, which does not survey the institutional population, but includes it in the population data used for calibration. Outside of the EU-LFS countries, Israel uses the same method. See chapter 7, Institutional population, for a discussion of this issue.

### 3.4.2.6 *Sample size*

111. The lack of oversampling among the 50+ and 55+ age groups and the upper age limit of 64 for most of the ad-hoc modules restrict the possibilities for detailed analysis of these age groups.

## 3.5 Summary

112. Most countries derive indicators on topics relating to longer working life from Labour Force Surveys. A great deal of effort has been put into harmonizing the EU-LFS, but some differences persist which may impact on the comparability of data. Moreover, while efforts are made to avoid changes in the content of ad-hoc modules as far as possible, there is no guarantee that questions will remain unchanged each time. It is important to stress, however, that despite these differences, the comparability of data between EU countries is likely to be much greater than between EU and non-EU countries.

113. Although many countries disaggregate the indicators by age and sex up to age 74, a number of countries use 65+ as the upper age group. This is an important issue, given the diversity of labour market circumstances of older people of different ages. The proportion of people who are employed and the types of jobs in which they are employed differs markedly between people aged 65-69 and those aged 70-74 years, for example. Understanding these differences is important in the development of policies and programmes to encourage older people to remain in the labour force for longer.

114. The unavailability of published age-sex disaggregated indicators for the older population in some countries reflects the limited numbers of older people in national samples. Oversampling is expensive and increases the burden on respondents.

115. Some specific issues relating to indicators on longer working life are:

- a) The indicators relating to lifelong learning, participation in job-related training and skill acquisition of the population aged 50 years, which are sourced from the Labour Force Surveys, relate usually to the four weeks prior to the survey interview. A reference period of 12 months would be more relevant to the measurement of participation in lifelong learning. Surveys such as the EU Adult Education Survey can be another valuable source for measuring these indicators, although not all countries collect data on older people in this survey since the age-range for compulsory coverage is 25-64 years, with coverage of those aged 65-69 being at the discretion of the country.
- b) The unemployment indicators for people aged 65 years and over may understate the true level of unemployment among older people, given that in some countries people of this age are considered to be retired based on their entitlement to claim social security benefits. However, it is important that unemployment continues to be measured at these older ages since mandatory retirement ages and pensions are being reformed in many countries, and the prevalence of unemployment in these age groups may grow in the future.
- c) In many countries, the employment status questions are asked in the Labour Force Survey only for people under the age of 75 years. With improvements in the health status of older people and removal of mandatory retirement ages,



there may be increases in the numbers and proportions of people remaining in the labour force beyond the age of 75 years. Monitoring these increases will not be possible unless changes are made to Labour Force Survey collection instruments to cover this age group.

## 3.6 Addressing data gaps

116. Although there is a wide range of information available on longer working life, there are some significant data gaps. This section focuses on those policy topics where no suitable measures exist, and makes suggestions for filling the underlying data gaps.

117. Few or no indicators are internationally available on the following topics:

- a) discrimination in the labour market
- b) incentives for working longer
- c) pension reforms.

118. Options for filling data gaps relating to labour market discrimination and incentives for working longer, where the required information cannot be obtained from existing administrative sources (e.g. some countries may have administrative data on formal complaints of employment discrimination), are to better exploit existing data, or to add supplementary modules to existing surveys. Adding supplementary modules to an existing survey vehicle on a related subject would enable the supplementary data to be related to the core content of the survey, thus increasing the value and coherence of the survey information. The addition of supplementary modules to existing surveys could impact on the overall response rate of the survey, with a risk, in turn, of adversely affecting the quality of the headline indicators produced from the survey. However, because the LFS is quite a short survey for older people outside the labour market, the addition of an ad hoc module targeted specifically at this group may be less burdensome and costly than expected. A repeated module on retirement is foreseen in the EU-LFS.

119. There is considerable scope for improving the value of information on longer working life through greater exploitation of existing data. This includes through greater integration of existing microdata, including survey and administrative data sources. For example, linking administrative data on employees over time offers the potential for tracking employment-related transitions of older workers as they approach retirement. This would provide insights into changing patterns of transition to retirement, variations in the patterns of transition to retirement among employees working in different industries and occupations, and variations in the duration of working life in different industries and occupations.

120. Information on the nature and timing of the implementation of pension reforms is readily available from legislative documents and from the OECD publication *OECD Pensions at a Glance*. The OECD report details the coverage of pension reforms and the work incentives associated with them. It should be therefore possible to obtain insights into the impacts of pension reforms on the working lives of older people by analysing and monitoring existing data on labour force participation, hours worked, average exit age from the labour market, etc. in relation to the pension changes.

121. As noted earlier, the number of individuals aged 55 years and older in national surveys, and the absence of oversampling of older people, limits the amount of disaggregation and analysis that is possible. In view of the fact that increasing the

number of older people in national surveys would be costly and would place more burden on respondents, other options for improving the reliability of data on older people should be investigated. These include, for example:

- a) combining data across several instances of the same survey (data pooling)
- b) using specialist techniques, such as small domain estimation techniques, to get more value from existing data.

122. Obtaining more value from existing data can also be achieved through bringing together relevant data from different data sources on a given topic, to provide a coherent set of indicators on the topic. For example, indicators on healthy working conditions are available from the EU-LFS, the EU ad hoc module on accidents at work and other work-related health problems, the European Working Conditions Survey, the Enterprise Survey on New and Emerging Risks and administrative data. Drawing together relevant indicators from these different sources to provide an overall picture of healthy working conditions can make the data more accessible, relevant and usable to end users, particularly policy users. The use of an underlying conceptual framework of the topic area can help in organizing and reporting on the indicators in a coherent and meaningful way. It can also highlight where there are gaps in the existing indicators.

## 4 Social inclusion and subjective well-being

---

### 4.1 Introduction

123. Social inclusion, non-discrimination and participation of older people in society are central to the ethos of the Vienna Declaration, as is clear from its subtitle, ‘Ensuring a society for all ages’. The domain of social inclusion has a great many dimensions that could be candidates for the production of ageing-related statistics, reflecting the complexity of the topic. Indeed, the Vienna Declaration makes ten distinct points about the ways in which social inclusion can be promoted, ranging from reducing poverty and material deprivation to addressing the specific needs of migrants and ethnic minorities.

124. Enhancing the subjective well-being of older people must be viewed as one of the ultimate goals of policies and programmes related to ageing. Indeed, once again, the subtitle of the 2012 Vienna Ministerial Declaration suggests this: ‘promoting quality of life’ is at the heart of the entire endeavour. Hence, the measurement of such subjective well-being needs to be given a high priority among ageing-related statistics.

125. This chapter considers the broad diversity of dimensions of social inclusion and subjective well-being, attempting to distil from the vast array of potential measures those that best capture the concepts concerned and for which the production of high quality statistics is, or could be made, the most feasible.

### 4.2 Topics that require measurement

126. The broad concept of ‘social inclusion and subjective well-being’ was operationalized into three domains: financial security, social inclusion/exclusion, and subjective well-being.

127. While social exclusion of older people can take various forms, being excluded from financial resources often acts as a catalyst in a process that leads to an involuntary detachment from society. Thus, **financial security in older age** can be viewed as a signpost for other forms of social inclusion. In practical terms, inadequacy of pension income is the major reason for which an older individual’s standard of living falls below a decent level. Lack of financial resources subsequently impinges upon other social domains, and combines with other factors typical of the experience of older age, such as frailty and the onset of disability, to impede a person’s capacity to participate fully in the society in which they live.

128. **Social inclusion** refers to fulfilment of a wider set of rights, opportunities and resources than just income, however. This wider set includes factors that are fundamental to the social integration of a person (or of a group to which the person belongs) and that are normally available to other members of the same society. With a focus on older people, this wider set includes such things as access to health care and social support; financial and physical security; transport; housing; employment; opportunities for civic engagement and democratic participation, etc.

129. In discussions of social inclusion, it is important to consider the question of who or what is responsible for ensuring inclusion or preventing marginalization in a society.

In democratic societies, a significant part of such responsibility lies with governments, and hence efforts to foster social inclusion can be identified in many structural and environmental features, such as public policies, laws and institutions. Ascertaining the dominant behaviours, values and beliefs in a society about older people is also an important part of measuring the nature and extent of social inclusion, since these affect both objective practices of inclusion or exclusion, and the self-perception of individuals or the groups to which they belong.

130. The **subjective well-being** of older people refers to how they view their quality of life. It is affected not only by their physical health but also by their emotional state and cognitive judgments in specific areas of their life. It includes positive emotions (such as happiness) as well as negative emotions (such as anxiety). It can be expected that both financial security and the wider set of social inclusion processes will influence the subjective well-being of older people.

### 4.3 Availability of suitable data

131. The three domains can, in turn, be divided into topics that capture the various different phenomena contained therein. Table 3 shows the domains and topics of social inclusion.

*Table 3 Domains and topics of social inclusion of older people*

Domains	Topics
<b>I. Financial security in older age</b>	Income levels
	Poverty levels and material deprivation
	Social security including state and private pension provision
	Home ownership and housing affordability
<b>II. Social inclusion/exclusion</b>	Availability of social support networks and satisfaction with relationships
	Discrimination
	Elder abuse and neglect
	Internet use and access, use of social media
	Leisure activities
	Housing and living conditions
	Living arrangements (household structures including partnership status and institutional residency)
	Availability of transport
	Barriers to inclusion (e.g. not feeling safe, not trusting others, lack of public transport)
	Political participation
<b>III. Subjective well-being</b>	Level of satisfaction with life overall
	Happiness levels
	Anxiety levels
	How worthwhile life is

132. Table 4 lists indicators for measuring the three domains, taking into consideration their links to policies and challenges related to social inclusion. For example, an estimate of the number of older people who are at risk of poverty is of particular relevance in informing policymakers responsible for designing reforms of pension and social assistance systems. For each indicator, the overall quality and comparability of the data between countries is also considered. As noted before, age breakdown in five-year age groups from age 55 to age 85 and older is recommended<sup>32</sup>. However, in some cases the upper age category may need to be lowered, for example to 75+. The degree of description and specificity of indicators shown in the table varies, reflecting the wide variation in the conceptual and methodological clarity of the topics covered.

*Table 4 Selected key social inclusion indicators*

Domains	Indicators	Tier
<b>I. Financial security in older age</b>	Distribution of the population by age and by housing tenure	1
	Housing costs as a percentage of disposable income	2
	Average disposable income by age groups	2
	Income composition by income quintiles	2
	Relative disposable income <sup>33</sup>	2
	S80/S20 ratio <sup>34</sup> of disposable income by age groups	2
	At-risk-of-poverty rate	2
	Material deprivation rate	2
	Net replacement rates by earnings level	3
	Pension expenditures	2
<b>II. Social inclusion/exclusion</b>	Social connectedness	3
	Availability of transport	3
	Physical security (worried about safety)	3
	Discrimination	3
	Elder abuse and neglect	3
	Severe housing deprivation of older people	2
	Proportion who regularly access the Internet	2
	Leisure activities	3
	Participation in activities of meeting of a trade union, a political party or political action group	1
	Independent living (living alone or as a couple)	1
	Percentage living in single-person households	1
<b>III. Subjective well-being</b>	Anxiety levels	3
	Mental well-being	3
	How worthwhile life is	3
	Percentage who are very satisfied with life	2

<sup>32</sup> As explained in paragraph 28, it is understood that this is not always possible, but it is recommended to aim for five-year age groups to the maximum possible extent.

<sup>33</sup> The ratio of the median disposable income of people aged 65 and above to the median disposable income of those aged below 65.

<sup>34</sup> The income quintile share ratio or the S80/S20 ratio is a measure of the inequality of income distribution. It is calculated as the ratio of total income received by the 20 per cent of the population with the highest income (the top quintile) to that received by the 20 per cent of the population with the lowest income (the bottom quintile).

## 4.4 Addressing data gaps and issues

133. Data availability is assessed according to the three-tier framework used throughout these Recommendations. Overall, the availability of data for the suggested indicators on financial security in older age is reasonably good for countries of the EU as well as for Switzerland, Norway and Iceland. For these countries, the Eurostat database provides a good data source.<sup>35</sup> The issues with respect to the comparability of these indicators are quite clear from the metadata available in this database. However, for non-EU UNECE countries, there is a mixed picture and often the comparability of the available data is limited.

134. The work of the World Bank in the programme area ‘The Atlas of Social Protection: Indicators of Resilience and Equity’<sup>36</sup> has started to provide good financial security data for older people. The work has helped to harmonize the methods and definitions. The country coverage of this work is also improving, although it is far from complete for the countries of the UNECE region.

135. The OECD’s Income Distribution database and its flagship publications ‘Pensions at a Glance’ and ‘Society at a Glance’<sup>37</sup> are excellent sources of data for OECD member countries. A wider coverage of these good statistical practices would greatly improve the availability and comparability of financial security data for the UNECE countries.

136. Two European-level datasets, namely the European Quality of Life Survey (EQLS)<sup>38</sup> and the European Social Surveys (ESS),<sup>39</sup> have now matured into very useful data sources for social inclusion/exclusion topics. The data quality and comparability of these two European surveys has been improving with every new edition available. The country coverage of these surveys is also improving, in particular in the case of the ESS, but the surveys still miss many non-EU UNECE countries. However, the general surveys often do not cover the whole population. In particular, the population groups at risk tend to be under-represented when using the usual sampling methods. For example, well-being measures would be biased if the institutional population or people living in households consisting of low-income asylum seekers are not interviewed (see Chapter 7, Institutional population, for more detailed discussion).

137. The availability of indicators for the domain of subjective well-being is encouraging. Many of them could be derived from the existing microdata of internationally-coordinated surveys. However, data quality and differences in definitions may restrict international comparability of data collected from other surveys.

138. Most social inclusion indicators are not readily available from national statistical offices’ websites – they are often available only when reports are published, which tends to be on a less-than-annual basis, such as when a specific study is undertaken. Furthermore, many of the social inclusion indicators lack agreed concepts, definitions or

<sup>35</sup> <http://ec.europa.eu/eurostat/data/database>

<sup>36</sup> [http://data.worldbank.org/data-catalog/atlas\\_social\\_protection](http://data.worldbank.org/data-catalog/atlas_social_protection)

<sup>37</sup> See <http://www.oecd.org/social/income-distribution-database.htm>, <http://www.oecd.org/els/public-pensions/pensionsataglance.htm> and <http://www.oecd.org/els/soc/societyataglance.htm>

<sup>38</sup> <https://www.eurofound.europa.eu/european-quality-of-life-surveys-eqls>

<sup>39</sup> <http://www.europeansocialsurvey.org/>

appropriate methodology. As an example, elder abuse and neglect can present particular difficulties even if concepts and definitions are agreed upon, since the perpetrators of abuse may be present when interviews are carried out or may even provide answers on behalf of respondents. Administrative data may provide some information but is unlikely to capture the phenomenon adequately. Standardized methodology has yet to be developed to attempt to surmount these challenges.

## 5 Health and independence in older age

### 5.1 Introduction

139. Health is an important measure of well-being. The experience of health is also uniquely tied to aspects of personal independence, particularly for older people. Preserving the independence of older people in self-care, decision-making, residence and participation in the broader community is of great value. Improving understanding of the health of older people, then, particularly as it relates to personal independence, is of significant policy interest. It should be noted that, while this chapter relates specifically to measures of the health and independence of older people, the health behaviours and characteristics of younger people are also relevant to the topic of ageing, given that the current health-related behaviours and conditions of younger people have a significant effect on future outcomes. Moreover, intergenerational comparisons can offer valuable insights into the age dimension of health in a given population.

### 5.2 Topics that require measurement

140. Based on the key policy issues identified in the Vienna Declaration, the conceptual domains for measurement regarding the health and independence of older people can be identified as follows:

- a) health status
- b) health risks and health behaviours
- c) chronic illness and disability
- d) health and social care needs and access to services
- e) independent living

141. The topics and indicators identified from a review of these domains appear in Table 5. As in other areas, all indicators are recommended for measurement by sex and five-year age groups from 55-59 to 80-84 and for the group 85 and older, albeit bearing in mind the importance of evaluating the reliability of survey data for small sample sizes in the oldest age groups<sup>40</sup>.

*Table 5 Domains, topics and indicators of health and independence*

Domain	Topic	Indicator	Tier
Health status	Physical well-being	Self-reported health status	1
		Health adjusted life expectancy at birth and at ages 55 and 65	1
		Years of life with disability, by cause	1
		Years of life lost by cause	1

<sup>40</sup> As explained in paragraph 28, it is understood that this is not always possible, but it is recommended to aim for five-year age groups to the maximum possible extent.



	Mental well-being	Mental well-being	3
		Psychological distress during the past four weeks	1
		Anxiety levels	3
	Emotional well-being	Share of those who are very satisfied with life, by health impairment	2
	Social well-being	See chapter 4	3
	Healthy lifestyle	Frequency of fruit consumption	3
		Frequency of vegetable consumption	3
		Frequency of hazardous alcohol consumption (binge drinking)	1
		Share of population that are daily smokers	1
		Share of population that undertakes at least 30 minutes of physical activity per day	2
		Share of population that are overweight based on body mass index	1
		Healthy working conditions	See chapter 3
		Work-life balance	See chapter 3
<b>Illness and disability</b>	Chronic health conditions	People having a long-standing illness or health problem	1
	Cognition	Dementia/Alzheimer's	2
	Independent functioning	Instrumental activities of daily living (IADLs)	1
		Functional limitations and activities of daily living (ADLs)	1
<b>Health and social care needs and access to services</b>	Preventative health care	Per cent of persons reporting difficulties with access to primary health care services	1
	Curative treatments and medical drugs and devices	Prescription drug usage (also includes health care equipment and devices)	2
	Access to care within continuum, especially long-term care	Per cent of population receiving institutional care	1
		Physical	3
		Psychological	3
		Social	3
	Unmet need for care	Per cent reporting unmet need for medical and dental examination or treatment	1
	Palliative care	Palliative care	2
<b>Independent living<sup>41</sup></b>	Residential independence	Living in own household	1
	Accessible architecture	No indicators proposed in these Recommendations	3

<sup>41</sup> See paragraph 179 for explanation of absent indicators in this domain.

Age-appropriate goods and services	No indicators proposed in these Recommendations	3
Receipt of formal care	No indicators proposed in these Recommendations	3
Receipt of informal care	No indicators proposed in these Recommendations	3
Characteristics and needs of caregivers	No indicators proposed in these Recommendations	3
Availability of transportation	Availability of transportation	3

### 5.3 Availability of suitable data

142. This section describes the topics and indicators of health and independence of older people selected based on relevance to the policy issues addressed in the Vienna Declaration and categorized into three tiers (see chapter 1, Introduction). The International Classification of Functioning, Disability and Health (ICF)<sup>42</sup> is used as the conceptual model of the relationship between health (health condition), disability (limitation) and independence (participation).

143. The ICF model is well established internationally and it provides a common vocabulary of terms. However, it does not provide a way to measure the concepts. In the following, we propose indicators for measuring health and independence of older people. The indicators were operationalized by reviewing them along three dimensions:

- a) a clear underlying concept
- b) a commonly held definition and
- c) routine production of the statistic

144. The categorization into the three tiers is based on these dimensions. Further considerations on these indicators are presented below according to the structure presented in Figure 2.

<sup>42</sup> WHO (1999)

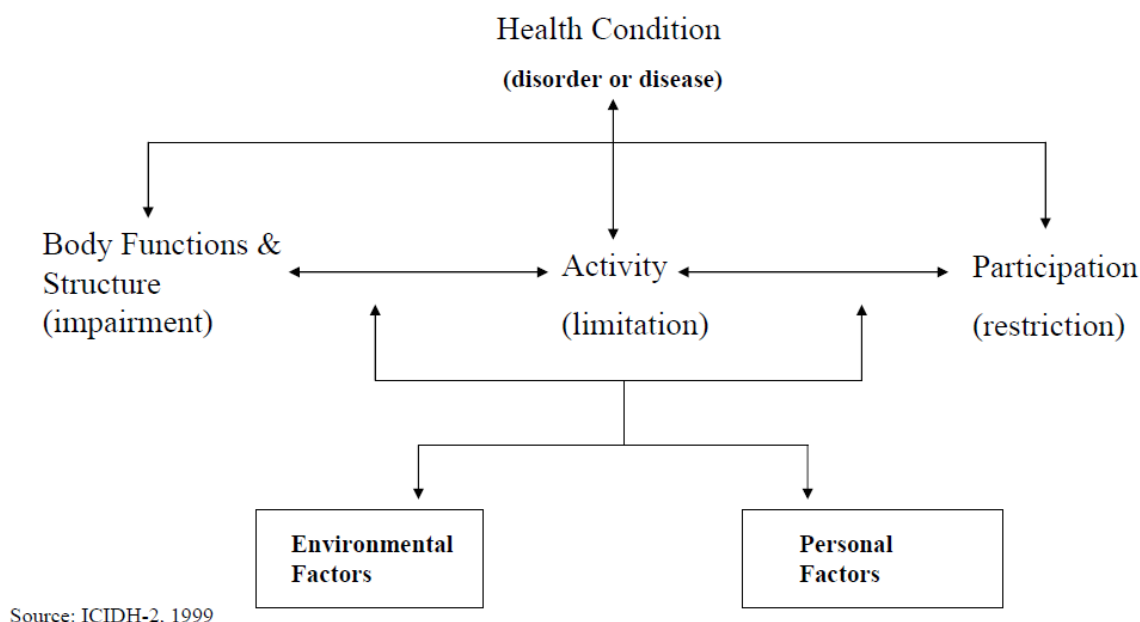


Figure 2 ICF Model

### 5.3.1 Health status

145. According to the World Health Organization (WHO), **health** is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.<sup>43</sup> The following topics are relevant to this domain: physical, mental, emotional and social well-being.

#### 5.3.1.1 Physical well-being

146. The proposed indicators of physical well-being are all well-defined and routinely collected (tier 1).

147. **Self-assessed health status** is an indicator of how an individual perceives his or her health—rating it as excellent, very good, good, fair or poor (as in the United States) or as very good, good, fair, bad and very bad (as in the EU Statistics on Income and Living Conditions, EU-SILC)<sup>44</sup>. Self-assessed health status has been validated as a useful indicator of health for a variety of populations. When a common scale is used, it allows for broad comparisons across different conditions and populations.<sup>45</sup> This indicator is available in the majority of countries (95 per cent) in the UNECE or Eurostat databases, and is sourced from survey data. EU-SILC is a key data source in European countries. The Survey of Health, Ageing and Retirement in Europe is another important source of data for European countries. In New Zealand, Australia, Canada and the United States, national health surveys are the main source of data on self-perceived health. Almost all countries that produce this indicator do so annually.

<sup>43</sup> WHO (1948)

<sup>44</sup> See <http://ec.europa.eu/eurostat/web/income-and-living-conditions/overview>

<sup>45</sup> <http://www.healthypeople.gov/2020/about/foundation-health-measures/General-Health-Status#one>

148. **Health-adjusted life expectancy** (HALE, also sometimes called disability-free life expectancy, DFLE) is the number of remaining years that a person of a specific age can expect to live without severe or moderate health problems.<sup>46</sup> Unlike conventional life expectancy, it combines the measurement of mortality with morbidity, resulting in a summary indicator of both length of life and quality of life. The indicator is useful in ageing societies to examine whether life expectancy at older ages is increasing at the same rate as expectation of life free from activity limitation and disease, or whether one is outpacing the other. For EU countries, the indicator is obtained from a self-perceived health status question in EU-SILC, combined with mortality data. For other countries, the WHO definition is used, namely the “average number of years that a person can expect to live in ‘full health’ by taking into account years lived in less than full health due to disease and/or injury”, and estimates are computed from mortality data and WHO estimates of incidence, prevalence, duration and years lived with disability for 135 major causes.<sup>47</sup>

149. **Years of potential life lost** from mortality (YPLL) is a summary indicator of premature mortality. It represents the total number of years not lived by people who die before reaching a given age, at each age up to some limit<sup>48</sup>. For example, in the United States, the age limit is often placed at 75: people who die before age 75 are defined as having lost some potential years of life. YPLL provides evidence of the health loss as a result of different diseases, illnesses and risk factors across different groups in the population. Deaths among younger people contribute more to the YPLL measure than deaths among older people. Years of potential life lost by cause of death can be calculated from deaths from all causes or as a cause-specific indicator. The indicator is produced annually in three quarters of those countries producing it.

### 5.3.1.2 *Mental well-being*

150. A number of indicators to measure mental well-being were proposed. These are not routinely collected and are somewhat less well defined than those of physical well-being.

151. WHO<sup>49</sup> defines mental well-being as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully and is able to contribute to her or his community. The way in which the indicator **mental health** is operationalized varies across countries. In the United States, for example, this is measured by depressive symptoms with clinically relevant depressive symptoms by age group and sex. In the EU, the indicators *mental well-being* and *prescription drug usage* that were available from the European Health Interview Survey cannot be provided after the change to the 2014 questionnaire. It appears difficult to substitute the information on mental well-being from another source.

152. In 2008, EHIS collected data on the indicator **psychological distress**, based on the Mental Health Inventory of three depression-related items and two anxiety-related items. The United States produces this indicator of psychological distress during the past four weeks as the proportion of people who have sought help from a professional in the

<sup>46</sup> For details of definition and methodology see [http://ec.europa.eu/eurostat/cache/metadata/en/hlth\\_hlye\\_esms.htm](http://ec.europa.eu/eurostat/cache/metadata/en/hlth_hlye_esms.htm)

<sup>47</sup> See <http://www.who.int/healthinfo/statistics/indhale/en/>

<sup>48</sup> For details of definition and methodology see [http://apps.who.int/gho/indicatorregistry/App\\_Main/view\\_indicator.aspx?iid=159](http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=159)

<sup>49</sup> See [www.who.int/features/factfiles/mental\\_health/en](http://www.who.int/features/factfiles/mental_health/en)

last 12 months because of a psychological or emotional problem. Future data collection plans in the EU aim at an indicator on the consultation of a psychologist, psychotherapist or psychiatrist. **Anxiety level** is another indicator used for measuring mental well-being.

#### **5.3.1.3 Emotional well-being**

153. Emotional well-being can be measured as the share of those who are **very satisfied with life generally**. This indicator is not routinely collected.

#### **5.3.1.4 Social well-being**

154. Chapter 4, Social inclusion and subjective well-being, considers indicators for this topic.

### **5.3.2 Health risks and health behaviours**

#### **5.3.2.1 Healthy lifestyle**

155. WHO lists the following as **risk factors** for chronic diseases: tobacco, alcohol (abuse), physical inactivity and poor nutrition.

156. **Tobacco use** is proposed to be measured as the share of the population that smokes daily. In the EU, this is the common definition, and the indicator is routinely produced. In the United States, the indicator is more commonly defined as the number of persons aged 18 years and over who have smoked at least 100 cigarettes in their lifetime and who now report smoking cigarettes every day or on some days. Overall, the indicator is fairly routinely measured.

157. It is proposed that **alcohol** (abuse) be measured as the frequency of hazardous alcohol consumption (binge drinking). In the United States, this indicator can be measured as the number of adults who report having five or more drinks (for men) or four or more drinks (for women) at the same time or within a couple of hours of each other during in the past 30 days. Generally, this indicator is commonly and routinely collected, although direct comparisons may be difficult.

158. The share of the population that undertakes at least 30 minutes of physical activity per day is proposed as an indicator for **physical activity**. Among the EU member countries, this indicator is commonly and routinely collected. In the United States, physical activity among older people is more typically measured as the number of adults who report that they never do, or are unable to do, light or moderate physical activity for at least ten minutes and that they never do, or are unable to do, vigorous physical activity for at least ten minutes. Therefore, a definition of the indicator that is common across the UNECE region has not yet been developed.

159. There does not seem to be a consistent indicator of **nutrition** or diet. The frequency of **fruit consumption** and **vegetable consumption** were suggested as indicators of healthy lifestyle. In the United States, overall diet is measured; assessment at the level of fruit or vegetable consumption is less robust. This is an area where common definitions and routine measurement could be strengthened.

160. **Obesity** is proposed to be measured as the share of the population that is obese based on body mass index. This can be measured as the number of adult persons with a

body mass index equal to or greater than 30.0, consistent with the recommendation of WHO. This indicator is fairly commonly and routinely produced.

### 5.3.2.2 *Healthy working conditions*

161. Another component of health risks is the set of risks associated with the work environment. Although no particular indicators were identified, **healthy working conditions** can be operationalized in a number of ways. The available indicators relating to healthy working conditions were analysed in chapter 3 (Longer working life).

162. **Work-life balance** can be measured as activities that allow for reconciliation between work and family life. Chapter 3 listed indicators and sources of information relating to work-life balance. It would be possible to produce common indicators for these topics on a routine basis among most UNECE member States.

## 5.3.3 Chronic illness and disability

### 5.3.3.1 *Chronic health condition*

163. **Chronic health condition** is a measure of morbidity, and is intended to capture the number of people with chronic limiting conditions. Among UNECE countries, such conditions typically include cardiovascular disease, arthritis, diabetes, asthma, cancer, and chronic obstructive pulmonary disease (COPD). Chronic limiting illnesses restrict the ability of individuals to participate in the labour market, and require considerable health and social resources. They can be measured as persons having one or more long-standing illnesses or health problems. Over 90 per cent of countries in the UNECE or Eurostat databases measure this indicator, with the EU-SILC and health surveys being the most common sources of data. Most countries that produce this indicator publish it annually.

### 5.3.3.2 *Cognition*

164. Diagnosis with **dementia or Alzheimer's disease** is proposed as an indicator to measure cognition. The indicator is commonly defined, but is less routinely collected. Under-coverage of the relevant population can be a concern, given that this is more commonly measured through household surveys, which generally excludes the institutionalized population (see chapter 7 for a discussion of this issue).

165. Of the indicators in this domain, the indicator on dementia/Alzheimer's appears to be the least comparable at present. The data on dementia/Alzheimer's is mainly obtained from administrative sources (registers), or alternatively from surveys. The register data presumably record diagnosed dementia/Alzheimer, while survey data are self-reported (most likely by proxy respondent or derived from drug usage). For several reasons, it seems worthwhile to use a uniform definition and source for this indicator. Since many countries conduct standardized health interview surveys (notably the European Health Interview Survey (EHIS) in Europe), this would seem to be a promising data source. However, not all countries allow for proxy responses, which are required (by definition) to answer questions on dementia/Alzheimer's. Age and sex breakdowns and periodicity are highly heterogeneous across countries, which is another reason to prefer a standardized health interview survey.

### 5.3.3.3 *Independent functioning*

166. Instrumental activities of daily living (IADLs) and functional limitations and activities of daily living (ADLs) are suitable indicators for this topic. Although these indicators are fairly commonly defined and routinely produced, two concise sets of indicators of independent functioning have been developed.

#### 5.3.3.3.1 *Short set of disability questions, Washington Group*

167. Specifically, the Washington Group<sup>50</sup> has developed, tested internationally, and adopted a set of **functional disability indicators** suitable for use in censuses, sample-based national surveys, or other statistical formats. Both an extended set and a short set have been prepared. The short set of questions was recommended for use in all national censuses.<sup>51</sup>

168. The short set comprises six questions (reproduced in Table 6) regarding self-perceived limitations, for use in censuses. These questions identify the majority of persons in the population who are at greater risk than the general population of experiencing limited or restricted participation in society due to a health problem. The questions cover six functional domains or basic actions: vision, hearing, mobility, communication, cognition/remembering, and self-care. Testing has shown that they produce internationally comparable data on functional disability. Over 90 per cent of countries in the UNECE or Eurostat databases produce this indicator. The data are sourced mainly from health or disability surveys.

*Table 6 Short set, Washington Group disability measures*

<b>“The next questions ask about difficulties you may have doing certain activities because of a HEALTH PROBLEM.”</b>	<b>No difficulty</b>	<b>Some difficulty</b>	<b>A lot of difficulty</b>	<b>Cannot do it at all</b>
<b>Do you have difficulty seeing, even if wearing glasses?</b>	1	2	3	4
<b>Do you have difficulty hearing, even if using a hearing aid?</b>	1	2	3	4
<b>Do you have difficulty walking or climbing steps?</b>	1	2	3	4
<b>Do you have difficulty remembering or concentrating?</b>	1	2	3	4
<b>Do you have difficulty (with self-care such as) washing all over or dressing?</b>	1	2	3	4
<b>Using your usual (customary) language, do you have difficulty communicating, (for example understanding or being understood by others)?</b>	1	2	3	4

<sup>50</sup> For more information see <http://unstats.un.org/unsd/methods/citygroup/washington.htm>

<sup>51</sup> UNECE (2015a).



### 5.3.3.3.2 Extended set of disability indicators, Washington Group

169. The Washington Group also developed an extended set of disability indicators. These are intended as a component of population surveys, as supplements to surveys, or as the core of a disability survey. The extended set includes the six items in the short set, plus questions relating to use of the upper body, learning/understanding, affect (emotion), pain and fatigue. As with the short set, each of the activities is mapped to an ICF code. Cognitive testing of a modified extended set of questions was conducted in Cambodia, Canada, Kazakhstan, Maldives, Mongolia, the Philippines, South Africa, Sri Lanka and the United States. In collaboration with the Budapest Initiative on Measurement of Health Status,<sup>52</sup> a final version of a question set on health state—a subset of the extended set on functioning—was partly included in the European Health Interview Survey. The United States has added a module including the extended set of questions to its National Health Interview Survey.<sup>53</sup>

Questionnaire Topic/Type		Basic Activity Domains									Complex Activity Domains					
		Vision	Hearing	Mobility	Communication	Cognition/remembering	Upper Body	Learning/understanding	Affect	Pain	Fatigue	ADL/IADL	Getting Along with People	Major Life Activities	Participation in Society	
Row																
1	Capacity	Short Set Single Questions (1)					d	a				d				
2		Extended Set Multiple Questions (1)				c	c		e	e	c	b				
3	Performance	Use of Assistive Devices Micro-E (2)			Sign language											
4		Functioning with Assistance, Micro-E							e							
5		Age at Onset														
6		Cause	Questions cognitively tested but not included on ESCAP field test													
7		Duration														
8		Impact (limit ability to carry out daily activities)										?	?	?	?	
9		Meso-Environment (3)	Question Set currently under development													
10		Macro-Environment (4)	To be obtained through other sources, not personal survey data collections													
		ICF Chapter Reference - Activities/Participation	ICF-1	ICF-1	ICF-4	ICF-3	ICF-1,2	ICF-4	ICF-1	ICF-2	(5) See Note below	ICF-5,6	ICF-7	ICF-8	ICF-9	

05/03/2014

10

05/03/2014

Figure 3 Schema for expanded set, Washington Group disability measures

## 5.3.4 Health and social care needs and access to services

### 5.3.4.1 Preventative health care

170. The share of persons reporting **difficulties with access to primary health care services** can be used to measure preventative health care. This indicator is commonly and routinely produced among UNECE member countries. Unmet need for access to

<sup>52</sup> UNECE (2012), available at <http://www.unece.org/index.php?id=31580>

<sup>53</sup> See <http://www.cdc.gov/nchs/nhis.htm>



health care is an even more valuable indicator of this topic. It is computed annually for the EU countries using EU-SILC.

#### **5.3.4.2    *Medical treatments, drugs, and devices***

171. These indicators should cover both met and unmet needs. With regard to the measurement of medical drugs, **prescription drug usage** is proposed. This indicator is not well defined, however, and not commonly collected.

172. Potentially, indicators of met and unmet needs for one component of assistive devices – **health care equipment** – could be measured using items established through the Washington Group’s extended measure set.<sup>54</sup> Adding to the Washington Group’s short set of items (described above), the extended set can be used to measure current use of equipment and identify unmet need for assistance, among other aspects of disability. Since the short set of items has been incorporated into the United States routine information collections, adoption of some portion (or all, depending on purpose and survey space) of the extended set might be appropriate. It is less clear how the aspect of ‘curative treatments’ is or should be measured.

#### **5.3.4.3    *Access to long-term care***

173. Among EU countries, **long-term care** has been defined as the organization and delivery of a broad range of services and assistance to people who are limited in their ability to function independently on a daily basis over an extended period. The services may be provided in a variety of settings including institutional, residential – i.e. in supported living arrangements other than nursing homes – or home care. Mixed forms of residential care and (internally or externally provided) care services exist in the form of assisted living facilities, sheltered housing, etc., for which a wide range of national arrangements and national labels exist. At the same time, long-term care comprises a mix of both health and social components, therefore pertaining to both health and social sectors. This complexity is a challenge when it comes to defining a clear, understandable and feasible boundary between the two long-term components: health care and social care.

174. The percentage of the population receiving **institutional care** can (at least in part) be used as the indicator for access to long-term care. Statistics for this indicator are commonly and routinely produced among UNECE countries. Other proposed indicators of access to care (**physical, psychological, and social**), including the quality of care (e.g. the level of training received by caregivers) were less well defined. Further conceptual and methodological work is needed for operationalizing indicators on this topic.

#### **5.3.4.4    *Unmet need for care***

175. The percentage of the older population reporting **unmet need for medical and dental examination or treatment** in the past 12 months aims to capture the subjective experience of unmet need. It refers to respondents who reported that there was one or more occasion when they needed medical or dental care and were not able to receive it. It reflects the lived experience of older people’s access to health care, which is important

---

<sup>54</sup> See Washington Group on Disability Statistics, Budapest Initiative and United Nations Economic & Social Commission for Asia & the Pacific, 2011.

in shaping their level of health and independence. As other subjective measures, comparability across countries may be influenced by cultural factors. This indicator is available for EU countries in EU-SILC and is considered to be in tier 1.

#### **5.3.4.5 Palliative care**

176. **Palliative care** is another topic and indicator for health and social care needs and access to services. However, it is not clear that the term has a commonly-held definition among UNECE countries. In the United States, palliative care is measured as the percentage of Medicare<sup>55</sup> recipients who used hospice or intensive care unit or coronary care unit service in their last 30 days of life. It is also not clear whether statistics for this topic are routinely produced. Closer examination of available indicators is warranted.

### **5.3.5 Independent living**

177. The topics that pertain to independent living, or ‘ageing in place’, among older persons include residential independence, accessible architecture, age-appropriate goods and services, receipt of formal and informal care, and availability of transportation.

#### **5.3.5.1 Residential independence and transportation**

178. **Residential independence** could be measured as living in a household alone or as a couple. In addition, the **availability of transportation** could be measured. Although most UNECE member countries produce statistics routinely on living arrangements of older people, the measurement of transportation access – particularly as it relates to persons with health concerns – is less well defined. Accordingly, it is difficult to assess whether such transportation statistics are routinely produced.

179. Indicators relating to accessible architecture, age-appropriate goods and services, or receipt of informal care were not proposed by the Task Force. While clearly important for a full picture of the extent of independent living of older people, the Task Force felt that further conceptualization and operationalization is warranted for these topics. The Washington Group includes accessibility of architecture and transportation within their conceptual model of disability. However, specific indicators do not yet seem to be defined.

## **5.4 Assessment of comparability**

180. Effective policy to address gaps in unmet health needs and decision-making requires robust measurement of health, health care receipt, and health independence over the life course, including the end of life. For each of the topics, the proposed indicators were reviewed. Clarity in conceptualization and definition, and routine production of statistics for the indicators were evaluated. Based on this evaluation, topics and indicators were ranked into the three tiers used throughout these Recommendations, according to their overall comparability. Below, these rankings are reviewed and

---

<sup>55</sup> Medicare is the United States federal social insurance programme for older persons and those on low incomes.

explained and actions are proposed to improve measurement with strategies specific to each tier.

### 5.4.1 Tier 1: Consideration of mode needed

181. Tier 1 indicators are those that are clearly and fully conceptualized in relation to older people's well-being, well-defined for measurement purposes, and routinely produced by UNECE member countries. Although strong, topics and indicators in tier 1 can be further evaluated with a view to enhancing comparability. Inclusion of the institutionalized population, uniform practices with regard to proxy respondents, and consistency in mode of collection (that is, survey rather than administrative records) would improve the quality and comparability of the resulting statistics. Achieving such uniformity in practices across countries is something to be aspired to, but it must be recognized that it will be difficult to achieve. Furthermore, constraints on achieving comparability arise from other sources such as different modes of collection and different survey contexts (health surveys, general surveys, etc.)

182. In general, indicators under the **health status** domain are well-developed and routinely collected. In particular, indicators of physical well-being can be described as belonging to tier 1. The data on the basic health topics (health status, limitation in daily activities, and chronic illness or other health problems) are obtained from the EU-SILC questionnaire for most European Union countries, and from health interview surveys in most other countries. Breakdowns are available by 10-year age groups and sex, and with a few exceptions, are collected annually. As a result of the harmonization of the health questions in the EU-SILC and EHIS questionnaires, both surveys should provide fairly comparable data.

183. Generally, the indicators measuring health status can best be computed from survey data sources. By their nature, the indicators are self-reported or calculated from self-reports and therefore best suited to survey data sources. In countries where these data are not available, some type of social survey featuring health indicators is needed.

184. The EHIS and the EU-SILC can be the basis of some harmonization of the surveys mentioned above. Including these questions in other existing health, disability, ageing or social surveys can ensure the extended availability of data in a manner that would not overly burden statistical offices. When choosing from different types of surveys it should be kept in mind that the more theme-specific a survey, the better the resulting quality of data that are consistent with that theme. For instance, EHIS measures health phenomena better than EU-SILC. Additionally, it should be noted that self-reported assessments of the health condition may lead to culturally differentiated (or biased) reporting (and thus to comparability issues). This problem has been addressed in the SHARE survey using 'vignettes', but not in EU-SILC.

185. In some cases, measurement should not be based on survey data. For *disability-adjusted life expectancy*, life expectancy should be calculated on the basis of mortality data derived from administrative death registers. For calculating *years of life lost*, the source should also be the administrative death registers. The data gap observed for these two indicators can be closed relatively easily assuming available raw data, since standard methodology is available.

186. Overall, at least one indicator of mental well-being is also well defined. Mental well-being is predominantly measured using health interview surveys. However, not all

countries conduct a health interview survey (for example, Italy). Where a common source of data is used, comparable age and sex breakdowns are generally available and the periodicity tends to be five years. However, few countries share the same data source for indicators in this topic, and therefore comparability within this topic is somewhat lower than within the health status domain. As in the health status domain, however, the institutionalized population is usually not included when measuring cognitive and behavioural health. This is problematic given the prevalence of mental health problems in the institutionalized elderly population, and the heterogeneous composition of the non-residential population across countries given likely differences in eligibility for services.

187. Indicators of **health risks and health behaviours** generally belong to tier 1. The exceptions relate to dietary indicators, physical activity, healthy working conditions and work-life balance, as discussed further below.

188. Several topics and their indicators within the **illness and disability** domain are also conceptually clear, well defined, and routinely produced. However, measures of dementia and Alzheimer's should be more routinely produced (see below).

### 5.4.2 Tier 2: Routine collection needed

189. Overall, it seems that few of the indicators can be described as fitting into tier 2, or indicators that are conceptually sound and well defined, but are not yet routinely produced. Advancement in the measurement of tier 2 indicators likely relies upon technical assistance to countries requiring improved national capacity to produce the minimum set of indicators.

190. Within the **health status domain**, emotional well-being (measured by the share of persons aged 65 years and older who are very satisfied with life, overall, and by health impairment) could be more routinely measured by member countries. Similarly, within the health risks and health behaviours domain, healthy lifestyle (measured, in part, by share of the population aged 65 years and older that undertakes at least 30 minutes of physical activity per day) could be more routinely measured.

191. Within the **illness and disability** domain, indicators of cognition (here, dementia/Alzheimer's and, in part, as a component of functional limitation measures) are well conceptualized and well-defined generally, but more routine measurement is warranted. Measuring the prevalence of *dementia and Alzheimer's* from administrative sources or institutional data collections (for example, medical practitioner records) are likely the best sources. Standard EU surveys would be used with difficulty; sample size and capability of answering are issues to be considered. A difficulty in producing robust statistics for this indicator relates to limitations in frame coverage among surveys, and respondent capacity to self-report.

192. Within the **health and social care needs and access to services** domain, the indicators proposed to measure curative treatments and medical drugs and devices, such as prescription drug use, and use of health care equipment and devices are well conceptualized and defined. These components could be more routinely measured. Unmet need for health care is based mainly on the EU-SILC in Europe and on other national health interview surveys elsewhere. In the United States, access to health care is measured through health and social surveys and administrative data. The

institutionalized older population is not included which, again, poses comparability problems, since access to appropriate care should not be assumed.

193. Overall, the need for health and social care should be measured using surveys. There are concerns about the appropriateness of using administrative sources to measure unmet need, or otherwise reflect the capacity and receipt of health and social care services. For example, if administrative data regarding waiting lists are used to measure health and social care needs, this source can both over- and underestimate actual needs. Further analysis of administrative sources is needed for the measurement of this domain. However, standard questions can be developed for use on the EHIS or any other health or social surveys. The indicator of *unmet needs for health and dental care* can be treated in the same way.

194. Given its self-reported nature, the standard EU indicator *per cent of persons aged 65+ reporting difficulties with access to primary health care services* is best measured on the basis of surveys. The EHIS and the EU-SILC can be the basis of some harmonization of different surveys. Some additional questions in other health, disability, ageing and social surveys can ensure the extended availability of data. The use of administrative records may present difficulties. For example, it is possible to calculate the ratio of persons living in communities where primary health care services are not present, but this would not provide information as to whether some can access services relatively easily in other places, or if access is limited due to other reasons (financial, infrastructure).

195. Prescription drug usage is usually based on health interview surveys. Both survey and administrative data sources can be used. The EHIS records which prescriptions have been taken over the past two weeks. The United States collects usage information through their health interview survey, although average prescription drug costs are calculated from administrative records pertaining to Medicare beneficiaries. Where a common source of data is used, comparable age and sex breakdowns are generally available and the periodicity tends to be five years. In the United States, the population for the calculation of drug costs for the Medicare beneficiary population is limited to those aged 65 years and older. As with other domains reviewed, the institutionalized population is usually not included. This is problematic, as it will almost surely underestimate drug usage among the elderly population.

196. Aspects related to curative treatments would benefit from further conceptualization and definition prior to wider (and routine) measurement. Similarly, palliative care appears to be fairly well conceptualized, although clarity of definition and more routine production would be valuable. Administrative records would likely be the best source of data to produce these statistics.

### 5.4.3 Tier 3: Further conceptualization needed

197. Tier 3 topics are those where further conceptual and operationalization work is necessary before indicators could be implemented routinely in a meaningful way. Typically, these indicators would benefit from focused workgroups to identify the most appropriate conceptual model relating the topic to indicators of well-being among older people. Subsequently, these workgroups could design, implement and evaluate testing of methodology across UNECE member countries. The outcome of such testing, once appropriate indicators are identified, could then be recommendations for more routine collection. For example, the Washington Group developed and implemented a series of



methodological tests before recommending the short and extended question sets for measurement of disability, and before it promoted routine collection of these indicators.

198. As noted above, in all health domains there is at least one topic where improved clarity in concept and/or definition is warranted. For example, among health status topics, measurement of mental well-being, anxiety, and social well-being would benefit from further conceptual review. Among health risks and health behaviours, improved measurement and consensus among UNECE member countries for nutrition, healthy working conditions and work-life balance indicators would be valuable.

199. With regard to the measurement of health and social care needs, a discussion of underlying interest in physical, psychological and social indicators would be helpful, since these indicators may be measured through related indicators already discussed. Because proposed measurement of these indicators requires clarification, there is insufficient information to assess the quality and comparability of these indicators. There is a need for further conceptualization of these indicators to increase the likelihood of reaching standard terminology, operationalization and comparability.

200. However, the most significant need for improved conceptualization is found in the measurement of independent living. Specifically, in addition to developing indicators of living arrangements, transportation access, caregiving, the built environment, and availability of age-appropriate goods and services, it may be helpful to develop and test indicators of decision-making authority.

201. Particular thought should be given to the measurement of health independence for historically disadvantaged groups, such as women, noncitizens and people living on a low income. Decision-making regarding health care and active living may be particularly limited for these groups. For example, it may be possible that older people in these groups would have less control than others over financial and legal resources to determine their health treatment and or residential care. Further conceptualization is necessary to advance measurement of this dimension.

202. Where indicators have been well conceptualized and tested, comparable and routine measurement should be encouraged. Indicators *share of population receiving formal care at home* and *share of population receiving institutional care* can use both survey and institutional data sources. As implemented currently, the comparability of these indicators is questionable, as admission criteria and eligibility for residential care facilities and the nature and scope of formal home care may differ substantially between countries. When choosing which data source is most appropriate for a particular country, one should consider the social protection scheme. In countries where the state has a dominant role in this area, administrative data sources can be used, such as a register of persons receiving care used for state financial contribution claims.

## 5.5 Summary

203. In general, indicators for the domains of health status, health risks and behaviours, illness, and disability are well developed and routinely measured. Improvements that could be made to the comparability of these statistics relate to mode of collection and inclusion of the institutionalized population.

204. Statistics for health and social care needs and access would benefit from further definition in some cases, and more generally, more routine collection. Statistics within this domain are not available for about half of UNECE countries.

205. With regard to independent living, further conceptualization and operationalization is necessary before routine production of these statistics would be warranted. Challenges to health independence may be further compounded for women, noncitizens and people living on a low income as traditionally disadvantaged groups.

## **5.6 Conclusions**

206. Further effort is needed to collect health and care needs indicators that are sufficiently reliable and internationally comparable. Among the domains examined, information on several health and social care needs and access to services indicators, particularly, is lacking. As discussed above, the most effective strategies to improve data quality and comparability for proposed topics will differ by the quality of the conceptualization, definition and routine collection of the indicator.

207. However, these steps alone will not suffice. Further monitoring of testing and collection practices, and provision of technical assistance to countries that would benefit from capacity-building are necessary first steps. Coverage of the target population, particularly people living in institutions, will be essential to development of robust measures of health and independence of older people. Standardization of age groups is necessary.

### **5.6.1 Improve monitoring**

208. Overall, existing data sources have great potential to address the observed data gaps. Nonetheless, further monitoring of country practices is needed in order to better understand data sources, especially administrative sources. Specifically, explicit mapping of concepts to topics and indicators should be undertaken. With regard to the latter, operational definitions and indications of possible sources should be specified for each indicator. Therefore, the work on development of international lists of indicators relevant to health and independence of older people should continue. The greatest focus should be on those indicators falling into tier 1 and tier 2, for purposes of refreshing the list. Since the list is also meant to be the basis for international data compilation, the establishment of a mechanism for international agencies to provide data and metadata regularly to a centralized data repository (hosted, for example, by UNECE), may prove to be useful.

### **5.6.2 Standardize age categorization**

209. As discussed in the chapter on demographic measures, harmonizing age breakdowns is particularly important in order for data to be internationally comparable. Different samples cannot always be compared if they relate to somewhat different

populations. Age brackets should be harmonized where possible to include five-year age groups 55-59, ..., 80-84 and 85+<sup>56</sup>.

210. The problems of data comparability and reliability are most pronounced for the upper age groups, where sample sizes are often very small and the upper categories are wider (and more variable) as a result. To address this, the sample size of the older respondents should be increased where feasible, although it is noted that using larger samples may have implications for survey cost and respondent burden which have to be weighed among the various priorities of individual NSOs. Alternative approaches to addressing the issue of sample size include pooling survey data over time – although this may not be appropriate for infrequent surveys or those where the measures change significantly over time – and linkages to administrative sources.

### 5.6.3 Consider method of collection

211. Comparability of data is also influenced by variation in the quality of different data sources. Several indicators are based on data collected by harmonized surveys such as EU-SILC and EHIS. Despite the efforts that have been made to harmonize the questionnaires and survey method,<sup>57</sup> disparities continue to exist which may compromise comparability across countries. In the EU-SILC, for example, countries are free to choose the interview procedure (e.g. to conduct telephone instead of face-to-face interviews) or to rely on register data. In some countries, legal constraints prohibit collection of health information by proxy. As a consequence, the EU-SILC data probably underestimate activity limitations among those aged 80 years and above,<sup>58</sup> and probably do so to a different extent across countries. The quality and comparability of the EHIS is monitored carefully, but the flexibility allowed in implementing the survey may be an obstacle to achieving full comparability.<sup>59</sup> Moreover, it is conducted only every five years (and soon six years), while the EU-SILC is conducted annually.

### 5.6.4 Address institutionalized population

212. Data comparability between national and international data sources is necessarily limited in cases where standardization of terminology and definitions has not been established. Differential rates of, and criteria for, institutionalization likely result in a heterogeneous composition of institutional population across countries (see chapter 7 Institutional population). To begin to address this issue, it is necessary that the term ‘institutionalized population’ be more clearly defined. These should align with the CES census recommendations.<sup>60</sup> The absence of the institutionalized population from survey data affects the quality of the data since it excludes a large number of people in the older age groups. Once a clear definition for the institutionalized population is developed, countries need to consider ways to include those populations in survey frames.

<sup>56</sup> As explained in paragraph 28, it is understood that this is not always possible, but it is recommended to aim for five-year age groups to the maximum possible extent.

<sup>57</sup> European Commission (2008).

<sup>58</sup> Katchadourian and Cambois (2013)

<sup>59</sup> Gauci (2011)

<sup>60</sup> UNECE (2015a)



## 6 Intergenerational solidarity

---

### 6.1 Introduction

213. Population ageing is a society-wide process that affects not only older people, but people of all generations. For policy responses to ageing to be successful, therefore, they must be perceived as balanced and acceptable to members of all age groups. The social and economic transformations that occur alongside or as a consequence of population ageing will never be experienced in exactly the same way by all age groups, but it is important for the sake of social cohesion that they should be seen as equitable, if not equal. Statistical indicators to measure this perception of equity between generations are the subject of this chapter.

214. From a theoretical point of view, ‘intergenerational solidarity’ can be defined as social cohesion among people and groups belonging to different cohorts, linked by a shared and mutually accepted understanding of the obligations and expectations of different generations, both those living and those yet to be born. It is a complex and mutable concept and therefore it is difficult to provide a precise definition, since the exact nature of what constitutes intergenerational solidarity depends upon a combination of cultural, institutional, economic and social factors, which vary over time and space. On a general level, however, it must include such concepts as fairness, equity and justice, reciprocity (both of monetary and non-monetary exchanges), and generations holding positive views of one-another. It encompasses both the actual state of intergenerational relationships, and, importantly, the *perceptions* of those relationships.

215. The 2012 Vienna Ministerial Declaration calls for a number of actions that would reduce the prejudices and structural barriers hindering the attainment of intergenerational solidarity. It provides a framework for the types of policies needed to empower older people with respect to other generations and to strengthen solidarity among generations. The Declaration indicates that intergenerational solidarity is maintained and enhanced by a series of factors, including: strong multigenerational dialogue and intergenerational learning; improved cooperation between youth and older people’s organizations; joint volunteering of people of all ages; educational campaigns (to foster increased understanding of ageing on both population and individual levels, to educate from an early age about the importance of a life-course perspective on active and healthy ageing, and to promote learning among older people about the challenges facing youth); adequate and sustainable social protection of older workers while they continue to make contributions to their communities through continued employment or other, non-paid, activities; and promotion of equal opportunities for self-determination.

216. This chapter aims to identify the key components and domains proposed by the Vienna Declaration that could be used to track statistically the progress in these factors that maintain or enhance intergenerational solidarity.

## 6.2 Topics that require measurement

217. The framework provided by the Vienna Declaration can be summarized by the four domains and nine sub-domains contained in Table 7.

*Table 7: Domains and sub-domains of intergenerational solidarity*

Domain	Topic
<b>Intergenerational transfer of knowledge</b>	Intergenerational dialogue and learning
<b>Educational campaigns</b>	Educational campaigns on issues of population and individual ageing
<b>Older people's unpaid contributions to society</b>	Provision of informal care
	Voluntary work
<b>Intergenerational relations</b>	Intergenerational co-residence
	Intergenerational transfers
	i) monetary
	ii) non-monetary
	Intergenerational contacts
	i) within family
	ii) outside family

218. Intergenerational transfer of knowledge is essential for a dynamic labour market. The transfer of knowledge and experiences in the workplace has the potential to be bidirectional, with flows going both from older to younger workers and vice versa. The flexibility of labour markets and their capacity to foster such intergenerational transfers is to some extent determined by the prevailing national policies and legislation concerning work and retirement. The intergenerational transfer of knowledge and opportunities is not, however, limited to the workplace. Such exchange can also occur in the context of organized educational and cultural activities, which influence older people's well-being positively by promoting their active participation in their communities.

219. The Vienna Declaration calls for educational campaigns to increase awareness and hence protect against stereotypes surrounding older people. In relation to the labour market, there are many widespread stereotypes based on age, such as that older workers are less motivated and competent at work than younger counterparts;<sup>61</sup> that older workers are harder to train and thus inherently less valuable as employees;<sup>62</sup> or that older workers are more expensive because they have higher salaries and because they use more health care benefits due to declining health.<sup>63</sup> Combating such unfounded stereotypes is one step towards realizing a more cohesive society. The Vienna Declaration also highlights the need for both education (i) for young people on healthy, active ageing as part of the

<sup>61</sup> Posthuma and Campion (2009)

<sup>62</sup> Ruppel and others (2010)

<sup>63</sup> Anne Bal et al (2011)

life-course, and (ii) for older people on the issues and challenges facing younger generations.

220. Whilst recognising the need for adequate and sustainable social protection of older people, the Vienna Declaration highlights the need to also recognize that older men and women continue to make important unpaid contributions to society in a variety of ways through provision of informal care and volunteering. Such unpaid activities by older people can be important in engendering intergenerational solidarity, as well as wider social cohesion and growth.

221. "Intergenerational relations" is a broad term referring to both the material and non-material aspects of the interactions between generations, especially those that take place between members of the same family. Thanks to increasing life expectancy, relationships between parents and children or between grandparents and grandchildren tend to last longer than ever before. Any attempt to quantify the impacts of these prolonged intergenerational relationships must take into account not only the direct impacts of care provision by family members, but also the cognitive and affective implications of having simultaneous contacts with people from multiple generations. It must also recognize the bidirectionality of intergenerational relationships, with care, transfers and social capital flowing both from older to younger and vice versa. These aspects are still insufficiently explored and operationalized, despite being the focal point of much research in this domain, such as the large volume of research based on data from the Generations and Gender Programme.<sup>64</sup>

222. The family, while clearly a central focus, is not the only setting for contacts between generations. Indeed, the size of families has progressively decreased, and the tendency for multiple generations to cohabit within households has diminished, making the family less dominant as an arena for intergenerational relationships. However, co-residence is not a prerequisite for intergenerational family relationships – such relationships clearly continue to exist even when generations occupy different households, with physical proximity mediating the nature of the relationships.<sup>65</sup> Non-family settings for intergenerational relations include both general everyday social interactions, and the activities of organized groups. The Vienna Declaration therefore calls for the "improvement of cooperation between youth organisations and older persons' organisations" and for recognition of "the value of fostering the joint volunteering of people of all ages".

### 6.3 Availability of suitable data

223. A review was conducted to identify available indicators to measure the sub-domains of intergenerational solidarity given in the preceding section. Only seven already existing indicators were identified, all of which relate to the third and fourth domains, namely older people's non-paid contributions to society and intergenerational relations. None of them is regularly produced on a large scale, and international standards for their measurement remain to be developed. With the exception of living arrangements (tier 2), they are all categorized in tier 3. Table 8 shows these proposed indicators. As elsewhere in these Recommendations, it is proposed that the indicators be

---

<sup>64</sup> See <http://www.ggp-i.org/>

<sup>65</sup> Mancini and Bleiszner (1989)

computed in five-year age groups from 55-59 to 80-84 and for the age group 85 and older<sup>66</sup>.

*Table 8 Proposed indicators*

Domain	Topic	Indicator	Tier
<b>Intergenerational transfer of knowledge</b>	Intergenerational dialogue and learning	Percentage of older people who participated in organized mentoring or training programmes to pass experience and knowledge to younger workers	3
<b>Older people's unpaid contributions</b>	Provision of informal care	Percentage of population providing unpaid care to own children and grandchildren	3
		Percentage of population providing unpaid care to older adults	3
	Voluntary work	Percentage of population volunteering	3
		Time spent in unpaid activities outside own household	3
		Participation in voluntary work in the last 12 months	3
<b>Intergenerational relations</b>	Intergenerational co-residence	Living arrangements	2
	Intergenerational transfers	Intergenerational transfers provided (financial and non-financial)	3

224. The review of indicators also identified possible sources and technical aspects of these indicators. For the indicators on informal care, potential sources include the social and time use surveys within UNECE countries and in particular, the Survey of Health, Ageing and Retirement in Europe (SHARE) and EU SILC. For the indicators on transfers, possible sources would be SHARE, and other household surveys such as the household budget survey in Switzerland and the American Housing Survey (AHS) in the United States. For the indicators on voluntary work, for which availability is more widespread, possible sources include the General Social Survey, time use surveys and Labour Force Surveys.

225. For all these indicators, there are challenges associated with their definitions, specifically:

- a) Percentage of population providing unpaid care to own children and grandchildren and percentage of population providing unpaid care to older adults: these lack a specific time reference or quantification of the amount of care (in hours per week or month), which precludes harmonized comparisons at the international level. The definition of these indicators should also clarify

<sup>66</sup> As explained in paragraph 28, it is understood that this is not always possible, but it is recommended to aim for five-year age groups to the maximum possible extent.

- whether they refer to only care provided by co-resident household members, or also to those outside the same household.
- b) Participation and volunteering. This indicator is not conceptually distinct from indicator 5 (voluntary work in the last 12 months), since both refer to voluntary work. Another weakness is the combined presence in the indicator of two different concepts, neither of which has a clear definition in itself ('participation' and 'volunteering').
  - c) Time spent in unpaid activities (outside own household): this indicator requires a more precise specification of the kind of activities to be considered. Some countries already collect data on 'unpaid activities', but it is essential define clearly which kind of these are of interest in this context, i.e. which should be included in the realms of 'participation', 'political life' and 'volunteering'.
  - d) Voluntary work in the last 12 months. This indicator requires a clear definition of 'voluntary work', and the reference period should be reconsidered. The adoption of the ILO definition of 'voluntary work' could be an appropriate and easy solution. It is also advisable, again in accordance with the recommendations of the ILO, to consider voluntary work carried out over the last four weeks.
  - e) Living arrangements. Older people's living arrangements have strong policy implications as they affect health and well-being, social inclusion, giving and receiving of care and the risk of institutionalization.
  - f) Intergenerational transfers. A clear and agreed-upon definition for this indicator is absent, and must be developed before countries can be expected to produce the indicator on a regular basis. Indeed, not only the indicator but the underlying concept needs to be clarified, to ensure a shared understanding of what is meant by a transfer. The definition of the indicator then needs to specify a reference period, the nature of what is transferred, and the age or age group of these between whom the transfer takes place.

## 6.4 Addressing data gaps and issues

226. It is clear from the foregoing section that there remain some very large gaps in the availability of indicators to measure intergenerational solidarity, with two out of the four identified domains offering no possible indicators, and the six indicators proposed for remaining two domains being poorly-defined and not widely available. This section therefore examines the possibilities for expanding the range of indicators for the four domains.

### 6.4.1 Domain 1: Intergenerational transfer of knowledge

227. The identification of potential indicators of transfer of knowledge requires recognition that such knowledge and opportunities can take a variety of different forms. These include, of course, the accumulated knowledge and formal, profession-specific competencies of older or retired employees. However, they also include implicit knowledge based on personal perspectives, attitudes and emotions. Effective exchange of both implicit and explicit knowledge (in both directions, from older to younger and vice

versa), whether taking place through formal or informal channels, can enable companies to save the costs of training and courses for new employees; protect themselves against generational conflicts and build a base of corporate skills and professional vision across all generations of employees.

228. As outlined above, the intergenerational transfer of knowledge and opportunities is not limited to the workplace but can also occur in the context of organized educational and cultural activities. Information on education and training in the years both preceding and following retirement could shed some light on this kind of knowledge transfer.<sup>67</sup> Moreover, this kind of information can be considered an indirect measurement of social and political interventions designed to value and motivate older people, itself a manifestation of intergenerational solidarity. When correctly identified, indicators relating to the pre-retirement period, being directly tied to the labour market organization, could be calculated through appropriate questions added to an already harmonized source such as Labour Force Surveys.

### 6.4.2 Domain 2: Educational campaigns

229. The measurement of the existence and efficacy of educational campaigns on issues of population and individual ageing, including campaigns designed to combat ageism, is not simple. As an indirect measure of the efficacy of efforts to combat ageism, people could be interviewed about their agreement with statements that reveal the presence of a more or less conscious ageism. Those questions could be included in harmonized social surveys. Specifically, the Eurobarometer Survey on ‘intergenerational solidarity’ (Flash EB269)<sup>68</sup> highlights how the European Commission is interested in public opinions on ageing, since these are strategically important to promote policies on social cohesion and solidarity among generations. Three crucial aspects emerge from the survey results:

- a) perceptions about relationships between younger and older Europeans
- b) perceptions about the affordability of pensions and elderly care
- c) perceptions about institutional responsibility as far as intergenerational policies are concerned

230. As well as the measurement of attitudes and opinions, there is a need to link any change in these to specific educational campaigns. Such analysis would need to be undertaken at the national level, as it is not clear how information on relevant interventions could consistently be collected across countries. Nonetheless, sharing across countries of success (or otherwise) of educational campaigns aimed at tackling ageism, promoting healthy, active ageing and highlighting the challenges for younger generations as well as older ones will be important, and further work is required to investigate how this can be achieved and reliably measured.

### 6.4.3 Domain 3: Older people’s unpaid contributions to society

231. Recognition of older peoples’ unpaid contribution to their own communities and society in general is crucial for the maintenance of intergenerational solidarity, although the exact nature of these contributions will vary across countries. Indicators have been

<sup>67</sup> Such data are available, for example, in the EU-LFS.

<sup>68</sup> See [http://ec.europa.eu/public\\_opinion/flash/fl\\_269\\_en.pdf](http://ec.europa.eu/public_opinion/flash/fl_269_en.pdf)



proposed for each of the two sub-domains of Provision of informal care and voluntary work, but further work is needed to refine their definition before any data can be feasibly collected across the UNECE area.

#### **6.4.4 Domain 4: Intergenerational relations**

232. It is clear from the foregoing sections that intergenerational solidarity is multifaceted. Research and policies on intergenerational solidarity need to consider intergenerational transfers, which can be both monetary (i.e. help to purchase a home) and non-monetary (such as service or care transfers).

233. In relation to cash transfers between generations, the economic literature confirms that vertical transfers from adults to young people are very common in all industrialized countries.<sup>69</sup> The specification of indicators needs to capture the direction of transfers, their size, frequency, and the ages and/or generations between which they take place (e.g. grandparents to grandchildren, working-age adults to retired adults, etc.). Some indicators already exist across the UNECE countries, as reflected by one of the six indicators in Table 8 above, but further work is still required to refine definitions before they can readily be collected more widely. The Luxembourg Wealth Study Database,<sup>70</sup> EU-SILC and the Generations and Gender Surveys (GGS) are the internationally available sources on this topic.

234. With respect to housing, the harmonized data from the Luxembourg Wealth Study Database offer a meaningful indicator to analyse the different economic conditions of younger and older generations: the home ownership rate by age of the principal earner. In fact, all countries register a sharply lower rate among young population than among older age groups. Through the EU-SILC it would also be interesting to analyse the help that young people receive from their parents to buy a first house, in order to measure the extent to which independent living of younger people is dependent upon parents' monetary transfers.<sup>71</sup>

235. Informal care represents another area that needs to be clearly operationalized before indicators can be selected. It is important to capture intergenerational solidarity in care and to take into account its bidirectionality: e.g. grandparents' care vs. nurseries and the increasing prevalence of adult children caring for their older parents. The former (provision of informal care by older people) is already captured within the third domain, but the provision to care to older people also needs to be taken into account. One such indicator could be care provided in the last four weeks for parents or grandparents.

236. As previously noted, SHARE, EU SILC and GGS could potentially be sources of data for such indicators on informal care for older people, enabling the consideration of co-residence of the generations involved. Time-use surveys also collect data on such transfers from parents to children and vice versa in terms of time, which enables the quantity of care provided to be quantified.

237. In terms of intergenerational contact, the Vienna Declaration mentions the need to recognize the value of and foster "the joint volunteering of people of all ages" as a means of maintaining and enhancing intergenerational solidarity. In addition to the

---

<sup>69</sup> Albertini and Kohli (2012)

<sup>70</sup> See <http://www.lisdatacenter.org/our-data/lws-database/>

<sup>71</sup> Aassve & Vitali (2013)

indicators on voluntary work included within the third domain, measuring such activity would need additional information on the involvement of different generations.

## 6.5 Quality and comparability of the data

238. In recent years, much scientific effort has been devoted to operationalizing the concepts included within the topic of intergenerational solidarity. The OASIS Programme,<sup>72</sup> for example, was one of the first efforts to define the dimensions and measures of intergenerational solidarity. Large, internationally-comparable datasets for quantifying intergenerational solidarity include SHARE – Survey of Health, Ageing and Retirement in Europe,<sup>73</sup> and the Generations and Gender Surveys.<sup>74</sup>

239. These large and high-quality datasets, however, are insufficient for a satisfactory production of harmonized indicators of intergenerational solidarity across the UNECE region (notwithstanding the lack of agreed definitions as discussed in the two preceding sections). Each survey or project is conducted through the lens of specific political, economic and/or academic aims, with a lack of articulation of the kind that would be offered by a coordinated effort on the part of national statistical offices: the exact nature of survey questions posed, the design of the samples, the time periods covered, and the geographic coverage are not ideal for the present purposes.

240. Hence it is of the utmost importance that statistical offices take the lead in reaching agreements on concepts and measures to represent accurately the phenomena in question; to standardize those measures and the data underlying them; and to produce them on an agreed and common schedule.

## 6.6 Dissemination and communication

241. The demand for indicators on intergenerational solidarity has increased significantly in recent years. Such indicators are called for by policymakers in order to facilitate the design, implementation and evaluation of relevant policies and programmes; and at the same time, they are useful for citizens in general, to permit them to assess the adequacy and effectiveness of the policies directed at them and at their societies.

242. The nature of such demand for indicators of intergenerational solidarity, however, differs widely between countries. In combination with the persistent lack of clarity in conceptualizing the issue; the heterogeneity in data-gathering processes and data products; and the variation in financial resources among different national statistical offices, this results in a substantial variability in the availability of indicators or the data from which indicators can be constructed, in both quantitative and qualitative terms. Indicators are often calculated for one-off projects or specific needs, without a global framework, precluding comparison across time or space.

---

<sup>72</sup> Lowenstein and Ogg (2003)

<sup>73</sup> See <http://www.share-project.org/>

<sup>74</sup> See <http://www.ggp-i.org/>



243. The relative underdevelopment of indicators of intergenerational solidarity (as compared with the other themes of the Vienna Declaration), while posing a great challenge, offers at the same time a unique opportunity to design and organize further development of indicators in a collaborative way, bringing together countries to define concepts and plan data collection activities with an international perspective. This could, if managed effectively, permit easier harmonization and comparability across countries as compared with the indicators used in those thematic areas that are already more advanced, such as health.

244. The heterogeneity in operationalization of concept, collection of data, and production of indicators is echoed once more in the arena of dissemination. The need for uniform criteria and standardized methodology is as just great and its absence as keenly felt, when it comes to publishing what is available and empowering users to access and understand the data.

245. ‘Dissemination and communication’ does not only mean communication of data, but also of ideas and awareness. The international statistical community has a duty to increase awareness of the topics, and should therefore attempt to play a coordinating role by bringing together experts and stakeholders to share knowledge, experiences, projects and best practices at a national, European and international level. Further initiatives to discuss concepts, analyse data and design research projects are necessary in order to make much-needed progress in the development of statistics in the area of intergenerational solidarity.

## 7 Institutional population

---

### 7.1 Introduction

246. Most surveys that provide data for ageing-related indicators are limited to individuals living in private households. As a consequence, many indicators, especially those on health and disability, may not fully represent older people, many of whom live in institutions or residential settings different from a private household. In particular, it is likely that epidemiological indicators, such as the prevalence of poor physical and mental health and functional disability, will underestimate the true population values if based on population in private households only.

247. About 60 per cent of countries cannot provide statistics on the institutionalized population for self-reported health, chronic illness or health problem, and psychological distress. On the other hand, countries that produce statistics on the indicator years of life with disability are able to provide breakdowns by institutionalization. Data on people living in institutions are not available for seven out of the ten proposed indicators, on average. It may be somewhat ironic that the population group that is known to have problems with health and independent living is systematically excluded from most national data sources from which statistical indicators are generated. The proposed new framework regulation on European statistics relating to individuals and households also foresees covering private households only.

248. This problem is well documented in the context of the collection of health data, but it is certainly not limited to this type of data. Indicators in the domain of social inclusion are also likely to be affected. Without surveys it is also difficult to estimate the range of limitations institutionalization sets on individual independence and how those limitations vary by health. In the case of health surveys, the European Commission set up a task force –The European Health Interview Survey (EHIS) task force No. IV – to discuss the problem in 2011.<sup>75</sup> This chapter is partly based on their findings.

### 7.2 Representativeness issues

249. As alluded to above, surveys whose target population is limited to people living in private households are not likely to be representative of the entire population, especially the population of older people. An obvious reason is that ill health or disability is often the very reason for an older person to move to a nursing home or some other form of assisted living. As a result, surveys based on private households are likely to produce biased estimates of ageing-related phenomena, especially those that are health-related. The extent of the bias will depend on the heterogeneity of the older population in the two settings, and this in turn will depend on the national (or regional) criteria that govern admission into residential care facilities.

250. Health and social policy practices, such as incentives to allow older people with functional limitations to stay in their own homes, are also likely to influence the relative characteristics of the two groups of elderly people. These policies, together with cultural

---

<sup>75</sup> European Commission (2011)

differences regarding the role of the family as caretakers for their elderly members, can be expected to lead to substantial cross-country differences in the size and characteristics of the older age groups living in private households, and this may seriously compromise the international comparability of certain ageing-related indicators.

251. Using administrative data to measure the health and independence of people living in institutions is also problematic. In some instances, people living outside institutions are included in administrative data from these institutions because surveys usually cover people in their permanent residences, and people living in institutions usually stay there for a limited, albeit sometimes repeated, period. Consequently, optimal comparability can only be achieved if the total population is represented in surveys. Additionally, there is some ambiguity about the sample size, as it is not always clear whether numbers refer to individuals, households or other units.

## 7.3 Sampling issues

252. Several sampling questions need to be addressed.<sup>76</sup> These are analysed below.

### 7.3.1 Which types of institutions should be included?

253. People not living at home in a private household can live in different kinds of institutions or ‘collective households’, depending on their age and other circumstances: prisons, homes for the elderly and nursing homes, convents, military barracks, children homes, etc. The EHIS task force recommends inclusion of at least the most common ones, i.e. the homes for the elderly and nursing homes. In the context of data collection on ageing-related topics, this seems to be the natural choice.

### 7.3.2 Duration of stay

254. Older people, especially those with ill health, often move between living arrangements (at home, in hospitals, day care centres, nursing homes). Consequently, a criterion needs to be chosen to define how long a person must have been living in a collective household in order to be considered living in an institution. Alternatively, the concept of the ‘usual place of residence’ could be used, as defined for population censuses.<sup>77</sup>

### 7.3.3 Sampling frame

255. The breadth of the health status, needs, access to appropriate care, and how this varies by age and sex among the institutionalized population currently cannot be described through household surveys and should not be assumed on the basis of their institutionalization at a health care facility. Countries should, therefore, consider approaches to include institutions in their survey sample frames, and the extent to which uniform use of proxy respondents would be appropriate. To the extent that administrative

<sup>76</sup> See also European Commission (2011)

<sup>77</sup> UNECE (2015a)

sources and institutional data collections can serve as the basis for statistical indicator estimates, standard data quality and linking methods would be needed. Since not all countries maintain national registers, the EHIS task force recommends two alternative methods (in order of preference): using census or national registers with updated addresses, or compiling and using comprehensive lists of institutions.

## 7.4 Practical issues

256. In addition to the potential problems associated with contacting institutions in order to interview some of their residents, a major difficulty arises when sensory or cognitive impairments of the interviewee hamper the normal interview procedure. In cases where the impairment is only sensory, the EHIS task force proposes proceeding with the direct interview using alternative means. However, in the case of cognitive impairment an interview by proxy is often inevitable. In this case, clear instructions are needed to guide the interviewer. In particular, the instructions should specify who is eligible to act as a proxy. The fact that the interview is answered by proxy and the nature of the proxy (e.g. family member, nurse, other institution staff) should be recorded in the questionnaire. In addition, it should be borne in mind that certain topic areas are not appropriate for proxy interviewing—for example, questions on subjective well-being or on sensitive personal matters.

257. A further practical issue related to the inclusion of institutional populations in surveys arises from the fact that the survey instruments are designed with the majority private household population in mind. Hence some questions may not be applicable to those in institutions, or may require adaptation to make them applicable. This could lead to practical difficulties in terms of designing the structure of questionnaires, and in certain cases may mean that separate data collection for institutional residents is necessary.

## 8 Dissemination and communication

---

### 8.1 Introduction

258. It is important that published statistics are relevant to questions that are of interest to policymakers, and are communicated in such a way as to ‘paint a picture’ that accurately characterizes the situation of older people in society. It is also becoming increasingly important to consider the communication of statistics to a wider audience, given the increasing demand for statistics and the improving statistical literacy of users. Communication and dissemination of ageing-related statistics should be part of a wider organizational strategy to engage with the media, using suitable communication channels.

259. For general guidance and good practices on dissemination and communication of statistics, we refer to the UNECE guidebook series *Making Data Meaningful*.<sup>78</sup> These cover a range of topics, from presentational considerations for statistical communication, to media communications and statistical literacy. Part 4 of this series, a guide to improving statistical literacy,<sup>79</sup> identifies a number of ways that a statistical organization can support evidence-based policymaking, including the following:

- a) increasing access to statistical information
- b) developing communication channels
- c) establishing consultative forums.

260. Each of these is considered in turn below, insofar as they are relevant to ageing.

### 8.2 Improving access to statistical information

#### 8.2.1 Tabulation tools

261. In its examination of data availability, the Task Force reviewed the dissemination of a set of prominent ageing indicators across a number of UNECE countries. In this process, it was discovered that many indicators that were not disseminated could be calculated from the microdata of the primary source. Online tabulation tools can provide the user the actual opportunity to do this, by creating customized tables through a query of the microdata or of highly disaggregated data. This approach reduces the potential burden on statistical offices from requests for ad-hoc tabulation of microdata held by the statistical office. It does not require specialized skills from users or software that would be needed for processing the microdata directly. Furthermore, it does not raise the same legal and data confidentiality challenges that arise with the delivery of microdata to users outside the statistical office. Of course, safeguarding confidentiality remains a necessary and important challenge even when such tools are used, but confidentializing routines can be applied ‘on the fly’ (in real time) to the specific output created by the user with the analysis tool, rather than to an entire underlying dataset.

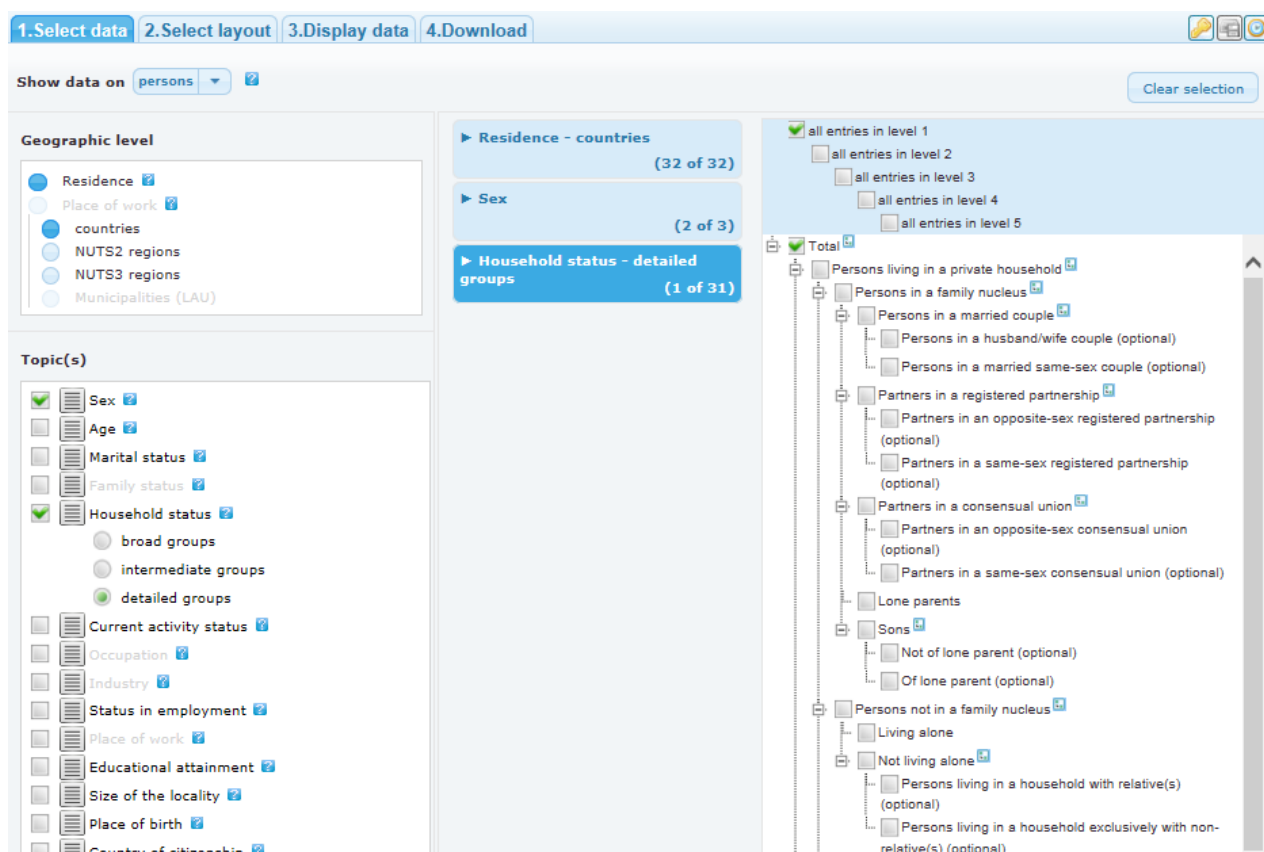
---

<sup>78</sup> [www.unece.org/stats/documents/writing.html](http://www.unece.org/stats/documents/writing.html)

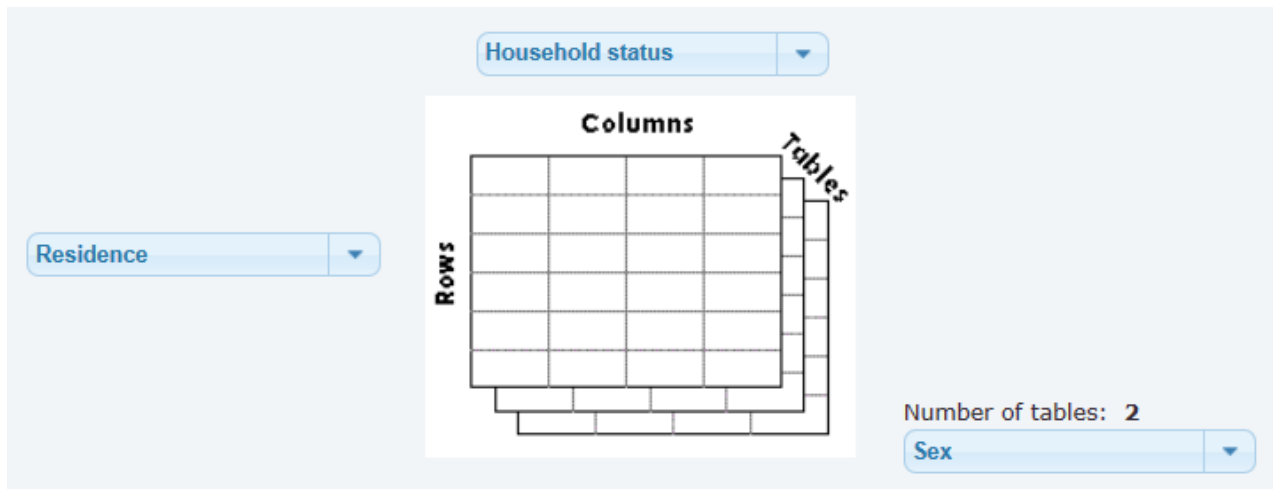
<sup>79</sup> [www.unece.org/fileadmin/DAM/stats/documents/writing/Making\\_Data\\_Meaningful\\_Part\\_4\\_for\\_Web.pdf](http://www.unece.org/fileadmin/DAM/stats/documents/writing/Making_Data_Meaningful_Part_4_for_Web.pdf)

262. One example of such a tool is that provided on Eurostat Census Hub website, which permits a wide range of user-defined queries of census data from hypercubes of highly disaggregated data tables. The flexibility of this tool, as well as the incorporation of data from multiple countries in one place, makes this an example of good practice for disseminating population data relevant to ageing (**Error! Reference source not found.**).

263. Users can use an interface to select which geographical regions and variables to enter into the query.



Picture 1 Eurostat Census Hub



Picture 2 Eurostat Census Hub: Tabulation of results

264. Users are then able to choose how the results are tabulated (**Error! Reference source not found.**), before the query is generated, and the resulting data tables are made available for download.

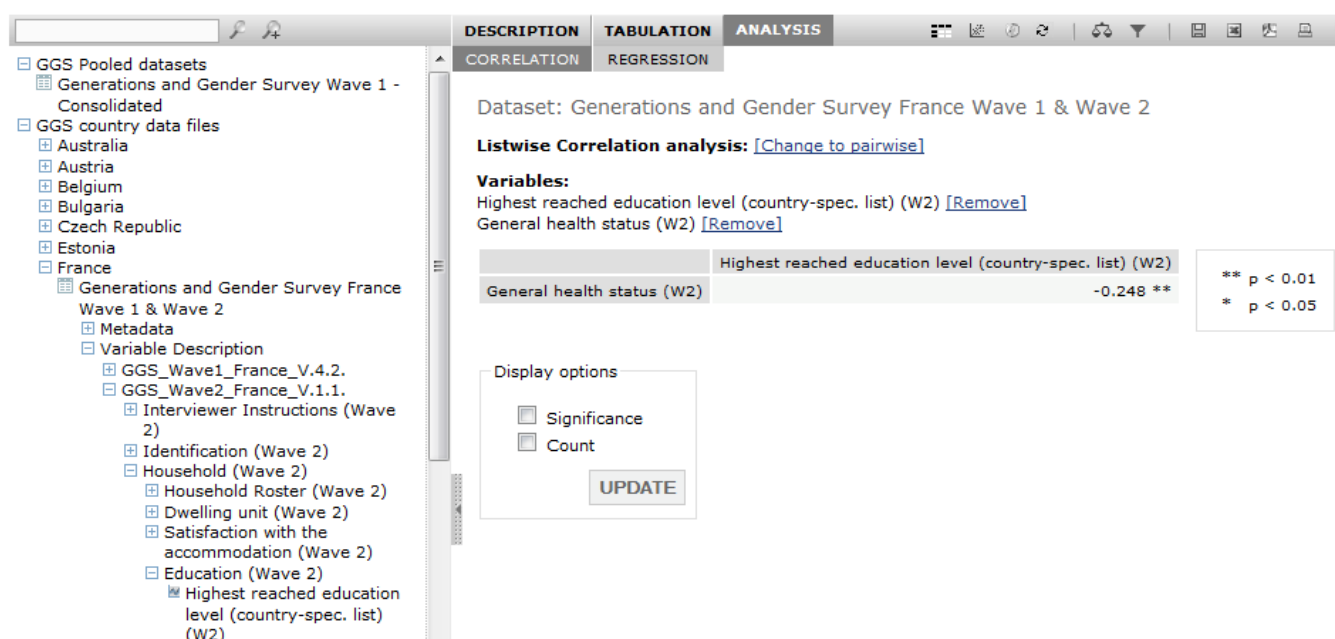
265. The large number of individual records and the complete coverage of the population make census data particularly suitable for user-defined queries, because it is easier to achieve a minimum cell-count to minimize the risk of disclosure of personal details. Nevertheless, it may be worth examining the possibility of adopting a similar tool to query survey data, particularly for surveys with large sample sizes.

266. Examples of this already exist, such as for the Generations and Gender Survey, which allows online tabulation of microdata, as well as some statistical analysis.<sup>80</sup>

267. The left pane allows selection of survey variables conducted in particular countries, while the right hand side allows tabulation, weighting, and correlation and regression analysis (**Error! Reference source not found.**). In the example shown below, a statistically significant correlation is found between educational attainment and general health status in France. In countries that have undergone multiple waves of the survey, longitudinal information is available.

268. Tools such as the Eurostat Census Hub and the Generations and Gender Survey online analysis tool can be seen as good practices for user-friendly tabulation of microdata. Nevertheless, it must be borne in mind that such tools come at a cost to providers, including the costs of obtaining and maintaining the necessary software, secure online storage of datasets, and providing training or guidance both for staff and for end users.

<sup>80</sup> Available at [www.ggp-i.org/online-data-analysis.html](http://www.ggp-i.org/online-data-analysis.html).



Picture 3 Generations and Gender Survey: online tabulation and analysis of microdata

## 8.2.2 Access to microdata

269. While online tabulation tools can be a flexible method of providing bespoke tabulations of data, some users still require microdata. Examples of such need may arise for certain analytical modelling techniques, or where a user wishes to match individual records to data from another source. Some surveys grant access to microdata upon registration of users,<sup>81</sup> while others require signing of a pledge and agreement.<sup>82,83</sup> Where feasible, it is desirable for means of remote access to microdata (from surveys or population registers) to be made available to users.

270. Data confidentiality concerns are a major challenge in the provision of access to microdata. The creation of anonymized public use microdata files is one potential approach to this, used for example by Spain and Canada. Spain's statistical office (INE) provides public use files freely on its website, and has found them to be highly valued by academic researchers.

271. A number of NSOs offer access to microdata under licence agreement, which allows access to a range of individual-level data sources from within those offices. Interested users must apply to the statistical offices to be granted a licence, outlining the proposed use of the data. Restrictions based on the affiliation or source of research funding apply (see examples from Denmark<sup>84</sup> and Norway<sup>85</sup>). The services may include only access to anonymized data, or they may extend to the possibility of combining other data with those of the registers, as in Finland.

<sup>81</sup> See the European Social Survey: [www.europeansocialsurvey.org/data](http://www.europeansocialsurvey.org/data)

<sup>82</sup> See the Generations and Gender Survey: [www.ggp-i.org/create-an-account.html](http://www.ggp-i.org/create-an-account.html)

<sup>83</sup> See EU-SILC:

[http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/documents/How\\_to\\_apply\\_for\\_microdata\\_access\\_1.pdf](http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/documents/How_to_apply_for_microdata_access_1.pdf)

<sup>84</sup> <http://www.dst.dk/en/TilSalg/Forskningsservice.aspx>

<sup>85</sup> [http://www.ssb.no/a/english/mikrodata\\_en](http://www.ssb.no/a/english/mikrodata_en)



272. The following case example of Statistics Finland outlines the data sources, format and means of access.

273. Statistics Finland's researcher services offer unit-level data (i.e. microdata), for scientific studies and statistical surveys. In compiling research data, versatile use can be made of:

- a) data from the Register of Enterprises and Establishments
- b) data describing persons and housing
- c) variables related to employment relationships, and wages and salaries
- d) microdata produced by Eurostat

274. The data selection comprises:

- a) ready-made research data
- b) research data tailored from Statistics Finland's data
- c) combinations of statistical data with the researcher's own data or those released by other organizations

275. Modes of data delivery comprise:

- a) use of data via their remote access system
- b) use of data at their Research Laboratory
- c) release of sample data to the researcher

276. The release of microdata is subject to a user licence, and the compilation and release of data produced is subject to Finland's statistical legislation, as well as other data protection and confidentiality practices specified in legislation.

277. The price of the assignment is determined on the basis of its extent, requirements and the mode of use of the data.

### 8.2.3 Metadata

278. When data are pulled together from different sources, ensuring that proper metadata appears with the statistics should be an integral part of the dissemination of statistics, and considered within the overall communication strategy of a statistical office. Such metadata is important for making valid international comparisons, but also more generally to help users to understand what is included or excluded within the scope of particular statistical data items.

279. The UNECE Gender Statistics Database provides an example of providing metadata alongside disseminated statistics, in the form of database footnotes (**Error! Reference source not found.**).

Population, 5-year Age Groups, by Age, Sex, Country and Year						
	1980	1990	1995	2000	2005	2010
85 - 89						
Female						
Albania	..	..	..	..	6874	13959
Armenia	8588	..	10147	10816	7315	..
Austria	39116	58053	67908	108109	99449	138495
Azerbaijan	9900	16000	18200	11366	10271	19911
Belarus	34855	50823	54835	74194	57981	81700
Belgium	50323	76115	84801	137710	126286	170042
Bosnia and Herzegovina	4452	7178	8000	12590	4556	17920

.. - data not available

**Source:** UNECE Statistical Database, compiled from national and international (Eurostat and UNICEF TransMONEE) official sources.

**Definition:** Total mid-year or annual average population.

Total population provided in this table may slightly differ from total population provided in Economic Statistics, due to the use of different sources.

**Regional aggregates** are computed by UNECE secretariat. For more details, see the [composition of regions](#) note. Due to rounding, there may be slight differences between regional aggregates and the sum of the population of all component countries.

#### Country

##### Albania

1990-2000 : data refer to 1 January and are based on previous population censuses. From 2001 : data refer to mid-year and are estimated on the basis of 2001 Population Census.

1990-2004 : age group 80-84 refers to 80+.

#### Country

##### Armenia

1980-2001 : data are estimated on the basis of previous population censuses. From 2002 : data are based on 2002 Population Census.

1990 : age group 80-84 refers to 80+ ; 2001-2004 : age group 85-89 refers to 85+.

### Picture 4 The UNECE Gender Statistics Database: footnote-style metadata

280. The UNECE guide to presenting metadata ‘Getting the facts right’<sup>86</sup> provides general guidance on provision of metadata. However, in addition to the general guidance there are a number of examples of metadata, which deserve particular mention in relation to ageing-related statistics:

- whether or not institutional populations are covered by the figures: If included, what type of institutions covered/not covered
- whether the source has an upper age range that excludes some older people (e.g., some Labour Force Surveys)
- for subjective measures: whether cultural differences in responses between different countries (or different subpopulations) have been corrected for (e.g., using vignettes)
- those too ill to respond to surveys: Whether any measures were taken to allow data to be obtained for these individuals (e.g., proxy responses)
- for care provision: whether figures include informal care in addition to formal care
- whether unemployment figures for older age groups exclude those who are considered to have ‘retired’ or to be eligible to receive state retirement benefits.

281. Metadata should be provided for users of varying levels of statistical literacy. New technologies with interactive interfaces that provide easily-accessible statistics can provide both opportunities and challenges for ensuring that users understand the

<sup>86</sup> [www.unece.org/publications/getting\\_facts\\_right.html](http://www.unece.org/publications/getting_facts_right.html).

accompanying metadata: footnotes for online tools, as well as user guides are generally recommended.<sup>87</sup>

282. Such metadata can provide an opportunity to raise users' level of understanding of the statistics, for example:

- a) the difference between cross-sectional and cohort-derived figures
- b) differences between traditional (years elapsed) and prospective (years remaining) measures of life expectancy
- c) how life expectancy figures based on synthetic cohorts don't account for possible future changes to mortality rates
- d) how mortality rates for certain groups can be influenced by migration

283. Consideration should be given to the naming of indicators. In chapter 2, Demographic measures of ageing, it is recommended to rename the dependency ratios (TDR, OADR) to demographic ratios, to avoid the misleading belief that those over age 65 are not employed, particularly given the current low employment rates of youths. As a minimum, metadata should clearly highlight such features of the data to avoid misinterpretation.

## **8.3 Developing communication channels and tools**

### **8.3.1 Single website for ageing-related statistics or publications**

284. It is recommended that national statistical offices should have a webpage dedicated to ageing-related statistics, which pulls together into one location relevant statistics on different areas of interest (e.g. health and labour markets). This allows users to find information relevant to ageing easily without separate visits to many different webpages. It also provides a place where any multi-thematic publications related to ageing can be made available. Such dedicated webpages should, where possible, be designed in such a way as to facilitate their use by older people (for example by following established standards on web accessibility). There may be resource constraints in designing and maintaining such portals, but these should be weighed carefully against the benefits of enhanced accessibility and use of available statistics.

285. One comprehensive example of a webpage dedicated to ageing-related statistics is that of the Italian National Institute of Statistics (ISTAT), which includes a portal called 'Elders'. 'Elders' is an innovative data warehouse that collects and organizes statistical data produced by ISTAT on population ageing in its different aspects, in order to make them more accessible and customizable to policymakers, researchers, journalists and citizens (Picture 5).

---

<sup>87</sup> See chapter 4 in UNECE (2013).



Picture 5 Ageing website from the Italian National Institute of Statistics (ISTAT)

286. Data and analysis are organized in a homogeneous and coherent way through themes, topics and indicators, which users can customize according to their objectives. In pictures 6 and 7, for example, one can observe the structure of pages dedicated to the theme 'population and families': in the first one, the user can read an introduction to the theme and a table that presents some crucial indicators. From this page, the user can access three dedicated pages that explore each topic in more depth.

Home / Sistema informativo anziani / Popolazione e famiglie

## Popolazione e famiglie

**TUTTO È RELATIVO. PRENDI UN ULTRACENTENARIO CHE ROMPE UNO SPECCHIO: SARÀ BEN LIETO DI SAPERE CHE HA ANCORA SETTE ANNI DI DISGRAZIE. (Albert Einstein)**

La popolazione italiana sta rapidamente invecchiando.

Il processo di modernizzazione e di secolarizzazione sociale da un lato e il progresso medico-scientifico dall'altro, negli ultimi decenni hanno profondamente inciso sulle due principali determinanti demografiche della crescita della popolazione (o della sua decrescita): fecondità e mortalità.

La persistenza del tasso di fecondità ben al di sotto della soglia naturale di sostituzione (2,1 figli per donna) e il raggiungimento di traguardi un tempo ispirati dalla speranza di vita per le donne e per gli uomini, fanno dell'Italia uno dei Paesi con il più alto indice di vecchiaia al mondo.

**Popolazione e famiglie in un flash**

Indicatore	Anno	Valore	Var. % sul 2004
Età media della popolazione	2014	44,2	+4,5
Numero medio di figli per donna	2013	1,39	+3,7
Indice di vecchiaia	2014	154,1	+13,6
Indice di dipendenza degli anziani	2014	33,1	+14,9
Speranza di vita alla nascita - maschi	2013	79,8	+2,4
Speranza di vita alla nascita - femmine	2013	84,6	+1,2
Speranza di vita a 65 anni - maschi	2013	18,5	+6,9
Speranza di vita a 65 anni - femmine	2013	22,0	+3,3

Per leggere meglio le determinanti e le implicazioni demografiche dell'invecchiamento della popolazione, viene offerta una lettura sistematizzata - attraverso dati, grafici e documenti - di tre dimensioni di analisi:

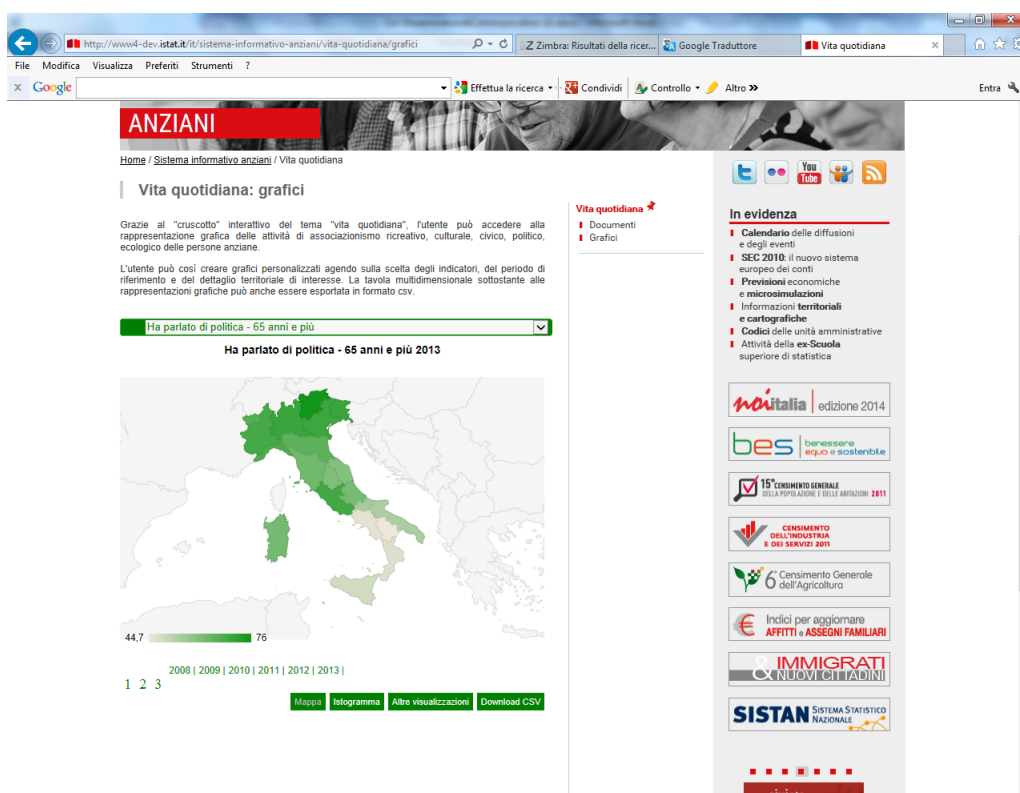
- Struttura e dinamica demografica
- Previsioni demografiche
- Contesto e forme familiari

Istruzione, formazione e lavoro | Condizioni socio-economiche | Stili di vita e salute | Cultura, uso dei media e nuove tecnologie | Vita quotidiana

**The three topics that subdivide the theme “population and families”**

Picture 6 Structure of pages dedicated to population and families (ISTAT website)

287. For each theme, a page is dedicated to indicators' graphic representations, through which users can customize maps, tables and graphs by changing variables, reference periods and heads and sides of the tables, according to their objectives. Moreover, data are organized in multidimensional tables, which users can export in .xls and .sdmx formats to work on their own.



Picture 7 Graphic representation of indicators (ISTAT website)

288. Other examples of such practices include Statistics Canada's website (Picture 8), which has a 'seniors' section of its website with links to multiple topics that concern older people and the Czech Statistical Office, which has a 'publications about seniors' webpage (Picture 9).



The screenshot shows the Statistics Canada website. The header features the 'Statistics Canada' and 'Canada' logos with a red maple leaf. A search bar is located on the right. Below the header, there are navigation tabs: 'Information for...', 'Browse by subject', 'Browse by key resource', and 'Help'. The main content area is titled 'Seniors' and includes a sub-section 'Statistics by subject' with links for 'Feeds' and 'What's new?'. A featured image shows an elderly couple. To the right, there is a 'Featured products' section listing 'Canada Year Book (Seniors)', 'Perspectives on Labour and Income (Seniors)', and 'Health Reports (Seniors)'. Below that is an 'External links' section with links to 'Veteran Affairs Canada', 'Health Canada', 'Human Resources and Social Development Canada', and 'Public Health Agency of Canada'. A 'Subtopics' section lists various topics like 'Seniors (general)', 'Care and social support', 'Elder abuse and victimization', etc.

**Statistics Canada**

**Canada**

Information for... Browse by subject Browse by key resource Help

Home > Statistics by subject

**Statistics by subject**

**Seniors**

**Feeds**

**What's new?**

Study: End-of-life care

**Featured products**

Canada Year Book (Seniors)

Perspectives on Labour and Income (Seniors)

Health Reports (Seniors)

**External links**

Veteran Affairs Canada

Health Canada

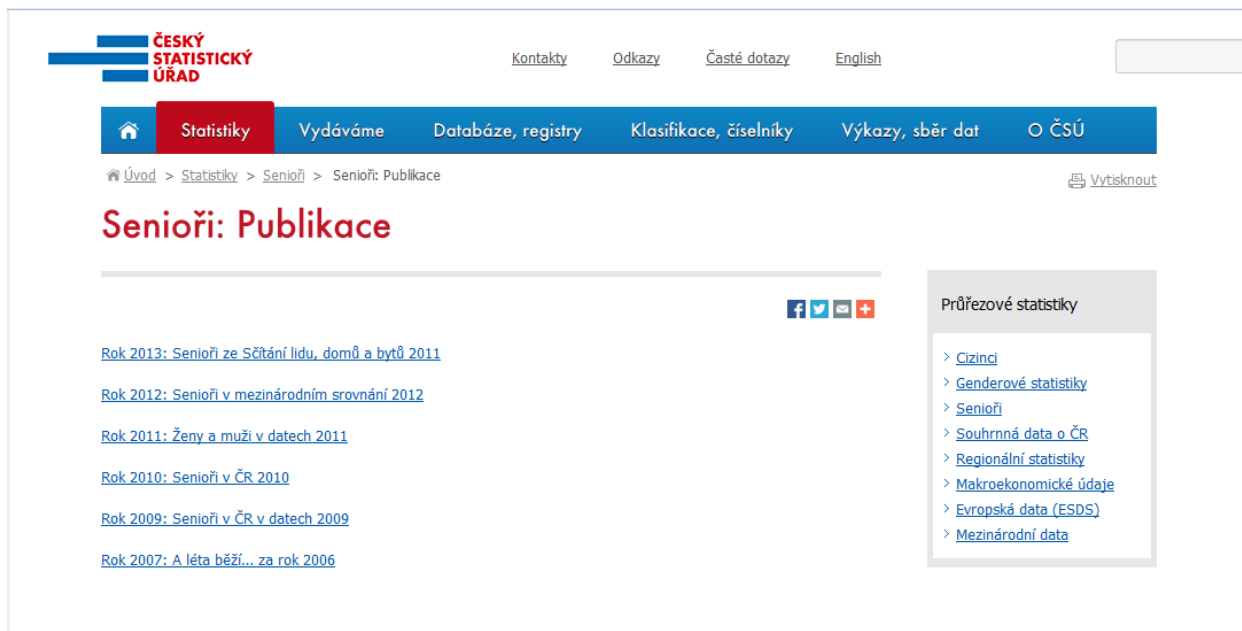
Human Resources and Social Development Canada

Public Health Agency of Canada

**Subtopics**

- Seniors (general)
- Care and social support
- Elder abuse and victimization
- Health and disability among seniors
- Housing and living arrangements
- Income, pensions and wealth
- Participating and volunteering
- Work and retirement
- All subtopics for Seniors

Picture 8 Website on seniors (Statistics Canada)



The screenshot shows the website of the Czech Statistical Office (Český statistický úřad). The header includes the office's name and a navigation menu with links like 'Kontakty', 'Odkazy', 'Časté dotazy', and 'English'. Below the header, there is a main navigation bar with links for 'Statistiky', 'Vydáváme', 'Databáze, registry', 'Klasifikace, číselníky', 'Výkazy, sběr dat', and 'ČSÚ'. The main content area is titled 'Senioři: Publikace' and lists several publications from 2007 to 2013, including 'Senioři ze Sčítání lidu, domů a bytů 2011', 'Senioři v mezinárodním srovnání 2012', 'Ženy a muži v datech 2011', 'Senioři v ČR 2010', 'Senioři v ČR v datech 2009', and 'A léta běží... za rok 2006'. A sidebar on the right titled 'Průřezové statistiky' lists various statistical categories like 'Cizinci', 'Genderové statistiky', 'Senioři', etc.

**ČESKÝ STATISTICKÝ ÚŘAD**

Kontakty Odkazy Časté dotazy English

**Statistiky** Vydáváme Databáze, registry Klasifikace, číselníky Výkazy, sběr dat ČSÚ

Úvod > Statistiky > Senioři > Senioři: Publikace

**Senioři: Publikace**

Rok 2013: Senioři ze Sčítání lidu, domů a bytů 2011

Rok 2012: Senioři v mezinárodním srovnání 2012

Rok 2011: Ženy a muži v datech 2011

Rok 2010: Senioři v ČR 2010

Rok 2009: Senioři v ČR v datech 2009

Rok 2007: A léta běží... za rok 2006

**Průřezové statistiky**

- Cizinci
- Genderové statistiky
- Senioři
- Souhrnná data o ČR
- Regionální statistiky
- Makroekonomické údaje
- Evropská data (ESDS)
- Mezinárodní data

Picture 9 Website for publications on seniors (Czech Statistical Office)



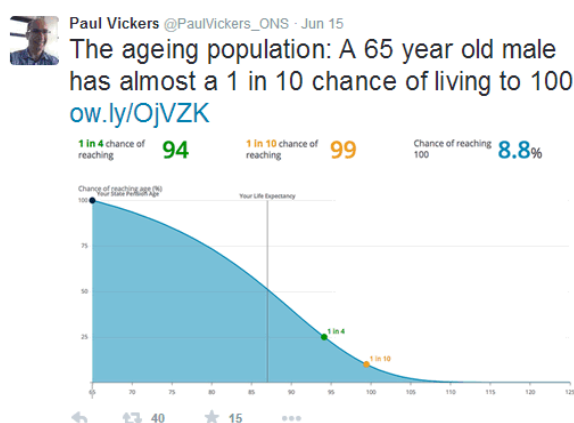
### 8.3.2 Using new means to communicate ageing-related statistics to a wider audience

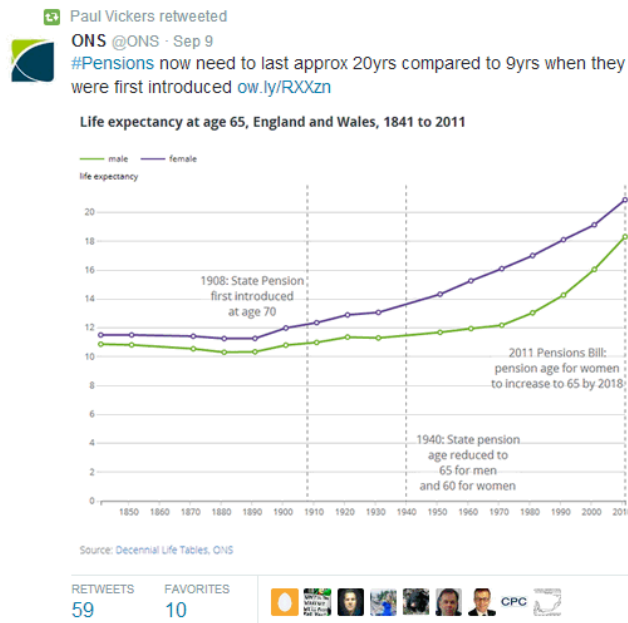
289. NSOs are increasingly employing new methods of outreach to communicate the results of their work to an ever widening audience. While a substantial proportion of users of official statistics are representatives of government departments and academic researchers, there is also increasing demand from businesses and members of the public, whose levels of statistical literacy are growing.

290. Given the far-reaching consequences of population ageing for both societies and individuals, it is particularly important to communicate ageing-related statistics to as wide an audience as possible, to encourage use of the statistics by policymakers, businesses and individuals who wish to make better-informed decisions when planning for the future.

291. Modern communication technologies have provided a wide array of methods for communication, giving statistical offices many choices for how to organize their outreach activities. The continuing and rapid evolution of technologies precludes any specific recommendation on particular methods that should be used. However, it is possible to describe in general terms the sorts of products that end users may find useful and appealing, while providing case examples of instances where statistical offices have utilized particular methods.

292. The first consideration in such outreach activities is to find ways to reach the people who might wish to consume ageing-related statistics. The case example below describes how the UK Office for National Statistics (UK ONS) has used social media to try to connect with potential end users (Picture 10). This particular platform is detectable via search engines, and contains an information feed that users can follow for regular updates of information connected to that feed. Such a method can pull in users who are conducting internet searches related to a particular topic, and allows information to be targeted to interested individuals.





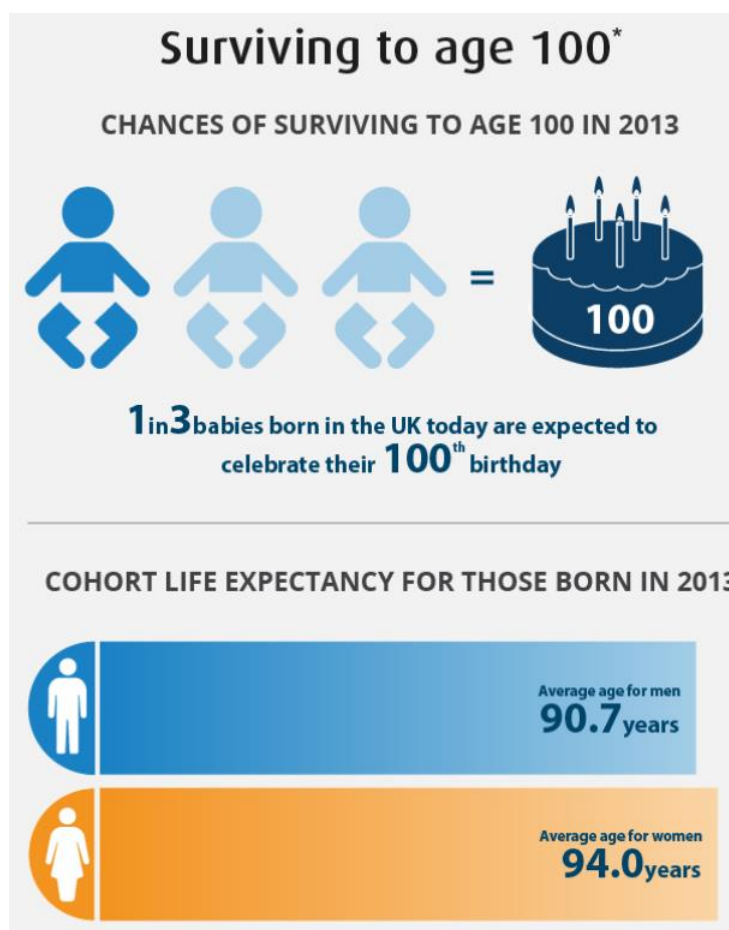
Picture 10 Use of *Twitter* (UK ONS)<sup>88</sup>

293. For those users who are interested in learning more about ageing through statistics, some consideration needs to be given to the forms of communication that are used to convey information.

### 8.3.3 Visualization tools for communication

294. Another method of communicating key messages on ageing to a less technical audience is through visualization approaches. Users often find statistics easier to understand and remember when they are displayed graphically or visually. Careful consideration should be given to what messages are intended to be communicated before choosing which method to use, and before designing the particular visualization. Different levels of sophistication can be geared towards users of differing levels of statistical literacy, and metadata made available should be tailored to the anticipated requirements of different types of users, as discussed in the separate subsection concerning metadata, above. An infographic (Picture 11) is an example of how visualization can be used to communicate simple key messages.

<sup>88</sup> <https://twitter.com/ONS>



**Picture 11 Infographic (UK ONS)<sup>89</sup>**

295. While infographics such as the one above are easy for members of the public to understand, users can also benefit from more sophisticated interactive visualization tools.

296. The example in Picture 12 illustrates an interactive visualization tool provided by the UK Office for National Statistics. As well as being able to select from various menu options, users can also play an animation of population pyramids to see how they evolve over time. The application to population pyramids is particularly appealing, given that it is possible to see how the impact of cohort effects (such as changing fertility rates) ripple through the pyramid during the animation. It would be hard to describe such a dynamic effect in words without using very technical language.

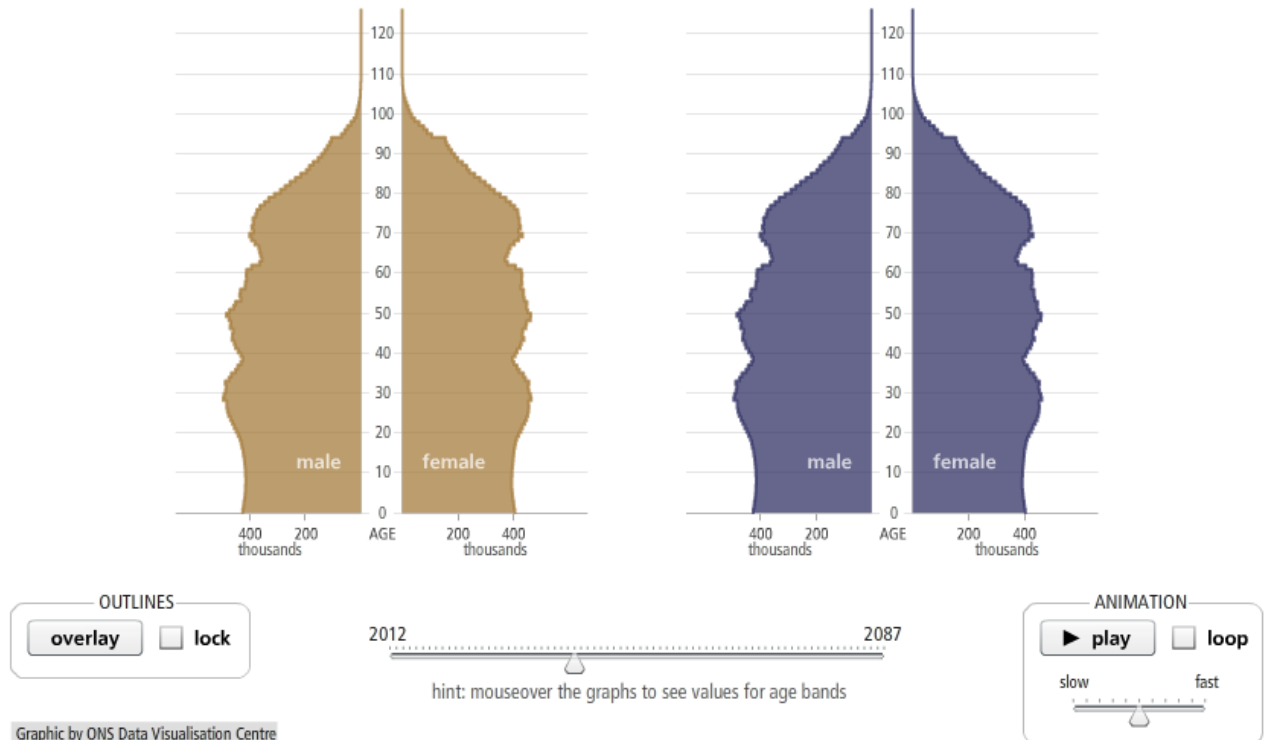
<sup>89</sup> <http://www.ons.gov.uk/ons/rel/census/2011-census-analysis/what-does-the-2011-census-tell-us-about-older-people-/what-does-the-2011-census-tell-us-about-older-people--full-infographic.html>

## UK National Population Projections - principal and variants, 2012-2087

Source: Office for National Statistics

full screen

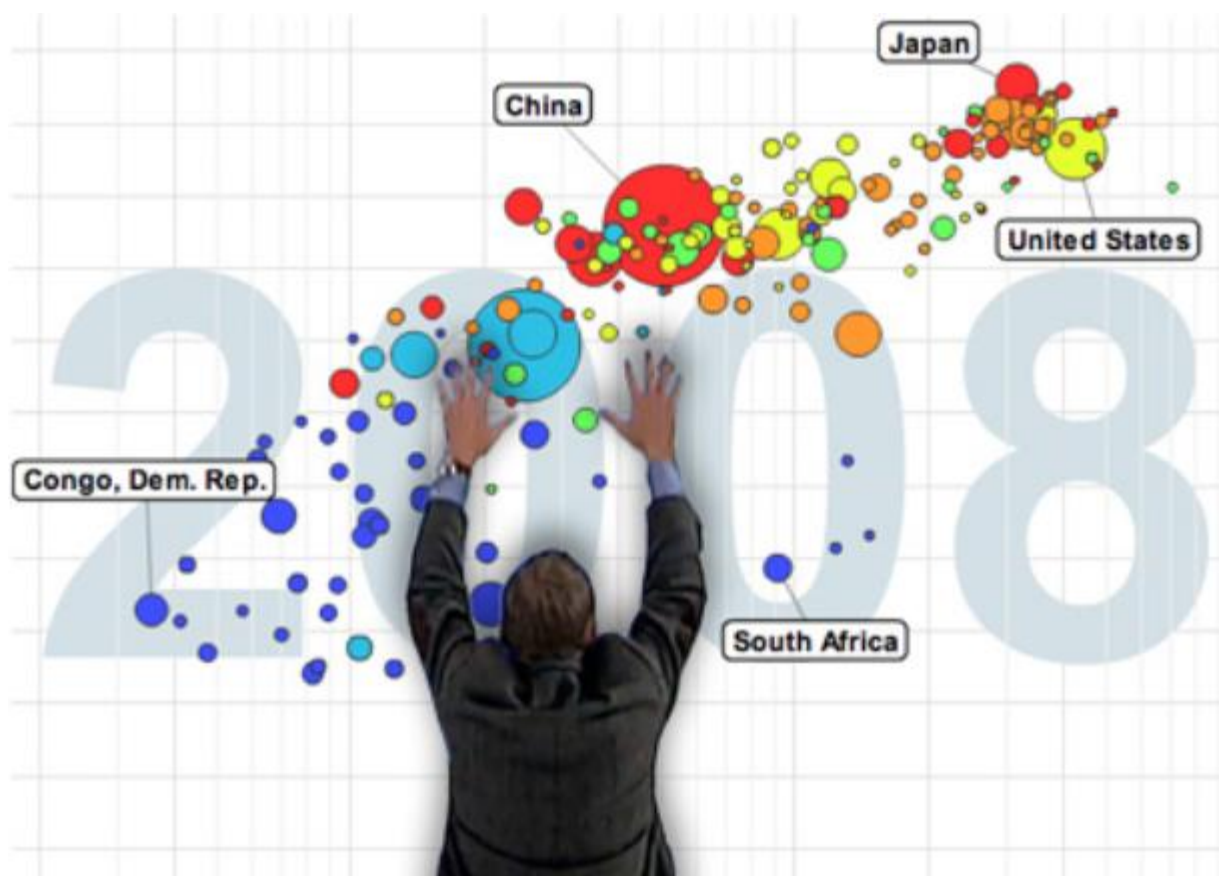
Principal 74.2 million 2040 74.2 million Principal



**Picture 12 Interactive visualization tools (UK ONS)<sup>90</sup>**

297. Another appealing example is that of the animations popularized by Hans Gosling, among others. Animated scatter graphs show how different groups of countries have changed over time with respect to various statistical variables (Picture 13). This sort of approach allows the animated charts to tell a story that would be complicated to relay in words.

<sup>90</sup> <http://www.ons.gov.uk/ons/interactive/uk-national-population-projections---dvc3/index.html>



Picture 13 *Gapminder*<sup>91</sup>

298. Finally, users are increasingly accustomed to the use of internet-provided mapping tools, and often seek geographical representation of statistics across different territories. Statistical offices may wish to consider making online mapping tools available to end users, subject to the feasibility of producing subnational breakdowns of statistics, as discussed in the separate subsection above.

299. An example of a thematic mapping tool is shown in Picture 14, which allows a user to very easily observe how a greater share of older people tend to be located in more rural or coastal areas of the United Kingdom: such a pattern would be much harder to detect without being displayed on a map.

<sup>91</sup> <http://www.gapminder.org/>



**Picture 14** *Geographic variation of population data (UK ONS)*<sup>92</sup>

**300.** While visualization tools are typically created using third party software, some are developed or adapted in-house. In such cases it would be of great value for NSOs to cooperate in sharing their methods and software code among the international statistical community.<sup>93</sup>

## 8.4 Consultative forums

**301.** Consultative or coordinating forums are a key way in which NSOs can orientate the production of ageing-related statistics towards the requirements of end-users. A number of countries have forums that coordinate the production of certain types of statistics, often with other government bodies who use those statistics for strategic planning and decision-making. It is recommended that national statistical offices participate in some coordination mechanism for the production and use of such statistics,

<sup>92</sup> <http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc235/index.html>

<sup>93</sup> This holds true not only for visualization tools for ageing-related statistics but for all statistical domains, and is facilitated, for example, by such platforms as the UNECE workshops on dissemination and communication of statistics.

at least between different parts of government, and possibly extending to academic and business-sector participants.

302. An example of a forum for coordinating ageing-related statistics is the Interagency Forum on Aging-Related Statistics in the United States of America. This forum is composed of 15 different agencies, and encourages collaboration to improve utility of aging-related data, by:

- a) widening access to information and data on the aging population through publications, etc.
- b) promoting communication among data producers, researchers, and public policy makers
- c) identifying data gaps and inconsistencies
- d) investigating questions of data quality

303. It is coordinated by the National Center for Health Statistics, and funded through interagency contributions. Its main statistical product is the chart book on older Americans, which includes a set of key indicators on well-being, as well as additional special publications. These are published on the Agingstats.gov website (see Picture 15).



Picture 15 Agingstats.gov website (Federal Interagency Forum on Aging-Related Statistics, USA)



## 9 Summary of recommendations

---

### 9.1 Role of national statistical offices

304. National statistical offices (NSOs) should endeavour to produce the indicators identified in these Recommendations, where relevant to each national situation.

305. NSOs should promote and participate in coordination mechanisms for the production and use of ageing-related statistics. It is desirable to establish such mechanisms for coordination among government agencies, especially where a range of different entities are responsible for collecting and compiling data. Coordination mechanisms could also be extended, where relevant, to civil society, academic and business-sector participants.

306. As in other areas of statistics, using internationally recommended and harmonized methodologies and definitions is important at every stage of the production cycle of ageing-related statistics, to ensure their quality and comparability.

307. In accordance with the Fundamental Principles of Official Statistics,<sup>94</sup> NSOs have a responsibility to ensure the greatest possible degree of access and understanding of the statistics they produce. There should therefore be a strong focus on ‘user empowerment’; that is, enabling data users to locate, interpret and make use of the available ageing-related statistics to the greatest extent possible.

### 9.2 Cross-cutting variables

308. Demographic indicators should be taken as the starting point of any compilation of ageing-related statistics.

309. All ageing-related statistics should be produced separately for women and men.

310. All ageing-related statistics should be disaggregated by age. They should be available by five-year age groups from 55-59 to 80-84 and for 85 and older, with the caveat that for some surveys and some indicators this may not be possible<sup>95</sup>. Ten-year age groups should be available as a minimum. Consistency in available age groups across sources, and both within and between countries, is of particular importance.

311. Providing a breakdown of indicators by native and foreign-born population is recommended to consider the phenomena of migration for countries where this is a significant factor, while breakdowns for other characteristics (ethnicity, indigenous status or religion) are recommended in countries where these characteristics are important dimensions of diversity.

312. NSOs should endeavour to produce all indicators at the sub-national level(s) relevant to the country.

---

<sup>94</sup> See <http://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx>

<sup>95</sup> See paragraph 28 in chapter 2.

## 9.3 Data collection

313. In data collection, steps should be taken to ensure the inclusion of potentially disadvantaged groups, such as foreign citizens, people living on a low income, and institutional population within surveys and administrative sources, where feasible and relevant.

314. The problem of data comparability and reliability is most pronounced for the upper age groups, where sample sizes are often very small and the upper categories are wider (and more variable) as a result. Difficulties in sampling certain groups of older people may also lead to a risk of bias. The sample size of the older generations should be increased in surveys, within the constraints of survey cost, respondent burden and data quality. Alternative approaches to addressing the issue of sample size include pooling survey data over time, booster samples and linkages to administrative sources.

315. The use of proxies for survey interviews should adhere to strict eligibility criteria. It should always be recorded in the completed survey questionnaire.

## 9.4 Communicating statistics

316. It is recommended that NSOs have a single entry portal/webpage dedicated to ageing-related statistics, which pulls together into one easily accessible location relevant statistics on different areas of interest. More value can be obtained from existing data by bringing together data from different sources on a given topic.

317. It is important to ensure that dissemination and communication practices are geared towards fostering easy access and understanding of ageing-related statistics. The use of an underlying conceptual framework of the topic area can help in organizing and reporting on the indicators in a coherent and meaningful way. Reports providing analysis and interpretation should be published alongside key indicators, as well as comprehensive metadata.

318. Given the far-reaching consequences of population ageing both for societies and for individuals, it is particularly important to communicate ageing-related statistics to as wide an audience as possible, and to encourage use of statistics by policymakers, businesses and individuals who wish to make better-informed decisions when planning for the future.

319. Data visualization and interactive statistical tools are examples of good practices that should be followed by NSOs in making visible key trends in ageing-related statistics.

320. NSOs should promote the use of online tabulation tools that provide the user the opportunity to create customized tables through a query to the microdata or to highly disaggregated data.

321. Where feasible, means of remote access to microdata from surveys or administrative registers should be made available to advanced users, such as researchers.

## 9.5 Further work

322. In the course of its work, the Task Force faced a number of challenges in identifying appropriate data sources and recommendations. To address these issues and respond to the growing demand for ageing-related statistics, further work is needed both on national and international levels.

### 9.5.1 Conceptual work

323. Further work is needed to develop clear concepts and operationalize many indicators before they can be produced in a harmonized way across countries. Such work requires identification of the most appropriate conceptual model and, subsequently, the design, implementation and testing of methodology in different contexts, with due regard to the needs of countries which do not participate in EU-wide survey programmes. On this basis, it would be possible to provide recommendations for routine data collection and dissemination.

324. Attention should focus on indicators or sub-domains identified as tier 2 or tier 3 in these Recommendations, many of which are in the domain of intergenerational solidarity.

### 9.5.2 Data collection

325. Reliability of data on older people suffers from the varying ability of older respondents to respond to surveys. This is particularly relevant with increasing moves towards online data collection. Methodological work is needed to improve response rates of older people in surveys, and to harmonise approaches in the use of proxy respondents. Attention should also be paid to the potential of administrative data and new or alternative data sources, such as ‘Big Data’, for production of ageing-related statistics.

### 9.5.3 Institutional population

326. The term “institutional population” should be more clearly defined. The definition should align with the CES census recommendations. In particular, criteria should be defined and made explicit for the determination of residence in an institution.

327. Once a clear definition for the institutional population is developed, countries need to consider ways to include those populations in survey frames or develop separate data collection tools for them. Coverage of people living in institutions is essential to the development of robust measures of older people, for indicators of health and independence in particular.

328. Extending the statistical measures to cover institutional populations was identified as a challenge for which there is currently no satisfactory solution. Further work towards establishing efficient data collection mechanisms for this population could start with compiling an overview of national practices.

### **9.5.4 Sharing experience and best practices**

329. Many countries would benefit from the development or compilation of detailed guidelines for the production of the suggested indicators. These could include details of recommended approaches for tackling challenges related to sampling, use of administrative sources and methodology for the calculation of the less commonplace indicators. It would be useful to share experience on testing and data collection practices and provide technical assistance to countries that would benefit from capacity-building. Compilation of links to existing methodological details would be a valuable first step in this direction.

## 9.6 Indicators

330. Table 9 presents a summary of the indicators suggested in the preceding chapters. It should be recalled, as explained in the introduction (see paragraphs 19 and 20), that these Recommendations are not designed to propose a set of recommended indicators, but rather *to provide guidance in the selection of indicators*. The differences in the degree of description and specificity of indicators are a reflection of the wide variation in the conceptual and methodological clarity of the topics, as discussed throughout the report.

*Table 9: Indicators*

Policy area	Domain	Topic	Indicator
<i>Demographic measures</i>			
		Population estimates and projections	Observed and projected numbers and percentage of population at ages 55-59, ..., 80-84, 85+
		Median age, observed and projected	Median age of total population Median age of those aged 65+
		Sex ratios, observed and projected	Ratio of women to men at ages 55+, 65+, 75+ and 85+
		Demographic ratios, observed and projected	$(0 \text{ to } 24 \text{ and } 65+) \div (25-64)$ $(65+) \div (25 \text{ to } 64)$ $(0 \text{ to } 14 \text{ plus } 65+) \div (15 \text{ to } 64)$ $(65+) \div (15 \text{ to } 64)$ $(85+) \div (65+)$
		Economic support ratio, observed	Ratio of the number of people not working to those working (regardless of age)
		Life expectancy*	Life expectancy at birth and at ages 55, 65, 75 and 85 Life expectancy at retirement age
		Survival rates, observed and projected	Survival rates at ages 65 and 85, and from age 65 to 85

Policy area	Domain	Topic	Indicator
		Prospective measures of ageing, observed and projected	Age at which life expectancy falls to 15 years
			Proportion of population with a remaining life expectancy of 15 years or fewer
		Diversity	Country of birth of population at ages 55-59, ..., 80-84, 85+
		Urban/rural distribution	Urban/rural distribution of population at ages 55-59, ..., 80-84, 85+
		Living arrangements	Living arrangements of population at ages 55-59, ..., 80-84, 85+
<i>Longer working life</i>			
Health risks and behaviours	Healthy lifestyle	Healthy lifestyle	See 'health & independence in older age'
	Healthy working environment	Healthy working conditions	Share of employed persons working during unsocial hours, by economic activity
			Share of employed persons working excessive hours
		Work-life balance	See 'Social inclusion and well-being'
Labour market participation at older ages	Labour market participation at older working ages	Labour market participation	Labour market participation
			Employment rate*
			Unemployment rate
			Long-term unemployment rate and incidence
			Employment by economic activity
			Employment by occupation
			Duration of working life
			Part-time employment
			No indicators proposed in these Recommendations
		Discrimination in the labour market	Discrimination at work
		Incentives for working longer	No indicators proposed in these Recommendations

Policy area	Domain	Topic	Indicator
		Pension reforms and statutory retirement age	Statutory retirement age
		Participation in lifelong learning (including work-based training)	Lifelong learning: those involved in training*
		Educational attainment	Percentage of older people with upper secondary or tertiary educational attainment*
Social inclusion and subjective well-being			
	Financial security in older age	Income levels	Income composition by income quintiles
			Relative disposable income*
			Average disposable income by age groups
		Poverty levels and material deprivation	S80/S20 ratio of disposable income by age groups
			At-risk-of-poverty rate*
			Material deprivation rate*
		Social security including state and private pension provision	Net replacement rates by earnings level
			Pension expenditures
		Home ownership and housing affordability	Distribution of the population by housing tenure (per cent)
			Housing costs as a percentage of disposable income
Social inclusion/exclusion	Availability of social support networks and satisfaction with relationships	Social connectedness*	
	Discrimination	Discrimination	
	Elder abuse and neglect	Elder abuse and neglect	
	Internet use and access, use of social media	Proportion who regularly access the Internet*	
	Leisure activities	Leisure activities	
	Political participation	Participation in activities of meeting of a trade union, a political party or political action group*	



Policy area	Domain	Topic	Indicator
		Housing and living conditions	Severe housing deprivation of older people
		Living arrangements (household structures including partnership status and institutional residency)	Independent living (living alone or as a couple)
			Percentage living in single-person households
		Availability of transport	Availability of transport
		Barriers to inclusion (e.g. not feeling safe, not trusting others, lack of public transport)	Physical security (worried about safety)*
		Subjective well-being	Level of satisfaction with life overall
Percentage who are very satisfied with life, by health impairment			
Happiness levels	Mental well-being		
Anxiety levels	Anxiety levels		
How worthwhile life is	How worthwhile life is		
<i>Health and independence at older ages</i>			
Health status	Physical well-being	Self-reported health status	
		Health-adjusted life expectancy at birth and at ages 55 and 65*	
		Years of potential life lost, by cause	
	Mental well-being	Mental well-being*	
		Psychological distress during the past four weeks	
		Anxiety levels	
	Emotional well-being	Share of those who are very satisfied with life, by health impairment	
	Social well-being	See ‘Social inclusion and subjective well-being’	
	Healthy lifestyle	Frequency of fruit consumption	

Policy area	Domain	Topic	Indicator
	Health risks and health behaviours		Frequency of vegetable consumption
			Frequency of hazardous alcohol consumption (binge drinking)
			Share of population that are daily smokers
			Share of population that undertakes at least 30 minutes of physical activity per day*
			Share of population that are overweight based on body mass index
		Healthy working conditions	See 'Longer working life'
		Work-life balance	See 'Longer working life'
	Illness and disability	Chronic health conditions	People having a long-standing illness or health problem
		Cognition	Dementia/Alzheimer's
		Independent functioning	Instrumental activities of daily living (IADLs) Functional limitations and activities of daily living (ADLs)
	Health and social care needs and access to services	Preventative health care	Per cent of persons reporting difficulties with access to primary health care services
		Curative treatments and medical drugs and devices	Prescription drug usage (also includes health care equipment and devices)
		Access to care within continuum, especially long-term care	Per cent of population receiving institutional care
			Physical
			Psychological
			Social
		Unmet need for care	Per cent reporting unmet need for medical and dental examination or treatment*
	Independent living	Palliative care	Palliative care
		Residential independence	Living in own household*
		Accessible architecture	No indicators proposed in these Recommendations
		Age-appropriate goods and services	No indicators proposed in these Recommendations

Policy area	Domain	Topic	Indicator
		Receipt of formal care	No indicators proposed in these Recommendations
		Receipt of informal care	No indicators proposed in these Recommendations
		Characteristics and needs of caregivers	No indicators proposed in these Recommendations
		Availability of transportation	Availability of transportation
<i>Intergenerational solidarity</i>			
	Intergenerational transfer of knowledge	Intergenerational dialogue and learning	Percentage of older people who participated in organized mentoring or training programmes to pass experience and knowledge to younger workers
	Older people’s unpaid contributions	Provision of informal care	Percentage of population providing unpaid care to own children and grandchildren*
			Percentage of population providing unpaid care to older adults*
			Percentage of population volunteering*
		Voluntary work	Time spent in unpaid activities outside own household
			Participation in voluntary work in the last 12 months
	Intergenerational relations	Intergenerational co-residence	Living arrangements
		Intergenerational transfers	Intergenerational transfers provided (financial and non-financial)

\*Denotes indicators which are broadly equivalent to indicators included in the Active Ageing Index (precise definitions may not be identical).

## References

---

- Aassve, A. and A. Vitali (2013). Le disuguaglianze di ricchezza tra generazioni in *Europa Cambiamenti demografici risparmio e solidarietà tra generazioni*, Edizione Neodemos.
331. Albertini, M. and M. Kohli (2012). The Generational Contract in the Family: An Analysis of Transfer Regimes in Europe. *European Sociological Review* (online), (July 6).
- Bal, A. C and others (2011). Examining Positive and Negative Perceptions of Older Workers: A Meta-Analysis, *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* (June).
- European Commission (2008). Note on the harmonization of SILC and EHIS questions on health. Eurostat, European Commission.
- European Commission (2011). Technical Group on Health and Health Interview Survey (HIS) Statistics, March 2011, Document Tech-HIS/11\_10, Report of the task force on institutionalised people. <http://www.cros-portal.eu/sites/default/files/TF%20HIS%20Report%20of%20the%20Task%20Force%20on%20institutionalised%20people.pdf>
- Gauci, D. (2011). Synthesis report on use of EHIS quality assessment criteria. Malta, Department of Health Information and Research, Final Report (March).
- Katchadourian, V and E. Cambois (2013). Analysis of 2009 EU-SILC national survey samples (draft), EHLEIS Technical report 6.1 (June).
- Lowenstein, A., and J. Ogg (2003). OASIS Final Report. Centre for Research and Study of Ageing, University of Haifa, Haifa, Israel. Available online at: <http://oasis.haifa.ac.il/downloads/oasis-final-report.pdf>
- Lutz, W., W. Sanderson and S. Scherbov (2008). The coming acceleration of global population ageing. *Nature*, vol. 451, pp. 716-719.
- Mancini, J. and R. Bleiszner, R. (1989). Aging parents and adult children. *Journal of Marriage and the Family*, vol. 51, pp. 275-290.
- Marin, B. (2013). Welfare in an Idle Society? Reinventing Retirement, Work, Wealth, Health, and Welfare, Ashgate: Aldershot, UK.
- Organisation for Economic Cooperation and Development (2013). OECD Pensions at a Glance <http://www.oecd.org/pensions/pensionsataglance.htm>
- Posthuma, R. A. and M. A. Campion (2009). Age stereotypes in the workplace: Common stereotypes, moderators, and future research directions. *Journal of Management*, vol. 35, no. 1 pp. 58-188.
- Ruppel, S. E. and others (2010). Are They Depressed or Just Old? A Study of Perceptions about the Elderly Suffering from Depression. *North American Journal of Psychology*, vol. 12, no. 1 pp. 31-42.
- Sanderson, W. and S. Scherbov (2010). Remeasuring aging. *Science* vol. 329, pp. 1287-1288.
- Sanderson, W. and S. Scherbov (2005). Average Remaining Lifetimes Can Increase As Human Populations Age, *Nature*, vol. 435, pp. 811-813.

Sanderson, W. and S. Scherbov (2013). The characteristics approach to the measurement of population aging. *Population and Development Review*. vol. 39, no. 4, pp. 673-685.

Sanderson, W. C., & Scherbov, S. (2015). Faster Increases in Human Life Expectancy Could Lead to Slower Population Aging. *PLoS ONE*, 10(4), e0121922.  
<http://doi.org/10.1371/journal.pone.0121922>.

UNECE (2013). Getting the facts right: a guide to presenting metadata. New York and Geneva: United Nations. <http://www.unece.org/index.php?id=34494>

UNECE (2015a). Conference of European Statisticians recommendations for the 2020 censuses of population and housing. New York and Geneva: United Nations. Available at <http://www.unece.org/statistics/publications.html>

UNECE (2015b). Handbook on Measuring Quality of Employment: a Statistical Framework. New York and Geneva: United nations. Available at <http://www.unece.org/statistics/publications.html>

Washington Group on Disability Statistics, Budapest Initiative and United Nations Economic & Social Commission for Asia & the Pacific (2011). Development of Disability Measures for Surveys: The Extended Set on Functioning. Available from [http://www.cdc.gov/nchs/data/washington\\_group/Development\\_of\\_Disability\\_Measures\\_for\\_Surveys\\_The\\_Extended\\_Set\\_on\\_Functioning.pdf](http://www.cdc.gov/nchs/data/washington_group/Development_of_Disability_Measures_for_Surveys_The_Extended_Set_on_Functioning.pdf).

World Health Organization (1948). Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

World Health Organization (1999). International Classification of Functioning, Disability and Health (ICIDH-2).