



Evaluation of the use and impact of the European Community Health Indicators ECHI by Member States

Final report

August 2013

**Written by: "Public Health Evaluation and Impact Assessment
Consortium" (PHEIAC)**

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Evaluation of the Use and Impact of the European Community Health Indicators

Final report

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Abbreviations and Acronyms

COM	Commission Communication
DG SANCO	Directorate General for Health and Consumers
EC	European Commission
ECDC	European Centre for Disease Control
ECHI	European Community Health Indicators ¹
ECHIM	European Community Health Indicators Monitoring
EFTA	European Free Trade Association
EGHI	The Experts Group on Health Information
EHES	European Health Examination Survey
EHIS	European Health Interview Survey
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EQ	Evaluation Question
EU	European Union
HEIDI	Health in Europe: Information and Data Interface
HiAP	Health in All Policies
JA	Joint Action
JRC	Joint Research Centre
KOM	Kick-off Meeting
MS	Member State
NIT	National Implementation Team
OECD	Organisation for Economic Co-operation and Development
OMC	Open Method of Coordination
PHP	Public Health Programme
SLWP	Council Working Party on Public Health at Senior Level
ToR	Terms of Reference
WHO	World Health Organisation

¹ ECHI stands now as European Core Health Indicators following a decision of EGHI in May 2013.

Executive summary

1. Introduction

This is the final report submitted by *Economisti Associati* as part of the assignment titled "Evaluation of the use and impact of the European Community Health Indicators (ECHI) by the Member States" undertaken on behalf of the European Commission (EC) – Directorate General for Health & Consumers (DG SANCO).

The purpose of the present Study is twofold. First of all is to assess the extent to which the ECHI indicators have been used in the countries participating to the ECHIM Joint Action (JA), either to monitor and evaluate health policies or to assess the responsiveness and efficiency of health systems, or in other steps of the policy-making process. In this sense, it involved an analysis of the limitations and possible reasons for non-use as well as of the driving forces behind their actual use.

Secondly, this Study is to provide indications on how to reach a high level of consensus on the use of the ECHI indicators in the participating countries, in order to ensure the long-term sustainability of the mechanism.

The geographical scope of the Study covers all the current EU 28 Member States (i.e. including Croatia), as well as Iceland and Norway.

The Study is based on five main sources of information, namely:

- a detailed review of all the relevant project deliverables released by the ECHIM Joint Action;
- an extensive in-depth interview programme (ca. 70 interviews carried out) inclusive of (i) EU-level informants, (ii) national-level key expert and (iii) European-level stakeholder organisations active in various fields;
- a questionnaire-based survey addressed to policymakers of various types (including regional level staff) from 30 countries. An overall 431 potential respondents were contacted and a total of 114 valid responses were received;
- a bibliometric research and analysis carried out in the *PubMed* and *OVID* databases, complemented by an impact factor analysis via the *Web of Science*;
- an extensive complementary desk research of country-level policy document and scientific and grey literature on ECHI.

In line with evaluation best practices, findings and conclusions are based on a triangulation of sources. Analysis of certain sustainability issues (legal aspects, governance, etc.) that required insider knowledge about the subject matter are naturally based mainly on interviews with key informants and could not be cross-checked with other external sources.

2. Main findings

ECHI helped structuring the National Health Information systems. ECHI has had a notable impact in helping certain countries to better structure their health information systems and favour the creation of a clearer legal framework for the collection of health indicators where this was needed. In particular, it played for latecomers a similar lighthouse role and a source of inspiration and reference as that played by WHO Health for All database or the OECD Health Performance Quality Indicators initiatives in the past, although probably on a smaller scale. Also, as a result of this, all European countries nowadays have envisaged a system to regularly collect health indicator datasets. This has had an enabling impact as most of these countries are now in a position to use these health indicators for strategic health policy steering purposes or for health system performance assessment, although with a variety of approaches, and the few who do not, reportedly have plans in the pipeline to that aim.

Moderate effects in terms of creation / stabilization of new indicators. The impact above has not necessarily materialized yet in the creation of new indicators at the national level except for sporadic cases where the investment needed was limited and data could be simply recalculated or extracted from existing registries. Most of the work done by 'latecomers' has focused on the creation or improvement of registries, and this will take time to return tangible results. Legislation on regulating data flows with healthcare services is often still pending. Resource issues also linked to the recent economic crisis have generally hindered the gathering of new data. In a few cases ECHI was not given the legal status to modify the existing agenda. As a result, little indicators have been added to existing international data sets and the indicators currently collected by means of temporary PHP projects have hardly stabilized in a clearer and more sustainable institutional framework which can be a particular matter of concern for users of these indicators as Commission PHP financing is not supposed to be on a permanent basis.

ECHI contributed to foster cross-country benchmarking. ECHI has certainly contributed to fostering systematic health benchmarking across Europe, which however remains at its early stages. Much of this benchmarking has had so far little tangible and documentable impact on the policymaking process, also because it is often poorly institutionalized. The bulk of all policy-related benchmarking activities takes place at a sectoral level in a sporadic and often informal and undocumented way. In many instances, ECHI indicators when used are hardly recognized as such, and more often than not are used 'unconsciously' since they were present in pre-existing data sets.

There is a relatively high but skewed knowledge of ECHI. Awareness about ECHI can be assessed on average as high but also rather skewed in both geographical terms and among categories of users. It can be considered even very high among health information services (such as public health institutes, statistical offices and the like), health study departments and academicians involved with the policymaking process, but it is much less so among the staff responsible for planning and monitoring of policies or for policy evaluation and the assessment of healthcare services, and particularly in countries that joined late the ECHI process and were not part of the ECHIM core group. This is likely to be the cumulated impact of ECHI information and communications activities over time. The HEIDI data tool, which is a quite recent instrument, is still far from reaching the dissemination potential of other similar tools, and does not seem able to redress this skewed pattern of awareness, but

possibly contributes to it, as it appears more frequently used by certain categories of policymakers than others.

ECHI has had a mixed bibliometric impact. ECHI has had a certain echo on the scientific literature although it is difficult to assess at this stage the impact on the scientific debate. Most of the articles published however are of a descriptive nature and aimed at advocating a wide use of the instrument among public health experts. There is a notable shortage of articles on the concrete use that can be made of these data and examples of the policy lessons that can be drawn with them.

The ECHI uptake in policymaking is skewed. The patterns of uptake of ECHI in the policymaking process appear rather skewed and broadly follow the same considerations already made for awareness. Documented instances mainly relate to benchmarking reports and dedicated health information databases. ECHI-based benchmarking reports have been published in three countries and are reportedly in the pipeline in another. A dozen countries have included ECHI as a recognizable component of their health information systems, although in a couple of cases, the sustainability of these initiatives appears uncertain. Formal uptake in general strategies and planning documents has been more limited so far and amounts to a handful of cases, although it seems bound to increase in the near future also because such kind of impact takes longer to materialize. All other instances of use are largely informal and undocumented or, as in the case of sectoral plans, often largely 'unconscious' because ECHI indicators are often perceived there as pre-existent.

ECHI individual indicators are generally widely used. There is some variability in the level of use of the different ECHI indicators (either named as such in the national inventories or not formally acknowledged as ECHI but equivalent to them) across Europe. This partly depends on the availability of the indicator or the sheer awareness about its existence, but also relates to intrinsic features of the indicator and its suitability to local policymaking needs. However, there are just very few instances of indicators in the implementation section that appear as limitedly or very limitedly used across the board. The majority of them appear as fairly widely used, particularly for descriptive or benchmarking purposes. Use for policy planning or monitoring purposes or for health system assessment and evaluation is more limited. This typically depends on competition with other sources, limited time series available, insufficient frequency of data collection, and lack of data breakdown at the regional level. The indicators classified for use for health inequalities or HIAP purposes are actually used in line with expectations.

ECHI individual indicators are often deemed as highly useful for policymaking. The ECHI indicators used in the past have generally been deemed very useful and only few specific cases are registered of partial dissatisfaction. The overall usefulness of ECHI shortlist would have been even higher if some of the indicators currently in the work-in-progress section had been actually implemented.

EHIS-based ECHI brings added-value to national sources. A quarter of ECHI indicators are to be implemented by means of EHIS. In those Countries with a longer tradition of health information systems and where health indicators are more developed, EHIS faces competition from both longer and more detailed HIS series or better quality registry-based data. Their only source of added value would therefore lie in increased scope for data comparability and their usefulness for internal policymaking purposes more limited. However this competition with other sources is expected to be mitigated by the fact that not only do EHIS data enable better European comparison, but they also often represent the only source available for health inequality purposes, as registries face in a number of countries privacy or

contractual limitations hindering the feasibility of such kinds of analyses. In those countries where no pre-existing HIS were available or registries are still underdeveloped the added value of EHIS for internal policymaking purposes is more obvious, but conversely mitigated by the fact that data are available only every five years.

Some EHIS-based ECHI are however not useful for comparisons. It is acknowledged that there are also a few EHIS indicators that can be particularly dependent on cultural factors and therefore do not lend themselves very well to cross-country comparisons. In these cases much of the informational added value would be related to their use for domestic vertical comparisons over time, and would be also mainly justified for health inequality purposes and other forms of cross-sectional analysis with other EHIS data. And it is recognized as such by users themselves. Needless to say, the perception of added value attached to these indicators is much lower in all those countries where the demand of indicators for health inequality purposes is less developed and the need for cross-sectional analytical work less sophisticated.

EHES-based ECHI are not usable yet. EHES would provide additional added value in terms of data quality for a few ECHI indicators (body mass index and blood pressure as currently already envisaged and diabetes prevalence, not envisaged yet but in the future pipeline) whose usefulness is however already deemed relatively high even in their EHIS-based version. There are broader cost considerations hindering for the time being EHES mainstreaming into the health information systems of a number of countries, and the incentives provided by the ECHI shortlist in its current format do not appear as sufficiently strong to really influence decisions in this respect. Much of the added value of EHES would continue to lie in providing more detailed information for research purposes than that required for strict policymaking needs. It remains an open question what could eventually happen one day if the number of EHES-based ECHI indicators were actually larger and resource constraints lower.

There is general consensus on having a system of European indicators like ECHI in place. There is considerable consensus among stakeholders on establishing a permanent health indicator system like ECHI at the European level particularly under a clearer institutional and legal framework, and possibly with the joint involvement of other international organizations and European institutions such as the OECD, WHO, and Eurostat. This would allow to capitalize on the results achieved so far, the methodological work already done and to keep the networking of a group of relevant competent experts across Europe alive and operational.

ECHI governance may be improved. As far as governance aspects are concerned there is a widespread consensus about the need to move away from a project-based approach and pursue the embedding of ECHI into a permanent, institutional mechanism at EU level although not necessarily embodied by means of EU legislation. The abovementioned mechanism should preferably involve all the relevant public authorities of the MS, and not be governed by a group of institutes as in the case of ECHIM, since this would give ECHI a more formal recognition. The ECHI shortlist should also be given a clearer legal status, as this has represented a barrier to its uptake in a number of countries. It is widely recognised that the European Commission should play a leading role in this mechanism as the primary coordinator of activities. This could mean a stronger involvement of DG SANCO or Eurostat although the various options should not be seen as mutually exclusive, since a strong coordination between these two services is deemed at any rate necessary. Other possibilities that might be examined include the coordination of this mechanism by another EU agency, e.g. JRC or ECDC. Finally there is

overwhelming consensus that enhanced coordination and synergy with the work of OECD and WHO should be sought.

Financing constraints may hinder ECHI sustainability. While there is consensus among stakeholders on the need to have a European system of indicators like ECHI in place on a permanent basis also in the future, there is also evidence of growing financial constraints on the health information systems of several countries, which have in some cases already impacted on ECHI maintenance. The fact that much of the use made of ECHI indicators for benchmarking purposes appears to materialize in highly fragmented, uncoordinated and poorly documented initiatives whose pay-off is not always visible to outsiders does not certainly help build its case vis-à-vis budgetary authorities. Also, its poor visibility and recognition in the formal policymaking process does not bode well in this respect, and should be further strengthened to provide a critical mass of evidence about the cost-effectiveness of having the ECHI instrument in place at the national level.

3. Recommendations and options available for further development

Minor modifications of the ECHI shortlist are possible. The ECHI shortlist could be considered as reasonably complete enough and without any obvious missing parts particularly if a higher implementation rate of its work-in-progress section could eventually be reached. There might be some scope for the restructuring of the section on health intervention and health services that could be made clearer in its purposes and benefit from the work carried out in parallel at the OECD on the same subjects. If the added value of ECHI is to be further increased by filling information gaps as was the case with health inequalities, then there is clear evidence of an increasing demand for age-specific indicators and in particular child and adolescent health indicators and strengthen data on avoidable mortality that is not fully met by the international databases.

Simplification / streamlining of the shortlist may be considered. If the ECHI shortlist is to remain an instrument for broad health descriptive purposes mainly aimed at fostering general benchmarking, then there is no major need to simplify and streamline it, but eventually for budgetary reasons. In such case, some of the indicators in the development section appear as likely candidates for downgrading, both because of difficulties in their implementation and their unclear relevance in certain countries' policy contexts. However, these would represent only marginal adjustments. If the ECHI shortlist is to become an instrument to steer the strategic policy planning and monitoring process across Europe and provide a common framework for reference, then a substantial simplification and shortening would be required in line with current trends. This would imply the selection of a few indicators per policy priority and a clear selection of the key policy areas to be included as core. The sheer way the shortlist is built should move away from incorporating the results of PHP projects to mirroring the agendas already decided in the different areas. There are compromise solutions between these two extremes that could eventually be considered, depending on political decision.

ECHI legal status should be clarified. While a joint action is certainly a good instrument to pilot a newly introduced tool and spread its use, it also has some notable limitations when it comes to mainstreaming it into common practice. At present, the unclear status of the ECHI shortlist as a fully EU-backed document represents a barrier to its uptake and implementation and the governance mechanisms of a JA would no longer be perceived by certain countries as fully legitimate. A more formal governance could also help foster MS commitment to indicator implementation.

There is a need for increasing ECHI awareness among certain categories of policymakers. Since any newly introduced information instrument is more likely to attract the attention of related experts, researchers and academicians, awareness about and use of ECHI appear still exceedingly skewed towards these categories of early users. Therefore there is a need to complement the information and communication effort with instruments more specifically targeted at policy practitioners that are sometimes unaware even about the existence of indicators already concretely implemented and potentially available for use. Better cross-referencing in the Eurostat database is the first obvious measure. But this could also include reports and studies on the use that could be made of these data and the concrete lessons a policymaker could draw from using them. Collaboration with the OECD and ECHI inclusion in *The Health at a Glance* report already represents a first step in this direction.

The work-in-progress section of ECHI should be finalised. The overall perceived usefulness of the ECHI shortlist would increase remarkably if some important indicators still in the work-in-progress section were eventually implemented.

Cross-country benchmarking should be encouraged. Any increase in the added value of ECHI from benchmarking implies a parallel growth in policy evaluation and health assessment practice. So far, benchmarking and international comparisons have been institutionalized as a stable and recognizable component of the policymaking process in a fairly limited number of countries, although there is clear evidence that also this process is slowly gaining ground across Europe. This should be further encouraged. In this sense, the limited policy evaluation capacity and the limited role played by health assessments in informing policymaking in a number of countries emerge as major barriers to a full exploitation of ECHI's benefits, and consequently to countries' investments on its implementation. It has however to be considered that in a number of countries internal benchmarking aimed at explaining wide domestic variance already attracts considerable resources.

To increase the usefulness for policy planners should become a priority. Throughout the implementation of the various ECHI projects, a great emphasis has been attached to ensuring data comparability and the overtime stability of the shortlist. However, if ECHI is also to become a common framework for coordinating policy planning and monitoring to better address the evolving information needs of policymakers, other important features of indicators should also receive greater attention in the future when it comes to their selection and identification, such as their sensibility, i.e. their capacity to indicate changes over a relatively short period of time, their specificity in reflecting the results of specific policies and their concrete actionability by policymakers, i.e. the fact that values can be really influenced over a reasonable period of time by policy action. This could include further research on which indicators of health outcome are more sensible to policies and less affected by or correlated with other external factors outside of policymakers' control.

Address financing issues. For the time being the financial sustainability of the mechanism appears still dependent onto EU financing. More than half of national experts interviewed rules out that participating countries could allocate financial resources to it, in addition perhaps to the own costs for participating to activities (human resources, travel expenses etc.). On the other hand, about one third of country experts surveyed do not exclude apriori the possibility of MS co-funding to this mechanism, thus indicating that there is already a good recognition of the advantages that such mechanism could bring at country level in the long run. Moreover, no sources of financing are currently available to ensure the sustainability of some of the indicators currently included in the shortlist.

Introduction

Purpose and scope of the assignment. This Report is the final deliverable to be submitted by *Economisti Associati* (the "Consultant") as part of the assignment titled "Evaluation of the use and impact of the European Community Health Indicators (ECHI) by the Member States" (the "Assignment" or the "Study"), undertaken on behalf of the European Commission (EC) – Directorate General for Health & Consumers (DG SANCO).

The Study is aimed at answering eleven evaluation questions² (EQ) reproduced in the text box below, and has two main purposes:

1. to assess the extent to which the ECHI indicators have been used in the countries participating to the ECHIM Joint Action (JA), either to monitor and evaluate health policies or to assess the responsiveness and efficiency of health systems, or in other steps of the policy-making process. This involves an analysis of the limitations and possible reasons for non-use as well as of the driving forces behind their actual use;
2. to provide indications on how to reach a high level of consensus on the use of the ECHI indicators in the participating countries in order to ensure the long-term sustainability of the mechanism; this may entail streamlining or updating the current list, according to the emerging policy needs.

The geographical scope covers all the current EU 28 Member States (i.e. including Croatia), as well as Iceland and Norway.

The Evaluation Questions

Awareness of ECHI in main user groups:

EQ1: Are indicators used for health policy planning and development in a systematic fashion?

EQ2: Which indicators are used in policy making/impact monitoring of health policies?

EQ3: What is the current level of knowledge about the ECHI list in a given MS, in particular by decision makers in the health field?

EQ4: What is the bibliometric status (e.g. Thomson Citation index) of ECHI in peer-reviewed scientific literature?

Utility of the shortlist:

EQ5: To which extent are the ECHI indicators used in the MS and at what level of the policy making bodies /government departments?

EQ6: Which ECHI indicators have been used in the past in particular and what is the assessment of the usefulness made in such context, in particular by decision makers in the health field?

EQ7: Have MS used ECHI to develop their own policy monitoring indicators? Have ECHI indicators been used for reporting at sectoral level (e.g. injury prevention) or in the remit of generic national health reporting exercises?

² Originally, the Terms of Reference included a twelfth EQ, on the role of the Secretariat and of the different actors of the Core ECHIM Group, but upon request by DG SANCO this question was excluded from the scope of the Study, since the ECHIM Joint Action (JA) will seemingly undergo a separate end-of-project evaluation.

EQ8: What is the relationship of the indicators used and those on the ECHI shortlist, is the latter considered complete enough?

Effectiveness:

EQ9: Is there evidence at hand between the systematic use of a set of indicators or one in particular and the policy based improvement in health outcomes?

EQ10: What is the relationship between the ECHI shortlist and the host of instruments put in place for its implementation (EHES, EHIS, etc) in particular as regards the added value of ECHI?

Horizon scanning:

EQ11: How can sustainability be ensured? Is a joint action the correct instrument for implementation?

Sources of information and methodology. The Study is based on five main sources of information, namely:

- a detailed review of all the relevant project documents released by the ECHIM JA (hereinafter, referred to as "the project documents") and in particular the information available on the implementation status of the ECHI shortlist in the different European countries as reported in the Final Report Vol. I, the detailed review of the indicators included in the Final Report Vol. II and the data from the Pilot Collection exercise reported in the Final Report Vol. III;
- an extensive in-depth interview programme inclusive of (i) EU-level informants, i.e. DG SANCO, Eurostat, ECHIM central secretariat, WHO-Europe, OECD, EHES project etc.; (ii) national-level key expert members of the 'ECHI family' (i.e. involved more or less directly in the ECHIM JA) such as member of the ECHIM steering group, members of the ECHIM transition network, members of ECHI National implementation teams (NIT), or members of the EC's *Expert Group on Health Information (EGHI)*, and (iii) European-level stakeholder organisations active in various fields. Overall, nearly 70 interviews were carried out;
- a questionnaire-based survey addressed to potential ECHI users from 30 countries. This includes public authorities and health administrations at both the national and regional level (75% and 25% of the whole population, respectively), as well as statistical offices, health insurers, and a number of external 'policy-influencers' (i.e. mainly academic experts and researchers reportedly involved as advisors in domestic policymaking or otherwise active in the policymaking debate). An overall 431 potential respondents were contacted and a total of 114 valid responses were received;
- a bibliometric research and analysis carried out in the *PubMed* and *OVID* databases, complemented by an impact factor analysis via the *Web of Science*;
- extensive desk research to complement the bibliographic search above and on the existing practices in the use of health indicators for policymaking purposes, including the set of indicators more frequently used to demonstrate the impact of health policies on health outcomes.

Structure of the report. This draft final report is structured into seven main chapters, and namely:

- **Section 1** summarises the background, the intervention logic of ECHI, and its key features;
- **Section 2** provides an overview of the 'demand' for health indicators for policymaking across Europe;

- **Section 3** deals with the knowledge and awareness of ECHI among policymakers and in the scientific community;
- **Section 4** analyses in detail the level of uptake and the perceived usefulness of ECHI for policymaking purposes;
- **Section 5** addresses various aspects related to ECHI added-value and the relevance of its underlying principles;
- **Section 6** deals with the issue of possible revisions of the ECHI shortlist and the factors related to its future sustainability;
- **Section 7** provides the Study's conclusions and recommendations

The Report includes also a series of **Annexes** providing supporting evidence, additional information and methodological documents.

1. Background

1.1 The key features of the ECHI initiative

Origins. The *European Community Health Indicators*³ (ECHI) initiative started more than a decade ago with the 1997-2002 EU Health Monitoring Programme, which included several projects about developing health indicators aimed at overcoming the difficulty to get a harmonised picture of Europeans health conditions at that time. The long list of indicators resulting from these projects was collected in the first ECHI initiative and comprised almost 500 indicators⁴. A first refinement and streamlining of this list was carried out by a second ECHI project. The indicators were to be specifically designed with a view to serve user needs in the public health field and support evidence-based policymaking, both at the EU and the MS level. They should not reflect any academic or research-related aim. In 2007, the implementation of the ECHI system became one of the explicit objectives of the EU Health Strategy and the ECHI initiative was supported by the creation of a dedicated ECHIM project (where "M" stands for monitoring). In 2008 ECHIM was financed as a joint action (JA)⁵ with a more direct involvement of the MS sponsoring the proposal. Public health institutes from five MS (Finland, Germany, Italy, Lithuania and the Netherlands) took the lead in the JA with a total 36 countries involved among MS, EFTA and candidate countries, 14 of which being part of the so-called core group of participants.

The ECHI indicators. ECHIM started working on an original shortlist of some 80 indicators established in 2005 that was later expanded to 88 to cover new policy needs.⁶ A more detailed review of the ECHI shortlist inclusive of summary definitions and underlying rationale is provided in the Annexes. The health indicators included in the ECHI shortlist do not necessarily coincide with those explicitly envisaged in the various Commission's sectoral Communications or Recommendations published at that time, or with the indicators proposed in the accompanying impact assessment documents. Such one-to-one correspondence can be found only with the three key indicators of the alcohol strategy (i.e. alcohol-related deaths, total alcohol consumption, hazardous alcohol consumption). However, some degree of correspondence can frequently be found also in other policy areas.

The ECHI list covers the entire public health field, broadly following the well-known *Lalonde* model's categories (i.e. health status, determinants of health, health interventions/health services, and socioeconomic and demographic factors) plus an additional category on the implementation of health policies called 'health promotion'. In order to promote its use among policymakers this shortlist has been further subdivided for classification purposes into five broad policy areas (health care and health services, ageing and population, health determinants, diseases and mental health, health in all policies –HIAP) and twelve more refined sectors⁷. While indicators

³ Following the Lisbon treaty the ECHI indicators should have been renamed European Union Health Indicators EUHI, but the old acronym has been retained here, because it is that already entrenched in the common practice. ECHI stands now as European Core Health Indicators following a decision of EGHI in May 2013.

⁴ See http://www.echim.org/docs/ECHIM_final_report.pdf

⁵ DG SANCO mainly funds activities through projects or tenders. A Joint Action is slightly different as a financing mechanism as it involves a more explicit commitment from Member State authorities. However, it too is temporary.

⁶ Namely: heatwave related mortality, dementia, general musculoskeletal pain, psychological well-being, healthy life years, colon cancer screening, timing of first antenatal visits among pregnant women, 30-day in hospital case fatality in AMI and stroke.

⁷ This is not the only classification of the ECHI indicators reported in the literature. Another classification based on seventeen different policy areas has been used in Kilpeläinen K, Tuomi-Nikula A, Thelen J, et al.

clearly relate to one main theme, they have been conceived to be potentially used across several different policy areas, in order to ensure that the information tool was sufficiently compact and a more efficient use. The latest version of the ECHI shortlist, including classifications by group and policy areas is provided in Table 1.1 below.

Table 1.1 - Official classification of the ECHI shortlist (last version)

Typology	Status	Policy Areas	Health services and health care			Ageing and population			Health determinants		Diseases and Mental Health			HIAP
			Sustainable health care systems	Health system perf. quality / efficiency of care, patient safety	(Planning of) health care resources and health care cost	Healthy ageing, ageing population	Maternal & perin. health	Child health	Health inequalities (including accessibility of care)	health behaviour (incl. young adults)	Non-Communicable diseases (NCD), Chronic Diseases	(BoD) and health threats, communicable diseases	Mental health	
Demography and socio-economic situation	IS	1. Population by sex/age	x		x	x								
	IS	2. Birth rate, crude	x				x							
	IS	3. Mother's age distribution		x			x	x	x					
	IS	4. Total fertility rate	x				x							
	IS	5. Population projections	x		x	x								
	IS	6. Population by education							x					x
	IS	7. Population by occupation							x					x
	IS	8. Total unemployment	x						x					x
	IS	9. Population below poverty line and income inequality	x						x	x				x
Health Status	IS	10. Life expectancy	x						x			x		
	IS	11. Infant mortality		x			x	x	x					
	IS	12. Perinatal mortality		x			x	x	x					
	IS	13. Disease-specific mortality; Eurostat, 65 causes		x						x	x	x	x	
	IS	14. Drug-related deaths							x	x		x	x	x
	WS	15. Smoking-related deaths		x		x			x	x	x	x		
	WS	16. Alcohol-related deaths		x					x	x	x	x	x	
	DS	17. Excess mortality by extreme temperatures (formerly 'by heat waves')								x				
	IS	18. Selected											x	

Health indicators in Europe: availability and data needs. Eur J Public Health 2012. January 31. See Annexes to the Study.

		communicable diseases												
IS	19. HIV/AIDS							x	x			x		
IS	20. Cancer incidence	x	x	x	x							x	x	
IS	21. (A) Diabetes, self-reported prevalence	x	x	x								x	x	
WS	21. (B) Diabetes, register-based prevalence	x	x	x								x	x	
WS	22. Dementia/Alzheimer	x			x	x						x	x	x
IS	23. (A) Depression, self-reported prevalence				x							x	x	x
WS	23. (B) Depression, register-based prevalence				x							x	x	x
WS	24. AMI	x	x	x								x	x	
WS	25. Stroke	x	x	x								x		x
IS	26. (A) Asthma, self-reported prevalence				x			x				x	x	
WS	26. (B) Asthma, register-based prevalence				x			x				x	x	
IS	27. (A) COPD, self-reported prevalence	x			x	x						x	x	x
WS	27. (B) COPD, register-based prevalence	x			x	x						x	x	x
IS	28. (Low) birth weight				x			x	x					x
IS	29. (A) Injuries: home/leisure, self-reported incidence				x	x		x						x
IS	29. (B) Injuries: home/leisure, register-based incidence				x	x		x						x
IS	30. (A) Injuries: road traffic, self-reported incidence				x			x				x		x
IS	30. (B) Injuries: road traffic, register-based incidence				x			x				x		x
IS	31. Injuries: workplace				x				x				x	x
DS	32. Suicide attempt				x								x	x
IS	33. Self-perceived health				x	x			x				x	x
IS	34. Self-reported chronic morbidity				x	x			x				x	x
IS	35. Long-term activity limitations				x	x			x				x	
	36. Physical and sensory functional limitations				x	x			x				x	
DS	37. General musculoskeletal pain												x	
DS	38. Psychological distress				x	x			x				x	x
DS	39. Psychological well-being					x			x					x
IS	40. Health expectancy: Healthy Life Years (HLY)	x			x	x								
WS	41. Health expectancy, others	x			x	x								

Determinants of health	IS	42. Body mass index				X	X		X	X	X		X			
	IS	43. Blood pressure				X	X			X	X		X			
	IS	44. Regular smokers				X	X		X	X	X		X			
	WS	45. Pregnant women smoking		X				X	X	X	X		X			
	IS	46. Total alcohol consumption				X			X		X		X			
	IS	47. Hazardous alcohol consumption				X			X	X	X		X			
	IS	48. Use of illicit drugs							X	X	X		X	X		
	IS	49. Consumption of fruit								X	X		X			
	IS	50. Consumption of vegetables								X	X		X			
	WS	51. Breastfeeding					X		X		X		X			
	IS	52. Physical activity					X			X	X		X			
	IS	53. Work-related health risks								X	X		X		X	
	IS	54. Social support					X			X	X		X	X		
	IS	55. PM10 (particulate matter) exposure								X	X	X		X		X
Health interventions: health services	IS	56. Vaccination coverage in children		X					X	X			X			
	IS	57. Influenza vaccination rate in elderly		X			X						X			
	IS	58. Breast cancer screening		X	X	X							X	X		
	IS	59. Cervical cancer screening		X	X	X							X	X		
	IS	60. Colon cancer screening		X	X	X							X	X		
	WS	61. Timing of first antenatal visits among pregnant women		X	X			X	X	X				X		
	IS	62. Hospital beds	X	X	X					X						
	IS	63. Physicians employed	X	X	X					X					X	
	IS	64. Nurses employed	X	X	X					X					X	
	DS	65. Mobility of professionals	X		X					X						X
	IS	66. Medical technologies: MRI units and CT scans	X		X					X						
	IS	67. Hospital in-patient discharges, limited diagnoses		X	X											
	IS	68. Hospital daycases, limited diagnoses		X	X									X		
	IS	69. Hospital day-cases as percentage of total patient population (in-patients & day-cases), selected diagnoses	X	X	X									X		
IS	70. Average length of stay (ALOS), limited diagnoses	X	X	X									X			
IS	71. General practitioner (GP) utilisation			X					X							

	IS	72. Selected outpatient visits			x				x				
	IS	73. Surgeries: PTCA, hip, cataract		x	x				x				
	IS	74. Medicine use, selected groups		x	x				x			x	
	WS	75. Patient mobility	x	x	x				x				
Health interventions: health services	IS	76. Insurance coverage	x						x				
	IS	77. Expenditures on health	x	x	x							x	
	IS	78. Survival rates cancer		x					x				
	IS	79. 30-day in-hospital case-fatality AMI and stroke		x					x				
	IS	80. Equity of access to health care services	x	x					x				x
	DS	81. Waiting times for elective surgeries		x	x				x				
	DS	82. Surgical wound infections		x						x			x
	DS	83. Cancer treatment delay		x					x			x	
	DS	84. Diabetes control		x			x			x	x	x	
	Health interventions: health promotion	IS	85. Policies on ETS exposure (Environmental Tobacco Smoke)										
DS		86. Policies on healthy nutrition						x	x	x			x
DS		87. Policies and practices on healthy lifestyles						x	x	x			x
DS		88. Integrated programmes in settings, including workplace, schools, hospital						x	x	x			x

Note: IS = Implementation section; WS = Work-in-progress Section; DS = Development section.

In spite of the fact that more than a decade has passed since ECHI activities have commenced, not all the indicators included in the short list have reached the so-called full implementation status⁸ yet. The latest available version of the shortlist contains 94 indicators in total (the 88 core shortlist indicators but six of them are envisaged both in a self-reported and a register-based variant). Of these, 67 ("IS" in the table above) are considered technically-speaking in their implementation phase, 14 considered as work-in-progress ("WS") and 13 ("DS") in an earlier development stage. However, 25 of the indicators ready for implementation - including all the six newly-introduced self-reported ones - will actually depend on the results of the 2014 European Health Interview Survey (EHIS) and are not available yet in all the countries.

⁸ The implementation section of the ECHI shortlist includes indicators deemed methodologically ready for implementation. This means that their definitions have been agreed and data are or will be reasonably available. However, this does not rule out the possibility that substantial harmonization problems still persist between the data available and the agreed definitions. The range of data availability patterns also substantially varies. Work-in-progress indicators are nearly ready for implementation, but there are no concrete plans for this to occur. The development section includes indicators whose definition has not been agreed or with major data availability issues.

Changes in the status of the different indicators (implementation, work-in-progress or development section) may occur at any time and in any direction. It already happened that indicators that had reached the implementation section were later 'downgraded' due to mutated conditions (e.g. availability issues, change of definition by the original source etc.).

In fact, the ECHI shortlist is not an original dataset of indicators autonomously collected by the ECHIM project, but is rather a methodological document defining the characteristics of health indicators, based *inter alia* on existing sources of statistical information, but whose concrete routine implementation, is left to others. The "improved" standards thus set by ECHI would then allow for optimal data collections by international organisations including first and foremost Eurostat, OECD and WHO. Of the 67 ECHI indicators now considered ready for implementation nineteen come from Eurostat routine data collection activities by means of questionnaires directly sent to national governments, another seven come from the annual labour force data gathering carried out in collaboration with the national statistical offices and from the EU statistics on income and living conditions (EU SILC)⁹. Other 25 indicators are envisaged within the framework of European health interview survey¹⁰(EHIS) that is to be conducted every five years. Of the remaining sixteen that are not drawn from Eurostat sources, five come from the WHO *Health for All* database, another couple is published respectively by the OECD and the EMCDDA each, and seven originate from various databases and other sources, including other EU PHP projects.

During the ECHIM JA, the shortlist has been proposed for direct implementation to all participating countries by means of *ad hoc* National Implementation Teams (NITs), and the JA itself has carried out a pilot data collection exercise. This exercise covered twenty indicators¹¹. This included first and foremost HIS-based information from the Countries that had not implemented, fully or in part, the first round of the EHIS

⁹ The EU statistics on income and living conditions, abbreviated as EU-SILC, is the reference source for comparative statistics on income distribution and social inclusion in the European Union (EU). It is used for policy monitoring within the framework of the 'Open method of coordination (OMC). It was first launched in 2003 on the basis of a gentlemen's agreement between Eurostat and six Member States (Austria, Belgium, Denmark, Greece, Ireland, Luxembourg) and Norway. It was then formally extended in 2005 to cover all of the then EU-25 Member States, together with Norway and Iceland. EU-SILC provides two types of annual data: 1) cross-sectional data pertaining to a given time or a certain time period with variables on income, poverty, social exclusion and other living conditions; and 2) longitudinal data pertaining to individual-level changes over time, observed periodically over a four-year period. Although not the focus of the exercise, health information is also obtained. EU-SILC is based on the idea of a common "framework" rather than a common "survey". The common framework defines the harmonised lists of target primary (annual) and secondary (every four years or less frequently) variables to be transmitted to Eurostat; common guidelines and procedures; common concepts (household and income) and classifications aimed at maximising comparability of the information produced. The reference population in EU-SILC includes all private households and their current members residing in the territory of the countries at the time of data collection. Persons living in collective households and in institutions are generally excluded from the target population. Some small parts of the national territory amounting to no more than 2 % of the national population and the national territories listed below may be excluded from EU-SILC. All household members are surveyed, but only those aged 16 and more are interviewed.

¹⁰ The first round of EHIS has been conducted in twenty European countries between 2006 and 2009. These include six old member States, eleven new member States a candidate country Turkey and two non EU countries Norway and Switzerland. Four old member states (Austria, Belgium, France and Italy) decided to implement only parts of EHIS. The second round of EHIS will be run in 2014 in all the MS.

¹¹ Namely: 15) smoking-related deaths; 16) alcohol-related deaths; 21) diabetes; 23) depression; 24) acute myocardial infarction, 25) stroke, 26) asthma; 27) chronic obstructive pulmonary disease (COPD); 29) injuries at home/leisure/school; 30) injuries road traffic; 42) body mass index; 43) blood pressure; 49) consumption of fruit; 50) consumption of vegetables; 57) influenza vaccination rate in the elderly; 58) breast cancer screening; 59) cervical cancer screening; 69) colon cancer screening; 71) general practitioner utilisation; 72) selected outpatient visits.

exercise.¹² It then specifically targeted the data available for computation of the indicators on smoking-related deaths and alcohol-related deaths that were however found still too dissimilar for the implementation section. Moreover, information was sought on two registry-based indicators respectively on acute myocardial infarction (AMI) and stroke, for which Eurostat had already started pilot data gathering activities. A total some twenty-five countries, i.e. two thirds of those covered by ECHIM, have taken part to the pilot data collection exercise.

Institutional dissemination mechanisms. Apart from the ECHIM project's own communication activities, the ECHI indicators have been disseminated through a number of institutional mechanisms, these include:

- **Referencing in official EU policy documents.** A great deal of the EU recommendations and communications on health over the last few years have called for MS to improve availability and use of comparable and harmonised indicators in a number of policy areas, although not always mentioning ECHI. As better detailed in the Annexes, a number of ECHI indicators have been officially adopted by the Healthcare and Long Term care component of the Open Method of Coordination (OMC) of the Social Protection Committee¹³, and have therefore become part of the related routine reporting practice. However, as reported in the table in the Annexes, ECHI has hardly ever been identified as the reference source for those data. However, the subsequent concrete OMC reporting practice has *de facto* shrunken the number of health indicators used to just a few ones of those originally included in the shortlist (namely access to care, healthy life years, etc.), and these again hardly referred to as ECHI indicators in the reports.
- **The HEIDI data tool.** The HEIDI data tool is an interactive data set recently established and managed by DG.¹⁴ The database was to integrate the information already available in the international databases, such as the WHO Health for All, the OECD Health Data and the Eurostat database and to complement it with ECHIM-originated information. The ECHIM, in fact, had created a system for data flow and storage from the different Countries to a central ECHI database for all those data / indicators that had not been already included in the other international datasets or could not be drawn from the EHIS, but were nevertheless available at the national level. The ultimate aim was to have part of the ECHI indicators implemented at the national level directly linked to the HEIDI data tool by means of automatic updates.¹⁵ The ECHIM pilot data collection exercise could be considered as a first possible instance of this mechanism. However, HEIDI first faced some problems with data validation, because the data published as directly drawn from the available data sets were not necessarily those in line with the recommended ECHI definitions as specified in the ECHI documentation sheets. Then, at the

¹² Sweden is the only Country that did not take part either to the first round of EHIS or to the pilot ECHIM data collection exercise.

¹³ One of the main achievements of the social Open Method of Coordination has been the development of a set of EU indicators in the areas of social inclusion and social protection. The list of indicators was to be continuously improved as statistics, data collection and policy needs evolve, but has not been updated since its establishment. Three subsets of EU social indicators by policy area have been envisaged and namely: 1) social inclusion; 2) pensions; 3) health care and long-term care.

¹⁴ The data tool became a part of the broader HEIDI Wiki initiative. The HEIDI Wiki was targeted at public health experts in Europe as a tool to distribute and share information, but has then been discontinued. This has generated some confusion in some interviewees who seemed to believe that since the HEIDI Wiki has been discontinued, also the data tool - launched in May 2012 - had come to a halt.

¹⁵ However the provisions of the general plan for the implementation of the ECHI indicators were less ambitious and stated that there was no obligation to provide the indicators eventually published as a result of ECHIM to the ECHI database or any other international dataset.

time of writing this report the indicators autonomously collected by ECHIM within the framework of the pilot data collection exercise have not been included yet in the HEIDI data tool, and diverging views have been registered as to their suitability for publication.

- **The OECD Health at a Glance Report.** As part of a broader cooperation agreement between the Commission and the OECD, since 2010 the ECHI indicators are officially used as one of the information bases of the OECD Health at a Glance – Europe report, covering 35 different European countries, of which the 28 EU Member States, four candidate countries and the three EFTA countries. The report is actually structured along a number of ECHI health indicators, but also includes additional indicators directly drawn from original OECD sources. In particular, the section on quality of care combines certain ECHI indicators with other related indicators developed within the framework of the OECD Health Care Quality Indicators project. Two editions of the report have been released so far. The most recent was issued in November 2012 and contained a much larger number of ECHI indicators than before, due to improved data availability. The report was prepared by OECD staff with contributions from both ECHIM key staff and relevant DG SANCO service. Although ECHI is clearly mentioned as the reference data framework, the sources quoted in report send back to the original data sets, i.e. WHO, OECD or Eurostat. Some features of the data used for the 2012 report that are worth highlighting include:
 1. data on diabetes prevalence and incidence have been based on International Diabetes Federation sources¹⁶ rather than EHIS survey data;
 2. the estimates on dementia prevalence were drawn from private studies since the related ECHI indicator was not ready yet;
 3. data on health determinants related to children have been drawn from a single comparative study, while those of the adult population come from official ECHI sources that do not cover children.

1.2 Future perspectives

The ECHIM JA has recently expired and will go through an internal evaluation process. The long-term sustainability of the ECHI mechanism, however, remains to be seen as it is no longer conceivable that the initiative could continue with a status of pilot project financed under the Public Health Programme, as it has been the case so far. The long-term sustainability of the initiative attains to two main respects. First the sustainability of the tasks undertaken within the framework of the joint action itself, i.e. indicators maintenance and updating, support of implementation at the national level, and communication and dissemination activities. A first set of proposals has been put forward by the ECHI transition network -, a voluntary structure established after the end of the JA to ensure some kind of continuity to ECHI management. Then the sustainability of the underlying data gathering machinery and the related exercises. To this aim, some kind of stability to the ECHI system has been provided by the existence of Eurostat Regulations on Health Statistics¹⁷.

¹⁶ IDF sources are derived from studies published in their Atlas after certain thresholds for reliability have been met.

¹⁷ Regulation (EC) No 1338/2008 16 December 2008 on Community statistics on public health and health and safety at work; and Commission Regulation 349/2011 11 April 2011 implementing Regulation (EC) No 1338/2008 of the European Parliament and of the Council on Community statistics on public health and health and safety at work, as regards statistics on accidents at work. Moreover, there are Commission regulations on causes of death and for the EHIS. See http://ec.europa.eu/health/data_collection/key_documents/index_en.htm

In reality, Eurostat is subject to a number of other constraints, including budgetary ones, and so far has not necessarily always followed the ECHI indications in devising its indicators. Additionally, all the new regulations on statistics are subject to a sunset clause. Under this clause the sustainability of the data collections associated with the indicators is not guaranteed in the long run if support from Member States comes to a halt. In an attempt to ensure continuity, the ECHIM suggested to embed the ECHI indicators in the national health information systems as the best possible strategy to muster enough support for their sustainability in the long term. This would also address the issue of the European Countries that are not OECD Member States and therefore do not contribute data to the OECD Health Data database.

On top of that, there are a number of additional pending issues as far as sustainability is concerned and mainly related (i) to those indicators still under development and for which no permanent implementing body has been designated yet, and (ii) those currently run by projects financed under the EU Public Health Programme (PHP) and for which the related data gathering process has not been consolidated yet in financial and institutional terms.

1.3 The ECHI logframe

As foreseen in the Commission's best practices on evaluation, the following logical framework (logframe) table describes the intervention logic of ECHI in terms of the set of hypothetical causal linkages describing how the initiative is expected to achieve its objectives. The logical framework comprises a hierarchy of objectives showing why and how resources are converted into certain outputs intended to attain certain results. The table also highlights key assumptions and risks. The ECHI logframe is mainly based on the template included in the tender specifications for the Study. This information has been complemented with the findings from the first round of exploratory interviews subsequently validated during the inception phase.

Key features of the proposed logframe. The logframe presented in Table 1.2 below includes a series of assumptions and key remarks on ECHI intervention logic which can be summarized as follows:

- Increasing health indicator comparability across Europe cannot be considered as the ultimate objective of ECHI. First of all the comparison of national data or lack thereof was supposed to trigger policymakers into action to fill information gaps and make indicators available when they were not. Then, benchmarking with other Countries by means of indicators was supposed to serve as an incentive to spur policy action and eventually facilitate the identification of best practice.
- ECHI indicators have been expressly conceived to serve a descriptive function for national health monitoring purposes and reporting purposes, complementing the other historical indicators when available. It was assumed that this would cover also other policymaking needs including monitoring and evaluating of specific health policies (policy reporting function) or to quantifying targets in a management by objectives process (target-setting function). It seems that needs in this respect have only been limitedly assessed and a correspondence taken for granted.
- Partly as a consequence of the above, it has been noted that great emphasis and effort have so far been put to ensure the highest possible degree of technical accuracy in the ECHI data comparability irrespective of any other

possible trade-offs, such as that it may be preferable to partly forego accuracy in favour of greater usability.

- The ECHI shortlist has been proposed to the implementing organisations (Eurostat, OECD; WHO) and the single countries as a reference document that they can align their work programmes and methodologies to the ECHI recommendations. The stability of the shortlist has therefore been considered as a major advantage per se irrespective of any other considerations. As a consequence, indicators discontinued by the relevant implementing bodies due to feasibility issues have not been removed from the list, in order also to preserve its stability as a pressure instrument. In this sense, the system appears to have been managed in a rather rigid way. For instance, the mechanisms for updating the shortlist have expressly envisaged that a selected indicator could only be dropped if the related policy priority also subsides.

Table 1.2 - Summary ECHI logframe

	<i>Intervention logic</i>	<i>Objectively verifiable indicators</i>	<i>Sources of verification</i>	<i>Key underlying assumptions and related risks</i>
Principal objective	Establish a sustainable European Health Monitoring System	Consensus among policy-makers on the usefulness of the ECHI instrument and willingness to sustain it	<ul style="list-style-type: none"> ▪ Survey ▪ Interviews 	
Specific objectives	<p>Facilitate the identification and exchange of best practices in policy-making.</p> <p>Promote the use of indicators for health programming, monitoring and evaluation and fill the information gaps.</p> <p>Help to identify the drivers behind possible converging or diverging health trends across Europe and spot problems.</p>	<p>Evidence of use of indicators in producing policies that appear to have occasioned positive health outcomes</p> <p>Number of MS that have developed indicators based on ECHI</p> <p>Number of countries that use indicators for policy-making purposes</p> <p>Extent of use of ECHI among the indicators used for policy-making at the national level</p>	<ul style="list-style-type: none"> ▪ Review of the literature ▪ Interviews with key informants (OECD, WHO) ▪ Surveys ▪ Interviews 	<p>Added value of indicators is deemed worth justifying the implementation costs.</p> <p>Sufficient programming and analytical capacity at the national level</p> <p>It is preferred to use comparable indicators even if their level of comparability is not perfect</p>
Results	<p>ECHI indicators are sufficiently comparable.</p> <p>Available ECHI health indicators are generally of a better quality than competing sets of indicators.</p> <p>Gaps in the health</p>	<p>Experts' opinion</p> <p>Policy-makers' and experts' opinions</p>	<ul style="list-style-type: none"> • ECHIM reports • Survey • Interviews 	<p>There is a genuine interest in comparison and benchmarking among policy-makers</p> <p>There are no alternative indicators or health data monitoring methods</p>

	<i>Intervention logic</i>	<i>Objectively verifiable indicators</i>	<i>Sources of verification</i>	<i>Key underlying assumptions and related risks</i>
	information available at the EU and MS are filled. Awareness about ECHI among policy-makers in Europe increases.	Lists of indicators available Policy-makers' opinions		that perform better or are better suited to local policy-making needs.
Outputs	International organisations (WHO, OECD, Eurostat) align their work programmes to the ECHI shortlist. ECHI indicators are actually collected and implemented at the national level. ECHI indicators are communicated at the national level to the relevant stakeholders.	Eurostat regulations, OECD and WHO work programmes Level of compliance with the ECHIM national implementation plans Policy-makers reached by communication activities Echo in the scientific literature	<ul style="list-style-type: none"> • Review of related documents • Interviews with key informants • ECHIM reports • ECHIM reports • Bibliometric analysis 	<p>There are no methodological reservations on the intrinsic value of ECHI indicators.</p> <p>Indicators are deemed sufficiently feasible.</p> <p>Indicators are sufficiently developed for implementation.</p> <p>The stability of the ECHI shortlist works as a pressure tool.</p>
Activities	A shortlist of indicators is established and constantly monitored to influence their developments. ECHIM experts promote implementation at the national level. ECHIM experts promote use of ECHI at the national level. Commission receives harmonised data flow from data producers and disseminates results in a consolidated dataset by co-financing the OECD Health at a Glance publication.	ECHIM Core Group of health information experts ECHIM National Implementation Team / contact persons are established and operational Heidi data tool contents OECD Health at a Glance contents	<ul style="list-style-type: none"> ▪ ECHIM minutes and project reports ▪ National feedback in ECHIM project reports ▪ ECHI indicators available in the national health information systems ▪ Website hits ▪ Circulation data 	Activities are carried out effectively

2. The demand for health indicators in Europe

2.1 Introduction

This Section deals with the general theme of the policy-driven demand for health indicators across Europe. More specifically, it addresses the first two evaluation questions laid down in the Study's ToR, namely:

1. *Are indicators used for health policy planning and development in a systematic fashion?*
2. *Which indicators are used in policy-making/impact monitoring of health policies?*

It is important to highlight that the above questions refer specifically to the use of indicators in the framework of the policy-making process, and not to the mere existence of health databases and health information system, which are available – with diverse level of comprehensiveness and precision – in virtually all European countries. The availability of a certain indicator is obviously a pre-requisite of its use, but it does not necessarily ensure it is taken into account by decision-makers in a systematic fashion. Hard evidence of use of indicators in policy making can be found first and foremost in the existence of indicators-enabled general health strategies and/or sectoral policies at national and/or sub-national level (in countries with a decentralised health system). In other cases, such use is more informal and therefore can be ascertained only through qualitative sources. In this respect, the sources of information used in this Section consist of a combination of in-depth interviews with key informants and the desk review of policy documents.

The other aspects analysed in this Section includes: (i) the 'type' of use of indicators made by policy-makers (i.e. in which step of the policy-making cycle and for what purpose); (ii) the possible external influences that led to the development /modification of the domestic approach to indicator-based policy-making; (iii) the type of indicator used (broken down by categories); and (iv) the possible reasons for non-use.

2.2 The adoption of indicators in the health policy-making process

Prevalence of indicator-enabled general strategies at national level. The majority of countries surveyed has an indicator-enabled general health strategy in place. There is a variety of approaches to it, which reflects historical trends (e.g. the possible existence of a long tradition of health statistics collection), different approaches to policy-making (e.g. the adoption of an evidence-based planning approach), and the 'external' influence of e.g. collaborations with WHO, and/or the requirements of EU structural funds planning (especially in the case of EU 12 – 'new' Member States).

On the basis of the evidence collected, a classification of the approaches reviewed can be attempted – bearing in mind that what follows is an 'idealtypic' classification, and that in reality the situation is much more complex:

1. **Multi-annual health development strategy.** This is the most typical case of indicators-driven general policy, i.e. a strategic framework document, commonly elaborated by the competent Ministry, laying down the objectives

and priority for action in the coming years, and indicating targets whose achievement is to be measured by means of a set of indicators. Examples of such documents can be found for instance in FI, PT, EE, LV, and HR. In some cases such strategies call for the subsequent development of appropriate measurement indicators either by a dedicated agency (e.g. an autonomous public health institute) or by the competent 'sectoral' services. This is the case, for instance, with the national strategic framework developed by FR, SE, BG and IE. A special case is the German and the Austrian *Gesundheitsziele*,¹⁸ a selection of medium-term health targets, developed through a participatory approach involving both authorities and stakeholders, and recommended for adoption in formal policy / legislation.

2. Performance reporting-driven policy-making. This category includes the cases of overall strategies / or policy-making activities in general, responding in a structural way to regular health performance reports. In other words, while under category (i) the policy establishes the indicators and calls for their implementation (i.e. also prior to their definition and/or arrangements for their collection are in place), in this case the policy can be seen as a reaction to the country's health situation as illustrated by reports. This appears to be the case with UK, NL, BE, ES, NO and – with the surplus of a legal obligation – with IT. The reference document in this case is a periodical national health report (often a health system performance assessment report), whose publication and content are enshrined in legislation / policy, and which has to be more or less explicitly taken into account by policy-makers.

Some other countries have a well-established indicator-enabled policy-making approach, although they do not have elaborated an overarching strategic document as those listed in Box 2.1 below. In some cases – e.g. LU, MT – indicators are systematically embedded in sectoral policies. In countries with a decentralised system, like DE, ES and UK, policy-making is essentially done at sub-national level, and 'regional' entities are free to adopt their preferred approach. In LT and SI the adoption of such a general strategy is reportedly in the pipeline.

Box 2.1 – Examples of indicator-enabled national health policies

BG: National Health Strategy 2008 – 2013¹⁹

HR: National health Development Strategy 2012 – 2020²⁰

EE: National Health Plan 2009-2020²¹

FI: Socially Sustainable Finland 2002²², the Kaste Programme²³; Health 2015 public health programme²⁴.

FR: *Loi 2004-806 4/8/2004* on public health policy²⁵, and connected indicators²⁶

¹⁸ See: <http://www.gesundheitsziele.de/> (DE), and www.gesundheitsziele-oesterreich.at/ (AT)

¹⁹ National Health Strategy 2008 – 2013, Adopted by Resolution adopting the National Health Strategy 2008 - 2013 and Action Plan to it Prom. SG. 107 of 16 December 2008.

²⁰ http://www.hrt.hr/fileadmin/video/49._-1.pdf

²¹

http://www.sm.ee/fileadmin/meedia/Dokumendid/Tervisevaldkond/Rahvatervis/RTA/Ingliseelne/RTA_pohit_ekst_2012_inglise.pdf

²² http://www.stm.fi/en/ministry/strategies_and_programmes/strategy

²³ National Development Programme for Social Welfare and Health Care www.stm.fi/en/strategies_and_programmes/kaste

²⁴ <http://pre20031103.stm.fi/english/eho/publicat/health2015/health2015.pdf>

²⁵

<http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000787078&dateTexte=&categorieLien=id>

DE: Health in Germany - Federal Health Reporting (federal report)²⁷
IE: Healthy Ireland - A Framework For Improved Health And Wellbeing 2013 – 2025²⁸
LV: Public Health Strategy for 2011-2017²⁹
NL: Health close to people³⁰, Towards Better Health (report)³¹
PT: National health plan 2012-2016³²
ES : National Health System Key Indicators - INCLASNS (report)³³
UK : Public health outcomes frameworks (En)³⁴, Public Health Strategic Framework - Health in Wales³⁵

Implementation of indicators embedded in national strategies. The use of general health indicators (i.e. indicators embedded in general health strategies) by policy-makers is obviously connected in the first place with the very availability of data. In the case of strategic documents falling under category (i) above, it is frequent that indicators not yet developed, or not yet collected, are included in the inventory (e.g. IE, BG, FR, FI³⁶) so not immediately available to policy-makers.

In other cases, some indicators have been only recently introduced in national inventory, therefore - although available – they are of poor use for policy-makers since there is not historical series. This issue is reported for instance in IS, EL, RO – where is possibly connected to the lack of a strong, long-standing tradition of embedding indicators in health strategy. In fact, as further elaborated in the following sections, countries with such a tradition are reluctant to change their inventory indicators for the very reason of the inevitable loss of historical data series. The introduction of new indicators may be due to a critical review of the own information system and the willingness to align to international standards – including ECHI – as in the case e.g. of PT.³⁷

Another enabling factor influencing the use of indicators is the existence of a unified health data / reporting system vs. a fragmentation of data collection and reporting among multiple agencies. A typical example is FR: in 2009 the *Haute Conseil de la Santé Publique* (HCSP) published a study on the French indicator system highlighting that despite France has a quite comprehensive and strong data collection system, the exploitation of such data is made difficult by their fragmentation across a number of institutions.³⁸ In countries with an insurance-based health system, the main issue in this field is the lack of integration between health insurances and Government / public health institutes' databases (e.g. CZ and SI). Fragmentation, may in principle occur also due to decentralisation, but in practice the main decentralised countries (UK, ES,

²⁶ <http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics/054000601/0000.pdf>

²⁷ http://www.gbe-bund.de/gbe10/owards.prc_show_pdf?p_id=9965&p_sprache=E

²⁸ <http://www.dohc.ie/publications/pdf/HealthyIrelandBrochureWA2.pdf?direct=1>

²⁹ http://www.who.int/fctc/reporting/party_reports/latvia_annex2_public_health_strategy_2011_2017.pdf

³⁰ <http://www.government.nl/documents-and-publications/leaflets/2012/05/11/health-close-to-people.html>

³¹ <http://www.rivm.nl/bibliotheek/rapporten/270061011.pdf>

³² http://pns.dgs.pt/files/2012/02/99_7_Indicadores_e_Metas_em_Saude_2013-01-18.pdf

³³ http://www.mssi.gob.es/estadEstudios/estadisticas/sisInfSanSNS/inclasSNS_DB.htm

³⁴ <https://www.gov.uk/government/publications/healthy-lives-healthy-people-improving-outcomes-and-supporting-transparency>

³⁵

<http://www.wales.nhs.uk/sitesplus/documents/866/5.1%20PH%20Service%20Framework%20final%20version%2013%2005%2011.pdf>

³⁶ In the case of Finland, the indicators still in the making relates to the *Kaste Programme* (http://www.stm.fi/en/strategies_and_programmes/kaste)

³⁷ See: <http://repositorio.insa.pt/handle/10400.18/982>

³⁸ See: www.hcsp.fr/explore.cgi/hcspr20091111_sisp.pdf

This study was followed in 2012 by another study proposing some reforms for a better collection and exploitation of health data. See: http://www.hcsp.fr/explore.cgi/hcspr20120309_bddadmination.pdf

IT, DE) have a centralised, integrated database – covering at least the essential indicators (e.g. LEA in IT, INCLA-SNS in ES, the RKI's federal health report in DE).

Use of indicators at sub-national level. In countries with a strongly regionalised³⁹ system (e.g. DE, ES, IT, UK, BE, SE) the competence for the design of strategic framework and other policies is onto local governments. This means that in principle local authorities are fully entitled to select and adopt specific sets of indicators to support local policy-making activities. In fact, this seldom happens since even when policy differs, common sets of indicators are adopted by regional entities in the framework of inter-regional coordination agreements. This is for instance the case with Spain, where Autonomous Regions are fully responsible for planning, delivering and evaluating their own health systems, but have agreed in 2007 to adopt a common set of 110 indicators (subsequently reduced by some half) implemented countrywide (the INCLA-SNS).⁴⁰ Similar experiences are registered *inter alia* in DE⁴¹ and in SE⁴². The Italian 'LEA' (basic levels of assistance) are minimum performance targets established by the central Governments that self-governing regional health authorities are required to attain. These targets are common-to-all and mandatory since 2001, although regions have the faculty to adopt additional targets.

The possibility of adopting local indicators in the addition to the national ones is granted - and sometimes actively promoted through *ad hoc* projects (e.g. FI) - also in countries with a somewhat decentralised structure (although not 'regionalised' *stricto sensu*), like FR, PT, NL, LT and others. This possibility seems however not fully exploited in most of the countries examined, and at the local level there is often too limited capacity to set up and run health statistics collection in addition to centrally-mandated ones. As a result, in many instances, significant geographic variability in the adoption, collection and use of indicators is reported (from DE, to BE, NO, PT, IT and others).

The issue of sub-national indicators adoption and use do not evidently apply to countries that for obvious geographical reasons (CY, IS, LV, LU, MT, SI) or political/cultural tradition (HR, BG, RO) have centralised health system – although in the latter group some trends toward decentralisation (especially driven by EU and WHO policies and programmes) are recorded in recent years.

External influences. The development of the above approaches to indicator-enabled policy making, in most of countries was 'inspired' by best practices coming either from other countries (often neighbouring countries) or international organisations,

³⁹ In this Section the term 'region' is used for simplicity to indicate any sub-national territorial entity, although in some instances the translation is formally not appropriate (e.g. for German Länder, Spanish Comunidad Autónoma etc.)

⁴⁰ See : http://www.msssi.gob.es/estadEstudios/estadisticas/sisInfSanSNS/inclasSNS_DB.htm

For further reference on 'regional' health indicator system in Spain, see – for instance:

Galicia:

http://www.sergas.es/cas/DocumentacionTecnica/docs/SaudePublica/IndicadoresSaude/Texto_Explicativo_castellano.pdf

Andalucía: http://www.calidadsaludandalucia.es/es/marco_conceptual.html

Asturias: <http://www.obsaludasturias.com/obsa/wp-content/uploads/Doc-Indicadores-ampliado-2012-VD.pdf>

⁴¹ See: (i) "Health in Germany - Federal Health Reporting" - published every 5-7 years, and prepared by RKI & Federal Stats Office (http://www.gbe-bund.de/gbe10/owards.prc_show_pdf?p_id=9965&p_sprache=E); and (ii) "GBE kompakt" - published on an *ad hoc* basis by RKI since 2 years, on issues of topical interest (http://www.rki.de/EN/Content/Health_Monitoring/Health_Reporting/Kompakt/Kompakt_node.htm)

⁴² See: the quality indicators (kvalitetsindikatorer) presented by the Swedish Association of Local Authorities and Regions (SALAR) and the National Board for Health and Welfare for public health, health care and social affairs. Data for these quality indicators are recorded in quality registries (kvalitetsregister) at the municipal and county level and used for the 'open comparisons' (öppna jämförelser) between municipalities and counties/regions (http://www.skl.se/vi_arbetar_med/oppnajokforelser)

essentially WHO, OECD and the EC. The single most popular 'source of inspiration' for the development of own national health indicators is the WHO Health-for-All initiative, which played a role in 14 of 23 countries surveyed. Other important sources that were influential in more than one third of countries have been OECD, the ECHI project (in more recent years and especially in participating countries), and other individual countries (especially Nordic countries and the Netherlands). A more detailed review of the sources deemed influential in the various countries is provided in Table 2.1 below.

Table 2.1 – External influences in the development of national indicator inventories

WHO	OECD	ECHI	Eurostat	Other countries	Mostly domestic
BG, HR, EE, FI, IE, IT, LV, LT, MT, NL, NO, PT, SI, ES,	AT, FR, IS, IE, MT, NL, PT, ES, SE	AT, CY, EE, EL, IT, NL, PT, ES	HR, MT, NL	AT, FI, DE, EL, IS, IE, ES, SE	FI, FR, DE, IE, IT, SE, UK

Source: based on in-depth interviews with key informants from 23 surveyed countries.

2.3 Main purposes for the use of indicators in policy-making

Possible uses of indicators in policy-making. Indicators can be used in different steps of the health policy decision-making process, and for different purposes. Five main types of policy-use have been identified and tested, namely:

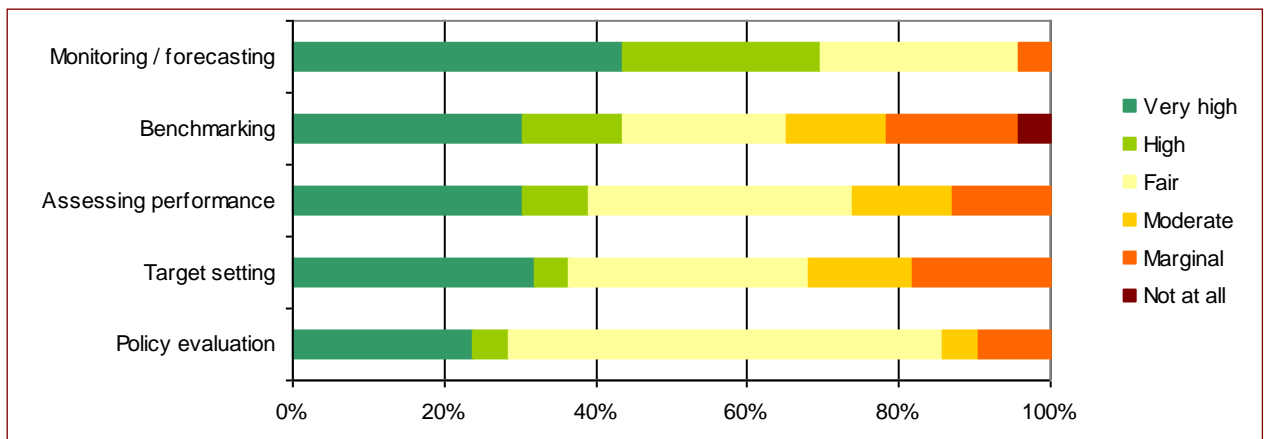
- (i) **Monitoring / forecasting**, i.e. to monitor current trends and forecast future needs as part of the analysis to describe a policy problem, its underlying drivers and/or their evolution over time and eventually substantiate the need for policy action also with quantitative arguments. It is essentially a 'descriptive' use.
- (ii) **Assessing the performance** of the health system in general and steer activities accordingly. It is the typical use made in connection with HSPA reports.
- (iii) **Benchmarking**, i.e. comparing the country's situation and/or performances with other countries and/or an EU average on the basis of a common set of indicators, with a view to possibly close a gap or addressing critical areas. It can be considered a 'reporting' use (since it typically materialises in the publication of comparative reports).
- (iv) **Target-setting**, i.e. to define quantifiable objectives and targets of policy actions in either absolute or relative terms, to be subsequently monitored. This may include reference to objectives and targets established in EU policies / legislation.
- (v) **Policy evaluation**, in connection with the above, it refers to the last phase of the policy-making cycle, i.e. when the outcome of a given policy action is measured against its objectives and the result is fed back to policy-makers.

As much as possible, only 'systematic' use of indicators along the above lines has been taken into account in the analysis. This entails that either (1) there is a consolidated practice of indicator-based policy-making inclusive of explicit quantified targets, and possibly monitoring mechanisms of related means of verification and feedback and reporting procedures, or (2) there is a consolidated tradition of having recourse to comparative benchmarking for analytical purposes. The following practices were

instead not considered as systematic use in the Study: (i) any practice of informally or tacitly considering indicators for health planning purposes in general; (ii) assessment of the performance of health systems in mere financial terms; (iii) sporadic recourse to indicators in policy papers or other documents aimed at influencing the policy debate.

The results are summarised in Figure 2.1 below, which described to what extent policy-makers make use of indicators (in general) for the abovementioned possible purposes.

Figure 2.1 – Extent of use of indicators in policy-making by purpose



Source: based on in-depth interviews with key informants from 23 surveyed countries.

- **Monitoring trends / forecasting needs** is the most common use of indicators in policy-making. They are largely used for this purpose in about two-thirds of surveyed countries. It is the underlying motivation for the establishment of comprehensive health information databases more and more integrated and harmonised. Obviously, it requires consistent data series, and therefore is suitable for well-established and standardised indicators, i.e. for countries with a longstanding tradition in the collection of health indicators (e.g. Nordic countries, UK, NL etc.). On the other hand, this kind of use is difficult to monitor. Policy-makers are supposed to take them into account in the policy process, but other considerations and interests may prevail, and there is typically no way to track if the evidence provided through health indicators has indeed informed the political decision and how. Due to the limited 'engagement' produced, this type of use is widespread in countries with regionalised system (e.g. IT, ES, UK, SE), i.e. where this use is particularly coherent with the competence of central authorities on health policy.
- The use of indicators for **benchmarking** purposes seems the most polarised. More than 4 in 10 countries reports the extent of this use to be 'high' or 'very high' but a similar percentage instead declares such use to be moderate or low. Big, regionalised countries like DE, IT, ES, appear less engaged in comparisons possibly due to practical reasons (i.e. disparities in the availability and quality of data across internal regions). In such countries, it is possible that benchmarking is extensively carried out at the level of sub-national entities, as it is the case for instance in the UK with England and Scotland. There appears to be limited interest in benchmarking exercises also in Nordic countries, where comparisons are reportedly carried out especially within the country (across regions/municipalities) or in some cases within the Nordic region. At the opposite end stands MS that have carried out in the past few years systematic

benchmarking study based on ECHI indicators, i.e. NL⁴³, FR⁴⁴ and RO⁴⁵, as well as many other (especially small) countries that report to carry out continuous comparisons with neighbouring countries⁴⁶ and the EU, using ad hoc selection of Eurostat, WHO and OECD data (hence implicitly some ECHI), e.g. LU, MT, SI, LT, EL, IE.

- The use of indicators for **assessing the performance** of the health system (and take appropriate measures accordingly) is by definition typical of countries having adopted the approach (2) indicated in Section 2.2 above. Accordingly, it is quite popular in North-western Europe (BE, NL, UK, IE) and IT. In addition, it is a typical use in part of the Baltic region (FI, LV, LT) and MT. Conversely, health system-related indicators do not compare (or only marginally) in the health strategies of FR, NO and BG, while DE, ES and SE report that such use is typical at sub-national level, since at the central level the information is not always complete or adequate in quality, but it is expected that this will improve in the future.
- Conversely, the use of indicators for **setting targets** of policy action is typical of the above approach (i), i.e. the development of multi-annual indicator-enabled general health strategy. In this context, indicators are laid down with the aim of ensuring that objectives are measurable. This use is quite polarised, and a good share of countries also appears quite neutral in this respect. This reflects the fact that this use is typically associated to specific policy area (e.g. smoking incidence) as reported for instance in DE and ES, although there are examples of more far reaching targets (EE, SE). A second issue is that in various contexts policy-makers are reluctant to set quantifiable objectives to policies (e.g. NL, IT, partly DE). Some countries reports objectives and targets are set **in connection with EU policy / legislation**, and/or to explicitly fill in gap with EU average. For instance in CY, the use of indicators in health policy is reportedly almost exclusively driven by EU standards. Similar considerations are frequent in the Baltic republics, SI and MT, while not so much in DE, LU, PT and FI.
- The use of indicators to **evaluate policy's** outcome and performance stems logically from the adoption of quantifiable targets within policies. In this respect, however, it is important to differentiate general strategic policies, with far-reaching, overall impact indicators (e.g. those linked to life-years and the like) from more specific, performance indicators embedded in sectoral / thematic action plans (which includes often 'process' indicators e.g. number of cancer screenings etc.). As regards the first type, many key informants commented that they are often too generic to be used to evaluate the real effects of policies (possibly, they can be more easily used to demonstrate the inefficacy of policies than their effectiveness, since it is complex to attribute exclusively to individual policies macro-impact on the population). This remark according to some respondents applies also to ECHI indicators, whose utility for policy evaluation purposes is limited. Instead, more widespread appears to be this use in the case of more specific policies, especially sectoral ones.

⁴³ The 'Dare to Compare' report from 2008, is the first of this kind and inspired similar exercises in other countries. It provides an international comparison of Dutch Health using the ECHI-indicators and simultaneously provided an analysis of the availability and quality of Dutch health data. <http://www.rivm.nl/bibliotheek/rapporten/270051011.pdf>

⁴⁴ HCSP, La santé en France et en Europe : convergences et contrastes, <http://www.hcsp.fr/Explore.cgi/avisrapportsdomaine?clefr=268>

⁴⁵ Profilul stării de sănătate pe baza indicatorilor comunitari ECHI, http://www.insp.gov.ro/cnepss/wp-content/uploads/2010/12/SINTEZA_ECHI_2011.pdf

⁴⁶ For instance LT, LV and EE regularly publish the report "Health in the Baltic Countries" with comparative statistics from the three countries, <http://sic.hi.lt/data/baltic11.pdf>

2.4 The types of indicators used in health policies

Categories of indicator used. There is significant variability in the amount and the type of indicators used in overall national health strategies, which reflects the different approaches sketched in the previous sections. Certain policy documents include a limited number of priority targets measured by a small set of indicators (e.g. the 10 *Gesundheitsziele*, but also the Swedish 11 objectives of PH, and the like). More frequently, the number of indicators used in general strategies range from some 30 (e.g. LV, IE) to some 90-100 (ES, NO, PT). In few cases - e.g. FR - the list of indicators developed in connection to national health strategies are even greater, but the trend is to slim down the inventory of indicators used at the 'strategic' level. Such trend has been reported for instance in ES (from 110 in 2007 to a planned 50) in IE, and in FR (expected significant reduction of the 100 objectives of *Lois 2004-806* in the next legislation).

As regards the category of indicators used in national strategic documents, quite expectedly the totality of the documents reviewed included health status (e.g. mortality, disease statistics) and health determinants (e.g. obesity, alcohol, but not that much environment-related) indicators. Specific attention to age groups and maternity is given in a number of cases (e.g. FR, DE, LU, LV). Also, the issue of health inequalities and vulnerable groups is increasingly under focus (e.g. BE, HR, FR, DE, SI). The inclusion of health system performance indicators appears instead divisive, with countries giving it much emphasis (e.g. IT, BG) while others not including them in the general strategy, but monitoring them separately (e.g. FR, HR, SI, DE).

A further complication is the fact that indicators embedded in general national strategy documents are not necessarily the only indicators used for policy-making in the country. Virtually all countries surveyed have more or less developed sectoral policies (action plans, sectoral programmes) which more often than not include targets and indicators for monitoring and evaluation. Among the countries surveyed, the elaboration of indicator-enabled sectoral policies has been found particularly developed in FI, FR, MT, NO, EE, ES, PT, UK, AT among others. There appears to be no 'typical' thematic areas, but indicatively the following themes are frequently covered by sectoral policies: (i) maternal / perinatal health; (ii) nutrition and obesity; (iii) alcohol; (iv) tobacco; (v) cancer; (vi) mental health; (vii) patient safety; and (viii) health inequalities. Obviously, the type of indicators used in sectoral policies are comparatively more of the performance / process kind but this cannot be generalised, since in some cases sectoral policies are formally considered integral part of the overall national strategies (e.g. EE, PT, AT).

A more systematic review of the types of indicators used in policy-making (irrespective of whether as part of a general strategy or of sectoral policies) has been carried out under this Study on the basis of in-depth interviews with key informants.⁴⁷ Since the way to classify policy areas and to gather indicators vary from country to country, an ECHI-inspired classification has been used to this end. As per the existing Commission classification of the ECHI shortlist, there are five main families of indicators, namely:

⁴⁷ This exercise was 'backed up' and triangulated by the documentary review sketched in the previous paragraphs, which however could not have been exhaustive due to obvious linguistic barriers. Needless to say, being based on an 'expert assessment' in various instances the information gathered could not be substantiated by hard evidence at hand, i.e. it is possible (and in some instances it was explicitly reported) that the reported use in policy-making is 'informal' and not part of any structured decision-making procedure.

- a. a first basic set of indicators about **demography and the socio-economic situation**;
- b. conventional epidemiological indicators about **health status** (mortality and morbidity);
- c. indicators about known **health determinants**;
- d. indicators about the **performance of health systems**;
- e. indicators about the **degree of implementation of health policies**.

These broad conceptual categories have been further subdivided into more specific analytical categories, inspired to the categories proposed by the OECD in its seminal work⁴⁸ on health outcome indicators and complemented with some consultant's inputs for some missing categories.

The results of the analysis are illustrated in Table 2.2 below, and can be briefly summarised as follows:

- the totality of countries surveyed reportedly collects and uses general **mortality indicators** (normally based on cause-of-death registries), as well as indicators related to **health determinants** such as: nutrition, obesity, drugs and alcohol abuse.
- it is also particularly widespread the use of **demographic and socioeconomic** indicators in the context of health policies, as well as in areas such as **life-style related mortality, disease-specific morbidity, and self-assessed general health** (perceived disability and impact of disease on the quality of life are instead seen as somewhat more problematic in certain countries due to the subjectivity of the assessment);
- the majority of the countries surveyed also reported a systematic use of indicators on the **performance of the health system**, with some caveats: (i) quality of treatment indicators like survival after treatment (especially for cancer) and preventable – and to a less extent 'avoidable' - morbidity and mortality are quite common, but indicators of interventions effectiveness are seldom measured; (ii) similarly, access to service (especially for special groups, e.g. migrants) and healthcare costs and infrastructures indicators are frequently used, but not as much as specific indicators on efficiency issues;
- the use of composite **multidimensional indicators** of health status is reported by about half of the countries surveyed, with a higher incidence in the case of indicators based on 'subjective' (.e. interview-based) data. A moderate use of health determinants indicators linked to work, social and environmental conditions is reported. In the case of work and social conditions, it must be sad that this often falls under social policies;
- very few countries make recourse to indicators on the **implementation of health policies**, both of vertical nature or transversal (i.e. linked to integrated programme). In a few cases, this is done for tobacco policy, possibly in connection with EU policy.

Table 2.2 – Reported use of indicators in policy-making by type of indicator

Families of Indicators	Use	Type of indicators	Use	Sub-type indicators	of	Use
Demographic and socioeconomic	VH	Demographic indicators	VH	N/A		N/A
		Socioeconomic	VH	N/A		N/A

⁴⁸ Melissa Jee, Zeynep Or *Health Outcomes in OECD Countries. A framework of health indicators for outcome-oriented policymaking*. OECD 1999

		indicators			
Health Status	TOT	Mortality indicators	TOT	General mortality indicators	TOT
				Lifestyle-related mortality indicators	VH
		Disease specific morbidity indicators	VH	Communicable diseases	VH
				Non communicable diseases	VH
		Self-assessed health status	VH	General perceived health	VH
				Impact on the quality of life and perceived disability	H
		Composite indicators multidimensional	M	Based on subjective data	H
				Based on objective data	M
Health Determinants	TOT	Nutrition, obesity and physical activity	TOT	N/A	N/A
		Alcohol and illicit drugs	TOT	N/A	N/A
		Smoking and tobacco	H	N/A	N/A
		Work conditions	M	N/A	N/A
		Social and Natural Environment	M	N/A	N/A
Performance of the Health Systems	H	Quality of treatment	H	Avoidable preventable morbidity and mortality	H
				Survival rates after treatment	H
				Effective interventions	L
		Efficiency of healthcare	H	Access to services	H
				Costs and infrastructure	H
				Efficiency issues	M
Implementation of Health Policies	L	Policy-related indicators	L	Nutrition, tobacco, etc.	L
		Transversal indicators	L	Integrated programmes	L

Note: Scores relate to the extent of key informants affirming that the indicator is used to some extent in policy-making in the country. Scores are calculated only taking into account 'informed' answers ('don't know' is not included), whose total varies from item to item (from 13 to 17).

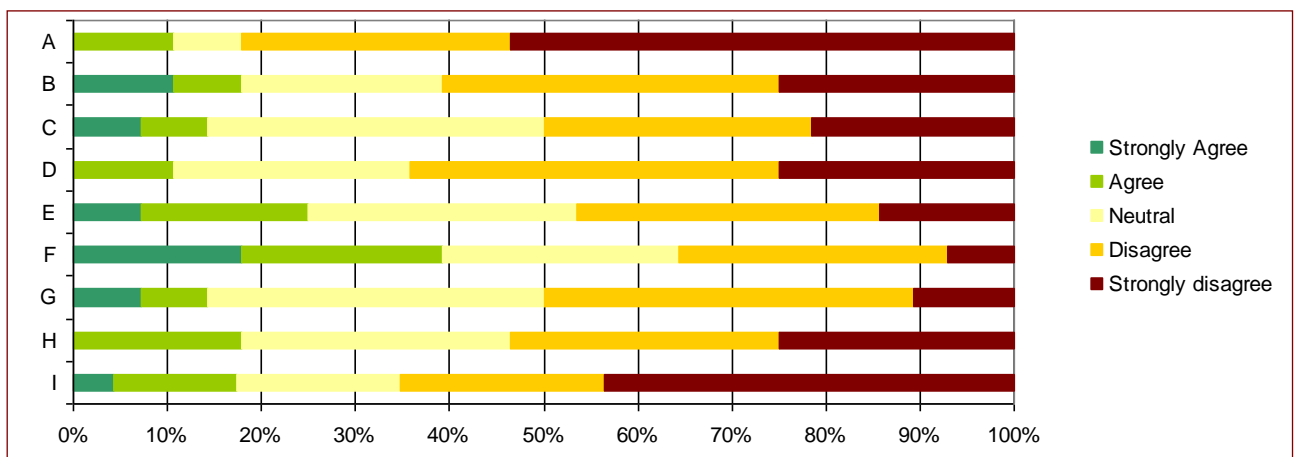
Legend: TOT: Totality (10/10 "YES" answers); VH: Very High (8/10 or more); H: High (6/10 or more); M: moderate (4/10 or more); L: Low (2/10 or more); VL: Very Low (less than 2/10).

Factors affecting the use of specific type of indicators. In order to fully appreciate the possible reasons for non-use of specific category of indicators, a series of potential methodological / practical issues connected to certain types of indicators have been tested with relevant authorities / experts of the country surveyed. The aim was to ascertain the possible existence of structural obstacles to the adoption of certain indicators, their severity and possible ways to overcome them. The analysis is based on experts' feedback (agreement/disagreement) to the following statements

concerning specific types of indicators. The results are illustrated in Figure 2.2 further below.

- A. **Demographic and socioeconomic indicators** are essentially context indicators, and are therefore irrelevant for decision-making;
- B. **General mortality indicators** are of limited relevance, what matters are “avoidable mortality” indicators;
- C. Likewise, **morbidity indicators** are of limited usefulness unless they relate to “avoidable morbidity” or to the effectiveness of interventions;
- D. **Lifestyle-related mortality indicators** are based on estimates and models that are too speculative and therefore do not offer a reliable basis for action;
- E. **Indicators on non-communicable diseases** are of limited use for policy-making unless they provide information on incidence or reliable estimate of the prevalence, i.e. based on health examination survey and not on patient’s awareness;
- F. **Indicators on self-perceived health status** are intrinsically unreliable for cross-country benchmarking because of cultural biases;
- G. **Composite life expectancy indicators** (e.g. healthy life years) are typically unreliable due to the fact that are based on data subject to cultural biases and /or on overly speculative models;
- H. **Data on health determinants** are of limited use for policy-making when based on self-reported data and not on objective/clinical examinations;
- I. **Indicators on the implementation of health policies** are of limited interest for policy-makers themselves, who are perfectly aware of the progress reached in certain areas, with no need to resorting to an indicators system.

Figure 2.2 – Assessment of possible factors affecting the use of indicators



Legend: For the full statements corresponding to ‘A’ through ‘I’ refer to the list in the previous page
Source: based on in-depth interviews with key informants from 26 surveyed countries. ‘Don’t Know’ answers not included.

Overall, there is a marked prevalence of disagreement with statements #A, #I, #D and #B. In particular:

- Demographic and socioeconomic indicators (#A) are not viewed simply as context indicators, but are relevant to define the policy problem (although not directly useful to take specific action), e.g. with reference to trends of ageing, fertility, family composition, migration, ethnic background, etc. They are also essential for programming under the structural funds.

- Mortality indicators (#B) are also deemed useful, since they often lay at the basis of the computation of 'avoidable mortality' indicators. Also, avoidable mortality cannot always be measured.
- As concerns lifestyle-related mortality indicators (#D), most of respondents stress the importance of using a rigorous and validated methodology for their calculation. When this is ensured, these indicators are considered very relevant for policy steering.
- With respect to indicators measuring the implementation of health policies (#I), it has been remarked that in principle they can be of significant use, but the problem lies in how to define them in a rigorous way.

A less strong disagreement (although prevailing in relative terms) was voiced about statements #C, #E, #G and #H. In particular:

- It is underlined that statement #C on morbidity indicators can be true for some disease and not for others (e.g. Alzheimer is not an 'avoidable' disease, so morbidity is an essential indicator).
- Although the majority of respondents disagree with statement #E on non-communicable diseases indicators, a non-negligible share confirms the existence of an issue of reliability on information that is collected via health interviews (and not health examinations).
- Various respondents disagree with statement #G on composite life expectancy indicators, since their reliability greatly depends on the methodology and the way they are used. On the other hand, some remarks that methodologies valid in one country are not necessarily valid in another one, and this may distort outcomes.
- The existence of possible bias in self-reporting can indeed affect health determinants data (statement #H) but various respondents highlight that such bias can be assumed constant overtime, therefore these data maintain their utility in showing trends.

The only case where the majority of respondents agree with the existence of an obstacle preventing the use of a certain category of indicator relates to statement #F, i.e. there is consensus on the fact that indicators on perceived health status are of limited use for country comparisons due to intrinsic cultural biases, although they maintain a general usefulness for other purposes.

3. The knowledge of ECHI among concerned groups

3.1 Introduction

This Section analyses the level of awareness of ECHI in two main groups, i.e. policy-makers of participating countries and the scientific / academic community. To this end, two different approaches have been adopted:

1. The level of knowledge about ECHI among policymakers has been measured through self-assessments collected via a questionnaire survey. In particular the survey investigated the sheer awareness of ECHI existence, the level of knowledge about its content (indicators definition, methodology etc.) and of its related tool (e.g. HEIDI data tool). The results were broken down by professional profile of respondents in order to allow comparisons between different sub-groups of policymakers. The analysis also involved a comparative assessment of the main national / international sources of health information available to policymakers, aimed at collecting evidence on the effectiveness of ECHI promotion activities.
2. In order to measure ECHI knowledge by the scientific / academic a bibliometric approach has been adopted. This involved the quantitative assessment of ECHI bibliometric status in the scientific journals via citation analysis and impact factor analysis. The quantitative analysis was complemented by an in-depth qualitative analysis (content analysis) of the scientific literature that has been found through bibliographic research.

The results of the analysis allow to respond to the following evaluation questions:

- *What is the current level of knowledge about the ECHI list in a given MS, in particular by decision-makers in the health field?*
- *What is the bibliometric status (e.g. Thomson Citation index) of ECHI in peer-reviewed scientific literature?*

3.2 General awareness among policymakers

Overview. The level of knowledge about ECHI appears quite diversified both in geographical terms and among different categories of policymakers concerned. Quite expectedly, it is generally much higher in countries that belonged to the ECHIM core group. With respect to policy-maker categories, health information experts result more aware of ECHI than all of other groups. Quite surprisingly, the level of knowledge is not higher among policy-makers operating at central level than among the regional / local ones, but in this regards major national variations exist. The publication of an ECHI-based benchmarking report, as well as the past implementation of EU pre-accession technical assistance projects specifically focused on ECHI are factors that seemingly contribute to increase the level of knowledge about the instrument at both the national and the regional level in the countries concerned.

Results from the survey. All in all, the results from the survey would indicate that the level of awareness about ECHI could be rated as *high* - when measured against the target established during the Study's inception phase⁴⁹. As can be seen in Table

⁴⁹ During the inception phase it was agreed with the steering committee that the level of awareness about ECHI could be considered as low with less than 25% of survey respondents reporting some degree of familiarity with either the shortlist, its underlying methodology or with the Heidi data tool. Conversely awareness would be considered high when up to 50% applies, and very high with > 75%.

3.1 below, over 50% of survey respondents actually could claim a fair knowledge about the ECHI instrument and familiarity with its contents. In particular, some 35% of them declared they are quite well-informed about the contents of the shortlist, and another 20% reported to have some familiarity with the underlying methodological issues. Conversely, some 15% of respondents acknowledged their total ignorance about ECHI before the survey, and another 28% admitted to have a very superficial knowledge of ECHI.

Table 3.1 - Level of knowledge about ECHI by categories of respondent

Categories of Respondents	Did not know about ECHI before participating in this survey	Have heard of an ECHI shortlist but not familiar with contents	Quite familiar with the ECHI indicators but not with its methodology	Fully familiar with the ECHI indicators and related methodology
Programming of resources and financing of the health system	8.3%	33.3%	58.3%	0%
Planning of health strategies and policies	23.5%	35.3%	29.4%	11.8%
Evaluation and monitoring of policy implementation	16.5%	33.3%	33.3%	16.5%
Health information services or study dept	10.8%	18.9%	35.1%	35.1%
External policy influencers (e.g. academicians and researchers)	12.5%	12.5%	37.5%	37.5%
TOTAL	15,6%	27,8%	35,6%	20,0%
<i>of which active at the regional level</i>	<i>14,3%</i>	<i>21,4%</i>	<i>35,7%</i>	<i>28,6%</i>

Source: Elaboration of survey results

It can also be noticed that the 50% threshold has barely been reached in the case of evaluation and monitoring experts, and that the level of awareness about ECHI among policymakers directly involved in the planning and monitoring of strategies and policies is considerably lower than the average and reaches just some 40% of that total. Conversely, the level of knowledge about ECHI among health information experts and the so-called external policy influencers (i.e. academicians and researchers more directly involved in influencing the policymaking process) could even be defined as 'very high' and lies in the region of 70%-75% of their respective total. No major differences could be noticed as to the level of knowledge between respondents at the national and the regional level⁵⁰. It is worth reminding that survey data are likely to slightly overestimate the actual level of knowledge in absolute terms

⁵⁰ Data at the regional level are even higher than average because of the heavy representation of respondents from the Spanish regions who proved very well informed about ECHI because of reasons better explained in chapter 7 below.

because many survey non respondents declined participation by claiming their very limited knowledge of the subject.

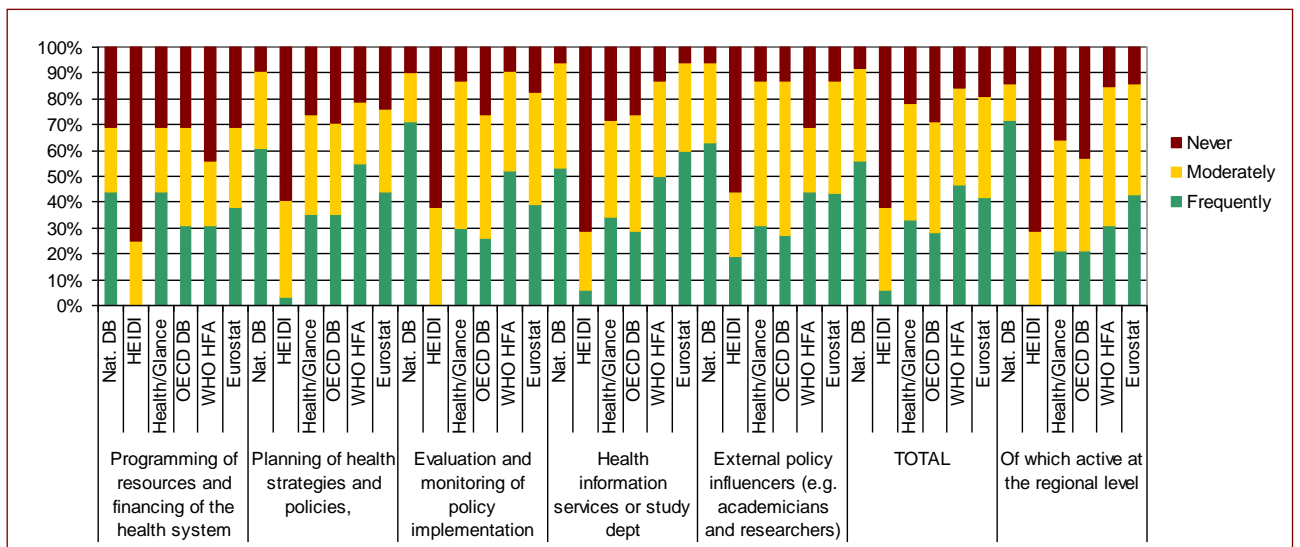
Results from the interview programme. The results of the survey have been broadly confirmed also by the in-depth interview programme with ECHI key informants (ECHIM steering group members and EGHI representatives). As a matter of comparison, some 50% of these interviewees have categorised knowledge about ECHI in their Countries as limited or very limited outside a small circle of experts, and in general as lower than average among the staff of health policy units and other decision makers. Conversely, the level of knowledge within the health information expert community has often been categorised as good or very good, also because these professionals were specifically targeted by ECHIM communication activities. Finally, as a further confirmation of these broad trends it was found that some 55% of the European Stakeholder Organizations contacted for this exercise (mainly through their policy officers) declared themselves unaware or barely aware about ECHI, as compared to the remaining 45% who proved fairly aware or even consolidated users.

The sources of information about ECHI. As Table 3.2 below clearly shows, the national databases still represent by far the most widely used source of information in this regard, but ECHI does not have a dedicated subsection of national databases in all countries, and when it does this is not always regularly updated. The WHO-Europe and the Eurostat databases closely follow as the second most widely used source of information, but ECHI indicators (there,) are not identified as such, a feature some interviewees have found puzzling and somehow confusing, especially in the case of the Eurostat. The use made of the OECD database and of the OECD Health at a Glance report as sources of information about health indicators are broadly comparable in terms of the audience reached, but ECHI have been acknowledged and identified as such only in the OECD report. The only ECHI-specific means of dissemination, the HEIDI data tool, has remained available to the public for too short a period of time to become really mainstreamed as a source of information, and its impact in terms of information dissemination capacity can be considered as still rather marginal, and this irrespective of the outstanding debate on its user-friendliness which remains in this respect a secondary aspect⁵¹. According to some interviewees, past experience with similar databases shows that it takes years or even decades for them to enter into common everyday use. It can therefore be concluded that for the time being it is mainly the OECD report spreading the word about ECHI in all those Countries where an ECHI-dedicated publication or an ECHI subsection in the national database is not available⁵².

⁵¹ Other initiatives have very powerful data presentation tools. For instance the Global Burden of Disease shows how disease patterns have changed over time in selected countries, extensively uses colours and includes heatmaps and arrow diagrams. See <http://www.healthmetricsandevaluation.org/tools/data-visualizations>

⁵² As a rough proxy of this it can be noticed that a quick Google search of "OECD Health at Glance 2012" at mid-May 2013 gives some 13,100,000 hits as compared to the 1,100,000 hits of the Google "Heidi data tool" search, i.e. with a difference in an order of magnitude of ten times.

Table 3.2 - Sources of data used to access health indicators (multiple answers possible)



Legend: Never=Not familiar / never accessed; Moderately= accessed 1-3 times in 12 months, Frequently= more than 3 times in 12 months
Source: Elaboration of survey results

It is interesting to notice that the different sources of information on health indicators are not neutral in terms of their targeted audiences, and there is a correspondence between certain categories of users and their preferred sources. Perhaps unsurprisingly, experts in programming of resources and financing of the health systems frequently report to turning to OECD sources, and in particular the Health at a Glance report, which probably explains the otherwise surprisingly high level of knowledge about ECHI among this category of users, particularly when compared to other categories of policymakers. Experts involved in policy planning and monitoring and evaluation display preference for WHO sources, especially in the case of policymakers operating at central level, while their regional peers seems more bound to national sources. It could eventually represent a matter of concern for the Commission that the Heidi data tool appears frequently used not that much among policymakers strictly speaking, but rather by health information experts and, above all, by the academicians. On the one hand this appears somehow distorted as compared to the original policymaker-oriented intentions of the overall Wiki initiative. On the other hand and possibly even more importantly, this would, in fact, mean that even at full regime any combination of Heidi data tool and the OECD Health at a Glance report as sources of information about ECHI appear unlikely to fully replace the missing references in the Eurostat database in terms not only of size of targeted audience, but also in its composition.

3.3 The bibliometric status of the ECHI Indicators

Bibliometric analysis. A bibliometric analysis⁵³ was conducted to assess the level of awareness of ECHI in the scientific community and the overall ECHI bibliometric

⁵³ The bibliometric analysis method is aimed at measuring the output of scientific research, through a quantitative analysis of publications, which are in turn classified according to the strand of specialised literature where they belong. In general, the bibliometric analysis involves various techniques for data retrieval and handling (data mining, statistics, network analysis etc.) and in the context of evaluation exercises it is typically used to assess three types of indicators: (i) output indicators (no. of publications, concentration of activity,

status. The exercise has involved a triangulation of sources, including both direct input from interviews with key informants and two separate bibliographic searches. Interviews were mainly intended to capture local sources and grey literature in the national languages, while the bibliographic searches were aimed at assessing ECHI bibliometric status. By "bibliometric status" we mean here the visibility of ECHI and similar key words in the relevant scientific literature and the related circulation. This has mainly included the peer-review publications routinely monitored in international databases. Out of a shortlist of five international scientific databases, PubMed⁵⁴ and OVID were the two selected to run the exercise. The choice of the databases of reference required a comparative assessment of their respective merits relative to the specific features of this assignment. The search was initially conducted over PubMed, having uncovered the relative advantages of researching this database over the main alternative ones readily available. However, since PubMed arguably remains exposed to some criticism on account that it may be considered biased towards some publications, languages and/or countries, a second search was subsequently run in OVID. In both databases the key word search was organised into a simple search and a composite search, where 'composite' refers to searches inclusive of the Boolean operator 'AND'. No filters (such as time range or language) were applied, to keep each search as comprehensive as possible⁵⁵.

Results from fieldwork. As concerns scientific publications in national languages and grey literature, results have been generally rather limited, but at any rate very country-specific. No additional scientific publication in peer-reviewed journals has been identified, other than what already found by means of bibliographic searches. The ECHI indicators have been extensively used for two descriptive books recently published in Italy⁵⁶ and there is some evidence they have also been dealt with within

specialisation spectrum etc.); (ii) visibility indicators (citations, impact factors etc.); and (iii) partnership indicators (co-authorships and the like). In line with the objective of the Assignment, the present bibliometric analysis has focused essentially on indicators of visibility and output, i.e. the number of citations of ECHI-related terms and their positioning in the scientific literature.

⁵⁴ PubMed strikes an optimal balance among its features of journal and language coverage, accessibility and focus on the subject area at hand. In a nutshell, PubMed is a free database primarily comprising references (abstracts and full-text articles) from the wider MEDLINE database; it covers over 6,000 in life science and biomedical topics and pools articles in 57 languages. PubMed appeared to be a very exhaustive channel as far as the subject matter was concerned, and in particular policy applications of the medical sciences. Web of Science (WoS) and Scopus cover scientific journals but their focus was found more general (especially WoS), and the specific coverage of medical sciences smaller. This is also confirmed by the practical tests carried out by Falagas et al. PubMed also has the largest language coverage after Google Scholar, which is of particular importance, since it better supports the geographical dimension of the analysis. In addition, PubMed is the most frequently updated, including online early versions of articles to be later released in print. In contrast, Scopus and WoS do not include early versions available on-line. The ECHIM reports having been published in mid-2012, the analysis demanded a clear bent towards recent publications; on this ground, too, PubMed appeared the best-suited tool.

⁵⁵ In PubMed, the simple search comprised the following words: ECHI; ECHIM; EGHI; "HEIDI wiki"; "European Community Health Indicators"; "EC Health Indicators"; "European Union Health Indicators"; "EU Health Indicators". The composite search, instead, comprised the following sets of words: EC AND "Health Indicators"; "European Community" AND "Health Indicators"; EU AND "Health Indicators"; "European Union" AND "Health Indicators"; "European Community Health Indicators" AND Monitoring; "Experts Group" AND "Health Information"; HEIDI AND "data interface"; HEIDI AND "data tool"; HEIDI AND "health information"; "EU health strategy" AND ECHI; "European Union health strategy" AND ECHI; "European Union" AND "Health Strategy" AND ECHI; European AND "Health Strategy" AND ECHI. The key words were searched in text or title. No filters (such as time range or language) were applied, to keep each search as comprehensive as possible. In OVID, the simple search included the following terms: ECHI; ECHIM; EGHI; "HEIDI wiki". ECHI was searched in title or abstract, while the others were searched in title, text or abstract. The composite search, instead, came down to the following concise syntax: (European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)

⁵⁶ Namely a study on women's health and related health inequalities Osservatorio Nazionale sulla Salute della Donna - *La Salute della Donna - Stato di Salute Assistenza nelle Regioni Italiane* - Libro Bianco 2011, Franco Angeli 2012 and a study on the health status of a county M.Niero La salute dei mantovani - Epidemiologia, percezione e differenze.

the framework of academic textbooks there⁵⁷. In Luxembourg, a few publications, rather closely - though not explicitly - inspired to ECHI have been retrieved⁵⁸. In the Netherlands RIVM pioneered ECHI-related scientific production, particularly during the years of its role as ECHI lead. On top of that it has been frequently mentioned that ECHI has been the subject or one of the subjects dealt with in a number of public health conferences and scientific meetings, particularly in the Mediterranean and some Eastern Countries.

Results from the combined bibliographic searches. As reported in greater detail in the Annexes the combined bibliographic searches have produced a final list of a total of over 90 valid results (after false positives have been screened out). The list includes both policy articles that relate directly to the key words searched or that attain to complementary thematic areas. For instance, in the case of the "European Union" AND "Health Indicators" search on PubMed, articles were admitted that related directly to ECHI, but also articles documenting the need for and/or experience of developing European health indicators (sometimes attached to specific areas, such as mental disabilities), which were not strictly ECHI initiatives. These over ninety articles can be classified into five categories:

1. A number of ECHI-related publications have been authored by first-hand participants in the ECHI project and the ECHIM JA. Aside from the congresses and conferences reported above, these specialised publications have represented in fact one of the principal channels used for dissemination of information about ECHI among the scientific community. Accordingly, this constitutes a relevant category of its own (Category 1). The number of publications falling in this category adds up to five; however few, these can be considered as the core articles that are most representative of the ECHI presence and associated debates in the scientific literature.
2. A second category is represented by the publications written in the context of other European projects that aim, *inter alia*, at producing public health indicators and possibly advocate for the inclusion of their indicators in the ECHI shortlist (Category 2). This is where the major share of the valid hits is, with 36 publications falling under this set. Such European projects include the EUPHIX-model for health monitoring, the European Health Promotion -

⁵⁷ F.Vitale, M. Zagra Igiene, Epidemiologia e Organizzazione Sanitaria orientate per problemi - Elsevier, 2012.

⁵⁸ 1. Alkerwi A., Sauvageot N., Nau A., Weber G., Columeau A., Beissel J., Delagardelle C., Couffignal S., Lair M.L., 2012, « La situation épidémiologique des facteurs de risque cardio-vasculaire potentiellement modifiables chez les adultes résidant au Luxembourg, en 2007-2008 », Enjeux Santé n°4, Bulletin luxembourgeois de la recherche et des études en santé publique, Ed. CRP-Santé; 2. Currie C., Zanotti C., Morgan A., Currie D., de Looze M., Roberts C., Samdal O., Smith O.R.F., Barnekow V., 2012, « Social determinants of health and well-being among young people: HBSC international report from the 2009/2010 Survey », Copenhagen, WHO Regional Office for Europe, (Health Policy for Children and Adolescents, No. 6); 3. Desroches S., Brochmann C., Wagener Y., Weber G., 2011, « L'alimentation de nos bébés - enquête nationale sur l'alimentation des enfants de 4, 6 et 12 mois au Grand Duché de Luxembourg en 2008 », Ed. Ministère de la Santé; 4. Swennen B., Robert E., Hansen-Koenig D., Wagener Y., Weber G., Brochmann C., Guedes E., 2009, « Enquête de couverture vaccinale au Grand Duché de Luxembourg - octobre 2007 à mars 2008 », Ed. Ministère de la Santé du Luxembourg; 5. Boyle P., Smans M. (editors), Benichou J., Boniol M., Gillis C.R., La Vecchia C., Levi F., Maisonneuve P., Mazzeo C., d'Onofrio A., Pukkala E., Quinn M.J., Robertson C., Zaridze D.G., Zatonski W. (scientific committee), Hackl M., Klimont J., Doneux A., Kongs A., Kyriacou E., Holub J., Storm H., Rahu M., Ahonen H., Pukkala E., Jougla E., Dittrich S., Schelhase T., Andritsopoulou L., Zikou C., Varga G., Olafsdottir E.J., Heanue M., Keatting J., Conti S., Stengrevics A., Kurtinaitis J., Weber G., Wagener Y., England K., Hoogenboezem J., Haldorsen T., Zatonski W., Catarino J., Plesko I., Pompe-Kirn V., Aragonés N., García-Ferruelo M., López-Abente G., Pérez B., Pollán M., Ayoubi S., Bjorkenstam C., Junker C., Levi F., Baker A., Brown I., Fegan G., Quinn M.J., Roberts C. (collaborators), 2008, « Atlas of Cancer Mortality in the European Union and the EEA, 1993-1997 », International Agency on Cancer Research, IARC Scientific Publications n°159

Indicator Development project (EUHPID), and the European Food Consumption Survey Method project (EFCOSUM), among others.

3. Another category is composed of articles documenting or advocating for the systematic use of indicators (with explicit reference to ECHI, or alternatively using ECHI as an incidental term of comparison) in policy making (Category 3); articles in this pool are substantial in number (21 in total), although those making explicit reference to the ECHI initiative are only about one fourth of them, i.e. the same number as the number of articles informing about ECHI.
4. More articles delve into devising and using indicators in very specific public health areas, often on a country or sub-country basis (Category 4). This category includes some articles published in languages other than English, such as those authored in Poland, Spain, Italy, Germany, etc.
5. A fifth category encompasses articles of various kinds, where the ECHI initiative (or an alternative indicator system) appears only tangentially. This subset of the literature has been classified under the label "miscellaneous" (Category 5).

It can be noted that articles strictly pertaining to ECHI are under the first two categories ("ECHI-sponsoring" literature and project-bound articles). In the remainder, ECHI turns out as an accessory, not at the core of the article's thesis. This is in line with the evidence stemming from expert interviews, and in particular those held with members of the various ECHI-attuned groupings (the Experts Group on Health Information, the ECHIM Steering Group and the Transition Network). According to their views, it appears that ECHI has been the object of a negligible niche of the scientific literature, with the exception of publications authored by public health practitioners who took the lead, or were anyhow directly involved in the ECHI initiative in the past. Their writings span, at irregular intervals, the last decade or so.

The related impact factor. The bibliometric analysis was complemented by an Impact Factor assessment by means of a count of the number of hits in the Web of Science and in the Web of Knowledge database. For articles categorised as ECHI-related (category 1 above) the assessment was difficult since the related journals are not monitored in the Web of Science and in the Web of Knowledge. However, just one article from 2003 has managed so far to exceed the 20 counts threshold and reach 30 hits.⁵⁹

Also articles categorised under category 2 and concerning the relationship between ECHI and other PHP projects have not generally had a major impact, but with a few notable exceptions. An article on the relationship between health indicators and employment status is one of the two most widely cited articles in the sample and has reached some 120 counts⁶⁰. If one considers that the other most widely cited article is about indicators on health inequalities⁶¹, this gives the flavour of the popularity of the subject among academic researchers these days. Other notable exceptions of widely quoted category-two articles relate to controversial items such as measurement of food consumption by means of surveys⁶² and physical activity monitoring⁶³, as well as

⁵⁹ Namely Kramers PG, (2003) 'The ECHI project: health indicators for the European Community', *European Journal of Public Health*, Sep;13(3 Suppl):101-6

⁶⁰ Benavides FG. Benach J. Diez-Roux AV. Roman C. How do types of employment relate to health indicators? Findings from the second European survey on working conditions. *Journal of Epidemiology & Community Health*. 54(7):494-501, 2000 Jul.

⁶¹ Huisman M, Mackenbach JP, Kunst AE, Socioeconomic inequalities in morbidity among the elderly; a European overview, *Social Science & Medicine*. 57(5):861-73, 2003 Sep

⁶² Brussaard JH. Lowik MR. Steingrimsdottir L. Moller A. Kearney J. De Henauw S. Becker W. EFCOSUM Group. A European food consumption survey method--conclusions and recommendations. *European Journal of Clinical Nutrition*. 56 Suppl 2:S89-94, 2002 May

to the PHP Peristat project⁶⁴ and to intellectual disabilities indicators⁶⁵. Another subject that has attracted some considerable attention has been an article reviewing HIS and HES practices in the EU⁶⁶.

Category 3 article discussing use of indicators for policymaking purposes have had some notable impact on the scientific debate mainly as far as the OECD and public spending indicators have been concerned.⁶⁷ There is nothing specifically related to the possible use of the ECHI ones.

While the data above can be considered as a good proxy about the level of impact on the scientific debate, they underestimate the impact on circulation of information among research experts. Some of the articles on ECHI have been published in journals without an academic impact factor but with a wide circulation among experts (see Box 3.1 below) such as those of public health associations or of the European Observatory on Health Systems and Policies, which could also partly explain why ECHI is so relatively well known among academicians and researchers, as well as health information experts, as compared to other possible categories of users.

Box 3.1 – ECHI in journals with no impact rating assigned

The **Archives of Public Health** is the official journal of the *Belgian Public Health Association* and it frequently publishes articles on PHP-funded projects (e.g. also EHES). It does not have an impact factor. Its web version is available for free. A Google search of the title gives some 237,000 hits

Eurohealth is the journal of the *European Observatory on Health Systems and Policies* published on a quarterly basis and also available for free on the web. It is quite specifically aimed to bridge the gap between the scientific community and the policy-making community by providing an opportunity for the publication of evidence-based articles of relevance to health policy issues. A Google search of the title gives some 274,000 hits.

A number of articles about ECHI have also appeared as the proceedings of the **European Public Health Association** that are indexed in the main databases but also do not have an impact factor.

⁶³ Rutten A. Vuillemin A. Ooijendijk WT. Schena F. Sjoström M. Stahl T. Vanden Auweele Y. Welshman J. Ziemainz H. Physical activity monitoring in Europe. The European Physical Activity Surveillance System (EUPASS) approach and indicator testing. *Public Health Nutrition*. 6(4):377-84, 2003 Jun.

⁶⁴ Zeitlin J, Wildman K, Bréart G, Alexander S, Barros H, Blondel B, Buitendijk S, Gissler M, Macfarlane A and the PERISTAT Scientific Advisory Committee, PERISTAT: indicators for monitoring and evaluating perinatal health in Europe, *European Journal of Public Health*. 13(3 Suppl):29-37, 2003 Sep.

⁶⁵ Walsh PN, Kerr M, van Schroyen Lantman-de Valk H, Health indicators for people with intellectual disabilities: A European perspective, *EUROPEAN JOURNAL OF PUBLIC HEALTH* 2003; 13 (3 SUPPLEMENT): 47-50

⁶⁶ Aromaa A., Koponen P., Tafforeau J., Vermeire C., HIS/HES Core Group. Evaluation of Health Interview Surveys and Health Examination Surveys in the European Union. *European Journal of Public Health*. 13(3 Suppl):67-72, 2003 Sep.

⁶⁷ Arah, Onyebuchi A.; Westert, Gert P.; Hurst, Jeremy; Klazinga, Niek S., A conceptual framework for the OECD Health Care Quality Indicators Project, *International Journal for Quality in Health Care*. 18 (Supplement 1):5-13, September 2006

4. Uptake and usefulness of ECHI for policymaking

4.1 Introduction

This Section analyses the extent to which the ECHI indicators have been used across European countries and their uptake in policymaking processes at different levels (national or regional), for different purposes (descriptive or for policy monitoring), and in different frameworks (sectoral policies or more general health strategic documents). In the event of a reported use, the degree of usefulness as perceived by policymakers has been also assessed. In a nutshell, the key evaluation questions covered in this Section are:

- *To which extent are the ECHI indicators used in the MSs and at what level of the policy making bodies /government departments?*
- *Have ECHI indicators been used for reporting at sectorial level (e.g. injury prevention) or in the remit of generic national health reporting exercises?*
- *Which ECHI indicators have been used in the past in particular and what is the assessment of the usefulness made in such context, in particular by decision makers in the health field?*

A series of judgment criteria have been utilised in order to answer to these questions, including:

- availability of indicator data and time series, or concrete plans for the future;
- type of evidence available of indicator inclusion in the policymaking process (verbal declaration, written documents, etc.), or concrete plans for the future (broken down by policy-making actors/levels);
- main purpose of indicator's use;
- extent of recognition of indicator's affiliation to the ECHI shortlist, as against 'unconscious' or 'implicit' use;
- assessment of indicator's usefulness for policy-making.

The information has been collected and elaborated triangulating various sources, i.e. the qualitative interviews with key informants, the results of the survey and the desk review of the policy documents published in participating countries.

4.2 Uptake of ECHI in policy documents

Use of ECHI for benchmarking reports. Not so many instances of formal recognition of ECHI in official documents can be found across participating countries, although these have been seemingly increasing over time and a number of new instances are reportedly in the pipeline. By far, the clearest evidence of uptake consists of ECHI-based benchmarking reports and by the inclusion of the ECHI indicators in other reports and databases summarizing the health situation in a given country. Four instances of health benchmarking reports have been identified. After the pioneering *Dare to Compare* report published in the Netherlands in 2008, the Romanian national institute of public health also started in 2010 an annual publication entirely based on ECHI data, while in France the *Haut Conseil de Santé Publique* also published a dedicated benchmarking report in 2012. Moreover, there are plans to extensively use comparison with ECHI indicators also as a basis for the National Health Report to come in Germany. There is more limited evidence of a documented impact

of these benchmarking reports on the formal policymaking process so far and just one such case could be identified⁶⁸. However, it has to be considered that impact might take time to materialise also because of the slow reaction time of the policymaking process. For instance, there have been talks that, possibly in connection with the French benchmarking report and some of the issues raised there, the next French health strategy will take into more extensive consideration international comparisons.

ECHI uptake in national health databases. The second type of 'hard' evidence of formal uptake is represented by the existence of a dozen countries with sections of the national health indicator databases expressly devoted to the ECHI indicators (see Table 4.1). Also in this case evidence of uptake seems to be growing over time, although, on the other hand, the long term sustainability of some of these initiatives seems uncertain. Five countries have created dedicated ECHI sections in their national databases or otherwise made ECHI indicators identifiable in their databases, but two of them already no longer update ECHI data (see Table 4.1). In other two there are links to the Heidi data tool dating back to the ECHIM project that are still active. Other three countries have reported plans to create a dedicated ECHI section in their websites, but this has not materialised yet. The adoption of the ECHI shortlist as a reference for other descriptive reports is seldom formally acknowledged, but recognised in practice, as it seems to be case with e.g. the Welfare Report in Iceland whose structure appears partly influenced by the available ECHI indicators.

Use of ECHI in general health strategies. Formal uptake of ECHI in general national policymaking documents is a much more limited and a much more recent phenomenon, although also in this case there seems to be evidence of a growing trend. The only official instance appears to be the Irish *Healthy Ireland* strategic initiative, which openly envisages the use of international indicator sets including the ECHI for policy monitoring.⁶⁹ There are reportedly talks to incorporate ECHI among the indicators to monitor the future Health 2020 strategy also in the Czech Republic. Some ECHI indicators are to be officially incorporated in the Italian LEA system, but a final decision is still pending. ECHI was finally reportedly taken into consideration for the selection of the indicators to monitor the recent Portuguese National Health Plan 2012-2016.⁷⁰ In all the other cases of general strategies and policies, the use of ECHI indicators appears to be an *ex post* coincidence and hardly includes EHIS indicators where these were not already available on a national basis. In some countries (e.g. Bulgaria, Estonia) it was noted that it would be difficult to incorporate entirely EHIS-based ECHI indicators also in the future since their five-years collection period does not fit with the shorter life span of national plans (and there are no other HIS sources available on an annual basis to complement them).

Use of ECHI in sectoral policies. There is a longer tradition of uptake of a limited subset of ECHI indicators in sectoral strategies and policy documents. This usually relates to indicators already agreed at the European level (e.g. illicit drugs, alcohol) and hardly includes EHIS data when these were not pre-existing at the national level. ECHI is at any rate never formally acknowledged in the related documents, and related use is reported as largely unconscious. A non-exhaustive list of such examples includes:

⁶⁸ The 'Dare to Compare' report is given as a reference in at least one policy document of the ministry of health (Title: Maatschappelijke Opgaven volksgezondheid en gezondheidszorg' (Sociaal challenges for public health and healthcare), the Hagure, VWS (=MoH), 2009. This document does not mention indicators explicitly, but refers to Dare to Compare.

⁶⁹ <http://www.dohc.ie/publications/pdf/HealthyIrelandBrochureWA2.pdf?direct=1>

⁷⁰ <http://repositorio.insa.pt/handle/10400.18/982>

- the various drug strategies (various countries);
- lifestyle-based strategies and policies on nutrition and physical exercise (e.g. Slovenia, Germany);
- alcohol and tobacco strategies (various countries);
- strategies and policies on injuries (various countries);
- the recently appeared cancer strategies (e.g. Germany, France).

A special case is represented by the increasing evidence of inclusion of ECHI or ECHI-equivalent indicators in strategies and policies on health inequalities, although seldom formally recognised as such.

Concrete examples. Table 4.1 below provides concrete examples of the abovementioned policy documents referring to various extents to ECHI indicators divided by country and by type of document.

Table 4.1 - Examples of uptake of ECHI indicators in Member States' (plus IS and NO) policy documents

	Dedicated health benchmarking reports	ECHI indicators included in descriptive documents and databases	General programming documents also reportedly based on some ECHI indicators	Sectoral programming documents also reportedly based on some ECHI indicators	Health System Performance Reviews – Indicator - based	Regional documents and databases including some ECHI indicators
AT		An ECHI dedicated website ⁷¹				
BE		Report on the Health Interview Survey ⁷²			Report on Performance of the Belgian Health System ⁷³	L'Observatoire wallon de la Santé ⁷⁴ Flemish Health Targets ⁷⁵
BG		Annual Health Report of the Nation (2012)	Draft Strategic Framework for improving Health 2014-2020			
HR		Croatian Health Service Yearbook ⁷⁶	National Healthcare Strategy 2012-2020 ⁷⁷	Drug Strategy in Croatia Action plan for Children AIDS Health Protection Program 2011-2015 National strategy on road safety 2011-2020 ⁷⁸ . Action Plan for tobacco control 2013-2016 ⁷⁹		

⁷¹ http://www.statistik.at/web_en/statistics/health/european_community_health_indicators_echi/index.html

⁷² https://his.wiv-isp.be/fr/SitePages/Rapports_complets_2008.aspx

⁷³ <https://kce.fgov.be/publication/report/performance-of-the-belgian-health-system-report-2012>. ECHIM is quoted there as one of the sources in the bibliography.

⁷⁴ <http://socialsante.wallonie.be/?q=sante/observatoire-wallon-de-la-sante/dispositifs/donnees-sante/indicateurs-de-sante>

⁷⁵ <http://www.zorg-en-gezondheid.be/Policy/Health-targets>

⁷⁶ http://www.hzjz.hr/publikacije/00_2012_WEB.pdf

⁷⁷ http://www.zdravlje.hr/programi_i_projekti/nacionalne_strategije/nacionalna_strategija_zdravstva

⁷⁸ www.vlada.hr/hr/content/download/163955/2394202/file/122_16.pdf

CY					Consumption of Health Services in the years 2005–2008	
CZ		Fourteen ECHI indicators reported in DPS⁸⁰ no dedicated ECHI section yet	Long-term Plan for Improving the Health of the Czech Population – Health for All in the 21st Century	National Action plan on social protection and social inclusion	National Reform Plan	Regional development programmes ⁸¹
DK		Database on national HIS ⁸² Risk factors and public health in Denmark ⁸³		Health Inequalities ⁸⁴		Database on national HIS
EE	Overview of health and wellbeing in Estonia 2000–2010; compared to European average (Eurostat data) ⁸⁵	ECHI section on DPS National	19 ECHI indicators are in the Estonian National Health Plan 2009–2020 ⁸⁶ (related implementation plans cover four years)		Estonia Health System Performance Assessment ⁸⁷	The County Overviews of Health and Well Being ⁸⁸
FI		Sotkanet should include an ECHI section⁸⁹ Terveystemme ⁹⁰ Hyvinvointikompassi ⁹¹	Socially Sustainable Finland 2020 – Strategy for Social and Health Policy National Development Programme for Social Welfare and Health Care (Kaste) ⁹² Health 2015 public health programme ⁹³	Cross-sectoral action plan for reducing social exclusion, poverty and health problems ⁹⁴ National action plan to reduce health inequalities 2008–2011 ⁹⁵	National strategy for mental health and substance abuse	Terveystemme/A TH ⁹⁶

⁷⁹ http://www.zdravlje.hr/content/download/11050/80223/file/AKCIJSKI_PLAN_ZA_JACANJE_NADZORA_NAD_DUHANOM.doc

⁸⁰ <http://www.uzis.cz/cz/dps/english/index.html>

⁸¹ A four-year programme is elaborated in each of the 14 regions as a main tool for management and coordination of development in the region. Aspects of health impact assessment and public health matters are also part of the programme.

⁸² www.sundhetprofil2010.dk

⁸³ http://www.si-folkesundhed.dk/upload/2745_-_risk_factors_and_public_health_in_denmark.pdf

⁸⁴

<http://www.sst.dk/~media/English/Health%20promotion%20and%20disease%20prevention/Physical%20activity/Health%20Inequality%20-%20determinants%20and%20policies.ashx>

⁸⁵ <http://www.terviseinfo.ee/et/truekised/download/610>

⁸⁶ <http://www.sm.ee/eng/activity/health/national-health-plan-2009-2020.html>

⁸⁷

http://www.sm.ee/fileadmin/meedia/Dokumendid/Tervisevaldkond/Uuringud_ja_analuusid/Estonia_HSPA.pdf

⁸⁸ <http://www.terviseinfo.ee/et/component/search/?searchword=county+overview&x=0&y=0&Itemid=131> (for the 15 counties, in English)

⁸⁹ The service also includes key information on the population and health of European countries.

<http://uusi.sotkanet.fi/portal/page/portal/etusivu>

⁹⁰ <http://www.terveytemme.fi>. Terveystemme offers statistical and follow-up information on the health and wellbeing of Finnish people by living areas and population groups.

⁹¹ <http://www.hyvinvointikompassi.fi/en/web/hyvinvointikompassi> The Welfare Compass website includes about a hundred of the most relevant indicators on health, wellbeing and social and healthcare services.

⁹² Information about the program: http://www.stm.fi/en/strategies_and_programmes/kaste; Indicators are published in Sotkanet database: <http://uusi.sotkanet.fi/portal/page/portal/etusivu/hakusivu?group=909>

⁹³ Information about the program: http://www.stm.fi/en/health_2015. Indicators are published in Sotkanet-database: <http://uusi.sotkanet.fi/portal/page/portal/etusivu/hakusivu?group=173>

FR	La Santé en France et en Europe: Convergences et Contrastes ⁹⁷	Etat de santé de la population en France Baromètre Santé Santé, soins et protection sociale	L'État de Santé de la Population en France Suivi des Objectifs Annexes à la Loi de Santé Publique ⁹⁸	Plan de lutte contre la pauvreté Plan National Nutrition et Santé Plans Cancer		
DE	ECHI to be used for comparison in the next National Health Report	Dedicated ECHI section in the health indicator database ⁹⁹		<ul style="list-style-type: none"> • In Form (2010/2011) • Cancer strategy(2013) • Prevention strategies that might start later this year • Gesundheitsziele - targets in public health¹⁰⁰ • Environment and Health¹⁰¹ 	Reporting by health insurance companies at Land level	Regional Health Reports (Laender Level) ¹⁰² Regional Health Indicators ¹⁰³
EL		National Observatory of the Health Status of the Greek Regions ¹⁰⁴				National Observatory of the Health Status of the Greek Regions
IS		The Welfare Watch The National Health Plan to the year 2010 ¹⁰⁵ The National Health Plan to the Year 2020 ¹⁰⁶				
IE		Public Health Information System Healthy Ireland (will include ECHI)	Healthy Ireland a Framework for Improved Health and Well-being ¹⁰⁹	<ul style="list-style-type: none"> • The Cardiovascular Strategy, • The National Children strategy 	Benchmarking Ireland's Health System ¹¹²	

⁹⁴ Information about the program: <http://www.stm.fi/en/prevention-of-social-exclusion>; Indicators are published in MSAH website (only in Finnish): http://www.stm.fi/c/document_library/get_file?folderId=42733&name=DLFE-26012.pdf

⁹⁵ Information about the program: <http://pre20090115.stm.fi/pr1227003636140/passthru.pdf>. Monitoring: http://www.thl.fi/en_US/web/kaventaja-en

⁹⁶ <http://www.terveytemme.fi/ath> The Regional Health and Well-being Study (ATH) provides municipalities and municipal federations with information to monitor their residents' health. Data on lifestyles that are not found in registers are collected according to population groups. http://www.thl.fi/en_US/web/en/project?id=21845

⁹⁷ www.hcsp.fr/explore.cgi/hcspr20120301_santeFranceEurope.pdf

⁹⁸ http://www.sante.gouv.fr/IMG/pdf/Etat_sante-population_2011.pdf

⁹⁹ http://www.gbe-bund.de/gbe10/abrechnung.prc_abr_test_logon?p_uid=gast&p_aid=4711&p_sprache=E&p_knoten=TR80000

¹⁰⁰ <http://www.gesundheitsziele.de/>

¹⁰¹ ECHI is not explicitly mentioned, but a number of ECHI indicators are used, only with different names; e.g. exposure to particulate matter, as taken first by WHO, then integrated by ECHI and then reproduced in this report. The Environment and Health Strategy was initiated by WHO and some of the Indicators are now present in the WHO E&H and the EU ECHI. http://www.apug.de/archiv/pdf/Action_Programme_1999.pdf

¹⁰² See for instance:

http://www.lzg.gc.nrw.de/_media/pdf/gesundheitberichtedaten/landesgesundheitsberichte/Landesgesundheitsbericht_NRW_2011.pdf

¹⁰³ See for instance:

<http://www.lgl.bayern.de/gesundheit/gesundheitsberichterstattung/gesundheitsindikatoren/index.htm>

¹⁰⁴ <http://paratiritirio.system.com.gr>

¹⁰⁵ <http://www.velferdarraduneyti.is/frettir-vel/nr/32815>

¹⁰⁶ <http://www.althingi.is/altext/141/s/0604.html>

		<p>Growing up in Ireland¹⁰⁷</p> <p>Irish Longitudinal Study on Ageing¹⁰⁸</p>		<ul style="list-style-type: none"> • Positive ageing strategy • Obesity and Sport Strategy, • National Substance Misuse Strategy¹¹⁰, • National Action Plan for Social Inclusion¹¹¹, • Towards a Tobacco Free Society, • Unequal at Birth Report 		
IT		<p>Osservasalute¹¹³</p> <p>Health for All - Italy¹¹⁴</p> <p>Surveillance system indicators on life style¹¹⁵</p>		<p>National Plan on Alcohol and Health¹¹⁶</p> <p>Indicators on car accidents and injuries are routinely informally used to steer related policies.</p>	<p>LEA-SIVeAS (six ECHI indicators proposed for inclusion)¹¹⁷</p>	<p>ECHI used as a reference framework in Lo Stato di Salute dei Liguri report¹¹⁸</p>
LV		<p>National Health Indicator Database</p>	<p>Public Health Strategy 2011-2017¹¹⁹</p>	<p>Road safety action plan</p> <p>Maternal and Child Health Improvement Plan 2012 to 2014¹²⁰</p> <p>HIV Programme¹²¹</p>	<p>Human resource development in health care 2006-2015</p> <p>Outpatient and inpatient health care provider development program</p>	
LT		<p>ECHI Indicators highlighted in the national database¹²²</p>	<p>Health Programme of Lithuania</p>	<p>Program on Alcohol and Tobacco Control 2012-2014</p> <p>National programme on Drug Control and Prevention of Drug Addiction 2010-2016</p>		

¹⁰⁹ <http://www.dohc.ie/publications/pdf/HealthyIrelandBrochureWA2.pdf?direct=1>

¹¹²

http://www.oireachtas.ie/parliament/media/housesoftheoireachtas/libraryresearch/spotlights/Benchmarking_Ireland%27s_Health_System.pdf

¹⁰⁷ <http://www.growingup.ie/>

¹⁰⁸ http://www.tcd.ie/tilda/assets/pdf/glossy/Tilda_Master_First_Findings_Report.pdf

¹¹⁰ <http://healthupdate.gov.ie/wp-content/uploads/2012/02/Steering-Group-Report-on-a-National-Substance-Misuse-Strategy-7-Feb-11.pdf>

¹¹¹ <http://www.socialinclusion.ie/documents/NAPinclusionReportPDF.pdf>

¹¹³ <http://www.osservasalute.it/index.php/rapporto/argomenti/2012/12>

¹¹⁴ <http://www.istat.it/it/archivio/14562>

¹¹⁵ <http://www.epicentro.iss.it/passi/>

¹¹⁶ http://www.salute.gov.it/imgs/C_17_pubblicazioni_623_allegato.pdf

¹¹⁷

www.salute.gov.it/imgs/C_17_navigazioneSecondariaRelazione_3_listaCapitoli_capitoliItemName_6_scarica.pdf; www.salute.gov.it/imgs/C_17_pubblicazioni_1072_allegato.pdf

¹¹⁸ http://www.arsliguria.it/index.php?option=com_docman&task=doc_download&gid=160&Itemid=130

¹¹⁹

[http://phoebe.vm.gov.lv/misc_db/web.nsf/626e6035eadbb4cd85256499006b15a6/ab75e1a6c38b637db22573d800293aaa/\\$FILE/POamatnostadnes_eng_pdf.pdf](http://phoebe.vm.gov.lv/misc_db/web.nsf/626e6035eadbb4cd85256499006b15a6/ab75e1a6c38b637db22573d800293aaa/$FILE/POamatnostadnes_eng_pdf.pdf)

¹²⁰ <http://polsis.mk.gov.lv/LoadAtt/file22355.doc>

¹²¹ <http://polsis.mk.gov.lv/LoadAtt/file17811.doc>

¹²² <http://sic.hi.lt/html/en/lhic.htm>.

LU				Different policy documents actually in the making: <ul style="list-style-type: none"> • mental health • perinatal health • immunization • colorectal cancer screening • home and leisure accidents 		
MT		Website on Health Indicators sends back to Heidi Data Tool ¹²³	National Environment and Health Action Plan			
NL	Dare to Compare ¹²⁴	ECHI indicators included in the national Kompas database ¹²⁵				
NO		Norhealth Database ¹²⁶				Kommunehelsa ¹²⁷
PL		Website on Polish Health sends back to the Heidi Data Tool ¹²⁸				
PT		Health Statistics ¹²⁹	National Health Plan 2012 - 2016 ¹³⁰		Health System Performance Assessment ¹³¹	
RO	Romania 2011 Profilul stării de sănătate pe baza indicatorilor comunitari ECHI ¹³²	Health Status Assessment ¹³³	National Sustainable Development Strategy Romania 2013-2020-2030	Ongoing projects on injuries and environmental health in urban planning		
SK		Report of the Health Status of Inhabitants of the SR ¹³⁴		National Programme of Obesity Prevention National Programme of Active Ageing 2014-2020 National program of HIV/AIDS prevention Action plan for the environment and human health Slovakia ¹³⁵	Report on the state of health care in Slovakia ¹³⁶	

¹²³ https://ehealth.gov.mt/HealthPortal/chief_medical_officer/healthinfor_research/health_indicators/health_indicators.aspx

¹²⁴ www.rivm.nl/bibliotheek/rapporten/270051011.pdf

¹²⁵ <http://www.nationaalkompas.nl/thema-s/internationaal/european-community-health-indicators-echi/>

¹²⁶ <http://norgeshelsa.no/norgeshelsa/>

¹²⁷ <http://khs.fhi.no/webview/>

¹²⁸ <http://www.zdrowiepolakow.pl/echim>

¹²⁹ <http://www.dgs.pt/>

¹³⁰ http://pns.dgs.pt/files/2013/05/6_Health-Indicators-and-Targets3.pdf

¹³¹ <http://pns.dgs.pt/files/2011/01/PHSAP.pdf>

¹³² www.insp.gov.ro/cnepss/wp-content/uploads/2010/12/SINTEZA_ECHI_2011.pdf

¹³³ http://www.insse.ro/cms/files/Anuar%20statistic/07/07%20Sanatate_en%20.pdf

¹³⁴ http://www.nczisk.sk/Publikacie/Edicia_roceniek/Pages/default.aspx

¹³⁵ http://www.uvzsr.sk/docs/org/ohzp/ap_sr_4.pdf

SI		In preparation: a dedicated section on PHI website for ECHI indicators in Slovenia and its regions.		<ul style="list-style-type: none"> • Healthy nutrition strategy (expired) • Strategy for diabetes • Child Health (under preparation) 	Strategies of health insurance funds	In preparation: a dedicated section on PHI website for ECHI indicators in Slovenia and its regions.
ES		Key Indicators of the National Health System (ECHI indicated as the reference framework)¹³⁷ Yearly report on the Spanish National Health System 2011 ¹³⁸		<ul style="list-style-type: none"> • Diabetes strategy¹³⁹ • Stroke strategy¹⁴⁰ • COPD strategy¹⁴¹ • Mental health strategy¹⁴² • National Drug Strategy 2009-2016 • National AIDS plan 		Health Plan for Catalonia 2011-2015 ¹⁴³ Regional health observatories ¹⁴⁴
SE				<ul style="list-style-type: none"> • Quality and Efficiency in Swedish Cancer Care¹⁴⁵ 	The state and development of health and social services ¹⁴⁶	Quality and Efficiency in Swedish Health Care – Regional Comparisons ¹⁴⁷
UK		Public Health Outcomes Framework ¹⁴⁸		<ul style="list-style-type: none"> • Tobacco strategy • Drug strategy • Mortality strategy • Road safety¹⁴⁹ 		Regional health strategies ¹⁵⁰

Note: in bold=instances where ECHI has been explicitly acknowledged.

4.3 Overall use of ECHI by policymakers and perceived usefulness

Total use and use by purpose. The results of the survey broadly confirm the findings above. Some half of respondents claimed to use the ECHI indicators relevant to his/her work in the framework of policy making and/or policy monitoring

¹³⁶ <http://www.health.gov.sk/Zdroje/?dokumenty/Sprava-o-stave-zdravotnictva-na-Slovensku.pdf>

¹³⁷ http://www.msssi.gob.es/estadEstudios/estadisticas/sisInfSanSNS/inclasSNS_DB.htm

¹³⁸

www.msssi.gob.es/organizacion/sns/planCalidadSNS/pdf/equidad/informeAnualSNS2011/Informe_anual_SNS_2011.pdf

¹³⁹ http://www.msssi.gob.es/organizacion/sns/planCalidadSNS/pdf/excelencia/cuidadospaliativos-diabetes/DIABETES/Estrategia_en_diabetes_del_SNS_Accesible.pdf

¹⁴⁰ <http://www.msssi.gob.es/organizacion/sns/planCalidadSNS/docs/EstrategiaIctusSNS.pdf>

¹⁴¹ <http://www.msssi.gob.es/organizacion/sns/planCalidadSNS/docs/EstrategiaEPOCSNS.pdf>

¹⁴² <http://www.msssi.gob.es/organizacion/sns/planCalidadSNS/docs/saludmental/SaludMental2009-2013.pdf>

¹⁴³

http://www20.gencat.cat/docs/salut/Home/EI%20Departament/Pla_de_Salut_2011_2015/documents/arxius/health_plan_english.pdf

¹⁴⁴ See, for instance: <http://observatorisalut.gencat.cat>

¹⁴⁵ <http://www.socialstyrelsen.se/publikationer2012/2012-3-15>

¹⁴⁶ <http://www.socialstyrelsen.se/publikationer2013/2013-2-2>

¹⁴⁷ <http://www.socialstyrelsen.se/publikationer2013/2013-5-7>

¹⁴⁸ <https://www.gov.uk/government/publications/healthy-lives-healthy-people-improving-outcomes-and-supporting-transparency>

¹⁴⁹ <http://wales.gov.uk/topics/transport/roads/safety/?lang=en>

¹⁵⁰ See for instance www.scotland.gov.uk/Publications/2013/03/3766

activities.¹⁵¹ If planned use is taken into account, this percentage increases to some 60% (based only on implemented ECHI), demonstrating the existence of a clear positive trend (see Table 4.2 below).

This percentage is calculated on the total respondents active in a given policy area and irrespectively of his/her awareness about the availability of a given indicators in his/her country. In this sense, it is worth noting that instances where the indicator is reported as available (see Table 4.2) do not necessarily coincide with those where the indicator is actually implemented (according to ECHIM report). In fact in a number of cases respondents seemed unaware about the availability of a given indicator in their country due e.g. to possible fragmentation between the policymaking and the health statistics collection work, which further reinforces the findings of previous Section 3 on awareness of ECHI.

The bulk of reported use (81% of respondents making use of a certain indicator for policymaking) is concentrated on descriptive purpose, i.e. to monitor and anticipate health trends. The second most important use (64%) is for benchmarking and comparison, while use for policy planning and evaluation or assessment of health system performance is less widespread.

Use by policy area. These patterns of use are more or less evenly distributed among the various policy areas identified by the Commission, with a few notable exceptions. Indicators on maternal and perinatal health are better known and used than average, but these are also those relatively less used for planning and policy assessment purposes. Those on preventable health risks and lifestyle health behaviours as well as those on chronic diseases appear as those comparatively less used in general, mainly because of their more limited reported availability. But these are also the two policy areas where the bulk of use for policy planning and monitoring tends to concentrate. Indicators on health ageing are also comparatively more used for policy planning and monitoring purposes than they are in general, but their reported availability is in line with the average.

Overall usefulness. Limited differences can be observed across policy area about the usefulness of ECHI, whose average rating is always high (4.26/5.00 on average). In comparative terms, particularly useful for policymaking appear to be the ECHI indicators on Non-communicable disease / chronic disease (4.39) and healthy ageing (4.32), while somehow lower usefulness ratings have been received by indicators on maternal and perinatal health (4.17), health inequalities and HiAP (4.22).¹⁵²

As could be easily be imagined the indicators in the implementation section of the different policy areas are always more used and available, but the overall usefulness of the indicators for the different policy areas would be increased if work-in-progress

¹⁵¹ The figure represents the average of the frequency of use for all ECHI indicators currently in the implementation section or the Work-in-progress section. It is important to highlight that respondents have been asked to provide feedback only on ECHI indicators falling into their area of competence. Since the definition of area of competence was self-determined by respondent a certain bias might affect (and in particularly inflate) this figure, i.e. some respondents might have neglected indicators relevant to their policy area / activity because they were not aware of / familiar with them.

¹⁵² As regards 'horizontal policies' such as Health Inequalities and HiAP, it should be noted that the results of the survey largely confirms the classification by policy area proposed by the Commission. All the indicators classified as HIAP indicators have actually been reported as used for such purposes with the notable exception of that on injuries at the workplace. The reported use of PM-10 particulate exposure for HIAP purpose is lower than for other HIAP indicators. To this aim it is worth noting that the EU PHP ENHIS project has already proposed to switch the indicator to PM 2.5 particulate exposure when these data - currently gathered in certain countries only - will be sufficiently available across Europe. Also, most of the indicators reportedly used for health inequality purposes have been correctly classified as such, again with the notable exception of injuries at the workplace, whose data usually come from registries that cannot be easily cross-linked with other population features. Also indicators on PM10 exposure are poorly used to this aim.

indicators were implemented. The only notable exception is represented by maternal and perinatal health where further implementation of work-in-progress indicators would reduce an overall perceived usefulness. Conversely, healthy ageing, preventable health risks and lifestyle health behaviours and chronic diseases would greatly benefit from progress in implementation of the ECHI agenda.

Table 4.2 - Overall use and usefulness of ECHI indicators and by policy area

Policy Area	Awareness/ Availability	Use in policy- making		Type of use				Usefulness rating
	% of resp.	Actual	Planned	To monit or trends	Set objec tives	Assess performance /evaluate policies	Compare data	1 (low) to 5 (high)
Sustainable health care systems	71%	53%	58%	80%	28%	41%	65%	4.29
<i>(only IS indicators)</i>	82%	62%	67%					4.29
Health system perf. quality / efficiency of care, patient safety	70%	52%	56%	81%	32%	46%	64%	4.28
<i>(only IS indicators)</i>	77%	57%	62%					4.28
(Planning of) health care resources and cost	66%	48%	53%	81%	31%	44%	64%	4.26
<i>(only IS indicators)</i>	74%	54%	60%					4.25
Healthy ageing	67%	48%	55%	85%	35%	46%	67%	4.32
<i>(only IS indicators)</i>	74%	53%	61%					4.28
Maternal & perin. health	78%	58%	63%	85%	29%	37%	66%	4.17
<i>(only IS indicators)</i>	92%	70%	75%					4.20
Child health	66%	47%	53%	83%	36%	46%	67%	4.27
<i>(only IS indicators)</i>	72%	52%	59%					4.26
Health inequalities	71%	51%	57%	81%	30%	46%	65%	4.22
<i>(only IS indicators)</i>	74%	53%	59%					4.22
Preventable health risks & lifestyle health behaviours	62%	44%	51%	82%	37%	48%	65%	4.30
<i>(only IS indicators)</i>	67%	47%	55%					4.26
NCD, Chronic Diseases	56%	40%	47%	86%	36%	44%	64%	4.39
<i>(only IS indicators)</i>	72%	52%	59%					4.33
(Preventable) Burden of Disease, communicable diseases	64%	46%	52%	82%	35%	47%	65%	4.28
<i>(only IS indicators)</i>	71%	51%	57%					4.25
Mental health	62%	44%	51%	84%	28%	45%	64%	4.23
<i>(only IS indicators)</i>	73%	52%	59%					4.20
HiAP	72%	52%	58%	77%	31%	46%	61%	4.22
TOTAL ECHI	68%	50%	56%	81%	31%	45%	64%	4.26
<i>(only IS indicators)</i>	74%	54%	60%					4.24

Notes: IS= Implementation Section. All HiAP indicators are IS, so the distinction Total/IS is not provided.

'Type of Use': multiple answers allowed.

Source: Elaboration of survey data.

4.4 Uptake and use of ECHI by category of indicator

Population and socio-economic indicators. Although a minority of interviewees seems to believe that demographic and socio-economic indicators should not really belong to a shortlist of health indicators, this section of the ECHI shortlist emerges as quite widely used among all categories of respondents. As reported in the Table 4.3 below some basic indicators (population and birth rate), are reported to be very frequently used. Indicators on education and occupation are slightly less so because they follow the uneven patterns of involvement in health inequality policies across Europe. Despite model-based indicators are somewhat controversial - and requests to drop them from the shortlist were reported - the indicator on population projections is confirmed among the most widely used and - unsurprisingly - in particular by those involved in the assessing the performance of healthcare systems. Conversely, the indicator on mother's age distribution, which is a *de facto* indicator on teenage pregnancy, is not used where teenage or late pregnancy is not considered within the scope of health policy. The indicator on poverty among the population is also often perceived outside the scope of health policy in strict sense, but is nevertheless among those most widely used to set policy objectives and monitor and evaluate policies.

Table 4.3 - Use and usefulness of ECHI socio-economic indicators

Category of indicators	Awareness /availability	Use in policy-making		Type of use				Usefulness rating
		% of resp.	Actual	Planned	Monitor trends	Set objectives	Assess perf./ evaluate policies	
Demographic and socio-economic indicators								
1. Population by sex/age	99%	88%	89%	88%	31%	33%	76%	4.49
2. Birth rate, crude	99%	81%	83%	85%	38%	33%	68%	4.39
3. Mother's age distribution	94%	65%	74%	82%	20%	27%	61%	3.97
4. Total fertility rate	94%	70%	78%	84%	25%	25%	60%	4.12
5. Population projections	89%	73%	80%	90%	28%	41%	53%	4.46
6. Population by education	88%	65%	74%	72%	25%	36%	58%	4.14
7. Population by occupation	84%	60%	69%	79%	23%	40%	56%	4.00
8. Total unemployment	99%	76%	84%	74%	25%	43%	54%	4.31
9. Population below poverty line and income inequality	78%	53%	64%	76%	38%	52%	71%	4.31
Average of category	92%	70%	77%	81%	28%	37%	62%	4.24

Note: Only ECHI indicators currently in the 'implementation section' are reported.

Source: Elaboration from survey results.

Health status. The patterns of use of health status indicators vary significantly, as illustrated in Table 4.4 below. Some of them are extensively used, while others significantly less so, and particularly among policy planners and evaluators. In some cases limited use essentially depends on very limited data availability or lack of

historical series (e.g. the IDB database on home injuries). In others, problems with availability are compounded by different judgments about the relevance of the indicators for policymaking purposes. This is generally the case for some survey-based indicators when it comes to monitoring and planning policies. Also the healthy-life years indicator - despite being considered a key EU indicator - is not always recognised as such for strategic policymaking purposes in some countries due to methodological disagreements on its significance. At any rate it appears as moderately used as a basis to define strategies, as others often pre-existing kinds of measurements (life expectancy, preventable mortality, DALY, etc.) continue to be preferred¹⁵³.

Table 4.4 - Use and usefulness of ECHI health status indicators

Category of indicators	Awareness /availability	Use in policy-making		Type of use				Usefulness rating
		% of resp.	Actual	Planned	Monitor trends	Set objectives	Assess perf./ evaluate policies	
10. Life expectancy	98%	84%	88%	87%	31%	43%	81%	4.50
11. Infant mortality	97%	78%	82%	87%	34%	50%	77%	4.41
12. Perinatal mortality	91%	68%	73%	88%	29%	46%	69%	4.26
13. Disease-specific mortality; Eurostat, 65 causes	94%	76%	79%	87%	36%	48%	77%	4.69
14. Drug-related deaths	73%	49%	55%	84%	37%	47%	71%	4.27
18. Selected communicable diseases	87%	68%	71%	84%	41%	47%	69%	4.55
19. HIV/AIDS	90%	70%	73%	81%	39%	46%	69%	4.43
20. Cancer incidence	85%	68%	73%	82%	39%	52%	77%	4.60
21. (A) Diabetes, self-reported prevalence	68%	49%	58%	86%	31%	36%	61%	4.29
23. (A) Depression, self-reported prevalence	68%	49%	59%	83%	25%	33%	64%	4.00
26. (A) Asthma, self-reported prevalence	64%	42%	49%	88%	22%	28%	59%	3.85
27. (A) COPD, self-reported prevalence	58%	37%	43%	93%	25%	32%	61%	4.17
28. (Low)	79%	56%	61%	86%	26%	42%	60%	4.06

¹⁵³ The situation therefore does not appear to have substantially changed from what already highlighted in the past. Also in 2006 an evaluation carried out before the last wave of NSM and focused on MS concluded that only "a slight majority of interviewed National and Regional Health Ministries use the HLY indicator for policy making". See *Evaluating the Uptake of the Healthy Life Years Indicator* Final report for DG SANCO, Rand Europe, 15 December 2006.

birth weight									
29. (A) Injuries: home/leisure, self-reported incidence	56%	37%	45%	77%	27%	27%	62%	3.71	
29. (B) Injuries: home/leisure, register-based incidence	51%	32%	39%	70%	43%	52%	78%	4.55	
30. (A) Injuries: road traffic, self- reported incidence	54%	38%	42%	65%	31%	31%	54%	3.83	
30. (B) Injuries: road traffic, register-based incidence	82%	64%	68%	77%	34%	47%	62%	4.57	
31. Injuries: workplace	82%	59%	65%	83%	33%	50%	57%	4.39	
33. Self- perceived health	89%	64%	72%	88%	18%	39%	65%	4.05	
34. Self- reported chronic morbidity	80%	59%	64%	91%	22%	40%	69%	4.11	
35. Long-term activity limitations	79%	53%	59%	93%	23%	43%	73%	3.97	
36. Physical and sensory functional limitations	62%	45%	47%	82%	15%	39%	73%	4.14	
40. Healthy life years	86%	67%	76%	85%	23%	34%	74%	4.34	
Average of category	77%	57%	63%	84%	30%	41%	68%	4.25	

Note: Only ECHI indicators currently in the 'implementation section' are reported.

Source: Elaboration from survey results.

Health determinants. Indicators on health determinants seem being used less than other categories of indicators, with the notable exception of the indicator on regular smokers, and possibly on total alcohol consumption (see Table 4.5 below). This seems to be essentially due to their more limited availability. On the other hand they are among those more extensively used for policy planning, monitoring and evaluation purposes, with the sole exception of indicators on consumption of fruits and vegetables, which have not yet been mainstreamed into the definition and evaluation of policies. This might depend on two main factors: (i) some decision-makers tend to prefer data from fully-fledged dietary surveys because they are viewed as more reliable; and (i) others would like these indicators to more specifically focus on the WHO's five-servings-a-day policy objective. Furthermore, in certain context indicators like these are considered as largely dependent on income factors and therefore of limited use for policy setting / evaluation.

Table 4.5 - Use and usefulness of ECHI health determinants indicators

Category of indicators	Awareness /availability	Use in policy-making		Type of use				Usefulness rating
		Actual	Planned	Monitor trends	Set objectives	Assess perf./ evaluate policies	Compare	
Health Determinants	% of resp.	Actual	Planned	Monitor trends	Set objectives	Assess perf./ evaluate policies	Compare	1 (low) to 5 (high)
42. Body mass index	77%	51%	60%	92%	43%	51%	70%	4.50
43. Blood pressure	61%	41%	52%	89%	32%	57%	61%	4.28
44. Regular smokers	85%	64%	73%	83%	54%	56%	67%	4.71
46. Total alcohol consumption	75%	56%	64%	80%	44%	49%	71%	4.36
47. Hazardous alcohol consumption	66%	49%	55%	83%	43%	51%	69%	4.45
48. Use of illicit drugs	58%	36%	45%	92%	29%	58%	71%	4.48
49. Consumption of fruit	70%	54%	64%	87%	37%	39%	53%	3.84
50. Consumption of vegetables	72%	49%	58%	91%	40%	40%	51%	3.97
52. Physical activity	75%	53%	64%	84%	50%	47%	58%	4.18
53. Work-related health risks	37%	29%	32%	67%	28%	50%	56%	4.31
54. Social support	48%	30%	42%	65%	30%	50%	65%	3.78
55. PM10 exposure	45%	30%	33%	90%	45%	70%	65%	4.00
Average of category	64%	45%	54%	84%	40%	52%	63%	4.24

Note: Only ECHI indicators currently in the 'implementation section' are reported.

Source: Elaboration from survey results.

Health interventions and health promotion. Quite expectedly, indicators about health interventions and health services appear mainly used by policymakers responsible for assessing healthcare system performance. As shown in Table 4.6 below, policy planners have a keen interest in data on vaccination and cancer screening and make extensive use of related indicators. In other cases, data on reported frequency of use should be better understood in the light of peculiar features of the indicator's actual or perceived availability. So, for instance, the use of the indicator on cancer survival actually depend on the availability of related registries across Europe (eleven countries in our sample are not reported), and on possible poor confidence in their representativeness, since their geographical coverage appears to be too limited to draw sound policy conclusions.¹⁵⁴ Use of the equity of access indicator broadly follow the

¹⁵⁴ For example the cancer data as captured in the EURO CARE database although nominally covering 19 Countries in our sample, has a very diversified geographical coverage within the different Countries covered and represents just 1% of the entire population Germany, between 10 and 15% of the population in France

different patterns of national involvement in health inequality policies, but also reflect the quite surprising finding that a number of respondents appear unaware of the fact that it is collected on an annual basis by means of the Eurostat SILC. Also familiarity with EHIS-based indicator is uneven and much below average for e.g. the indicator on outpatient visits. Hospital-focused indicators are poorly used for target-setting. As expressed by some interviewees, there might be the need to reconsider these indicators since they are poorly reliable in various contexts and often do not cover private healthcare providers. Health promotion indicators on policy implementation are seldom available, but when they are, they appear as fairly extensively used.

Table 4.6 - Use and usefulness of ECHI health interventions and health service indicators

Category of indicators	Awareness /availability	Use in policy-making		Type of use				Usefulness rating
		Actual	Planned	Monitor trends	Set objectives	Assess perf./ evaluate policies	Compare	
Health intervention	% of resp.							1 (low) to 5 (high)
56. Vaccination coverage in children	80%	69%	72%	84%	57%	55%	71%	4.52
57. Influenza vaccination rate in elderly	77%	57%	62%	92%	41%	54%	72%	4.21
58. Breast cancer screening	80%	58%	65%	80%	45%	53%	63%	4.53
59. Cervical cancer screening	71%	47%	59%	91%	45%	58%	67%	4.57
60. Colon cancer screening	62%	42%	50%	82%	57%	57%	50%	4.24
62. Hospital beds	89%	70%	74%	76%	33%	49%	61%	4.16
63. Physicians employed	90%	63%	66%	80%	33%	48%	65%	4.28
64. Nurses employed	89%	63%	66%	78%	30%	48%	65%	4.23
66. Medical technologies: MRI units and CT scans	71%	47%	53%	67%	15%	39%	64%	4.12
67. Hospital in-patient discharges, limited diagnoses	83%	63%	65%	76%	27%	47%	60%	4.25
68. Hospital daycases, limited diagnoses	69%	47%	53%	79%	21%	44%	62%	3.93
69. Hospital day-cases as percentage of total patient population (in-patients & day-cases), selected diagnoses	65%	51%	51%	71%	23%	46%	57%	3.90
70. Average	81%	67%	69%	67%	29%	46%	60%	4.10

as compared to 100% in England, Denmark and Sweden. See for a review of this point. E. Nolte, *International Benchmarking of Healthcare Quality- A review of the literature*, A RAND Europe Report, 2010.

length of stay (ALOS), limited diagnoses								
71. General practitioner (GP) utilisation	68%	51%	55%	74%	21%	45%	66%	4.09
72. Selected outpatient visits	50%	31%	38%	77%	14%	36%	64%	4.00
73. Surgeries: PTCA, hip, cataract	70%	46%	51%	65%	18%	44%	56%	4.11
74. Medicine use, selected groups	67%	47%	51%	74%	29%	50%	62%	4.38
76. Insurance coverage	70%	46%	51%	72%	16%	41%	66%	4.07
77. Expenditures on health	83%	57%	64%	84%	34%	52%	68%	4.63
78. Survival rates cancer	63%	46%	49%	87%	26%	45%	71%	4.46
79. 30-day in-hospital case-fatality AMI and stroke	52%	36%	38%	72%	16%	32%	60%	4.04
80. Equity of access to health care services	41%	31%	36%	77%	23%	32%	59%	4.25
85. Policies on ETS exposure (ETS)	35%	21%	24%	71%	43%	64%	50%	4.36
Average of category	70%	50%	55%	77%	30%	47%	63%	4.24

Note: Only ECHI indicators currently in the 'implementation section' are reported.

Source: Elaboration from survey results.

Work in progress indicators. As can be seen in the table 4.7 below, ECHI indicators that are still in the work-in-progress section are less available and therefore less used than the others. But when they are available their use is more intensive, also because their perceived usefulness is ranked as higher than average. They are therefore often regretted as still missing. The only limited exceptions are represented by the indicator on patient mobility that appears as more of an EU priority than a national one and by the indicators on timing of first antenatal visit and on register-based diabetes prevalence.

Table 4.7 - Use and usefulness of ECHI indicators still in the work in progress section

Indicators	Availability	Use in policy-making		Usefulness rating 1 (low) to 5 (high)
		% of resp.	Actual	
Work-in-Progress Section				
15. Smoking-related deaths	46%	36%	39%	4.67
16. Alcohol-related deaths	54%	38%	45%	4.44
21. (B) Diabetes, register-based prevalence	38%	30%	33%	4.06
22. Dementia/ Alzheimer	23%	12%	19%	4.17
23. (B) Depression, register-based prevalence	29%	21%	24%	4.18

24. Acute myocardial infarction (AMI)	64%	48%	53%	4.59
25. Stroke	63%	47%	52%	4.39
26. (B) Asthma, register-based prevalence	25%	10%	19%	4.80
27. (B) COPD, register-based prevalence	25%	11%	18%	4.80
41. Health expectancy, others	48%	30%	38%	4.47
51. Breastfeeding	33%	24%	24%	4.13
61. Timing of first antenatal visits among pregnant women	34%	22%	25%	4.00
75. Patient mobility	25%	17%	20%	3.78
Average of Section	39%	27%	31%	4.34

Legend: Elaboration from survey results.

5. Analysis of ECHI intervention logic and added-value aspects

5.1 Introduction

This section deals with different aspects related to ECHI added-value. It starts with a survey-based assessment of the perceived added-value of ECHI by policymakers (section 5.2), where different possible factors are analysed. It continues (section 5.3) with a more in-depth review (supported by desk research) of the evidence of ECHI impact on the structuring / refinement of national health indicator datasets. Then, an ex post assessment of ECHI intervention logic is carried out (section 5.4), focusing in particular on the main principles that were supposed to account for most of ECHI added-value, i.e. indicators' comparability and stability. In the following Section 5.5 ECHI is analysed in the context of the wider relationship between use of indicators and policy-based improvement in health outcomes. Finally, section 5.6 assesses in terms of added-value the relationship between ECHI and two other EU-level initiatives in the field of health indicators, i.e. the European Health Interview Survey (EHIS) and the European Health Examination Survey (EHES).

In addressing the overall theme of ECHI added-value and of the relevance of its intervention logic principles, this section of the Study answers *inter alia* to the following evaluation questions:

- *Have MS used ECHI to develop their own policy monitoring indicators?*
- *Is there evidence at hand between the systematic use of a set of indicators or one in particular and the policy based improvement in health outcomes?*
- *What is the relationship between the ECHI shortlist and the host of instruments put in place for its implementation (EHES, EHIS, etc.) in particular as regards the added value of ECHI?*

5.2 The main determinants of ECHI added value

The determinants of ECHI added value by type of policymaker. Five main possible sources of ECHI added-value has been investigated through the survey of European policymakers. In particular respondents have been requested to rate on a 1 to 5 scale the validity of the following factors:

1. prior to the introduction of ECHI, similar data was not collected / only sporadically collected;
2. ECHI indicators respond to an interest to compare health data with other European countries;
3. the quality of existing national indicators has improved thanks to the methodological work behind ECHI;
4. ECHI indicators enjoy a higher reputation and international recognition than domestic indicators;
5. ECHI indicators are more user-friendly than other available indicators.

The results are illustrated in table 5.1 below, and can be summarized as follows:

- the survey results have largely confirmed that the main source of ECHI added value according to its potential users is the fact that it enables the international comparisons. This factor is rated on average significantly higher than the others, and in particular by experts from PHI / health information offices and academic policy influencers. In relative term, the judgment of policy evaluation

- / monitoring officers is more tepid, seemingly due to their greater awareness of methodological difficulties and comparability issues;
- the second-highest ranking added-value factor is the possible effect had by ECHI on improving the quality of national indicator collections. ECHI as a methodological reference is the most important added-value according to policy evaluation / monitoring officers. It is instead rated low in relative terms by academic policy influencers;
 - reputational considerations on the international profile of ECHI are on average the third source of its added-value. This is particularly the case, again, with experts from PHI / health information offices (which were also the primary target / stakeholders of the initiative), while is below the average assessments provided by policy planners and policy influencers;
 - the added value of ECHI related to its user-friendliness (hence practical utility) is perceived as relatively low by the majority of respondents and especially by services involved in healthcare programming and monitoring and policy evaluation;
 - the lowest added-value among the factors considered is attributed to possible spurring effect ECHI possibly had on the introduction / implementation of new indicators in the national information system. Particularly negative is the feedback of policy planners in this respect, while healthcare programmers and policy evaluators seem relatively more positive.

Table 5.1 – Assessment of factors impacting on ECHI added value

Area of added-value	Services involved in programming of resources and financing of the health system	Service involved in the planning of health prevention strategies and health policies	Service responsible for evaluating / monitoring and/or reporting on policies	Public health institutes, statistical offices and/or other health information services / study department	Policy 'influencer' (e.g. academics and researchers)	Total
Prior to the introduction of ECHI, similar data was not collected / only sporadically collected	2.36	2.31	2.50	2.47	2.55	2.42
ECHI indicators respond to an interest to compare health data with other European countries	3.77	4.46	4.17	4.55	4.60	4.36
The quality of existing national indicators has improved thanks to the methodological work behind ECHI	3.41	3.32	4.60	3.32	2.88	3.40
ECHI indicators enjoy a higher reputation and international recognition than domestic indicators	3.00	3.22	3.33	3.50	3.00	3.26
ECHI indicators are more user-friendly than other available indicators	2.23	3.09	2.17	2.89	2.86	2.73
Total	2.97	3.30	3.31	3.36	3.23	3.26

Legend: score 1 = very low added value; score 5 = very high added value.

Source: Elaboration of survey results

5.3 The incentives provided by ECHI to MS to develop their own monitoring indicators

ECHI as a reference standard. As already seen in section 5.2 the impact ECHI has had in spurring MS to further develop / modify their monitoring indicators in line with ECHI recommendations is mixed. First of all, there are countries where the ECHI shortlist played a role as a framework for reference for the overall development of their health information systems and even helped in the submission of related legal proposals, particularly to clarify the areas where private healthcare providers were to submit statistical information to public health authorities. Relevant examples include, for instance: Slovenia where the concomitant ECHI initiative also was used to support a proposal for a new law on health data collection and healthcare-related information provisions and to clarify the relations with private data providers and their related obligations; Cyprus where reportedly there was no real information system in place and where new coding of death certificates has been introduced in response to ECHI incentive together with the creation of new registers and where also a law empowering the health information system to collect data has been proposed; Belgium where ECHI has become one of the reference standards for the feasibility study reviewing the entire set of national indicators; Spain where ECHI was used as one of the reference frameworks for the creation of the national set of health indicators – INCLA-SNS; Italy where a Commission for the international validation of its LEA indicators that expressly envisages ECHI as the source for reference was established but whose proposals are still pending; and Greece where all ECHI indicators have been reportedly included in the national health indicator databases and are therefore in the agenda over the next few years.

In other countries the ECHI shortlist has been used on a more indirect and not always explicitly acknowledged basis as a benchmark for reference to review and modify to various extents the national indicator data sets (Portugal, Iceland, Lithuania and Ireland). In Estonia - which has experienced a reduction in the number of indicators actually gathered over the last few years due to budgetary constraints - there is a general commitment to use the ECHI shortlist as reference framework for indicator development in the future and the shortlist is already informally used to filter the various requests for health indicators coming from the different policy units.

ECHI legal status as a barrier to implementation. While in one third of the countries reviewed, the ECHI shortlist as a EU-backed initiative has enjoyed enough prestige to be considered as one of the framework for reference for the development of health indicators, in a minority of countries no formal uptaking of ECHI was registered in the health information system due to the fact that ECHI mechanism was not enshrined in a clearly defined institutional framework, and could therefore be considered as a 'private' project run by a limited core group of countries. The lack of an institutional / legal status attached to ECHI was reportedly seen as an obstacle to formal adoption in e.g. Sweden, Latvia, France and Croatia. As clearly put down by an interviewee, no change of the indicator system enshrined in the national law can be envisaged in France unless the request originates from a recognised international organisation or Eurostat. The "private project" status of ECHI does not endow it with such legitimacy.

Intermediate situations. In between these two extremes there are a certain number of countries that while maintaining their national health information system have worked on aligning with ECHI standards a few indicators through improved collection of data from registries. This is for instance the case of the Netherlands (e.g. low birth weight, physicians, and nurses employed), Lithuania, the Czech Republic and Malta. In other cases (e.g. Italy, Austria, Germany, Romania and also Estonia),

existing indicators have been recalculated based on ECHI definitions but without any additional work on new sources of data. The result has often been that a parallel ECHI-denominated series is now complementing the pre-existing ones. The sustainability of these initiatives is difficult to assess and probably varies from case to case also based on contingent factors. In a couple of these countries such parallel series have no longer been updated because of shortage of resources, which does not bode well for their long term sustainability. In others, they seem sustainable because there are clear policy initiatives on the use of related data. Whenever the health indicator system is enshrined in the law (e.g. Italy, Romania) proposals have been formulated to adopt the newly-calculated ECHI series as a legal standard, but these have not been approved yet also because of the burdensome procedure required. Although this has not given rise to new indicators yet, some Countries have reported improved relations with their registries or even the creation of new registries and therefore it is reasonable to assume that new indicators should become available in the future.

Limited impact. In the remaining countries surveyed ECHI has had little tangible impact, for seemingly a combination of reasons (see table 5.2 below). Either the health information system was already so well developed that no action was needed to get to indicators “substantially comparable” with ECHI for all practical purposes, although not necessarily formally aligned with ECHI indicated sources of reference. This is for instance the case of the UK, Finland, Denmark and – perhaps - Norway. Otherwise, major capacity problems and lack of supporting registries are reported, as in Slovakia and Bulgaria. Poland is a very special case because all health indicator-related activities have apparently come to a halt, since the country is about to move toward a fully integrated e-health information system. A new law has been introduced already to gather data on e-health records. Since the new law will enter into force in 2014, much of the effort has been devoted to manage the transition period and the related organisational and management issues.

Table 5.2 – Incentives and barriers to the use of ECHI for the development of national indicators

Incentives / barrier	Countries
Officially used ECHI to develop their Health Information System	BE, CY, ES, SI, EL
Informally Used ECHI to review their Health Information System	IS, EE, PT, IE
Barriers to action reported unless legal status is clarified	SE, LV, HR, FR
New indicators introduced from registries	MT, NL, CZ, LT
Parallel series of ECHI indicators recalculated	AT, DE, IT, RO
No action taken for various reasons	FI, UK, NO, DK, SK, BG, PL

5.4 Ex-post relevance of ECHI intervention logic

The role of benchmarking in policymaking. *Does International Benchmarking Represent an Incentive for Policy Action?* One of the key assumptions behind the quest for enhanced comparability of health indicators across Europe is that comparisons with neighbours on the hand and the identification of outliers on the other hand, through a combination of increased awareness and reputational incentives, would spur Governments to take policy action and remedy poor performance. The previous

sections have indeed showed that there is a growing interest¹⁵⁵ in international benchmarking and policymakers increasingly consider it as an important use of health indicators. The sheer growing number of countries participating to the ECHI initiative itself or to the OECD Health Care Quality Indicator project is further evidence of this trend. However, few national systems explicitly envisage international comparisons and benchmarking as a formalised part of their policymaking process. The Dutch Ministry of Health, Welfare and Sport has regularly commissioned the Dutch Health Care Performance Report (on a biannual basis from 2004 and every four years starting from 2010) with the explicit aim of enabling the “policy appraisal of health care performance also through international comparisons”. In the UK the National Quality Board has been entrusted with the official mission of overseeing the work to improve health quality indicators and to examine how to use international comparisons for health quality improvement up to the point that international benchmarking has become one of the priority areas of the *High Quality Care for All* initiative. The Nordic Countries have a long tradition in this field and the Nordic Indicator Groups Project set up by the Nordic Council of Ministers can even be considered as a precursor of the OECD Health Care Quality Indicator project. However, apart from the Dutch case, interest in benchmarking has not necessarily been focused on comparison with the rest of Europe. So a number of benchmarking studies in the UK have targeted the US, Canada, Australia and other Commonwealth countries for comparison, and Nordic countries have developed a long and well-established tradition of benchmarking among themselves or, again, with the US and the Commonwealth¹⁵⁶.

In all the other European countries, healthcare quality benchmarking has been fairly informal so far, and is only now entering in the process of being better formalised. In France the experts of the HCSP envisage the possibility of having greater recourse to benchmarking in the next health strategy; Belgium has paid considerable attention to international benchmarking in carrying out in its federal Project on the Performance of the Belgian Health System; Italy has been considering the introduction of so-called second-level LEA indicators expressly aimed at international benchmarking; the WHO evaluation of the Portuguese Health Plan has included a section on benchmarking, although this was not explicitly used to assess performance.

Since much of this benchmarking process is informal and undocumented, it is difficult to identify clear patterns of interest across Europe. With rough approximation, it can be assumed that the level of interest in international benchmarking is higher in small and relatively centralised countries than in large or heavily decentralised ones – with the UK being an exception. Qualitative evidence collected for the Study seemingly shows that countries whose health system is based on a substantial delegation of powers to local authorities appear often almost-exclusively focused on investigating reasons behind internal variance of health outcomes and mostly neglecting the external comparative dimension¹⁵⁷.

¹⁵⁵ The few dissenting views wondered that the recent emphasis on health inequalities across Europe would switch the focus of political attention again from international back to domestic comparisons.

¹⁵⁶ For instance the report on risk factors and public health in Denmark has final comparative section with data from the USA, New Zealand, Australia and the Netherlands only. http://www.sifolkesundhed.dk/upload/2745_-_risk_factors_and_public_health_in_denmark.pdf

¹⁵⁷ As part of the spending review there recently was a debate on C-section surgeries in Italy that reached the media and raised some attention in the public on healthcare performance issues. However, the focus of the debate was on domestic regional variance in the data which was apparently so big not to need any further confirmation by means of international comparisons. Moreover, benchmarking with ECHI indicator #73 was never considered because related data at the regional level are not available, so nobody could say whether a similar level of variance could be found also in other Countries, which was the aspect that could have been relevant to the debate.

Moreover, also the feedback of benchmarking activities on policymaking is by and large undocumented, with very few concrete cases - mostly linked to feedback from specific indicators (whether ECHI or not) - gathered during the exercise. These mainly concern the countries mentioned in the previous paragraphs. So, as a result of the Peristat II study, the issue of exceeding perinatal mortality when compared to neighbouring countries was raised in the Netherlands.¹⁵⁸ This triggered the Dutch Government to commission an *ad hoc* investigation which eventually found that one of the main reasons for the high perinatal death rate in the country is the midwife care system (homebirth rates are among the highest in the world 30%, but down every year and midwives remain the mainstay of the system).¹⁵⁹ This contributed to raise in the scientific literature concerns about the possible pressure in the UK to adopt the Dutch system of maternity care. The UK is now leading in the development of a more detailed surveillance system for trends in obstetric practice and management (SAMM). The WHO is currently in the process of integrating these efforts into internationally accepted criteria for SAMM¹⁶⁰. As a second example, data on 30-day In-Hospital Case-Fatality of AMI published in the OECD 2012 Health at a Glance report have reportedly spurred the Belgian Government to commission a study on the reasons behind the apparent bad performance of the country. Finally, there is evidence of substantial cross-country benchmarking in the field of alcohol policy as far as alcohol consumption and alcohol-related deaths are concerned particularly among the Nordic countries and to some extent the UK.

Two separate groups of reasons have often been mentioned for this limited availability of concrete evidence of impact. As far as health population statistics are concerned, three main interrelated factors would be at play:

- First of all, most international comparable indicators - and ECHI among them are purposefully multifactorial, - i.e. they depend on a number of different factors. So the identification of major variations in data does not necessarily point towards any specific possible redressing policy action.
- As a consequence of the above, most of the input of benchmarking to the policymaking process whether explicit or not, presupposes at any rate the availability of rapid assessment services or a certain evaluation capacity to identify the underlying causal relations. The existence of such capacity¹⁶¹ is therefore a precondition for impact to happen and is certainly facilitated by the existence of institutional mechanisms focused on international comparisons. Where such capacity is not there or is underdeveloped the WHO might play a supplementary role, but it is then left to them to define the set the indicators relevant for benchmarking or to be developed in the future. And there are little mechanisms currently in place to ensure that this is necessarily consistent and coordinated with the ECHI agenda, which might send conflicting signals to policymakers in the countries concerned.

¹⁵⁸ Mohangoo AD, Buitendijk SE, Hukkelhoven CW, Ravelli AC, Rijninks-van Driel GC, Tamminga P, Nijhuis JG.

Higher perinatal mortality in The Netherlands than in other European countries: the Peristat-II study. (Article in Dutch) Ned Tijdschr Geneeskd. 2008 Dec 13;152(50):2718-27. <http://www.ncbi.nlm.nih.gov/pubmed/19192585>.

¹⁵⁹ <http://www.erasmusmc.nl/perskamer/archief/2010/2620025/?lang=en>

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https://openaccess.leidenuniv.nl/bitstream/handle/1887/14001/5415_zwart_binnenwerk.pdf?sequence=1

¹⁶¹ Then the role played by the different single indicators can be difficult to ascertain in detail because they become part of a more complex assessment exercise and are confused among the several components of an evaluation report. This would be indirectly confirmed by the finding of this exercise that the level of interest in using indicators for international benchmarking tends to correlate with the level of interest for using them for evaluation purposes and the existence of the underlying consolidated evaluation tradition.

- Thirdly, there is an income gradient, partly correlated to the factor above, as countries with relatively lower levels of income usually also have lower overall institutional and evaluation capacity to draw lessons from comparing policy indicators. However, these countries also tend to attribute their health outcomes to the prevailing general socioeconomic conditions rather than their own health policies. They also tend to believe that their general level of income affects the overall quality of their health information systems, which results less reliable than in other countries (although some respondents claim that benchmarking can be informally used as a source of inspiration to set targets also in these cases)

As a result of the combination of factors above, the likelihood of benchmarking influencing policymaking appears to increase with the level of income and tend to focus on comparisons with Countries with roughly similar levels of income.

The second group of reasons concerns certain healthcare system performance indicators and in particular those efficiency-indicators related to material and immaterial investments. In this case, the impact of benchmarking on policymaking can be hindered by a subtler circular argument. In fact, as highlighted by proponents themselves the significance of certain indicators for policymaking is not straightforward and can be evaluated only within the framework of the health systems they are referring to. But this line of argument would void the comparison and benchmarking of much of its practical relevance for policymaking purposes. The argument roughly goes that if producers of international data themselves warn against interpreting an indicator outside of its policymaking context, then that indicator can hardly be used to draw comparative lessons on the appropriateness of the policy framework itself and the need for its reform. In other words, even perfect data comparability from a statistical viewpoint could never really compensate for the more structural underlying problem of system comparability. Moreover, as the ECHI factsheets themselves indicate, certain indicators of health system performance and efficiency in the use of resources if taken in isolation from a broader analysis can draw ambiguous results even within the framework of a given health system. Needless to say, because of the abovementioned limitations very few ECHI-based benchmarking exercises with an explicit focus on healthcare system performance and efficiency have been identified and documented.¹⁶² The few existing instances tend to use OECD data as a source of reference, given its undisputed specialization in measuring health-related efficiency issues.

The shortlist as a work programme. *Has the emphasis given to ensuring stability of the ECHI shortlist over time irrespective of feasibility considerations paid back in terms of confidence in the use of related indicators?* As mentioned by some interviewees, the ECHI initiative has purposefully been inspired to a “rather fundamentalist” approach to the issue of feasibility because it was a tool to foster the implementation of indicators. This has deeply characterised ECHI from other similar initiatives that on the contrary have paid much more attention to feasibility considerations in the way their list of indicators are made official. The OECD, for

¹⁶² See for instance, the report on *Benchmarking the Irish Health System*, Library Service of the Irish Parliament http://www.oireachtas.ie/parliament/media/housesoftheoireachtas/libraryresearch/spotlights/Benchmarking_Ireland%27s_Health_System.pdf. In France, as part of an overall effort to reduce hospital stays and reduce costs, attention has been paid to benchmarking outpatient cataract cases with the Scandinavian Countries. In Slovenia the indicator on financial accessibility to healthcare showed that inequalities in public health are not excessive, as coverage is overall good in the country; and the indicators of public health expenditure as % of GDP and as share of tot health expenditure when compared with other countries showed that expenditure elsewhere was growing faster than in Slovenia and reportedly led to an increase in financing.

instance, has stipulated that a minimum threshold of Countries implementing and submitting any proposed indicator (a minimum of ten Countries in the HCQI experience) should be met before the indicator is officially upgraded and included in the related list of OECD indicators. This makes the list stable and reliable in the long run in the eyes of potential users and leaves all uncertainty to the pre-list stage.

The ECHI shortlist, instead, has operated as a work programme and included subsections where the indicators could move back and forth depending on changing feasibility considerations. So it has purposefully included also indicators proposed by international organisations as pilot, but then dropped by them because of lack of compliance with their own feasibility criteria and also indicators implemented on a pilot basis by European projects but never considered for collection by international organisations. To compensate for this and further increase the stability of the shortlist as a work programme, according to present rules the removal of an indicator from the shortlist would require that the underlying policy issue, and not the indicator itself, were no longer considered as relevant.

There are a number of reasons perfectly justifying these rather rigid arrangements, including the need to avoid an exceedingly protracted negotiation process and the need to voice health information priorities within the broader agenda of European institutions themselves and National Governments alike.

However, if this mechanism were to be a tool to exert pressure to keep on working on the data gathering of pilot indicators and make it sustainable, results so far have fallen short of expectations, as none of the pilot indicators proposed by the OECD but then dropped because of their limited feasibility has then reached the minimum standards to eventually enter the OECD Health Quality Indicators list. Also, none of the indicators temporarily implemented by EU PHP projects and included in the ECHI shortlist has managed so far to gain access to the data collection agenda of either Eurostat, the WHO or the OECD - with the possible exception of HLY-related indicators that had become in the meantime a EU priority. Resource barriers in the last few years have proved an insurmountable obstacle in this respect.

Conversely uncertainties about the actual implementation perspectives of some ECHI indicators could have had – at least in a few cases - the paradoxical result of increasing the perception of ECHI as a relatively unstable dataset that could not be reliably used as a framework for reference for use for policymaking purposes and discouraged its uptake until clear commitment to implementation would become visible.

The trade-off between indicator comparability and availability. *Has the quest for indicator comparability gone too far as compared to the practical needs of policymakers?* Much of the scientific debate on health indicator international comparability has focused on the differences in data collection methods, and the possible changes in reporting practices over time that would hinder the usefulness of international benchmarking. The ECHI approach has followed in this respect the lines established by the OECD in its pioneering work on the Health Care Quality Indicator Project and has paid considerable attention to remedying the structural weaknesses in existing data. A well-known example is represented by the estimate of the number of nurses or health professionals that in some countries is based on head counts taken from professional qualification registries, while in others is limited to those actually in employment or even working for the State sector. The response to this has been an overall quest for complete harmonisation at all levels, including data collection methods and reporting practices.

While the majority of public health practitioners and health information experts do share the same concerns and totally agree with this prevailing approach, a minority of interviewees has raised the point that the importance of complete comparability has been probably overstated and that for practical policymaking purposes some "reasonable" degree of comparability would probably suffice to draw policy lessons from data. In their view ECHI has pursued very high (some say even exceedingly high) harmonisation standards without considering the effectiveness and cost-effectiveness of alternative approaches such as the identification of conversion factors based on small samples and other simplified estimate techniques. The price to be paid is that this could have ultimately hindered the availability of data and could have unduly increased the loss of confidence in data that are still often reported to the public as not perfectly comparable but whose margin of error in approximating reality for practical comparison purposes and ranking is probably comparable to that of the original data gathering or sampling techniques. It is noted that projects such as the Global Burden of Disease add information on the uncertainty interval in given data.

The limited documented examples available on the impact of international benchmarking on policymaking, do not provide conclusive evidence on which of the two opinions is concretely supported by facts and concrete experience and it seems likely that different policymaking communities have different views and implicit sets of reference standards on the subject as to what could be considered as an acceptable level of comparability.

For instance, on the one hand it can be noticed that the Dutch policy initiative on perinatal mortality was based on Peristat project data whose comparability standards are more stringent than those currently envisaged in the WHO Health for All database temporarily adopted by ECHI. This would lend support to the ECHI proposal of switching one day the indicator standard from the WHO to the Peristat one and confirm the importance of harmonisation in reinforcing confidence on international indicators and take action accordingly. On the other hand, however, policy action was also reportedly taken based on the 30-day in-hospital case-fatality of AMI and stroke which is possibly a more controversial and debatable indicator in its own nature, but is also considered by ECHI itself an indicator where it is not always clear where the same calculations have been used over time in different Countries - which would, on the contrary, confirm the view that there is a certain degree of practical tolerance to uncertainties as to data comparability, once the order of magnitude is large enough to point to a real significance of reported differences.

5.5 Relationship between use of indicators and policy-based improvement in health outcomes

The pros and cons of health outcome indicators for the policymaking process.

The ECHI shortlist is composed of both outcome and process indicators. The rationale behind using health outcome indicators to influence the policymaking process is that they would focus decision makers' attention on the ultimate goal of the policymaking activity: the health status of the population and are therefore relatively easy to communicate. These indicators are fairly straightforward as they directly measure whether health systems are achieving their desired goals, without the shortcomings of process indicators. Process indicators tend to be more sensitive to the short-term changes in the quality of care and can capture quality of service aspects that are generally important to patients (e.g. waiting times, level of service) although not necessarily significant in terms of ultimate health outcomes. Moreover, they are prone to easily become outdated as organisation and technology advance and, as mentioned before, bear the risk of becoming exceedingly context sensitive. Finally, process

indicators can be more easily manipulated along the information chain, thereby potentially undermining genuine efforts to reform health policies.

However, a number of difficulties can be experienced also in using traditional health outcome indicators within the framework of the policymaking cycle to monitor the implementation of policies or assess their impact. These difficulties can be summarised in terms of their limited sensitivity and specificity.

- **Sensitivity.** A problem frequently reported for health outcome indicators is their limited sensitivity. The observation of an impact in the health outcome of interest is often much delayed, and it is thus difficult to establish a link with any given policy or intervention (e.g. cancer survival data are an obvious example of this kind of delay).
- **Specificity.** Secondly, as mentioned in the previous chapters, health outcome indicators typically reflect the interplay of a range of factors and are not necessarily specific, and this is even the more so when purposefully selected with the criteria underlying the choice of ECHI, i.e. their capacity to cover several health-related aspects at the same time.

While the above features represent little of a problem for a set of indicators aimed at describing the health of the population at large or intended to serve as one of the bases of subsequent epidemiological studies, they do pose problems in a more formal indicator-based policymaking setting. The indicators used in these settings should be very sensitive to change due to the short duration of the policymaking / electoral cycle and the need to ensure accountability of results¹⁶³. Secondly they should be specific enough to allow easy interpretation of data and actionability of policies, as described below.

Interpretability and actionability requirements. In a policymaking setting indicators should be easily interpretable, i.e. they should allow policymakers to draw clear conclusions, and actionable in that they can be directly affected by the healthcare system or other health policies. It is worth noting that judgment on the interpretability and actionability of the different indicators might vary between the different professional communities also based on the diverse national allocation of responsibilities among ministries and other contextual factors. So, for instance, an indicator on breastfeeding such as that envisaged in the ECHI shortlist, can be considered as perfectly actionable in countries with a well-established tradition of HIAP, because it can be modified by means of appropriate social policies and legislation on working conditions. However, countries lacking such tradition might perceive it as outside the core area of action of health policies and therefore poorly actionable. Much in the same vein, different professional communities might disagree on the direct interpretability of indicators such as 30-day in-hospital mortality that are simultaneously influenced by factors such as quality of care, length of hospital stay, and hospital-transfer practice, and only a detailed knowledge of local conditions and practices allows to draw conclusions as to the direct interpretability of data.

In an extremely simplified way it can be said that the views of the policymakers interviewed on the ideal requirements of indicators to demonstrate impact of policies on health outcomes vary between: (i) the mainstream view that indicators should be conceived for descriptive purposes only and it is then up to *ad hoc* evaluation or short assessment exercises to demonstrate causal links, and (ii) those that would like to

¹⁶³ Davies H. Measuring and reporting the quality of healthcare; issues and evidence from the international research literature. Edinburgh. NHS Quality Improvement. Scotland 2005.

replace traditional indicators with intermediate outcome or specific outcome ones for reporting and policy monitoring purposes. In concrete terms this would entail:

- some more emphasis on ways to estimate avoidable mortality / morbidity rather than gross general figures;
- a bigger emphasis on incidence rather than prevalence of chronic diseases (to this aim it is worth noting that also the 2012 OECD Health at a Glance publication feels the need to complement ECHI indicators with data on incidence);
- a clear preference for process indicators for aspects that can be directly influenced by policy rather than for outcomes still perceived as out of control (e.g. on Alzheimer, etc.).

One of the problems frequently reported about the use of health indicators for target setting in policymaking is that the exercise often boils down to extrapolating trends and setting "wish lists" based on rather arbitrary values (e.g. a +10% improvement across the board in a four-year time span). There reportedly is very limited evidence available on what more realistic targets could be extrapolated from other countries' experiences, as well as on what could be the most appropriate indicators to help this cross-learning process and the issue is still poorly debated in any international fora. Some even believe that DG SANCO with the JRC could take the lead and specialise in increasing the informational added value drawn from these data.

According to some interviewees the US Healthy People 2020 programme can be considered, among others, as a good example of how the selection of indicators can be influenced by interpretability and actionability considerations. First of all the document is structured in a way to accommodate the preferences of the different professional communities across the different US member states. So a set of key health indicators selected for communication purposes has been complemented by a wider range of secondary indicators in the different policy areas for specialist review. Then, the selection of proposed indicators has been mainly driven by the need to ensure verification of the achievement of targets and has therefore been overly inspired by actionability considerations. More detailed considerations in this regard are reported in the Annexes. It is worth noting that those two views could more easily coexist if the needs of the second community were not constrained by availability considerations and the existence of mandatory sets. It has been found that there are only a limited number of countries in Europe – and generally are those with a longer tradition in the use of indicators – where policymakers are free to propose the implementation of *ad hoc* indicators for their policymaking needs. In the vast majority of cases the selection of indicators is constrained to the already available ones. This explains the concern a limited number of policymakers have that ECHI could inadvertently become one day a barrier to the implementation of policies agreed at the EU level that would require better fine-tuned and policy-specific indicators. On the other hand there are also those who are strongly against the idea of developing policy-specific indicators because of their wider reservations on target-based policymaking, which they view as exceedingly exposed to the risk of manipulation for political purposes.

Demonstrability of policy-related health outcome improvements – evidence from the literature. The way health outcomes that can be actually influenced by policies rather than by broader socio-economic factors or cultural sets of values is also the subject of academic research and a hotly debated subject. For instance, a major

study¹⁶⁴ recently appeared has compared the performance of health policies across a number of European countries based on a number of intermediate health outcome and a few composite process indicators (see box 6.1 below)¹⁶⁵. The study found out that certain health indicators could be clearly correlated to income factors. These would therefore appear as out of the reach of specific health policies. Others, on the contrary, were more clearly dependable on the effectiveness of Government action. A number of health outcome indicators have been found correlated to certain sets of cultural and institutional values (democracy, importance of well-being, etc.) that in turn are the complex product of historical developmental factors. It is an open question the extent to which policies can, at least in the short run, really have an impact on these broader factors and therefore influence outcomes. This is possibly the case for cultural factors, but seems unlikely for more institutional ones.

Box 5.1 - Results of regression analyses of health outcome performance on possible explanatory factors

1. Tobacco control score (a composite indicator comparable to ECHI)
2. Male smoking (also included in ECHI)
3. Male lung cancer (also included in ECHI)
4. **Alcohol policy score (a composite indicator not included in ECHI)**
5. Alcohol consumption (included in ECHI)
6. Male liver cirrhosis (not included in ECHI)
7. Iodine deficiency (not included in ECHI)
8. *Fat as % of energy (not included in ECHI)*
9. **Fruit and vegetable consumption (included in ECHI)**
10. *Teenage pregnancy rate (included in ECHI)*
11. Neonatal mortality (included in ECHI)
12. Maternal mortality (not included in ECHI)
13. Measles immunization rate (included in ECHI)
14. **Child safety score (a composite indicator not included in ECHI)**
15. *Post-neonatal mortality (included in ECHI as perinatal/infant mortality)*
16. AIDS incidence (included in ECHI)
17. MRSA rate (not included in ECHI)
18. *Influenza vaccination rate (included in ECHI)*
19. Male systolic blood pressure (not included in ECHI)
20. *Female stroke mortality (included in ECHI but not implemented yet)*
21. *Cervical cancer mortality (included in ECHI as part of the indicator on disease mortality)*
22. **Seat belt wearing (not included in ECHI)**
23. *Vehicle occupant mortality (not directly included in ECHI because detailed breakdown is not available)*
24. *Pedestrian mortality (not directly included in ECHI because detailed breakdown is not available)*

¹⁶⁴Johan P. Mackenbach, Martin McKee *A comparative analysis of health policy performance in 43 European countries*. The European Journal of Public Health.

¹⁶⁵ A number of limitations are acknowledged in the study. First, there were many gaps in information about the actual implementation of health policies and their intermediate and final health impacts. Missing data were compensated on the basis of the average value for the indicator in its region. Second, given the inter-correlation between the background variables, associations with the health policy indicators are likely to be determined by some variables acting through their impact on others, such as higher GDP per capita encouraging a move away from an emphasis on cultural values and towards modern values emphasizing quality of life.

25. Sulphur dioxide (not included in ECHI)

26. Ozone levels (not included in ECHI)

Legend: indicators that depend on income have been highlighted in italics, those on Government action are in bold and those on cultural factors are underlined.

Source: Johan P. Mackenbach, Martin McKee *A comparative analysis of health policy performance in 43 European countries. The European Journal of Public Health.*

According to the abovementioned study results, health performance in a number of areas was clearly associated with income and availability of resources. Thus, income alone could explain both higher levels of fruit and vegetable consumption, but also a higher proportion of fat in the diets. Income could also largely explain lower teenage pregnancy rates, lower post neonatal mortality rates, higher rates of influenza immunization, lower death rates from stroke and from cervical cancer and lower death rates from traffic injuries, among both vehicle occupants and pedestrians. Some of these correlations are intuitive. Available income can make more fruit and vegetables affordable, but also energy-dense high-fat products. More resources can be spent on healthcare, such as cancer screening, detection and treatment of hypertension and vaccination programs. They also make it possible to maintain roads and enable people to buy more modern, and therefore safer, cars. Government action emerges as a significant factor in alcohol policy, where the ability to enforce restrictions on access and sanctions against drunk driving and related matters is important. Similarly, the ability to develop, implement and enforce policy measures to increase the safety of children's environments is clearly linked to the effectiveness of government. Also seatbelt wearing would largely depend on the importance of law enforcement in this area.

The study is the first ever attempt to compare quantitatively the performance of European countries in terms of their health policies. However, a number of other studies have used qualitative methods and focused on inputs to policy and on policy processes, and have often been based on self-reports by policymakers, rather than focusing on the outputs of actual policy implementation and intermediate and final health outcomes. Correspondence can sometimes be seen with the results of these exercises. However, in more general terms there cannot necessarily be a correspondence between the evidence from official documents and self-reports and the findings from such kind of quantitative analyses and there may be a large gap between intentions and the ability to implement policies on a scale that will create population-wide health impacts

Demonstrability of policy-related health outcome improvements – evidence from the survey. Survey respondents have reported a number of instances in which a set of indicators has been used to demonstrate the improvements in health outcomes spurred by a given policy. By far the most frequently mentioned policy areas have been smoking, followed by nutrition and physical exercise, traffic accidents and road injuries, vaccination campaigns, alcohol consumption and drug policy. A few outliers have reported specific interest in cancer with specific reference to early treatment, diabetes and chronic diseases, mental health and stroke. It is worth noting that these correlations are not necessarily validated in the literature, supported by strong evaluation evidence or based on sophisticated methodological analysis. For instance, those countries reporting a link between their policy on road injury and improved health outcomes might have ignored in their findings the results from data envelopment analysis techniques demonstrating that the improvement in health outcomes largely depends on technological enhancement, and the efficiency of policy

action is actually declining¹⁶⁶. Finally some are based on reviews of *ad hoc* studies. ECHI indicators are usually a subset of those used in these reports, but not all of them are actually implemented. Smoking-related deaths for instance is very frequently used together with specific youth-related indicators.

Table 6.3 below reports the number of countries claiming to have used indicators to demonstrate the enhanced health outcomes of a given policy. Whenever available links to the underlying reports have been added. The list is not supposed to be exhaustive, but represents a good approximation of the relative importance of the underlying policy areas. It also highlights the role played by the international organisations (notably the WHO, the EMCDDA) in steering the use of certain sets of indicators to support the implementation of specific policies and evaluating their results.

Table 5.3 - Countries reporting use of indicators to demonstrate impact on health outcomes

Policy Area	Countries
Smoking	Denmark ¹⁶⁷ , Germany (young), France (young), UK (Scotland ¹⁶⁸ and England ¹⁶⁹), Slovenia, Spain ¹⁷⁰
Nutrition and physical exercise	France, Slovenia, UK ¹⁷¹
Traffic accidents	France, Latvia, Spain ¹⁷²
Vaccination campaigns	France, Germany, Luxembourg ¹⁷³
Alcohol consumption	Germany, Slovenia
Drug policy	Croatia, Lithuania ¹⁷⁴

5.6 The Relationship between ECHI, EHIS and EHES in terms of added value

ECHI and EHIS. The European Health Information Survey (EHIS) is a Eurostat survey about health conditions in Europe to be carried out every five years to complement the other information collected by means of the SILC on an annual basis. EHIS is to become an important source of data for all those ECHI indicators that cannot be found in the international databases or in other Eurostat routine data collection exercises and currently is the envisaged source for roughly as many as one fourth of all ECHI indicators, with particular reference to those included in the sections on health determinants and health status. As usually happens with Eurostat newly-introduced surveys, EHIS was first implemented on a pilot and voluntary basis in eighteen MS and

¹⁶⁶ See, e.g. Egilmez G. McAvoy D *Benchmarking road safety of US states: a DEA based Malmquist productivity approach*, Acc Anal Prev, Arpil 2013

¹⁶⁷ <http://www.sst.dk/~media/Sundhed%20og%20forebyggelse/Tobak/Tal%20og%20undersogelser/Danskerne%20rygevaner/2012/DanskerneRygevaner2012FrekvensKrydstabeller.ashx>

¹⁶⁸ www.healthscotland.com/scotlands-health/evidence/smokefreelegislation.aspx

¹⁶⁹ http://www.nice.org.uk/niceMedia/documents/smoking_evidence_briefing.pdf

¹⁷⁰ <http://www.seepidemiologia.es/monografia.pdf>; <http://info.elcorreo.com/documentos/2011/estudio.pdf>

¹⁷¹ http://www.nice.org.uk/nicemedia/documents/physical_activity_adults_eb.pdf

¹⁷² http://www.dgt.es/was6/portal/contenidos/documentos/seguridad_vial/estudios_informes/EVOLUCION_S EGURIDAD_31102011.pdf;

¹⁷³ <http://www.sante.public.lu/fr/rester-bonne-sante/120-vaccinations/surveillance-vaccination/index.html>

¹⁷⁴ http://www.ntakd.lt/en/files/2012_EN.pdf

Norway. Starting from 2014 it will run within the framework of a mandatory EU regulation¹⁷⁵, which is however subject to a sunset clause and will have to be confirmed every five years. Ten countries including Denmark, Finland, Iceland, Ireland, Lithuania, Luxembourg, The Netherlands, Portugal, Sweden and the UK, as well as Croatia as an accession State did not carry out the first round of the survey on various grounds, mainly because of overlapping with existing national HIS sometimes linked to parallel national HES exercises, or because of budgetary constraints. Six of the EHIS participating countries (Austria, Belgium, Germany, Estonia, France and Italy) opted to implement only parts of the questionnaire and two of them (Austria and Estonia) actually used an old version. According to ECHIM sources, all in all only ten countries actually implemented all the EHIS questions as in the original questionnaire. Most of these countries were New Member States lacking a previous consolidated tradition with national HIS. In spite of all the practical synergies, ECHI and EHIS have obviously formally remained two separate processes run by different teams. In general ECHIM has closely worked in agreement with Eurostat to set EHIS methodological standards, although matters of disagreement have arisen from time to time between the two technical groups as to the criteria applicable to certain indicators, as well as to their concrete feasibility. In particular, after the first round of EHIS was implemented, some indicators had to be moved backward from one ECHI section to another and in preparation of the second round some methodological definitions have started diverging. So at present the ECHI shortlist requirements and the text of the Eurostat EHIS questionnaire do not strictly coincide any longer for some indicators.

ECHI and EHES. The European Health Examination Survey (EHES) was recently run as a pilot PHP project in twelve European countries but has never been considered for inclusion among the Eurostat regulatory survey exercises. In fact, since HES data were deemed poorly available across Europe, no ECHI indicator currently envisages EHES as its main source of information. However, two ECHI indicators and namely, #42 Body Mass Index, #43 Blood Pressure envisage EHIS as their source on an intermediary and temporary basis, and should become EHES-based when EHES is eventually mainstreamed into the European health information system and another # 21 Prevalence of Diabetes in the Population is in the pipeline. At that time it is also reportedly possible that other HES-based indicators such as cholesterol or lipid profile will have been included into the ECHI shortlist. HES exercises are not new in Europe and five of EHES participants already had some well-established tradition with national HES and took part to EHES mainly to standardise their protocols and sampling strategies. One of the big challenges of standardising HES is the cascade effect this might have on national HIS series. HES are usually thought to act in synergy with HIS and it is actually considered best practice to combine HIS and HES so that results from interviews are validated by clinical examinations whenever possible. Only a few HIS data e.g. tobacco smokers are then interpreted as standalone. Finland, for instance, has carried out a HES every five years since 1972 and related results have been constantly used to calibrate and validate those of the annual HIS conducted in between. Other countries have also used similar strategies. So any HES harmonisation triggers the risk of losing HIS historical series as an unintended side effect.

EHIS added value in terms of ECHI indicator availability. In some countries EHIS made it possible the collection of indicators that would have otherwise not been available in full or in part, because they were not previously included in the National Health Information Systems. This is the situation reported in some new MS (e.g. Romania, Estonia, Slovenia, Bulgaria, Latvia) and in a few cases also in the Mediterranean. Although not formally part of the EHIS pilot exercise, also Luxembourg

¹⁷⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:047:0020:0048:EN:PDF>

reportedly pilot tested its first HIS survey a couple of years ago, possibly out of imitation with the first wave of EHIS. The main limitation to the use for policymaking purposes of these newly collected information in all the countries where EHIS is or will be the only available source of HIS data is that data collection on a five-year basis is not considered frequent enough to draw reasonably relevant time series or for yearly policy monitoring and reporting purposes. These exercises, to be of full use, should therefore be replicated on a yearly basis with national resources only, which has not materialised yet in any of the countries concerned and in several cases seems unlikely to happen any time soon because of costs and budgetary constraints. The other major current or prospective limitation to added value is represented by the fact that EHIS data are not collected by default on a regional basis, as extended samples would need additional resources that only some Member States have been in a position to grant (e.g. Italy, Germany, Spain and the Czech Republic). Implementation by means of a Regulation is not generally believed to have an impact on these broader constraints, but possibly to reassure about the reliability of these data flows in the future, although the matter is controversial among the interviewees themselves. While some believe that the sheer fact that EHIS has been embodied in a Regulation will contribute to its overall credibility and strengthen the argument for its use, others are still concerned that uncertainties about a real long term commitment to its implementation, as well as increasing evidence of methodological disagreements between ECHIM and the TG-EHIS will weaken the case for related indicators and eventually reduce confidence in ECHI. In all other countries with a pre-existing and well-established national HIS and related time series, EHIS provides added value mainly in terms of increased data comparability although opinions diverge as to the very subtle differences that sometimes might exist between "substantially equivalent HIS-based" national indicators and nationally-adapted EHIS version ones in terms of concrete practical impact on data comparability. A tension is, however, inevitably created on how best to reconcile the national HIS with the EHIS and on how to integrate surveys that are generally annual, broader and deeper in scope with the European exercise, particularly when there is already a multiannual EHES to play the reference framework for the annual HIS. This tension inevitably becomes more severe when budgetary constraints hinder a solution by addition and thereby force a rethinking of the overall survey strategy as is currently reportedly the case in the Netherlands.

EHIS contribution in terms of informational added value. As reported in the Table 5.4 below EHIS-based indicators are used with the same intensity of the other ECHI indicators, when they are available. The main difference is that are slightly more used than average for planning and monitoring purposes and that their perceived usefulness is lower than average. In fact, apart from comparison purposes, self-reported information is not necessarily considered as a source of informational added value, from the point of view of the single countries concerned. It may be so when there is no alternative data available, but EHIS-based indicators are likely to appear a second-best solution when they compete with reliable registries or health examination surveys. EHIS provides clear added value - broadly in line with expectations - for those indicators that do not really lend themselves to be objectively validated by means of a HES. As expressly mentioned by some interviewees this has been particularly the case for lifestyle indicators and for indicators whose registry-based versions are deemed not regularly available or sufficiently reliable in the majority of the countries concerned. However, the most important source of added value of EHIS in a number of countries is that they allow having data for health inequality purposes that would otherwise have not been possible because of the severe privacy limitations in place in many countries in cross-linking registries with personal information.

Table 5.4 - Patterns of use of the EHIS-based ECHI indicators

Category of indicators	Awareness/ Availability	Use in policy-making		Type of use				Usefulness rating
		Actual	Planned	To monitor trends	To set objectives	To assess performance / evaluate policies	To compare	
All categories	% of resp.	Actual	Planned	To monitor trends	To set objectives	To assess performance / evaluate policies	To compare	1 (low) to 5 (high)
21. (A) Diabetes, self-reported prevalence	68%	49%	58%	86%	31%	36%	61%	4.29
23. (A) Depression, self-reported prevalence	68%	49%	59%	83%	25%	33%	64%	4.00
26. (A) Asthma , self-reported prevalence	64%	42%	49%	88%	22%	28%	59%	3.85
27. (A) COPD, self-reported prevalence	58%	37%	43%	93%	25%	32%	61%	4.17
29. (A) Injuries: home/leisure, self-reported incidence	56%	37%	45%	77%	27%	27%	62%	3.71
30. (A) Injuries: road traffic, self-reported incidence	54%	38%	42%	65%	31%	31%	54%	3.83
36. Physical and sensory functional limitations	62%	45%	47%	82%	15%	39%	73%	4.14
42. Body mass index	77%	51%	60%	92%	43%	51%	70%	4.50
43. Blood pressure	61%	41%	52%	89%	32%	57%	61%	4.28
44. Regular smokers	85%	64%	73%	83%	54%	56%	67%	4.71
47. Hazardous alcohol consumption	66%	49%	55%	83%	43%	51%	69%	4.45
49. Consumption of fruit	70%	54%	64%	87%	37%	39%	53%	3.84
50. Consumption of vegetables	72%	49%	58%	91%	40%	40%	51%	3.97
52. Physical activity	75%	53%	64%	84%	50%	47%	58%	4.18
54. Social support	48%	30%	42%	65%	30%	50%	65%	3.78
57. Influenza vaccination rate in elderly	77%	57%	62%	92%	41%	54%	72%	4.21
58. Breast	80%	58%	65%	80%	45%	53%	63%	4.53

cancer screening								
59. Cervical cancer screening	71%	47%	59%	91%	45%	58%	67%	4.57
60. Colon cancer screening	62%	42%	50%	82%	57%	57%	50%	4.24
71. General practitioner (GP) utilisation	68%	51%	55%	74%	21%	45%	66%	4.09
72. Selected outpatient visits	50%	31%	38%	77%	14%	36%	64%	4.00
74. Medicine use, selected groups	67%	47%	51%	74%	29%	50%	62%	4.38
Average of EHIS	66%	46%	54%	83%	34%	44%	62%	4,17
AVERAGE ECHI	74%	54%	60%	81%	31%	45%	64%	4.24

Source: Elaboration from survey results

EHES added value in terms of ECHI indicator availability. EHES has roughly doubled the number of countries committed to implementing HES exercises in the future. In fact, all EHES participants but two have reported they will keep implementing these exercises in the future, and five of them had little previous tradition. Moreover, another four non participant countries have declared their interest in the exercise and another two make national implementation conditional on the availability of co-financing. Some other countries like Bulgaria or Latvia report some pilot testing at the local level. There are talks about discontinuing HES in the Netherlands as part of a broader survey strategy review, as well as in Scotland that have both long been HES implementing countries. Cost issues, budgetary constraints together with organisational and logistic complexity have been frequently mentioned as insurmountable barriers to any realistic prospect of implementation also elsewhere in Europe at least in the short run. At any rate future compliance with ECHI standards as such, has been mentioned by just a couple of EHES participating countries as one of the motivational factors for pursuing HES implementation in the future.

EHES added value in terms of increased data quality. Some interviewees have acknowledged that one of the difficulties HES has in becoming mainstreamed into health information systems is that its added value is more easily understandable to health experts and researchers than to policymakers strictly speaking, and that EHES data typically are more extensively used for epidemiological research purposes than for planning and monitoring of policies. Actually the number of EHES-based ECHI indicators is a subset of EHES core measurements. These include height, weight and waist circumference, non-fasting blood sample for cholesterol and lipids and fasting blood samples of glucose as a proxy for diabetes with a view to moving to non fasting measurement of glycated haemoglobin (HbA1c). Apart from these core measurements, HES and HIS are largely interchangeable. Most of HES data are collected at any rate by means of a questionnaire, although with a higher level of detail, and exactly as with HIS respondents report what physicians have told them. Therefore HIS and HES data are largely substitutes in terms of monitoring trends, although HES is clearly preferable for research about risk factors.

Results from survey however show that the EHIS-based versions of the three potentially EHES-based ECHI indicators are often deemed generally acceptable. In the light of that, some interviewees maintain that the substantial EHES extra costs would be hardly justifiable just to demonstrate that 40% of diabetics are unaware of their condition, as EHES proponents claim. So in order to increase the chances of mainstreaming EHES as a routine source of data for policymaking purpose some say it would be necessary to add other indicators such as cholesterol and lipids and to use HbA1c as a routine indicator for diabetes management as currently happens in the US.

6. Sustainability of ECHI and future perspectives

6.1 Introduction

This final section addresses the two study's evaluation questions that have the clearest forward-looking nature, namely:

- *What is the relationship of the indicators used and those on the ECHI shortlist, is the latter considered complete enough?*
- *How can sustainability be ensured? Is a JA the correct instruments for implementation?*

The first EQ has been addressed both comparing ECHI with national shortlist of health strategy indicators in order to assess possible differences, and directly soliciting experts feedback on ECHI completeness and possible need for future modification / expansion / streamlining.

The second evaluation questions have been answered analysing (i) the current level of interests in ECHI continuation; (ii) the possible consequences of discontinuing ECHI; (iii) the specific tasks and activities deemed essential for the possible ECHI follow up; (iv) the stakeholders' indications and preferences about organisational arrangements, governance etc; and (v) the possible judgement criteria for the future assessment of such mechanism.

With respect to the second EQ it s worth highlighting that the mandate of the ECHIM JA ended in June 2012. Since then an informal initiative denominated ECHI Transition Network has been set up by various ECHIM participants and coordinated by Dutch *National Institute for Public Health and the Environment* (RIVM). The initiative is aimed at maintaining a communication platform for the exchange of ECHI-related information among participants, with a view to 'keep ECHI alive' while DG SANCO and the other actors involved agree on a common approach for ECHI's long-term sustainability. Since its creation the ECHI Transition Network has elaborated *inter alia* a proposal (in two parts) on the way forward for ECHI. In parallel, DG SANCO has officially sent to the members of the *Council Working Party on Public Health at Senior Level* a request for feedback on ECHI including specific questions on the options to be considered for ECHIM JA follow up. Against this background – and as agreed with the Steering Group – the Study's aim is not to duplicate the work already being done by DG SANCO nor to develop detailed scenarios for the continuation of ECHI but to carry out an 'horizon scanning' of the factors and conditions for the future sustainability of ECHI.

6.2 The completeness of the ECHI shortlist

Comparison with databases and strategies. The number of health indicators in use in most countries often can easily amount to one or two hundreds and reach even further in the more complex cases, which means that ECHI is typically a smaller subset of these.¹⁷⁶ It is commonly accepted that ECHI cannot and should not cover the totality of the indicators in use, given its primary 'strategic' aim, and in particular it should not include the several specific indicators used in sectoral policies. On the other

¹⁷⁶ This difference in size between the national set of indicators and the ECHI one can vary from country to country, but at any rate remains substantial. For instance, there are over 170 health indicators in use in Sweden, i.e. double the size of the ECHI shortlist. The Italian list of indicators to monitor the performance of the health system alone amounts to 90 and the Romanian list of public health indicators for official reporting purposes only almost reaches 130 not to include other survey-based lifestyle indicators and infectious diseases epidemiological data.

hand, in order to test ECHI shortlist completeness it might be interesting to compare it with the list of indicators included in countries' general policy documents and to analyse the extent to which the respective priorities match. To this end, two recent strategic frameworks reportedly inspired to a different extent to ECHI, have been selected, namely: the Irish *Healthy Ireland*, and the Portugal's *National Health Plan 2012 - 2016*. A detailed review of the result of comparison is provided in Box 6.1 below.

The two national strategic documents adopt quite different approaches to the use of indicators, in terms of scope and underlying rationale. The Irish framework document emphasises lifestyle, child and adolescent health, health inequality indicators, as well as HIAP policy implementation indicators. Instead, the Portuguese document includes a much wider number of policy areas, shares the same emphasis on lifestyle issues and child and adolescent health¹⁷⁷, but does not include specific indicators on health inequalities and HIAP. Both documents agree in complementing mortality indicators with other more policy-oriented measurements of outcome (preventable mortality in the Irish case, PPLY in Portugal). The Portuguese document moreover includes a very detailed list of healthcare system performance indicators and includes also a general indicator on the degree of satisfaction with the healthcare service. It also clearly envisages that a number of ECHI indicators will have to be developed in the future.

As can be seen the ECHI shortlist covers a sizable share of the information needs that ranges from roughly one third to one half of the total number of indicators envisaged in both documents (and the ECHI share in the Irish document also depends on the sizeable number of policy and social indicators, but it is some half of the core ones). Another half of the indicators to be developed in Portugal belongs to the ECHI shortlist also because the country did not run the first round of EHIS. This share would be even higher if certain indicators now offering partial coverage of information needs would be better refined. This attains child health-related aspects and separate indication of preventable mortality.

Box 6.1 – ECHI coverage in the Irish and Portuguese general health strategies

A. Ireland

Indicator	ECHI coverage
Increase healthy life expectancy at age 65 years by: reducing morbidity overall and premature mortality for four major non communicable diseases.	Covered by ECHI but ECHI then does not cover premature or avoidable mortality
Decrease infant mortality per 1,000 live births.	Covered by ECHI
Increase the number of adults and children with a healthy weight.	ECHI body mass index does not cover children
Increase the proportion of adults eating the recommended five or more servings of fruit and vegetables per day	ECHI indicators identify only consumption at least once per day
Reduction in daily salt consumption.	Not covered by

¹⁷⁷ Also in the programming documents reported in box 4.2 below there is a common emphasis on including specific child and adolescent-related health indicators. As a further indicator of this growing trend it is worth noting that the Flemish Health Indicators include only young or adolescent-targeted indicators for a number of policy areas. <http://www.zorg-en-gezondheid.be/Policy/Health-targets>

	ECHI
Reduce smoking prevalence among adults.	Covered by ECHI
Reduce smoking initiation rates among young people.	Not covered by ECHI
Decrease alcohol consumption across the population.	Covered by ECHI
Decrease levels of self-harm across all life stages.	Not covered by ECHI
Reduce suicide rate across all population groups	Covered by ECHI
Increase the proportion of population undertaking regular physical activity across each life stage	Covered by ECHI
Reduce the gap in healthy life expectancy at age 65 between the highest and the lowest socio-economic groups	Covered by ECHI
Reduce the gap in premature mortality between the lowest and highest socioeconomic groups for circulatory diseases, cancers, injuries and poisoning	Not covered by ECHI
Reduce the gap in low birth weight rates between children from the lowest and highest socio-economic groups and the percentage of low birth-weight babies across socio-economic groups	Covered by ECHI but no inequality breakdown
Reduce the % of people at risk of poverty.	Covered by ECHI
Reduce the % of the population in consistent poverty.	Not covered by ECHI
Reduce self-reported, unmet need for medical care.	Covered by ECHI
Increase self-reported happiness and wellbeing across socio-economic groups.	Covered by ECHI
Increase immunisation rates for children.	Covered by ECHI
Increase immunisation rates for vulnerable adults and healthcare workers.	Partly covered by ECHI
Increased prevention, control and surveillance of infectious disease.	Policy indicator
Compliance with environmental (air, water, noise) and food indicators.	Policy indicator
Compliance with indicators defined in International Health Regulations, WHO.	Policy indicator
Establishment of national policy, implementation plan, accountability mechanisms and active monitoring, and reporting of same	HIAP Policy indicator
Establish baseline indicators measuring the level, range and effectiveness of cross-government collaboration.	HIAP Policy indicator
Development and implementation of social impact assessment tools.	HIAP Policy indicator
Increase percentage of people participating in informal, unpaid charitable work.	Social indicator
Establish baseline indicators measuring the level, range and effectiveness of structures to facilitate cross-sectoral working.	HIAP Policy indicator
B. Portugal	
Indicator	ECHI coverage
PYLL due to a dozen different conditions	Not covered by ECHI
Hospital admissions due to seven different conditions	ECHI covers discharges
Disability pensioners	Not covered by ECHI
Life expectancy at birth and age 65	Covered by ECHI
Preterm births (/100 live births)	Not covered by ECHI
Low birth weight infants (/100 live births)	Covered by ECHI
Caesarean sections (/100 live births)	Covered by ECHI
Live births from adolescent mothers (under the age of 20)	Covered by ECHI
Perinatal mortality (/1000 births)	Covered by ECHI
Infant mortality (/1000 live births)	Covered by ECHI
Under 5 mortality (/1000 live births)	Not covered by ECHI
Mortality for four different age classes and six diseases	Not entirely covered by ECHI

Mortality due to suicide under 65 years	Not covered by ECHI
Mortality due to alcohol-related diseases under 65 years	Not covered by ECHI
Mortality due to motor vehicle traffic accidents under 65 years ¹⁷⁸	Not covered by ECHI
Mortality due to work - related accidents	Not covered by ECHI
Children whose health status is being monitored at the age of 6 (%)	Not covered by ECHI
Children whose health status is being monitored at the age of 13 (%)	Not covered by ECHI
Medical doctors	Covered by ECHI
Nurses	Covered by ECHI
Nurses in Primary Healthcare	Not covered by ECHI
Family Medicine appointments	Not covered by ECHI
Hospital medical appointments	Not covered by ECHI
Hospital emergency admissions	Not covered by ECHI
Ratio between hospital emergencies and outpatient appointments	Not covered by ECHI
Expenditure on medicines in the total health expenditure (%)	Not covered by ECHI
Generic drugs in the total market of medicines	Not covered by ECHI
Analgesic and antipyretic drugs consumption in the NHS, in outpatient treatments	Not covered by ECHI
Anxiolytic, hypnotic and sedative drugs consumption in the NHS, in outpatient treatments	Not covered by ECHI
Antidepressants consumption in the NHS, in outpatient treatments	Not covered by ECHI
Antibacterial drugs consumption in the NHS, in outpatient treatments	Not covered by ECHI
TO BE DEVELOPED:	
Healthy life years at age 65 (years)	Covered by ECHI
Mortality due to alcohol related motor accidents	Not covered by ECHI
Breast cancer five year relative survival (%)	Covered by ECHI
Cervix uteri cancer five - year relative survival (%)	Covered by ECHI
Colon and rectum cancer five - year relative survival (%)	Covered by ECHI
Hospital admissions due to alcohol - related diseases	Not covered by ECHI
Hospital admissions due to ambulatory care - sensitive conditions	Not covered by ECHI
Incidence of diabetic foot amputations (/10000 pop.)	Not covered by ECHI
Years of work lost due to incapacity (years)	Not covered by ECHI
Absenteeism from work due to illness (days)	Not covered by ECHI
Patients without a family doctor (%)	Not covered by ECHI
Pregnancy appointments in the first trimester (%)	Covered by ECHI

¹⁷⁸ The different ECHI sub-indicators on mortality look at the overall population through the Standardized Death Rates (SDR). However, data is available at Eurostat for these different age groups.

Patients with first hospital specialty appointments made within the reference time (%)	Not covered by ECHI
Surgical patients with waiting time under the maximum response time guaranteed (%)	Covered by ECHI
Long-term care referral times (days)	Not covered by ECHI
Patients who are very satisfied/satisfied with the healthcare services (%)	Not covered by ECHI
Population with diabetes (%)	Covered by ECHI
Population with asthma (%)	Covered by ECHI
Population with arterial hypertension (%)	Covered by ECHI
Population suffering from chronic pain (%)	Covered by ECHI
Population suffering from depression (%)	Covered by ECHI
Population who consumes tobacco daily (%)	Covered by ECHI (cigarettes)
Population who consumes alcohol (%)	Not covered by ECHI
Overweight population (%)	Not covered by ECHI
Obese population (%)	Covered by ECHI
Population who evaluates positively their health status (%)	Covered by ECHI
Physical activity	Covered by ECHI
DMFT Index (decayed, missing, and filled teeth in permanent teeth) at the age of 12	Not covered by ECHI
General practitioners and family doctors (/100000 pop.)	Covered by ECHI (medical doctors)
Health expenditure evolution rate (%)	Not covered by ECHI
Current healthcare expenditure by the NHS, at current prices (total, per resident)	Not covered by ECHI
Current expenditure on healthcare by families, at current prices	Not covered by ECHI
Ratio between private health expenditure and household disposable income	Not covered by ECHI
Healthcare expenditure in the GDP (%)	Covered by ECHI

Assessment of the shortlist thematic coverage. The prevailing view across policy-makers and experts of participating countries is that the ECHI shortlist adequately covers all relevant thematic areas, and does not currently need any major reshuffling or addition of items. This does not necessarily entail a total satisfaction about the shortlist. On the contrary, some experts clarified that, far from being perfect, the shortlist represents an acceptable compromise between the diverging views and interests of the different countries and actors involved. Others remarked that the shortlist is *de facto* unbalanced because many important indicators are still under development.

Among the dissenting views, the criticism more frequently voiced is that the section on health interventions and health services should be improved and revised in line with the work being done at the OECD. In particular, requests to expand the section on health expenditure and efficiency indicators were quite frequently voiced. Other frequent suggestions for improvement focus on the need to expand indicators on children and adolescent health, on the elderly¹⁷⁹, and on mental health -including disabilities and child development problems. Furthermore, some respondents would like to include a general indicator on the degree of satisfaction about healthcare services (now collected by means of a Eurobarometer). Finally, better data on

¹⁷⁹ Some Governments have even commissioned ad hoc surveys on the subject, e.g. Ireland

environmental health - in particular better data on causes of deaths and illnesses attributable to various environmental risk factors - would also be welcome by about a quarter of those who are currently not entirely satisfied with the shortlist.¹⁸⁰

At a more general level, some expect that future periodical updating of the shortlist take more into account the EU policy priorities and the policy debate in international fora and less individual preferences of ECHI participants or the results of the various PHP projects¹⁸¹.

Possible simplification and streamlining. There are diverging views as to the optimal length of the shortlist. The majority of respondents who conceive the shortlist mainly as a reporting tool broadly agree that its ideal length should be in line with the available OECD and WHO data sets i.e. in the range of some 50-100 indicators - and are therefore satisfied with the current number of indicators. Those more involved in academic research even maintained that there should ideally be no limit to the number of indicators, provided that certain comparability quality standards are met. On the other hand, a minority of respondents more directly involved with policy planning highlighted that in order to focus decision makers' attention on a limited number of key items and enhance impact in terms of communication, indicators should not exceed the range of some 10-50, and possibly remain in its lower bound. According to some practitioners in order to allow indicators to convey a clear message on policy effectiveness and impact no more than two key indicators – as a rule of thumb – should be retained by policy area.

There are some indications that this communication-oriented approach is gaining ground across Europe and more and more countries seem moving away from an extended list of policy monitoring indicators to more compact sets in their strategies and programming documents. According to some experts, the US *Healthy People 2020* initiative can be considered as a best practice since it combines this communication-oriented approach (via a compact shortlist of key indicators) with the traditional analytical one (via a relatively long list of complementary ones). Applied to ECHI, this approach would entail a core shortlist comprising only indicators clearly related to key EU policies (none of them should be allowed in the development section), and gathered on an annual basis, and a more extended list addressing other information needs and based on less stringent availability criteria.

- Box 6.2 below reports as example the key indicators of the US Healthy 2020 initiative as well as the indicators selected for the Finnish KASTE Programme that was reportedly inspired to the same communication-oriented rationale. As can be seen in both cases the number of indicators remains in the range of twenty to thirty.

¹⁸⁰ Other items mentioned more sporadically include cholesterol indicators, migrants' access to healthcare, hospital infections, use of pain medications without prescription, congenital anomalies, venereal diseases, adverse reactions to drugs. Other suggestions for improvement depend on the limited user-friendliness of the shortlist, as some users do not realise that ECHI already does include data on suicides and mortality from self-harm although not separately reported.

¹⁸¹ A respondent highlighted that in order to increase synergy between the initiatives of the different international organisations, ECHI should focus on work in progress to develop a WHO Global Action Plan for the prevention and control of non-communicable diseases 2013–2020, that foresees a global monitoring framework of the Plan based on 25 indicators and a set of nine voluntary global targets for the prevention and control of NCDs. This includes, for instance, the mean population intake of salt which is also a core EU objective not adequately monitored through ECHI for apparently unknown reasons. Others noted that detailed lists of indicators to be developed are often attached to already existing official reports, e.g. <http://ee.euro.who.int/E93979.pdf>

Box 6.2 – List of key indicators in the US and Finland’s health strategies

The **US Health People 2020** is structured along a set of 26 Leading Health Indicators organized under 12 topics, and namely:

Access to Health Services

- 1) Persons with medical insurance (covered by ECHI)
- 2) Persons with a usual primary care provider (not covered by ECHI)

Clinical Preventive Services

- 3) Adults who receive a colorectal cancer screening based on the most recent guidelines (covered)
- 4) Adults with hypertension whose blood pressure is under control (covered by ECHI)
- 5) Adult diabetic population with an A1c value greater than 9 percent (not covered by ECHI)
- 6) Children aged 19 to 35 months who receive the recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella, and PCV vaccines (covered by ECHI)

Environmental Quality

- 7) Air Quality Index (AQI) exceeding 100 (not covered by ECHI)
- 8) Children aged 3 to 11 years exposed to secondhand smoke (not covered by ECHI)

Injury and Violence

- 9) Fatal injuries (covered by ECHI)
- 10) Homicides (covered by ECHI under mortality indicators)

Maternal, Infant, and Child Health

- 11) Infant deaths (covered by ECHI)
- 12) Preterm births (covered by ECHI)

Mental Health

- 13) Suicides (covered by ECHI)
- 14) Adolescents who experience major depressive episodes (not covered by ECHI)

Nutrition, Physical Activity, and Obesity

- 15) Adults who meet current Federal physical activity guidelines for aerobic physical activity and muscle-strengthening activity (not covered by ECHI)
- 16) Adults who are obese (covered by ECHI)
- 17) Children and adolescents who are considered obese (not covered by ECHI)
- 18) Total vegetable intake for persons aged 2 years and older (not covered by ECHI)

Oral Health

- 19) Persons aged 2 years and older who used the oral health care system in past 12 months (not covered by ECHI)

Reproductive and Sexual Health

- 20) Sexually active females aged 15 to 44 years who received reproductive health services in the past 12 months (not covered by ECHI)
- 21) Persons living with HIV who know their serostatus (not covered by ECHI)

Social Determinants

- 22) Students who graduate with a regular diploma 4 years after starting 9th grade (not covered by ECHI)

Substance Abuse

- 23) Adolescents using alcohol or any illicit drugs during the past 30 days (not covered by ECHI)
- 24) Adults engaging in binge drinking during the past 30 days (not covered by ECHI)

Tobacco

- 25) Adults who are current cigarette smokers (covered by ECHI)
- 26) Adolescents who smoked cigarettes in the past 30 days (not covered by ECHI)

The Twenty Target Indicators of the **Finnish KASTE 2008-2011 Programme** (also covering social inclusion aspects), includes:

Social inclusion indicators

- 1) Placements outside the home for those aged 0 - 17, as % of total population of same age
- 2) Those aged 17 - 24 not in education or training, as % of total population of same age
- 3) Long-term social assistance recipients aged 18-24, as % of total population of same age
- 4) Long-term unemployed, as % of unemployed population
- 5) Lone homeless persons per 1000 inhabitants

Enhanced Well Being and Health and Reduced Inequalities

- 6) Total consumption of alcoholic beverages in pure alcohol, 1000 litres (covered by ECHI)
- 7) Sale of alcoholic beverages per capita, as litres of pure alcohol (not covered by ECHI)
- 8) Overweight (BMI \geq 25 kg/m²) in those aged 15–64, as % of total population of same age (not covered by ECHI)
- 9) Obesity (BMI \geq 30 kg/m²) in those aged 15-64, as % of total population of same age (covered by ECHI)
- 10) Daily smokers, as % of all pupils in 8th and 9th year of comprehensive school (not covered by ECHI)
- 11) At-risk-of-poverty-rate for children (not covered by ECHI)
- 12) Periods of care arising from accidents at home or during leisure time/10 000 inhabitants (not covered by ECHI)
- 13) Mortality from accidents at home or during leisure time/100 000 inhabitants (covered by ECHI)

Improved Quality and Availability of Services

- 14) Regular home care, clients aged 75 and over on 30 Nov, as % of population of same age (not covered by ECHI)
- 15) Care in residential homes or long-term institutional care in health centres, clients aged 75 and over on 31 Dec, as % of total population of same age (not covered by ECHI)
- 16) 30-day mortality in myocardial infarction patients, standardised ratio (not covered by ECHI)
- 17) 30-day mortality in stroke patients, standardised ratio (%) (not covered by ECHI)
- 18) Re-surgery of hip replacement patients within 2 years, adjusted ratio (%) (not covered by ECHI)
- 19) Vacant physicians' positions at municipal health centres (shortage of doctors) as a percentage of the total number of positions for physicians at municipal health centres, % (not covered by ECHI)
- 20) Unfilled dentist's positions at municipal health centres (shortage of dentists) as a percentage of the total number of positions for dentists at municipal health centres, % (not covered by ECHI)

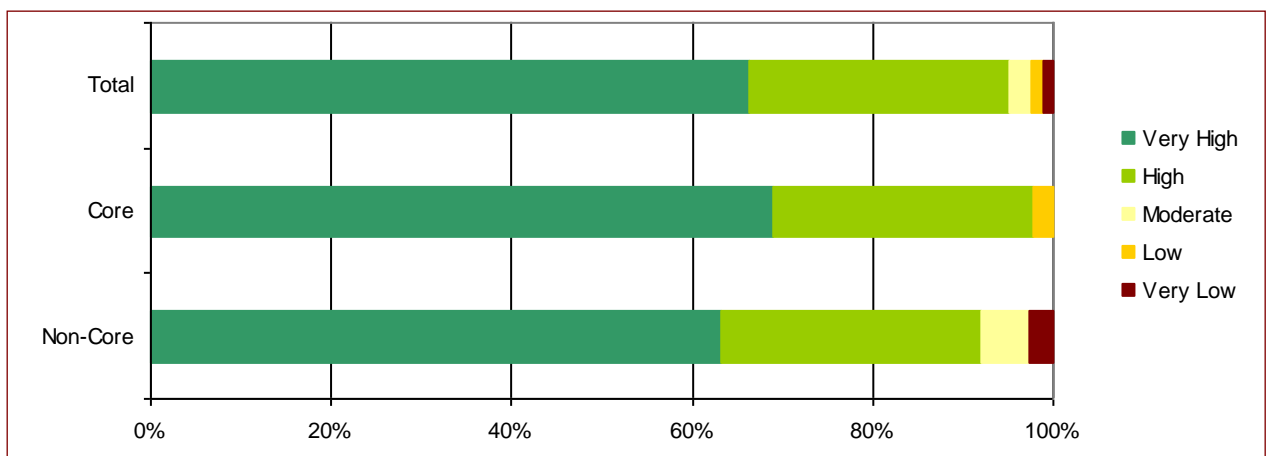
The indicators more frequently singled out as potential targets for further shortlist simplification and streamlining are those included in the development section, and particularly those that do not appear to be concretely in the pipeline in many countries. This includes entire controversial sections such as that on policy implementation, as well as single indicators such as 'excess mortality by extreme temperature' that has been singled out as rather irrelevant / low priority in a number of countries. Survey results have broadly confirmed these findings. Respondents that are confident that there are plans in their countries to use the indicators in the development section hardly exceed 5% of the total, with the notable exceptions of the indicators on suicide attempts and on psychological well-being, where the degree of confidence seems to be higher. The lowest score on the possible future use of development-section indicators are received by, again, 'excess mortality by extreme temperature' (1.1% of confidence), 'waiting times for elective surgeries' (2.1%) and 'surgical wound infections' (2.1%). This is compounded by the fact that experience with some of the indicators in the development list is very limited. Conversely, the indicators in the work-in-progress section are generally considered very useful, with the possible exception of that on patient mobility which remains more of an EU information priority than a clear country-level information need.

6.3 Perspectives on ECHI continuation

Establishment of a permanent EU indicator system. There is widespread consensus on the need to set up a stable system of common health indicator at the EU level. Quite expectedly, the totality of experts that were directly involved in the ECHI Joint Action is favourable to maintaining an ECHI-like system, although in a more institutional configuration. Also the vast majority of policy-makers and experts not involved in ECHI - and sometimes also poorly acknowledgeable of such system -

considers the establishment of a common health indicator system as an important objective (see Figure 6.1 below). Such consensus is comparatively slightly higher in countries that belonged to the ECHI Core Steering Group, as a possible consequence of the role played by ECHI in influencing policy-makers attitudes and approaches toward the use of indicators for cross-country benchmarking. Instead, no significant difference can be observed across respondents' profile, beside a slightly lower interest among policy officers charged with programming of resources.

Figure 6.1 – Perceived importance of an EU-level common indicator system on health



Source: Results of the survey of policy-makers and policy influencers non-directly involved in the ECHI Joint Action.

Note: 'Core' and 'Non-core' refer to respondent country's position within the ECHI Joint Action, i.e. in the core Steering group or in the Extended (non-core) Steering group.

Likely impact of ECHI discontinuation. The reasons for the perceived importance of having an ECHI-like system in place have been examined by analysing the likely consequence of a possible discontinuation of the ECHI initiative by the Commission (i.e. no further action in this area). Indirectly, this provides insights on the rationale for ensuring sustainability to this initiative. On the basis of the qualitative feedback provided by 30 experts from 23 different countries, the main shortcomings of a discontinuation of ECHI would be those reported in figure 6.2 below. The figure combines in a causal model the various issues mentioned during in-depth interviews, which range from immediate to long-term impacts. More specifically, the possible immediate effects of ECHI discontinuation could be:

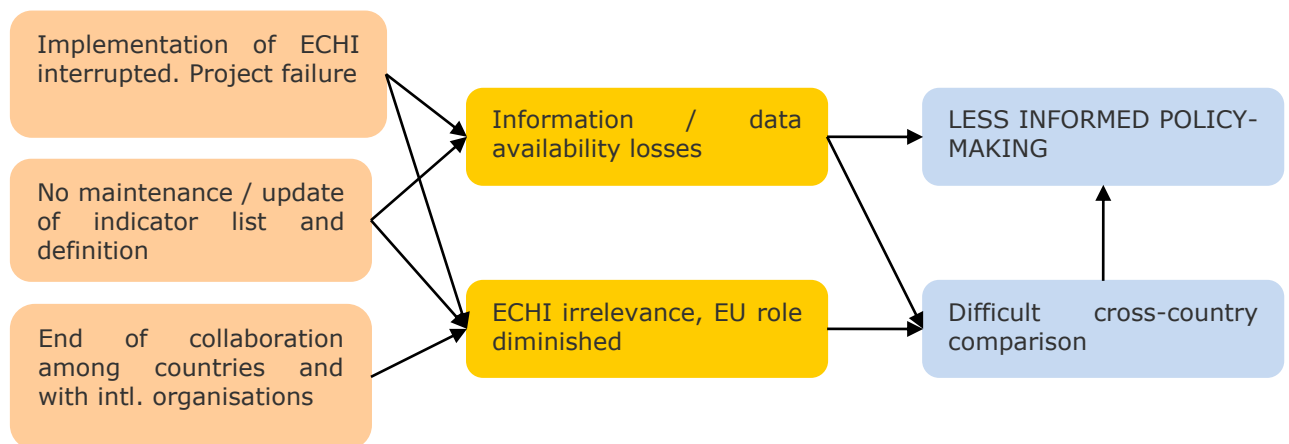
- **Interruption of ECHI implementation.** ECHI is not yet fully implemented. As discussed previously, there are various indicators that still lack a proper definition or are defined but not implemented. Furthermore, not all ECHI indicators in the so-called 'implementation section' are actually collected in all countries and sometimes harmonisation issues still persist. The immediate consequence of the discontinuation of ECHI would be to interrupt implementation process at national level and, according to some, this would end up in wasting all the work done so far. The issue appears more marked in countries where ECHI appears to have played a role in the adoption of health indicators that were previously not collected.
- **No further maintenance /update.** Connected with the above, in the absence of a dedicated structure (e.g. secretariat, steering group etc.), the ECHI list would not be maintained and regularly updated. This is a crucial aspect for a

number of country experts. In their views, ECHI should be a dynamic system in constant development and able to adapt to the evolving context, otherwise there is the risk of continuing collecting data that might have become irrelevant in the meantime. Also, the absence of a central coordination would leave national counterparts without an appropriate support and guidance, and might have repercussion on the comparability and quality of the information collected.

- **Diminished collaboration and synergies.** Finally, the end of ECHI would translate in the end / diminished collaboration among countries on the theme of health indicators, with likely repercussions at national level (in many instances countries have set up their indicators on the basis of other countries examples) and EU-level (again, possible increased fragmentation). Some respondents also noted that countries would simply turn to the existing datasets of WHO and OECD, with an ensuing loss of importance of the EU on this theme.

In summary, the above immediate consequences would have two main kinds of negative impact, namely: (i) information losses (indicators not developed / maintained, data not collected anymore etc.); and (ii) increasing irrelevance of the current ECHI shortlist, and of EU role in the definition and adoption of internationally recognised health indicators. These would in turn hamper a cross-country comparison (which is the primary objective of ECHI) and ultimately affect policy-making, which would be deprived of instruments for benchmarking.

Figure 6.2 – Expected consequences of ECHI discontinuation



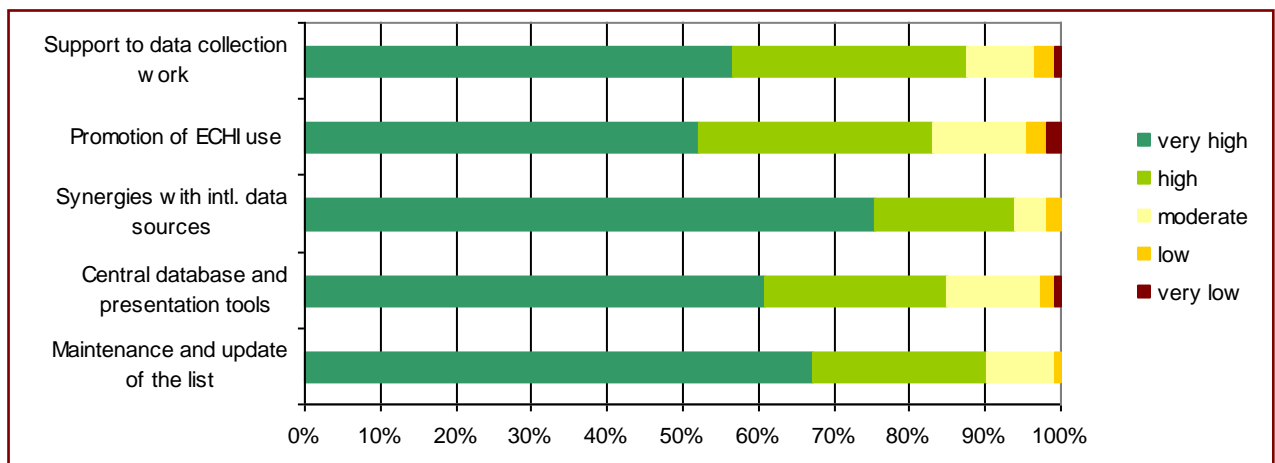
Note: author’s elaboration of qualitative feedbacks provided by 30 experts interviewed.

6.4 Tasks for a future ECHI-like system

Overview of main tasks. The key tasks undertaken so far as a part of the ECHI Joint Action should be maintained under any permanent ECHI-like mechanism that might be established. There is general consensus on the importance of the activities carried out by the governance bodies of the ECHI project. The consensus is particularly high for what concerns the collaboration with main ‘data sources’, i.e. Eurostat, EU agencies and international organisations like OECD and WHO, with a view to establish a common, harmonised and consolidated health indicator system, exploit synergies and favour the long-term stability of chosen indicators. Respondents rated very high also the importance of having a technical body to continuously develop, maintain and update the list of valid indicators and coordinate with other parallel initiatives. The

need for a central database and other data presentation tools is somewhat less felt - reflecting the limited use made so far e.g. of the HEIDI database. Some support to data collection work is expected in a number of countries, although it is considered a comparatively less important task. At the bottom of the scale lies the promotion of the use of ECHI in country's policy-making. It is still considered important by a vast majority of respondents but not as much as the other proposed tasks, thus reflecting the fact that ECHI was only partially conceived as a direct tool to support policy-making. The corresponding data are illustrated in Figure 6.3 below.

Figure 6.3 – Comparative importance of possible tasks to be undertaken under future ECHI-like mechanism



Source: Results of the survey of policy-makers and experts. Based on 114 valid answers ('don't know' answers not reported).

A more detailed analysis of data breakdown shows the existence of some moderate variations across groups. First of all, it can be observed that the average level of consensus with the proposed tasks for an ECHI like system is slightly higher in non-EU surveyed countries (NO, IS, HR¹⁸²) as well as in 'New MS' than in 'Old MS'. Secondly, it varies across the respondent profiles, namely: the importance of the proposed tasks is rated somewhat higher among policy planners and external experts (e.g. academics), while it is below the average among health care programming officers. The level of awareness about ECHI seemingly does not affect responses. These distinctions tend to reproduce across individual tasks.

Possible additional tasks. In addition to the abovementioned some other tasks emerged as relevant for the possible follow-up to the ECHI initiative. These include:

- support to **networking activities** among participating countries, e.g. collaborative platforms, exchange of good practices, collaborations, periodical conferences and the like;
- use the data collected to prepare **studies, assessments, country profiles and other publications**, which may *inter alia* stimulate the adoption of ECHI for policy-making purposes;
- provide **regional / local breakdown of data** (although for certain indicators this would require the investment of significant resources);
- promote a **greater use of ECHI in EU policies** and more generally to better exploit synergies with other initiative at EU level.

¹⁸² Croatia has joined the EU on 1st July, 2013, so at the time of the survey it was not formally a Member State.

6.5 Possible arrangements for ECHI follow-up

Governance. Discussions on the best arrangements for a possible follow up of the ECHI initiatives started already during the last phase of the ECHIM Joint Action. The position of MS on ECHI continuations was formally collected by DG SANCO by means of a questionnaire sent in November 2012 to the members of the *Council Working Party on Public Health at Senior Level*. A detailed assessment of the possible scenarios for the future of ECHI is not in the scope of this Study. In order to answer the evaluation question on sustainability it appeared however useful to briefly investigate country experts' views about the most suitable governance model for ECHI follow up. The results can be summarised as follows:

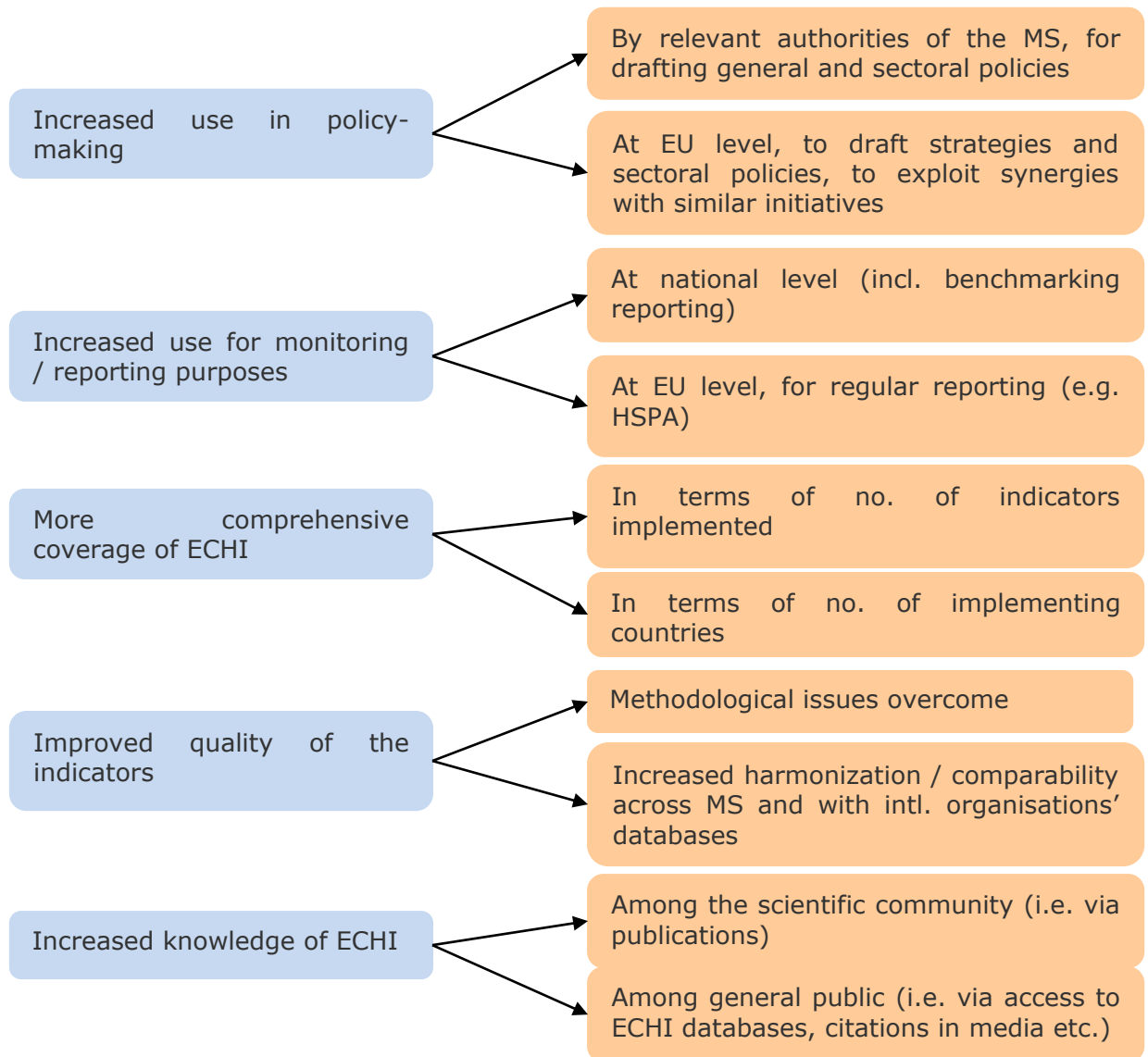
- there is a widespread consensus about the need to move away from a project-based approach and pursue the embedding of ECHI into a **permanent, institutional mechanism** at EU level. A few experts aired the possibility of a mandatory adoption of ECHI by EU legislation, but on this point a significant opposition can be expected;
- the abovementioned mechanism should preferably **involve all the relevant public authority of the MS**, and not be governed by a group of institutes as in the case of ECHIM, since this would give ECHI a more formal recognition. On the other hand, it should be noted that some respondents found the previous governance arrangement as perfectly suitable for the purpose;
- the **European Commission should play a leading role** in this mechanism, not only as the main sponsor – as it was with the ECHIM JA – but also as the primary coordinator of activities. This would raise the profile of such ECHI - like system and stimulate its full implementation. However, there are two main diverging views on which service should be in the driving seat: (i) some believes such mechanism should operate under the aegis of **DG SANCO**, for continuity with the past and to emphasize the policy-enabling aim of it; (ii) others find more appropriate to embed such system under **Eurostat**, for a closer and better coordination with data collection activities, and an enhanced stability of indicators. These options should not be seen as mutually exclusive, since a strong coordination between these two services is deemed necessary. Other possibilities that might be examined include the coordination of this mechanism by another EU agency, e.g. JRC or ECDC;
- enhanced **coordination and synergy with the work of OECD and WHO** should be sought. This would possibly entail not only to involve OECD and WHO in the board of the proposed mechanism in an advisory role, but to actively explore the possibility of having a jointly develop system / database in place. This would significantly raise the profile of the current indicator list, and perhaps consolidate and reduce the data collection burden for participating countries.

Financing. In line with the abovementioned prevailing view of ECHI as a possible EU institutional mechanism in the future, its financial sustainability should mostly lie onto EU financing. More than half of national experts interviewed rules out that participating countries could allocate financial resources to it, in addition perhaps to the own costs for participating to activities (human resources, travel expenses etc.). On the other hand, about one third of country experts surveyed do not exclude *a priori* the possibility of MS co-funding, thus indicating that there is a good recognition of the advantages that such a mechanism would bring at country level.

Future assessment. This final paragraph deals with the judgment criteria that would be adopted by national experts to assess the success of a future ECHI-like mechanism. This provides useful information about the design of the intervention logic, its objectives, targets and success indicators. Six main judgment indicators,

further broken down in twelve possible families of indicators have been identified, as illustrated in Figure 6.4 below.

Figure 6.4 – Possible judgement criteria for the future assessment of an ECHI-like mechanism



Note: Author's elaboration of qualitative feedbacks provided by 30 experts interviewed.

7. Conclusions and recommendations

7.1 Conclusions

A) The impact of ECHI

- **Structuring the National health information systems.** ECHI has had a notable impact in helping certain countries to better structure their health information systems and favour the creation of a clearer legal framework for the collection of health indicators where this was needed. In particular it played for latecomers a similar lighthouse role and a source of inspiration and reference as that played by WHO Health for All database or the OECD Health Performance Quality Indicators initiatives in the past, although probably on a smaller scale. Also, as a result of this all European countries nowadays have envisaged a system to regularly collect health indicator sets. This has had an enabling impact as most of these countries are now in a position to use these health indicators for strategic health policy steering purposes or for health system performance assessment, although with a variety of approaches, and the few who do not, reportedly have plans in the pipeline to that aim.
- **Creating new indicators at the national level or stabilizing ECHI-proposed ones.** The impact above has not necessarily materialized yet in the creation of new indicators at the national level except for sporadic cases where the investment needed was limited and data could be simply recalculated or extracted from existing registries. Most of the work done by 'latecomers' has focused on the creation or improvement of registries, and this will take time to return tangible results. Legislation on regulating data flows with healthcare services is often still pending. Resource issues also linked to the recent economic crisis have generally hindered the gathering of new data. In a few cases ECHI was not given the legal status to modify the existing agenda. As a result, few indicators have been added to existing international data sets and the indicators currently collected by means of temporary PHP projects have hardly stabilized in a clearer and more sustainable institutional framework, which should be of concern of users of the indicators as the PHP financing mechanism should not be considered as a permanent financial source.
- **Fostering benchmarking.** ECHI has certainly contributed to fostering systematic health benchmarking across Europe, which however remains at its early stages. Much of this benchmarking has had so far little tangible and documentable impact on the policymaking process, also because it is often poorly institutionalized. The bulk of all policy-related benchmarking activities takes place at a sectoral level in a sporadic and often informal and undocumented way. In many instances, ECHI indicators when used are hardly recognized as such, and more often than not are used 'unconsciously' since they were present in preexisting data sets.

B) Awareness about ECHI

- **Relatively high but skewed knowledge.** Awareness about ECHI can be assessed on average as high but also rather skewed in both geographical terms and among categories of users. It can be considered even very high among health information services (such as public health institutes, statistical offices

and the like), health study departments and academicians involved in the policymaking process, but it is much less so among the staff responsible for planning and monitoring of policies or for policy evaluation and the assessment of healthcare services, and particularly in countries that joined late the ECHI process and were not part of the ECHIM core group. This is likely to be the cumulated impact of ECHI information and communications activities over time. The HEIDI data tool, which is a quite recent instrument, is still far from reaching the dissemination potential of other similar tools, and does not seem able to redress this skewed pattern of awareness, but possibly contributes to it, as it appears more frequently used by certain categories of policymakers than others.

- **A mixed bibliometric impact.** ECHI has had a certain echo on the scientific literature although it is difficult to assess at this stage the impact on the scientific debate. Most of the articles published, however, are of a descriptive nature and aimed at advocating a wide use of the instrument among public health experts. There is a notable shortage of articles on the concrete use that can be made of these data and examples of the policy lessons that can be drawn with them.

C) Use and usefulness of ECHI

- **The ECHI uptake is also skewed. The** patterns of uptake of ECHI in the policymaking process appear rather skewed and broadly follow the same considerations already made for awareness. Documented instances mainly relate to benchmarking reports and dedicated health information databases. ECHI-based benchmarking reports have been published in three countries and is reportedly in the pipeline in another. A dozen countries have included ECHI as a recognizable component of their health information systems, although in a couple of cases, the sustainability of these initiatives appears uncertain. Formal uptake in general strategies and planning documents has been more limited so far and amounts to a handful of cases, although it seems bound to increase in the near future also because such kind of impact takes longer to materialize. All other instances of use are largely informal and undocumented or, as in the case of sectoral plans, often largely 'unconscious' because ECHI indicators are often perceived there as pre-existent.
- **ECHI Indicators are generally widely used.** There is some variability in the level of use of the different ECHI indicators (either named as such in the national inventories or not formally acknowledged as ECHI but equivalent to them) across Europe. This partly depends on the availability of the indicator or the sheer awareness about its existence, but also relates to intrinsic features of the indicator and its suitability to local policymaking needs. However, there are just very few instances of indicators in the implementation section that appear as limitedly or very limitedly used across the board. The majority of them appears as fairly widely used, particularly for descriptive or benchmarking purposes. Use for policy planning or monitoring purposes or for health system assessment and evaluation is more limited. This typically depends on competition with other sources, limited time series available, insufficient frequency of data collection, and lack of data breakdown at the regional level. The indicators classified for use for health inequalities or HIAP purposes are actually used in line with expectations.

- **ECHI are deemed highly useful.** The ECHI indicators used in the past have generally been deemed very useful and only few specific cases are registered of partial dissatisfaction. The overall usefulness of ECHI shortlist would have been even higher if some of the indicators currently in the work-in-progress section had been actually implemented.

D) The added value of ECHI

- **EHIS-based ECHI display added-value vis-à-vis national sources.** A quarter of ECHI indicators are to be implemented by means of EHIS. In those Countries with a longer tradition of health information systems and where health indicators are more developed, EHIS faces competition from both longer and more detailed HIS series or better quality registry-based data. Their only source of added value would therefore lie in increased scope for data comparability and their usefulness for internal policymaking purposes more limited. However, this competition with other sources is expected to be mitigated by the fact that not only do EHIS data enable better European comparison, but they also often represent a source for health inequality purposes, as registries face in a number of countries privacy or contractual limitations hindering the feasibility of such kinds of analyses. In those countries where no pre-existing HIS were available or registries are still underdeveloped the added value of EHIS for internal policymaking purposes is more obvious, but conversely mitigated by the fact that data are available only every five years.
- **Some EHIS-based ECHI are poorly comparable.** It is acknowledged that there are also a few EHIS indicators that can be particularly dependent on cultural factors and therefore do not lend themselves very well to cross-country comparisons. In these cases much of the informational added value would be related to their use for domestic vertical comparisons over time, and would be also mainly justified for health inequality purposes and other forms of cross-sectional analysis with other EHIS data. And it is recognized as such by users themselves. Needless to say, the perception of added value attached to these indicators is much lower in all those countries where the demand of indicators for health inequality purposes is less developed and the need for cross-sectional analytical work less sophisticated.
- **EHES-based ECHI not mainstreamed.** EHES would provide additional added value in terms of data quality for a few ECHI indicators (body mass index and blood pressure as currently already envisaged and diabetes prevalence, not envisaged yet but in the future pipeline) whose usefulness is however already deemed relatively high even in their EHIS-based version. There are broader cost considerations hindering for the time being EHES mainstreaming into the health information systems of a number of countries, and the incentives provided by the ECHI shortlist in its current format do not appear as sufficiently strong to really influence decisions in this respect. Much of the added value of EHES would continue to lie in providing more detailed information for research purposes than that required for strict policymaking needs. It remains an open question what could eventually happen one day if the number of EHES-based ECHI indicators were actually larger and resource constraints lower.

E) The sustainability of ECHI

- **General consensus on having a system of European indicators like ECHI in place.** There is considerable consensus among stakeholders on establishing a permanent health indicator system like ECHI at the European level particularly under a clearer institutional and legal framework, and possibly with the joint involvement of other international organizations and European institutions such as the OECD, WHO, and Eurostat. This would allow to capitalize on the results achieved so far, the methodological work already done and to keep the networking of a group of relevant competent experts across Europe alive and operational.
- **Broad governance orientations.** As far as governance aspects are concerned, there is a widespread consensus about the need to move away from a project-based approach and pursue the embedding of ECHI into a permanent, institutional mechanism at EU level although not necessarily embodied by means of EU legislation. The abovementioned mechanism should preferably involve all the relevant public authorities of the MS, and not be governed by a group of institutes as in the case of ECHIM, since this would give ECHI a more formal recognition. The ECHI shortlist should also be given a clearer legal status, as this has represented a barrier to its uptake in a number of countries. It is widely recognised that the European Commission should play a leading role in this mechanism as the primary coordinator of activities. This could mean a stronger involvement of DG SANCO or Eurostat although the various options should not be seen as mutually exclusive, since a strong coordination between these two services is deemed at any rate necessary. Other possibilities that might be examined include the coordination of this mechanism by another EU agency, e.g. JRC or ECDC. Finally, there is overwhelming consensus that enhanced coordination and synergy with the work of OECD and WHO should be sought.
- **Financing constraints however more uncertain.** While there is consensus among stakeholders on the need to have a European system of indicators like ECHI in place on a permanent basis, there is also evidence of growing financial constraints on the health information systems of several countries, which have in some cases already impacted on ECHI maintenance. The fact that much of the use made of ECHI indicators for benchmarking purposes appears to materialize in highly fragmented, uncoordinated and poorly documented initiatives whose pay-off is not always visible to outsiders does not certainly help build its case vis-à-vis budgetary authorities. Also, its poor visibility and recognition in the formal policymaking process does not bode well in this respect, and should be further strengthened to provide a critical mass of evidence about the cost-effectiveness of having the ECHI instrument in place at the national level.

7.2 Recommendations

A) Completeness of the ECHI shortlist

The ECHI shortlist could be considered as reasonably complete enough and without any obvious missing parts particularly if a higher implementation rate of its work-in-progress section could eventually be reached. There might be some scope for the restructuring of the section on health intervention and health services that could be made clearer in its purposes and benefit from the work carried out in parallel at the OECD on the same subjects. If the added value of ECHI is to be further increased by filling information gaps as was the case with health inequalities, then there is clear

evidence of an increasing demand for age-specific indicators and in particular child and adolescent health indicators and strengthen data on avoidable mortality that is not fully met by the international databases.

B) Purpose and simplification of the shortlist

If the ECHI shortlist is to remain an instrument for broad health descriptive purposes mainly aimed at fostering general benchmarking, then there is no major need to simplify and streamline it, but eventually for budgetary reasons. In such a case, some of the indicators in the development section appear as likely candidates for downgrading, both because of difficulties in their implementation and their unclear relevance in certain countries' policy contexts. However, these would represent only marginal adjustments. If the ECHI shortlist is to become an instrument to steer the strategic policy planning and monitoring process across Europe and provide a common framework for reference, then a substantial simplification and shortening would be required in line with current trends. This would imply the selection of a few indicators per policy priority and a clear selection of the key policy areas to be included as core. And the sheer way the shortlist is built should move away from incorporating the results of PHP projects to mirroring the agendas already decided in the different areas. There are compromise solutions between these two extremes that could eventually be considered, depending on political decision.

C) Sustainability and added value

There are six possible options to increase consensus about ECHI, foster its use and increase its added value to policymakers and improve its sustainability. These include both short term and long term options:

Short Term Options:

- **Clarify its legal status.** While a joint action is certainly a good instrument to pilot a newly introduced tool and spread its use, it also has some notable limitations when it comes to mainstreaming it into common practice. At present, the unclear status of the ECHI shortlist as a fully EU-backed document represents a barrier to its uptake and implementation and the governance mechanisms of a JA would no longer be perceived by certain countries as fully legitimate. A more formal governance could help foster MS commitment for the of the indicator.
- **Increase awareness among certain categories of policymakers.** Since any newly introduced information instrument is more likely to attract the attention of related experts, researchers and academicians, awareness about and use of ECHI appear still exceedingly skewed towards these categories of early users. Therefore there is a need to complement the information and communication effort with instruments more specifically targeted at policy practitioners that are sometimes unaware even about the existence of indicators already concretely implemented and potentially available for use. Better cross-referencing in the Eurostat database is the first obvious measure. But this could also include reports and studies on the use that could be made of these data and the concrete lessons a policymaker could draw from using them. Collaboration with the OECD and ECHI inclusion in The Health at a Glance report already represents a first step in this direction.
- **Finalise the work-in-progress section as early as possible.** The overall perceived usefulness of the ECHI shortlist would increase remarkably if some

important indicators still in the work-in-progress section were eventually implemented

Long Term Options:

- **Increase the added value that can be drawn from benchmarking.** Any increase in the added value of ECHI from benchmarking implies a parallel growth in policy evaluation and health assessment practice. So far, benchmarking and international comparisons have been institutionalized as a stable and recognizable component of the policymaking process in a fairly limited number of countries, although there is clear evidence that also this process is slowly gaining ground across Europe. This should be further encouraged. In this sense, the limited policy evaluation capacity and the limited role played by health assessments in informing policymaking in a number of countries emerge as major barriers to a full exploitation of ECHI's benefits, and consequently to countries' investments on its implementation. It has however to be considered that in a number of countries internal benchmarking aimed at explaining wide domestic variance already attracts considerable resources.
- **Increase the added value for policy planners.** Throughout the implementation of the various ECHI projects, a great emphasis has been attached to ensuring data comparability and the overtime stability of the shortlist. However, if ECHI is also to become a common framework for coordinating policy planning and monitoring to better address the evolving information needs of policymakers, other important features of indicators should also receive greater attention in the future when it comes to their selection and identification, such as their sensibility, i.e. their capacity to indicate changes over a relatively short period of time, their specificity in reflecting the results of specific policies and their concrete actionability by policymakers, i.e. the fact that values can be really influenced over a reasonable period of time by policy action. This could include further research on which indicators of health outcome are more sensible to policies and less affected by or correlated with other external factors outside of policymakers' control.
- **Address Financing Issues.** For the time being the financial sustainability of the ECHI mechanism appears still dependent onto EU financing. More than half of national experts interviewed rules out that participating countries could allocate financial resources to it, in addition perhaps to the own costs for participating to activities (human resources, travel expenses etc.). On the other hand, about one third of country experts surveyed do not exclude a priori the possibility of MS co-funding to this mechanism, thus indicating that there is already a good recognition of the advantages that such mechanism could bring at country level in the long run. Moreover, no sources of financing are currently available to ensure the sustainability of some of the indicators currently included in the shortlist.

ANNEXES

ANNEX A – Functional classification of the ECHI Indicators

A.1 Introduction

This Annex summarises key information on the 94 indicators included in the ECHI shortlist. The information is presented on a detailed analytical grid of over twenty sectors including both vertical and horizontal health policies.

The key features of the indicators have been summarised according to the following template articulated into five points:

- 1) Status reports on the degree of readiness for implementation attributed to the indicator during the life of the ECHIM project. This can vary from a fully-fledged "implementation" status, to an almost ready "work-in-progress" classification to a very preliminary attribution to the "development" section. Since these classifications have changed over time, data are reported according to the status of the various indicators at the beginning (2008) and at the end (2012) of ECHIM activities. It also includes summary information on how the indicator has been classified in the last ECHI classification which is based on the following analytical categories: 1) health services and healthcare (composed of a) sustainable health, b) health system performance, c) health planning); 2) ageing and population (which includes d) healthy ageing; e) maternal and perinatal health; f) child health); 3) health determinants (which groups health inequality and prevention of health risks), 4) diseases and mental health (dealing together with chronic diseases, preventable health burden and mental health) and finally 5) health in all policies – HiAP indicators.
- 2) Rationale outlines the original rationale behind the indicator as can be reconstructed from the available project documents. This section also eventually includes information on the indicator being officially adopted within the framework of official EU policies and for which some kind of use for policy reporting or evaluation purposes can therefore be somehow presumed.
- 3) Implementation and sources gathers available information on indicator concrete availability and existing implementing organisations and data sources. It highlights whenever the indicator is one of those envisaged for implementation within the framework of the European Health Interview Survey (EHIS) that was first carried out in a number of Countries between 2006 and 2010 and whose next wave is scheduled as part of a EU Regulation starting from 2014. At present there are three ECHI indicators that are planned to move to Health Examination Surveys as soon as these are available. At present a pilot EHES exercise has been carried out in twelve MS, but there are no plans to have it run as a routine Eurostat data gathering tool. Comments are also made on remaining comparability issues including proposals to drop the indicator from the ECHI shortlist.
- 4) Reasons for non-use speculates on possible reasons for non-use for policy-making purposes based on extrapolations from ECHIM project documents and Consultant's educated guesses. This information is to be eventually confirmed or refuted in the fieldwork phase.
- 5) Evidence of use for improvement in health outcomes summarises information available from the literature on the link between the indicator and policies

improving health outcomes. It also includes references from US Healthy People 2020 strategy and other similar documents that make extensive use of indicators to define monitorable health policy objectives.

A.2 Demographic and socioeconomic indicators

1. Population by sex/age

Status. A basic demographic indicator regularly included in the implementation section from the beginning of ECHI activities. It is classified as an ECHI indicator of sustainable health systems, planning of health care resources and ageing.

Rationale. A basic demographic indicator describing the total population broken down by sex and age and the old-age dependency ratio.

Implementation and sources. Regularly collected and published by Eurostat based on the concept of usual resident (de jure residents). However Member States in practice have recourse to data from registers or censuses that do not necessarily coincide with the Eurostat definition.

Possible reasons for non-use. Provision of health services might not be linked to the de jure resident concept, or problems with health coverage might be comparatively more experience by the youth.

Evidence of use for improvement in health outcomes. This is mainly a descriptive and a context indicator and is hardly quoted in the literature on actionable health policies to improve health outcomes. The OECD classifies age dependency as a social indicator for social policies¹⁸³ (including pensions) and could therefore have a HIAP dimension.

2. Birth rate, crude (resident live births/population)

A basic demographic indicator long established in the implementation list that would pose very little comparability problems were it not for the fact that most countries report data also on residents born-abroad, while others keep track also of non-resident born. Changes in data collection systems have led to breaks in time series in the past. The indicator is classified not only for maternal and perinatal health (although the relation between the birth rate and maternal mortality tends to hold true in developing countries) but also as a health sustainability indicator. OECD literature on social and fiscal policies to improve the birth rate as a way to ensure long term fiscal sustainability and therefore health sustainability does not usually consider as a possible policy target the crude birth rate per se, but rather the gap between the desired and the observed fertility rate¹⁸⁴. In this respect it could be considered as an indicator with a HIAP dimension.

¹⁸³ <http://www.oecd.org/about/publishing/38148786.pdf>

¹⁸⁴ OECD, *Babies and Bosses – Reconciling Work and Family Life: A Synthesis of Findings for OECD Countries*, 2007; D’Addio, A.C. and M. Mira d’Ercole (2005a), “Trends and Determinants of Fertility Rates in OECD Countries: The Role of Policies”, OECD Social Employment and Migration Working Papers No. 15, OECD, Paris.

D’Addio, A.C. and M. Mira d’Ercole (2005b), “Policies, Institutions and Fertility Rates: A Panel Data Analysis for OECD countries”, OECD Economic Studies.

3. Mother's age distribution

Status. An indicator regularly included in the implementation section and classified for use as a health performance indicator, and one of child and maternal health and health inequalities.

Rationale. A basic demographic indicator measuring both live births in mothers younger than 20 and live births in mothers of 35 years or older. Major implications also for health inequalities.

Implementation and sources. Eurostat data available for all EU MS also at the regional level, but socioeconomic breakdown by level of education available in 14 MS only and Norway. Data are reasonably comparable with minor differences in the way age is calculated live birth is defined. However, PERISTAT proposed indicator based on the number of mothers rather than of births.

Evidence of use for improvement in health outcomes. Teenage pregnancy has been considered a national public health problem requiring interventions in some MS (e.g. the UK) and the idea that teenage pregnancy constitutes *per se* a health problem is expressed in high level policy documents¹⁸⁵. However, whether this represents a public health problem impacting health outcomes strictly speaking and not a broader social issue is a matter not entirely settled in the literature¹⁸⁶ yet. Late pregnancies appear a better recognized factor of maternal mortality and morbidity as well as of health outcomes in the offspring, but there is little evidence of explicit policies in this respect. At any rate this would be reflected in maternal mortality and morbidity indicators that are not currently included in the ECHI shortlist. While teenage pregnancy used to be a policy issue also in the US in the past, at present no such target has been included in the US Healthy People 2020 objectives.

4. Total fertility rate (mean number of children born alive to a woman during her lifetime)

Another basic demographic indicator routinely included in the implementation section collected by Eurostat in all European Countries but not available at the regional level. The indicator is classified both as a health sustainability and a maternal and perinatal health indicator. There are minor comparability issues concerning the way age is calculated and the definition of live birth. There can be problems with the quality of the registers of a few countries, but all in all data are accurate and complete. For use in policymaking the indicator tends to overlap with # 2 above and the same considerations apply as far as improvement in health sustainability are concerned.

5. Population projections

Basic demographic data used in the context of scenario analyses to assess the impact of population ageing on health spending in particular and public spending in general. Projections are based on the EUROPOP2010 project scenario and the indicator has remained in the implementation section and is classified as an ECHI indicator of healthy ageing, health sustainability and planning. Comparability is hindered by the different quality of baseline data especially as refers to international migration. The

¹⁸⁵ For example, the Nordic Resolution on Adolescent Sexual Health Rights counts as a measure of public health success the fact that 'the number of teenage pregnancies in Nordic countries are among the lowest in the world'.

¹⁸⁶ Debbie A Lawlor and Mary Shaw "Too much too young? Teenage pregnancy is not a public health problem". *International Journal of Epidemiology*, 2002; 31 :552–554

indicator is reliable to the extent prospective user consider the underlying projection methodology as such. Otherwise they could have recourse to ordinary population forecasts. There can be huge differences based on the underlying assumptions. Actually some MS have objected to have it considered as an indicator and would prefer to have it dropped from the ECHI shortlist. A survey-based study on the impact of population projections on policymaking recently implemented for the Commission has concluded that, *"the actual influence of population projections on policy decisions is most obvious in pension policy, but also labour market policies and education policies were mentioned often. The need for future health reforms is compelling, but this has not yet contributed to the implemented policy"*. A major limitation hindering use in policymaking would be the alleged difficulties these indicators would have in assessing the demographic impact of existing or planned public policies¹⁸⁷.

6. Population by education (Educational achievement in the working age population)

Long established in the implementation section, it is a routine Eurostat labour force survey (LFS) indicator with a regional level of detail available and is considered the basis for stratification schemes aimed at measuring socio-economic inequalities in the EU, without any other specific policy purpose. It is currently classified as an ECHI indicator for health inequalities and a HIAP indicator. The ECHI indicator draws from a labour force survey and covers the 25-65 age group only and cannot therefore have other immediate uses for health policymaking. Markers of social-role transitions that are associated with altered patterns of health risk are among the indicators internationally proposed for adolescent health status¹⁸⁸. For instance, in the US the share of students who graduate with a regular secondary education diploma without delays since entering school is considered the key adolescent overall proxy health indicator and therefore the target of explicit health policies.

7. Population by occupation

A long-implemented indicator, also proposed for health inequalities and related HIAP. Data (are) routinely provided by the EUROSTAT-LFS survey are reclassified by Esec classes and are available for all Countries at the regional level with a very high degree of comparability. Generally speaking, the effects of policy interventions on health inequalities are still unclear and subject of research. However, relevance of occupation for direct use for policymaking purposes is dubious. There is some systematic evidence that certain categories of intervention may impact positively on inequalities or on the health of specific disadvantaged groups, particularly those interventions in the fields of housing and work environment¹⁸⁹. As far as low and middle income Countries are concerned, a report for the WHO¹⁹⁰ has concluded that the concept of *"occupation", as collected in vital statistics or censuses, is not an adequate stratifier for health inequalities because of a number of confounding factors including income,*

¹⁸⁷ *The use of demographic trends and long-term population projections in public policy planning at EU, national, regional and local level*

http://ec.europa.eu/employment_social/social_situation/docs/lot1_projections_summary_en.pdf

¹⁸⁸ George C Patton, Carolyn Coffey, Claudia Cappa, Dorothy Currie, Leanne Riley, Fiona Gore, Louisa Degenhardt, Dominic Richardson, Nan Astone, Adesola O Sangowawa, Ali Mokdad, Jane Ferguson *Health of the world's adolescents: a synthesis of internationally comparable data*. Lancet 2012; 379: 1665-75. See also <http://www.unicef.org/adolescence/files/Lancet-Adolescent-Data.pdf>.

¹⁸⁹ C Bamba, M Gibson, A Sowden, K Wright, M Whitehead, and M Petticrew, Tackling the wider social determinants of health and health inequalities: evidence from systematic reviews, *Journal of Epidemiology Community Health*. 2010 April; 64(4): 284-291. Published online 2010 March 26. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2921286/>.

¹⁹⁰ *The social determinants of health: Developing an evidence base for political action*. Final Report to World Health Organization Commission on the Social Determinants of Health from Measurement and Evidence Knowledge Network October 2007

the formal and informal sector and family work. Therefore '*occupational classes*' have been found *as not a useful alternative concept since there are no studies where these have been classified taking into account position and income variables.*

8. Total unemployment

Another possible cause of health inequalities and a contributor to health sustainability. Also classified as a HIAP indicator. It has been implemented for long and is a EU structural indicator, a sustainable development indicator and an OMC Social Inclusion and Social Protection indicator. Data are routinely provided by the EUROSTAT-LFS survey and long term unemployment is separately calculated. Data are available for all Countries at the different regional levels with a very high degree of comparability. The main limitation for use is that data cover the economic definition of unemployment, including long term unemployment, but do not include the discouraged and the other economic inactive that have withdrawn from the labour market including those who look after home and family.

9. Population below poverty line and income inequality

A major component of health inequality issues routinely provided by EUROSTAT-SILC also at the regional level, and also classified as a sustainable health indicator, a HIAP indicator and an indicator of preventable health risks. Evidence of use to improve health outcomes is however mainly limited to experimental settings and policy research also due to the relatively limited use of health impact assessment tools for social policies. For instance, it has been argued that policies to cut U.S. poverty in half would cost less than 20% of current federal health care spending and have a much higher impact on the health status of the population¹⁹¹. The Finnish National Plan to Reduce Health Inequalities 2008-2011 uses the share of children living in families under the poverty line as the key indicator for poverty and health inequalities, but could not substantiate any concrete impact of poverty-targeted measures on health outcome because no assessment had been made of how far social benefits can actually reduce health inequalities. Kela, the Finnish Social Security Institute, was reported as planning such an assessment to fill the information gap at that time. The rationale behind the selection of the indicator was that poverty in the childhood home more than doubled the risk of poverty in adulthood. The ECHI indicator includes a separate 0-17 age group and therefore would be compatible with such a use.

A.3 Health status mortality indicators

10. Life expectancy

Status. An indicator regularly found in the implementation section since 2008 and classified as an indicator of sustainable health systems, health inequalities and preventable health burden.

Rationale. A summary indicator of health risks, occurrence and severity of diseases, effectiveness of treatments and interventions in a given environment. Life expectancy at birth at 45, 65 and by socioeconomic status are indicators also adopted by the OMC on Social Protection and Social Inclusion, health and long-term care strand.

¹⁹¹ Greenberg, M., I. Dutta-Gupta, and E. Minoff. 2007. *From Poverty to Prosperity: A National Strategy to Cut Poverty in Half*. Washington: Center for American Progress.

Implementation and sources. Eurostat data available for all EU MS also at the regional level, but socioeconomic status breakdown is still under preparation. Data can be deemed as reasonably comparable without major causes of concern.

Possible reasons for non-use. Non-use appears extremely unlikely. However, there are parallel WHO and OECD sources that use different methods of calculation and give slightly different results, which could be puzzling.

Evidence of use for improvement in health outcomes. According to an OECD study¹⁹² while "measures of life expectancy are a useful aggregate indicators of health status" for descriptive purposes, they do not provide actionable information on the specific causes of death. The Potential Years of Life Lost (PYLL) indicator would provide a better measurement of "premature mortality" according to cause of death. "Consideration of premature mortality, instead of standardized death rates, distinguishes deaths which could be "potentially avoided" and might give better insights for developing priorities for preventive programs and assessing effectiveness across different health care systems". Moreover, traditional data provide no information on the quality of life of the population. The health outcomes of chronic conditions such as hypertension, asthma, diabetes, are not captured when life expectancy is used as an overarching health policy indicator.

11. Infant mortality

Status. An indicator regularly found in the ECHI implementation section since 2008 and classified as an indicator of health performance, child and maternal health and health inequalities.

Rationale. A basic demographic indicator with major implications in terms of health inequality also adopted by the OMC Social Protection Committee

Implementation and sources. Proposed by the PERISTAT project. Eurostat data available for all EU MS also at the regional level, but socioeconomic breakdown still under preparation. Data are reasonably comparable with some differences due to the way the residence criterion is accounted for and to different limits on gestational age and weight at birth that could bias results.

Possible reasons for non-use. Non-use appears extremely unlikely for this basic indicator. Policy-makers might eventually prefer data with more level of detail because drivers of neonatal or post neonatal deaths tend to be different.

Evidence of use for improvement in health outcomes. The indicator is a good proxy of overall population health and therefore not necessarily very specific for other sectoral health policy purposes¹⁹³. In fact, infant mortality appears to be primarily a result of the socioeconomic situation. Despite this sensitivity to external factors, it is widely adopted to measure maternal, infant and child health policy among developed countries. For instance, this is one of the keys of maternal, infant and child health policy indicator in the US. In the past, it was argued that it could not be considered the best possible proxy indicator of quality of health care when compared with perinatal mortality¹⁹⁴.

¹⁹² Jee, M. and Z. Or (1999), "Health Outcomes in OECD Countries: A Framework of Health Indicators for Outcome-Oriented Policymaking", OECD Occasional Papers, 1999 dx.doi.org/10.1787/513803511413

¹⁹³ D Reidpath, P Allotey, *Infant mortality rate as an indicator of population health*, J Epidemiol Community Health 2003; <http://jech.bmj.com/content/57/5/344.long>

¹⁹⁴ Waaler, Serky, *What is the Best Possible Indicator of Health Care ?* World Health Forum vol. 5, 1984

12. Perinatal mortality

Status. Another indicator that has been stably included in the implementation section since 2008. It has the same ECHI classification status as the indicator on infant mortality above.

Rationale. An important quality indicator of perinatal and preventive health care measuring together foetal deaths and deaths up to the sixth completed day after birth.

Implementation and sources. Also proposed by the PERISTAT project and a long established WHO-HfA indicator is available for all EU MS but without regional detail. Comparability discounts the fact that not all countries apply the same definition of perinatal mortality or can precisely measure gestational age by means of ultrasounds. Moreover different registries are not always consistent even within the same MS and there can be differences in the way the residence criterion is accounted for.

Possible reasons for non-use. Non-use appears extremely unlikely. Policy-makers might eventually prefer data with more level of detail.

Evidence of impact for improvement in health outcomes. This is one of the few instances of an ECHI indicator with a fully documented impact in the policy and scientific debate. As a result of the Peristat II study, a paper¹⁹⁵ raised the issue of exceeding perinatal mortality in the Netherlands when compared to neighboring countries. This triggered the government to commission the Erasmus Medical Centre in Rotterdam an *ad hoc* investigation¹⁹⁶. The Government investigation found that one of the main reasons for the high perinatal death rate in the country is the midwife care system (homebirth rates are among the highest in the world 30%, but down every year and midwives remain the mainstay of the system). This contributed to raise in the scientific literature concerns about the possible pressure in the UK to adopt the Dutch system of maternity care. The United Kingdom is now leading in the development of a more detailed surveillance system for trends in obstetric practice and management (SAMM). The World Health Organisation is currently in the process of integrating these efforts into internationally accepted criteria for SAMM¹⁹⁷.

13. Disease specific mortality

Status. Indicator regularly to be found in the implementation section both in 2008 and 2012. It is currently classified as an ECHI indicator of preventable health risk and preventable burden of disease, as well as an indicator of chronic non communicable diseases.

Rationale. Routine epidemiological information for health prevention purposes.

Implementation and source. Implemented in all the MS and standardized by means of future implementation measure of 2008 Eurostat regulation. Also available at the regional level.

¹⁹⁵ Mohangoo AD, Buitendijk SE, Hukkelhoven CW, Ravelli AC, Rijninks-van Driel GC, Tamminga P, Nijhuis JG.

Higher perinatal mortality in The Netherlands than in other European countries: the Peristat-II study. (Article in Dutch) Ned Tijdschr Geneeskd. 2008 Dec 13;152(50):2718-27. <http://www.ncbi.nlm.nih.gov/pubmed/19192585>.

¹⁹⁶ <http://www.erasmusmc.nl/perskamer/archief/2010/2620025/?lang=en>

¹⁹⁷

https://openaccess.leidenuniv.nl/bitstream/handle/1887/14001/5415_zwart_binnenwerk.pdf?sequence=1

Possible reasons for non-use. Lack of familiarity with indicator-based policy-making. Request for more subtler and detailed data on premature mortality.

Evidence of impact for improvement in health outcomes. Similar indicators are routinely used everywhere. Much of the policy-related debate on mortality has more specifically focused on avoidable or amenable mortality¹⁹⁸ and the EC took a lead in the past in encouraging this approach by financing some groundbreaking exercises. However, much of the Eurostat mortality data set is not sufficiently disaggregated to allow for detailed analysis of 'avoidable' mortality. If 'avoidable' mortality were to be monitored at European level drawing on Eurostat data, it would be necessary for Eurostat to collect mortality data at a sufficient (and higher) level of disaggregation.

14. Drug-related deaths

Status. An indicator regularly in the implementation section both in 2008 and 2012. It is classified as an indicator of health inequalities, preventable health risks, preventable burden of disease, mental health and HIAP.

Rationale. Indicator of a major group of preventable deaths due to lifestyle behaviours.

Implementation and source. Data are gathered and processed by EMCDDA based on agreed protocols. Comparability has reportedly improved over time although some differences still remain mainly in the availability of raw sources of information. Data are available for all MS, Croatia and Norway.

Possible reasons for non-use. National policy-makers might prefer to stick to local data extraction protocols if available series are longer or regional breakdown of data is available.

Evidence of impact for improvement in health outcomes. According to the EMCDDA¹⁹⁹ figures on drug-related deaths are difficult to interpret, because of their fluctuating trends, and limited relevance for devising policies. Thus, for instance it is difficult to establish whether preventative measures have had any impact. To remedy this uncertainty, a number of mortality cohort studies are currently underway in Europe to determine overall and cause-specific mortality rates for drug users, and estimate the group's excess mortality compared to the general population. However in spite of the difficulties above, the indicator remains widely in use and also the US monitor drug-induced deaths by means of an indicator with a policy target attached.

15. Smoking-related deaths

Status. An indicator downgraded from the implementation section in 2008 to the work-in-progress one in 2012. It is classified as an indicator of health system performance, healthy ageing, health inequalities, preventable health risks, chronic diseases, and preventable health burden.

Rationale. An estimated mortality indicator of a lifestyle behaviour.

¹⁹⁸ Lucia Kossarova, Walter Holland, Ellen Nolte and Martin McKee, *Measuring Avoidable Mortality Methodological note* for the Directorate-General "Employment, Social Affairs and Equal Opportunities" Unit E1 - Social and Demographic Analysis December 2009. RAND, LSE. ec.europa.eu/social/BlobServlet?docId=4738&langId=en.

¹⁹⁹ EMCDDA, 'Mortality related to drug use — a comprehensive approach and public health implications', Selected issue, European Monitoring Centre for Drugs and Drug Addiction, Lisbon, November 2011

Implementation and source. Data are gathered and processed by ECHI as a combination of Eurostat mortality data and results from the EHIS questionnaire, but unclear who will make the calculations. Already tested as part of the first EHIS wave the indicator is to be fully implemented since 2014. Comparability will therefore depend on the quality of death register data and by the way the proposed methodology will capture the relevant features of smoking prevalence.

Possible reasons for non-use. National policy-makers might continue to prefer other national proxies when available²⁰⁰.

Evidence of impact for improvement in health outcomes. There can be no impact of the ECHI indicator, as this is not implemented yet. However, survey-based estimates of smoking-related deaths can appear questionable in the underlying assumptions behind the relative risk of death for smokers and related sensitivity in discriminating against other possible causes of death. Similar attributional problems have also been experienced by the WHO indicator²⁰¹. These parameters might vary over time also in response to policies or the different stages of the tobacco epidemics, and therefore be unable to capture the impact of policies. The ECHI indicator for instance assumes for mortality estimation purposes that duration, type of smoking, and level of tobacco consumption do not change, that most of the current smoking is long term smoking and that all persons who ever smoked, irrespective of type, time span, quantity and period since quitting are regarded as former smokers. This type of indicator, for instance, is no longer monitored for policy-making purposes in the US where more directly operational indicators have been preferred.

16. Alcohol-related Deaths

The indicator previously included in the implementation section is now considered as work-in-progress and will be first implemented with the next EHIS based on an estimation methodology developed by the EU ODHIN project and similar to that already tested on smoking (See indicator #15 above). Evidence of impact for improvement in health outcomes suffer from the same limitations. The indicator is classified as an ECHI indicator of health system performance, health inequalities, preventable health risks, chronic diseases, preventable health burden, mental health and HIAP. Comparability will depend on harmonization of data on usual national beverages to a standard measure of drink. Policy-makers might prefer to stick to local available sources or local HIS when available. Alcohol-related deaths identified by means of registries have been extensively used in the Nordic countries to assess the cross-border impact of alcohol taxation on health outcomes and this has even led to some policy reversals.²⁰² The indicator is also implemented in the US by means of a special register.

²⁰⁰ For a review of the pros and cons of the various methodologies possible see Andrew Fenelon, Samuel H. Preston *Estimating Smoking-attributable Mortality in the United States* University of Pennsylvania Working Paper Population Studies Center 2011.

http://repository.upenn.edu/cgi/viewcontent.cgi?article=1025&context=psc_working_papers.

²⁰¹ See for instance, <http://tobaccocontrol.bmj.com/content/20/2/166/reply>.

²⁰² See among others Kimmo Herttua, Pia Mäkelä and Pekka Martikainen, *An evaluation of the impact of a large reduction in alcohol prices on alcohol-related and all-cause mortality: time series analysis of a population-based natural experiment*. *Int. J. Epidemiol.* (2011) 40 (2): 441-454. Kim Bloomfield, Matthias Wicki, Nina-Katri Gustafsson, Pia Mäkelä, Ph.D., and Robin Room, *Changes in Alcohol-Related Problems After Alcohol Policy Changes in Denmark, Finland, and Sweden*. *J Stud Alcohol Drugs*. 2010 January; 71(1): 32-40.

17. Excess mortality by extreme temperature

An innovative indicator being developed within ECHIM to assess the possible health effects of climate change based on harmonized mortality registers, but that has never gone beyond the development section. It is classified as an indicator of health inequalities only. There are still ongoing disagreements among experts on definition issues and what should be concretely measured and on related methodological approaches. Some MS have proposed that the indicator should be deleted from the ECHI shortlist because of its limited policy relevance. Implementation would pose very large administrative burden on MS and added value for policy-making purposes compared to rougher less sophisticated but non comparable Country-specific proxies is unclear. There are no providers of such data at the moment but the indicator is conceived to be collected by Eurostat. Since the paucity of data available there is no study clearly linking excess mortality by extreme temperature to the health outcome of any policy. No similar indicator is currently implemented or being developed for policy purposes in the US.

A.4 Health status – Morbidity indicators

18. Selected communicable diseases

Status. An indicator regularly included in the implementation section since 2008 and classified as an indicator of preventable burden of disease.

Rationale. A routine surveillance indicator of twelve different infectious diseases.

Implementation and sources. Data are collected in all European countries by means of a common surveillance system: the ECDC Tessy database. Data are comparable only to the extent to which the underlying national surveillance systems and the related legal frameworks are (e.g. voluntary vs. mandatory reporting); the estimates of under/misreporting as well as data coverage hugely differ in the MS. Moreover Countries keep modifying their national reporting systems which can cause break in series. Data are not age standardized and published with a two-year delay.

Possible reasons for non-use. This indicator draws from health threats surveillance sources although not all diseases deemed relevant threats are necessarily covered (e.g. tuberculosis).

Evidence of impact for improvement in health outcome. Communicable diseases data are used primarily for monitoring trends in disease occurrence rather than for initiating public health action. A relevant exception is represented by disease elimination programs, where efforts must be made to identify factors that allow cases to continue occurring. To this aim the US monitors a shorter and slightly different list of six diseases for policy purposes, namely those for which a vaccination programme is ongoing with an eventual view to disease eradication²⁰³.

19 HIV AIDS

Status. An indicator long included in the implementation section and classified as an indicator of health inequalities, as well as of preventable risks and preventable burden of disease.

²⁰³ <http://www.cdc.gov/vaccines/pubs/surv-manual/chpt18-surv-indicators.html>

Rationale. A routine surveillance indicator of the HIV/AIDS epidemics measuring the incidence (new cases) of HIV-infected and AIDS cases in a given calendar year.

Implementation and sources. Data are collected in all European countries by means of a common surveillance system: the WHO CISID database previously managed by EuroHIV. Data are comparable only to the extent to which the underlying national surveillance systems are, and the estimates of under/misreporting differ in the MS including time delays and possible double counting of already known cases. Moreover Countries keep modifying their national reporting systems.

Possible reasons for non-use. This indicator is very likely to be used for policy-making purposes although not necessarily deemed the most relevant one in immediate operational terms.

Evidence of impact for improvement in health outcome. HIV incidence is a proxy indicator of the overall effectiveness of HIV policies in a given country, although subject to major biases. Since patient awareness is considered the most important factor driving the spread of the disease, parallel indicators have been developed along these lines. For instance, the US monitors these incidence indicators and has policy targets on them, but considers awareness of HIV serostatus as the key policy indicator in the field of HIV.

20. Cancer incidence

Status. An indicator regularly implemented since 2008. Currently classified as an ECHI indicator of health services and health care, of healthy ageing, of chronic diseases and of preventable burden.

Rationale. Routine epidemiological information for health prevention purposes.

Implementation and source. Implemented in all the MS by means of two databases held at the International Agency for Research on Cancer. No data available at the regional level and for childhood cancers. Comparison with indicator #13 not possible because of different definitions.

Possible reasons for non-use. Data are based on extrapolations at the national level from available cancer registries where national ones are missing. Data might be deemed relevant for policy purposes at the regional or local level only. Data are not comparable with mortality indicators which might hinder assessment of trends and policies. Strict privacy concerns on implementing cancer registries in a number of MS are still pending.

Evidence of use for improvement in health outcomes. Cancer incidence varies markedly among states because of population heterogeneity regarding risk, genetic, and demographic factors. Population-based cancer registries are therefore deemed essential to monitoring cancer trends and control the effectiveness and impact of health measures. Cancer incidence data tend to be subject to detection techniques and therefore suffer from the Will Rogers phenomenon when comparisons are carried out between different data sets, so that it might be difficult to demonstrate improvements based on these sources only. Furthermore, to avoid this possible source of bias the OECD has not selected incidence among its three key indicators of cancer

care²⁰⁴. Much in the same vein, the US does not monitor this indicator for policy-making purposes but conversely has a monitoring indicator for the number of States covered by detailed cancer registries that represents the intermediate policy target.

21. Diabetes prevalence (implemented both as self-reported and register-based prevalence. The latter is still as work-in-progress, while the first is in implementation status)

Status. Split into two subversions in 2012, of which only one considered in the implementation section and the other as work-in-progress. It is classified as an ECHI general indicator of healthcare and health systems, as an indicator of chronic diseases and preventable health burden.

Rationale. A routine epidemiological indicator to measure progress in prevention and treatment.

Implementation and sources. Self-reported version to be implemented as an ECHI indicator since 2014 after pilot testing was carried out in 18 MS (related results will not be officially published by ESTAT). Eurostat is working in parallel on a register-based indicator facing the limitations in comparability of the various national information systems and whose continuation of activities is unclear. EUBIROD project register harmonization methodology tested in 21 countries to be further developed before coming to standardized national figures.

Possible reasons for non-use. Self-reported indicator will provide some added value just to countries that do not have a register or have a strongly misaligned and poorly reliable one. Relevance for policy-making purposes might be seen as limited as compared to known cases on HES-based diagnosed-cases, prevalence of pre-diabetes conditions and newly-diagnosed cases.

Evidence of impact for improvement in health outcomes. NGOs have long complained that the absence of complete data (including diabetes mortality) is one of the factor preventing governments from assessing the impact and effectiveness of their national diabetes policies and programmes²⁰⁵. Estimates of diabetes prevalence among the population reported in the International Diabetes Federation International Diabetes Atlas²⁰⁶ consistently differ (sometimes also in a considerable manner) from the figures made available by the national statistical offices and often based on surveys. Although diabetes prevalence is generally recognized as a key outcome indicator at the macro level²⁰⁷ together with the proportion of the population aware of diabetes and its risks, uncertainty about the reliability of data sources have led to different practical behaviours. For instance, HIS-based indicators in the US are used to monitor newly diagnosed cases and healthy behaviours among pre-diabetes. Other policy targets are related to HES-based diagnosed cases on estimated total. No generic indicators on prevalence are monitored for policy purposes.

²⁰⁴ These are: cancer survival rates (breast, cervical and colorectal cancers); Cancer mortality rates (all, breast, cervical, colon, lung and prostate cancers) and screening rates (breast and cervical cancers)

²⁰⁵ See on the subject, Federation of European Nurses in Diabetes, *Diabetes – The Policy Puzzle. Is Europe Making Progress?* 2012 Report. <http://www.idf.org/sites/default/files/ThePolicyPuzzleBook.pdf>

²⁰⁶ <http://www.idf.org/diabetesatlas/>

²⁰⁷ Pia Pajunen, Rüdiger Landgraf, Frederik Muylle, Anne Neumann, Jaana Lindström, Peter Schwarz, Markku Peltonen

Quality and Outcome Indicators for Prevention of Type 2 Diabetes In Europe – EU IMAGE PROJECT report 2010

22. Dementia / Alzheimer

A diagnosis-based morbidity indicator has been pilot-tested by Eurostat in 17 MS. It was downgraded from the implementation section in 2008 to work-in-progress in 2012. It is simultaneously classified as an indicator of health sustainability, health planning, ageing population, chronic disease, preventable burden of disease and mental health. No publication of pilot data envisaged by Eurostat for the time being, but some MS could theoretically make data available if deemed comparable. It is difficult to estimate dementia prevalence in the population because of challenges associated with assessing dementia even at the research study level²⁰⁸. Accurately assessing the presence of dementia in study participants is challenging because dementia impairs cognitive functioning, which makes self-reported data unreliable. There may also be problems with obtaining an accurate assessment from family members because of the stigma associated with having dementia in general, in some countries, and in some racial and ethnic groups. Dementia diagnosis is also imprecise because clinical symptoms present differently in some individuals, which makes it difficult to make a definitive (dementia) diagnosis. Projections in Alzheimer prevalence vary by orders of magnitude according to the authors' assumptions. For example, the advocacy organization, Alzheimer's Disease International, projects that the number of dementia cases will double every twenty years; whereas the WHO projects the number of dementia cases to triple by 2050. Some have reservations on the relevance of diagnosis-based data and would prefer at least EHES-based sources. Relevance for improvement in health outcome is also debatable because there are diverging views on what the outcome judgment criteria is what health policy should aim at, whether early diagnosis, access to services or reducing stigma and improving social inclusion²⁰⁹. Cost-effectiveness of collecting detailed indicators compared to existing proxies might also appear questionable. In this uncertainty, the US is finally developing other indicators on awareness of the diagnosis and preventable hospitalisations.

23. Depression

Status. Originally considered in the implementation section the indicator has then split into a self-reported version still in the implementation section and a register-based one now considered as work-in-progress. It is classified as an ECHI indicator of health planning, chronic disease, preventable health burden and mental health

Rationale. An epidemiological indicator monitoring a growing public health priority.

Implementation and sources. The indicator is proposed both in a self-reported prevalence version and in a register-based one. The EHIS version will be actually implemented in wave two in a more advanced version than tested under wave I. Eurostat is also piloting a register-based exercise in 16 MS whose results will not be published but can be available at the MS level. It is currently unclear how Eurostat will

²⁰⁸ Blossom Stephan and Carol Brayne, "Prevalence and Projections in Dementia," in Excellence in Dementia Care: Research into Practice, ed. Murna Downs and Barbara Bowers (New York: McGraw-Hill, 2008), pp. 9-34

²⁰⁹ Alzheimer's Disease International, National Alzheimer and Dementia Plans Planned Policies and Activities: Early Detection, Access to Diagnosis and Stigma Reduction, April 2012, p. 12, <http://www.alz.co.uk/sites/default/files/national-alzheimer-and-dementia-plans.pdf>
World Health Organization, Dementia: A Public Health Priority, Geneva, Switzerland, 2012, http://whqlibdoc.who.int/publications/2012/9789241564458_eng.pdf
Chengxuan Qui, Miia Kivipelto, and Eva von Strass, "Epidemiology of Alzheimer's Disease: Occurrence, Determinants, and Strategies Toward Intervention," Dialogues in Clinical Neuroscience, vol. 11, no. 2 (2009), pp. 111-128.

gather and process the diagnosis-specific morbidity data and what comparability problems will eventually arise.

Possible reasons for non-use. Policy-makers might be interested in knowing prevalence data not biased by search for professional help or by poor diagnosis practices among healthcare providers.

Evidence of impact for improvement in the health outcomes. According to the EU Consensus Paper on the Prevention of Depression and Suicide the effectiveness of prevention programmes has been demonstrated in reducing the incidence of new cases²¹⁰ or the severity of symptoms²¹¹ and therefore cannot be necessarily captured by prevalence data because of the chronic and recurrent nature of depression once established. Prevalence data are however still commonly used to set policy targets. For instance the US has an indicator on reducing the share of the population who have been experiencing a major depressive episode.

24. AMI

Originally included in the implementation section because conceived as a Eurostat morbidity indicator this composed indicator has become a work-in-progress directly pilot-tested by ECHIM and aimed at estimating one of the highest-burden causes of disease and death in the EU by monitoring both cases of infarction (fatal and non fatal) and actual coronary deaths. It is currently classified as a healthcare and health systems indicator and as an indicator of chronic diseases and preventable burden. It still requires algorithm for better computation and implementation is hindered by complex personal data protection issues in a number of MS. Comparability suffers from inhomogeneous legal frameworks and from differences in coding and autopsies practice. The indicator is not currently gathered by any organization and has been proposed in the EUROSTAT pipeline. Data from regional registries are available for 8 MS plus Iceland. ECHIM documentation itself acknowledges that incidence data are more interesting from a primary prevention viewpoint in assessing the health outcome of lifestyle-related interventions, but feasibility considerations have prevailed because data for the overall attack rate are more widely available. However, when it comes to simply estimating prevalence in the population HIS-based indicators have sometimes been deemed sufficient for the purpose²¹². As often happens with chronic diseases the immediate relevance of prevalence data to steer public health action is not always apparent and other indicators can be preferred if incidence data are not available. For instance, the only indicator monitored for policy-making purposes in the US is that on coronary heart deaths, because all other indicators are more fine-tuned and directly monitor, among others, risk factors in the population at risk, compliance with treatment and hospitalizations.

25. Stroke

Same considerations and difficulties as above apply²¹³ but availability of data from currently established regional registries is even more limited and covers six MS plus Norway. The indicator is not classified as preventable burden but for mental health.

²¹⁰ Cuijpers P, Van Straten A, Smit F (2005). Preventing the incidence of new cases of mental disorders: a meta-analytic review. *J Nerv Ment Dis* 193(2):119-25. <http://www.ncbi.nlm.nih.gov/pubmed/15684914>.

²¹¹ Jané-Llopis E, Hosman C, Jenkins R et al. (2003). Predictors of efficacy in depression prevention programmes. *Meta-analysis.Br J Psychiatry* 183:384-97 <http://www.ncbi.nlm.nih.gov/pubmed/14594912>.

²¹² <http://www.cdc.gov/datastatistics/archive/heartdisease.html>

²¹³ See for the US http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6120a5.htm?s_cid=mm6120a5_w

The use of the indicator for measuring improvements in the health outcomes is ambiguous. An increase in prevalence might mean greater incidence of new cases, more frequent detection of cases, or increased survival of people with risk factors or disease after the condition is recognized. So these data basically reflect an increased public health burden, with attendant costs. Also because of this, the US just sets policy targets on stroke deaths and does not monitor non-fatal attacks for policy purposes.

26. Asthma

Source. An indicator first considered in the implementation section in 2008, but then split into two possible implementation modalities, one of which – EHIS-based – considered in the implementation section and the other – register-based – as work-in-progress. The indicator is currently classified for health planning, child health, chronic diseases, and preventable health burden.

Rationale. An epidemiological indicator on the total number of diagnosed in the population for a condition on which prevention is partly possible.

Implementation and source. Implemented both as self-reported prevalence via the EHIS survey and as register-based prevalence through a Eurostat pilot that for the time being will not be published. The same limitations and comments as per the other EHIS-based exercises apply.

Possible reasons for non-use. The scope of the indicator might not necessarily be perceived as aligned with the objective of policy-making action. Asthma-related policies might focus on reducing the number of deaths, hospitalizations, emergency department visits, school days or workdays missed, and limitations on activity due to asthma (ECHI indicator #13 does not include asthma mortality). Finally policy-makers might prefer to rely on local register-based series when available because deemed of better quality.

Evidence of use for improvement in health outcomes. There are a number of policy actions possible to partly prevent asthma ranging from exposure to smoking during pregnancy and the first years of life to breastfeeding to occupational risk factors, but these are usually measured in terms of incidence in experimental settings for the reasons already explained above and are at any rate subject to environmental confounders. Outside of prevention, improvement in health outcomes can be measured by other standards. The US, for instance has indicators and related policy targets on asthma mortality and hospitalizations.

27. COPD

Same considerations as above apply also to chronic obstructive pulmonary diseases. However, in this case the indicator is classified for health sustainability and planning, healthy ageing, preventable health risks, chronic disease and preventable health burden.

28. Low birth weight

Status. An indicator included in the implementation section both in 2008 and 2012. It is classified as an ECHI indicator of health system performance, child and maternal health and preventable burden of disease.

Rationale. A basic indicator of perinatal care and pregnancy conditions.

Implementation and sources. WHO-HfA data are available for all MS but the Netherlands that has reported only for a couple of years. No regional breakdown available or by age or mother status. The indicator is fraught with physiological variability and would require classification of cause of low birth weight to be fully comparable. Changes in data gathering have caused breaks in time series.

Possible reasons for non-use. Non-use appears extremely unlikely. Policy-makers might eventually prefer data with more level of detail (e.g. distinguishing between low weight and extremely low weight or disaggregating data by causes of low birth weight).

Evidence of use for improvement in health outcomes. Low birth weight is an important indicator of infant health because of the close relationship between birth weight, infant mortality and health issues during life. Low birth weight infants have a greater risk of poor health or death, require a longer period of hospitalisation after birth, and are more likely to develop significant disabilities during lifetime. However, in developed OECD country the indicator is increasingly dissociated from infant mortality because medical care (or newborns) has been particularly successful in reducing infant mortality. Moreover, causes (increase in the number of multiple births, partly as a result of the rise in fertility treatments; the increased age of mothers at childbirth, etc.) are often poorly amenable to policy interventions. Nevertheless, despite this lack of specificity the indicator continues to be routinely monitored in the US for policy-making purposes and target-setting.

29. Injuries home/leisure

Status. An indicator in the implementation section since 2008. It is classified as an indicator of health planning, child health, preventable health risks and preventable health burden.

Rationale. An indicator to steer prevention policies and monitor injury trends in terms of injuries requiring hospitalizations.

Implementation and sources. Implemented both by means of registry data (the Dg SANCO Injury Database) and through the EHIS survey. However contents of the second EHIS wave will be less detailed than the first pilot one and will no longer include data on hospitalizations and injuries at school. Registry-based data are available for 15 MS to be soon increased by a dedicated Joint Action, but do not cover regions.

Possible reasons for non-use. None apparent but eventually for the need to take action at the regional/local level where regional/local data are therefore needed. Some MS might be more interested in monitoring case-incidence rather than persons-incidence as ECHI does.

Evidence of use for improvement in health outcomes. Most home and leisure injuries are preventable, but those linked to consumer product safety issues in particular require detailed registry data. This has led to a recent call for a strengthening of related EU data sets²¹⁴ currently deemed insufficient for the purpose and not

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[http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwAssets/32F1469164C820FAC12576CC0051A0D4/\\$file/Joint%20call%20kopicie.pdf](http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwAssets/32F1469164C820FAC12576CC0051A0D4/$file/Joint%20call%20kopicie.pdf)

sustainable in a number of MS. The US has also long monitored this indicator by means of a register and has set policy target on it

30. Injuries road traffic

Same considerations as above apply although in this case the source of registry data is the UNECE database whose full comparability with the parallel EU CARE database remains to be ascertained. The indicator is not classified as a child care indicator, but as a HIAP indicator.

31. Injuries workplace

Status. An indicator long established in the implementation section and classified as an ECHI indicator of health planning, health inequalities, preventable health burden and HIAP.

Rationale. An indicator to steer occupational health and safety at work policies and monitor injuries at work and both an EU structural indicator and an EU Sustainable Development Indicator.

Implementation and sources. Implemented by means of Eurostat ESAW data and reported in all MS and Norway. Data are sector-standardized. There remain differences in the way data are gathered also because of the different underlying legal systems. Comparability is therefore hindered between Countries relying on insurance-based reporting systems and those relying on public inspections. Not all the MS cover all the sectors of the economy and public servants are often not reported, as well as self-employed and family members. Data at the regional level to be published.

Possible reasons for non-use. Policy-makers might be more interested in those data with a sectoral breakdown that are provided by Eurostat.

Evidence of use for improvement in health outcomes. A study²¹⁵ commissioned for the WHO in 2001 concluded that there were four main recommendable indicators of health outcome at work, and namely: 1) fatal work accidents; 2) work accidents; 3) occupational diseases (cases of 31 occupational diseases as defined by EU per 100,000 employees) and perceived work ability. The first two remain those more widely employed to demonstrate the effectiveness of public health interventions, although operationally policies are often decided at a sectoral level rather than the aggregated one. For instance, the US provides this indicator and has policy targets on it on a sectoral basis.

32. Suicide attempts

An indicator proposed by the EU MINDFUL project that has never moved out from the development section because there is no consensus on data sources and related methodologies and no prospects that any international data collection mechanism will be developed in the future. The indicator is classified for health planning, preventable burden of disease and mental health. There are reservations on ethical grounds in gathering data by means of HIS. Suicide attempts is a policy driven indicator.

²¹⁵ Jorma Rantanen, Timo Kauppinen, Jouni Toikkanen, Kari Kurppa, Suvi Lehtinen, Timo Leino *Country profiles and national surveillance indicators in occupational health and safety*, People and Work • Research Reports 44, Finnish Institute of Occupational Health, Helsinki 2001
http://www.who.int/occupational_health/regions/en/oeheurcountryprofiles.pdf.

Although some preventive programmes have shown a statistically significant reduction in suicide rate, it is not recommended²¹⁶ to use it as the only primary indicator for measuring the effectiveness of suicide prevention, due to the very low rate in completed suicides. Alternative benchmarks to measure the effectiveness of any suicide prevention programme, especially for a relatively small community, include suicide attempts and suicide ideation rates. An indicator on adolescent suicide attempts is actually implemented in the US based on surveillance data and is being studied also by the EU CHILD project. The indicator has been proposed for removal from the ECHI shortlist due to difficulties in implementation.

33. Self-perceived health

Status. It has maintained its implementation status both in 2008 and 2012 as an indicator of health planning, healthy ageing, health inequalities, preventable burden of disease and mental health.

Rationale. A subjective indicator complementing other more objective measurements of health needs at the population level and a predictor of subsequent mortality. Breakdown by education level provides general information on health inequalities.

Implementation and sources. Implemented as part of the EU-SILC survey and to be possibly moved into EHIS in the future. Data are collected for all Member States and EEA countries. No regional breakdown is available. Comparability still hindered by slight differences in the way questions are phrased and cultural standards in dealing with health issues. People living in institutions are excluded from the sample.

Possible reasons for non-use. Results might not be immediately actionable for policy-making purposes because deemed exceedingly influenced by cultural factors or policy-makers could rely on more objective sources of information for setting their targets.

Evidence of use for improvement in health outcomes. Self-perceived health is often considered as a health outcome per se and analysed in terms of its determinants²¹⁷. In certain countries it has also been analysed as a leading indicator (for use) of health services and mortality²¹⁸, but there is little evidence of use to set policy targets. For instance, there is no such indicator monitored for policy-making purposes in the US.

34. Self-reported chronic morbidity

Similar to the above and sharing the same limitations the indicator provides grainier information on specific chronic diseases. Added value compared to HES where existing might appear questionable. Main use in policymaking is related to correlation with the use of health systems, but differently from self-perceived health and little correlation with health outcomes could be found (see note 36 below). The US is developing a slightly different indicator in older adults only on their degree of confidence in managing a chronic condition.

35. Long-term activity limitations

Another indicator based on self-reported data, also used to calculate the healthy life years indicators. It is classified as the ECHI indicators 33 and 34 above, but for mental

²¹⁶ WHO - *Towards evidence-based suicide prevention programmes. Suicide - prevention and control.* World Health Organization 2010. <http://www.wpro.who.int/mnh/TowardsEvidencebasedSPP.pdf>.

²¹⁷ See for instance, <http://www.scotland.gov.uk/Publications/2012/08/5277/10> or

http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-09-024/EN/KS-SF-09-024-EN.PDF

²¹⁸ <http://www.jclinepi.com/article/S0895-4356%2897%2900045-0/abstract>

health. The same considerations as for the other EU-SILC-based indicators also applies and in addition there can be breaks in the existing series due to changes in question at the MS level. The US monitors the same indicator but with reference to older adults under Medicare assistance only.

36. Physical and sensory functional limitations

Status. Considered in the implementation section in 2008 and 2012, it is currently classified as an indicator of health planning, healthy ageing, health inequalities, and preventable burden of disease.

Rationale. An indicator aimed at assessing the percentage of the population declaring evidence of declining physical functioning and therefore in potential need of assistance or institutionalisation.

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged EHIS indicator since 2014 but with substantial changes in the way questions are phrased. Data will not be age-standardised.

Possible reasons for non-use. Policymakers might be more interested in further operational aspects.

For instance the US is developing an indicator on the unmet needs for long-term services and support in the older population. The added value of extending the survey to the population as a whole might also appear questionable.

37. General musculoskeletal pain.

This burden of disease indicator has never gone beyond the development section. It has been proposed by the EUMUSC.NET project as part of a possible prevention and treatment policy with substantial economic implications in terms of absence from work and disability but never accepted by Eurostat as a EHIS indicator. Very few MS reportedly carry out national surveys specifically focusing on this item and sometimes with a narrower focus. Detailed indicators on arthritis, osteoporosis and hip fractures are available in the US. Reasons for non-use might include limited policy prioritisation of issue in the light of limited life threatening condition or perceived low economic burden of disease compared to others.

38. Psychological distress

An indicator originally implemented in the first wave of EHIS but then dropped from the future second wave because of problems with implementation and unreliable results in Eastern Europe and downgraded to development status. The indicator is classified for health planning, healthy ageing, preventable burden of disease and mental health. The perceived relevance for policy-making remains to be seen, because proponents themselves highlight that distress does not necessarily involve mental illness or require health services although some preparatory studies have recommended such correlation based on scores. The indicator is partly overlapping with indicator 39 below and has already been proposed for removal from the ECHI shortlist.

39. Psychological well-being

See comments above. The ECHI classification is however slightly different as the indicator is not intended for health planning purposes or as an indicator of preventable health burden.

40. Healthy life years

Status. An indicator regularly in the implementation section since 2008. It is classified as an ECHI indicator of sustainable healthcare, health planning and health ageing.

Rationale. A structural indicator of the Europe 2020 strategy to measure healthy active life, HLY is also an indicator in the Innovation Union flagship initiative and a sustainable development indicator. Moreover it has been adopted by the OMC on Social Inclusion and Social Protection.

Implementation and source. Implemented by a Joint Action based on EU-SILC data and available at the national level for all European Countries but Croatia. No regional breakdown available.

Possible reasons for non-use. Policy-makers might prefer the HALE (Health Adjusted Life Expectancy) and DALE (Disability Adjusted Life Expectancy) indicators produced by the WHO based on different data, assumptions and methodologies. The Joint Action has reportedly proposed the US and Japan to carry out the GALI survey on long term activity limitations to be able to calculate HLY and increase comparability worldwide.

Evidence of use for improvement in health outcomes. The utility and relevance of HLY for public health depends on 1) the comparability and reliability of the measure of long-standing limitations²¹⁹; 2) the possibility of decomposing gaps in HLY by origin (mortality or disability), or by cause of morbidity and age group responsible; and 3) the ability to assess the impact of changes in health determinants and health interventions on HLY²²⁰.

41. Health expectancy, others

Status. An indicator originally included in the implementation section, but then downgraded to work-in-progress in 2012. It has the same ECHI classification as the indicator on healthy life years above.

Rationale. Health expectancies is a composite indicator of mortality data and self-perceived health, morbidity and disability to complement the healthy life years information above much in the same way as HALE complements DALE in the WHO indicator system.

Implementation and source. Implemented by the EHEMU/EHLEI Joint Action based on EU-SILC data and available at the national level for all European Countries but Iceland, Norway and Croatia. No regional breakdown available. At present the

²¹⁹ Ekholm O, Brønnum-Hansen H. *Cross-national comparisons of non-harmonized indicators may lead to more confusion than clarification.* Scand J Public Health. 2009

²²⁰ For instance, there is some evidence suggesting that the effect of health determinants such as smoking decreases the total life expectancy and decreases both the years without and with disability, while other determinants such as obesity decrease the years without disability but increases the years with disability. Reuser M, Bonneux L, Willekens F. *Smoking kills, obesity disables: a multistate approach of the U.S. Health and retirement survey.* Detroit: Population Association of America; 2009. pp. 1–20

indicator is published only for population 65+ but not at birth. It is unclear whether Eurostat will continue calculation once the JA is discontinued.

Possible reasons for non-use. As mentioned above policy-makers might prefer the HALE (Health Adjusted Life Expectancy) and DALE (Disability Adjusted Life Expectancy) indicators produced by the WHO based on different data, assumptions and methodologies because deemed more rid of subjective and cultural biases.

A.5 Determinants of health

42. Body Mass Index

Source. An indicator stably included in the implementation section. It is classified as an indicator for health planning, healthy ageing, preventable health risks, chronic diseases and preventable health burden.

Rationale. A key obesity indicator and one of health and a Long Term Care indicators of the Social Protection Committee, as well as a EU Sustainable Development Indicator.

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged EHIS indicator since 2014 as a second best solution while waiting for a final EHES version. In 2010 EHES pilots have started in 14 countries.

Possible reasons for non-use. No historical series available, uncertainties about future vertical comparability over time. No regional breakdown available where policy is implemented at the regional level. Member States might prefer more detailed indicators from national HES data where available.

Evidence of use for improvement in health outcomes. Studies have shown that BMI levels correlate with body fat and with future health risks. In particular, the high BMI tracked by ECHI predicts future morbidity and death. The relationship between BMI in the overweight range and total mortality risk, on the contrary, remains controversial. There is evidence of an adverse relationship in some studies but not in others²²¹. Some have proposed that methodological issues may mask the true relationships of overweight and obesity with total and cause-specific mortality²²². At any rate, BMI remains a key indicator monitored for policy-making purposes in the US based however on HES-data.

43. Blood pressure

Status. In the implementation section since 2008, it is classified as an indicator of health planning and healthy ageing, as well as an indicator of health inequalities, preventable health risks and preventable health burden.

Rationale. Epidemiological indicator of relevance for the prevention of coronary heart disease, stroke and possible complications from diabetes. In the EU version it is aimed to survey the number of persons reporting they have been diagnosed over the last twelve months.

²²¹ <http://circ.ahajournals.org/content/119/25/3263.full>

²²² Lawlor DA, Hart CL, Hole DJ, Davey Smith G. Reverse causality and confounding and the associations of overweight and obesity with mortality. *Obesity* (Silver Spring). 2006; 14: 2294-2304

Implementation and sources. An EHIS survey pilot-tested in 17 MS and Norway and to be implemented starting from 2014 in a slightly modified version. Breakdown at the regional level not available. It is considered second best compared to EHES sources but these are available in some MS only. In particular, a pilot EHES survey has covered 14 countries since 2010 and is already envisaged that the ECHI indicator will switch to EHES sources when available EU-wide.

Possible reasons for non-use. MS might prefer better quality EHES data when available to ECHI ones. The relevant level for policy-making intervention might be at the regional/local level where ECHI data are not provided. EHIS sources are not stable enough for use for policy-making purposes and data are not age-standardized.

Evidence of use for improvement in health outcomes. Evidence of improvement in health outcome is demonstrated for hypertensive subjects under regular therapy. Other data on prevalence could help detect lack of awareness about hypertensive status and therefore undetected need for therapy. To this aim, the key US indicator on heart disease and stroke, based on HES data, directly monitors the percentage of adults with hypertension whose blood pressure is under control, as well as age-adjusts data with reference to a given benchmark year.

44. Regular smokers

Status. An indicator regularly included in the implementation section both in 2008 and 2012. It is classified as an indicator of health planning, healthy ageing, child health, preventable health risks, health inequalities and preventable health burden.

Rationale. A basic indicator of the number of people who are regular active smokers and one of the Health and Long Care Indicators of the Social Protection Committee.

Implementation and source. Already tested in 18 MS and 2 EEA as part of the first EHIS wave, the indicator is to be fully implemented since 2014. Regional breakdown will not be available and data will not be age standardised.

Possible reasons for non-use. National policy-makers might continue to prefer national sources when available because the coverage or the level of detail is higher.

Evidence of use for improvement in health outcomes. Focus on regular smokers might underestimate the health burden of light and intermittent smokers²²³ and bias the expected impact of smoking cessation policies. The US indicator also monitors regular smokers and has also policy targets on cigars that are not covered by the EU survey.

45. Pregnant women smoking

An indicator downgraded from the implementation to the work-in-progress section and originally proposed by the EU PERISTAT project and collected in half of the MS on a pilot basis by the project itself, but on which no final consensus and validation on definition, means of calculation and preferred data sources has been reached yet outside of the project. The indicator is not currently implemented by any international organization and is not included in the EUROSTAT set of indicators on perinatal health. Studies²²⁴ confirm that mothers who smoke during pregnancy will have smaller babies,

²²³ Rebecca E. Schane, MD, Pamela M. Ling, MD, MPH, and Stanton A. Glantz, Health Effects of Light and Intermittent Smoking: A Review. www.ncbi.nlm.nih.gov/pmc/articles/PMC2865193/.

²²⁴ Emma Tominey Maternal Smoking During Pregnancy and Early Child Outcomes', CEP Discussion Paper No. 828 <http://cep.lse.ac.uk/pubs/download/dp0828.pdf>

but around half of this damage is because of 'unobservable traits' of the mother (drinking alcohol, nutrition, knowledge of healthy behaviour). Research also finds that the lasting harm to babies due to smoking during pregnancy is greatest if the mothers are teenagers and have a lower level of education. The harm to the baby is essentially reduced to zero if the mother quits by month five of the pregnancy. This makes policy approach very specific and targeted. No similar examples of policy targets are monitored in the US. It is currently classified as an ECHI indicator of health performance, child and maternal health, health inequalities, preventable health risks and preventable health burden.

46. Total alcohol consumption

Source. An indicator regularly maintained in the implementation section and classified as an indicator of health planning, child health, preventable health risks and preventable health burden.

Rationale. A basic indicator for monitoring the magnitude of per capita alcohol consumption. A key indicator of the EU alcohol strategy.

Implementation and source. Data are published by the WHO-GISAH and are based on a collection of national sources on apparent consumption (production + imports – exports) and some correction and conversion factors. Data are available for all Member States. There are variations in the sources available for the estimates of recorded and unrecorded consumption that could affect comparability.

Possible reasons for non-use. National policy-makers might prefer to stick to local data or might not deem the indicator too generic and not specifically relevant for policy purposes.

Evidence of use for improvement in health outcomes. Estimates of per capita consumption of alcohol across entire national populations can provide policy makers with some sense of the magnitude and trends likely to be found in overall alcohol-related problems and are therefore a very good proxy of health outcomes that are usually monitored by means of other indicators. Per capita consumption is a good indicator of alcohol-related harm in a country. The higher the average consumption of alcohol in a population, the higher the population's incidence of alcohol-related problems, and this relationship also holds good at the individual level. Therefore, the average annual alcohol consumption is monitored through indicators aimed at policy actions.

47. Hazardous alcohol consumption

Status. An indicator included in the implementation section both in 2008 and in 2012, but then downgraded to the development section in the period in between. It is currently classified as an indicator of health planning, health inequalities, preventable health risks, chronic morbidity and preventable health burden

Rationale. An indicator measuring excessive drinking defined as more than 20 g alcohol daily for women and more than 40 g daily for men. A key indicator envisaged in the EU alcohol strategy.

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged

EHIS indicator since 2014 but with concerns and uncertainties about vertical comparability of questions. Data available by age group and level of education.

Possible reasons for non-use. No historical series available, uncertainties about future vertical comparability over time. Member States might prefer more detailed indicators or local sources linked to compliance with local recommendations or guidelines where available.

Evidence of use for improvement in health outcomes. Patterns of alcohol use contribute together with total consumption to overall alcohol-related health damage. The ECHI indicator is in line with the WHO definition of harmful drinking for health outcome purposes. Others might monitor other key indicators even more focused on short-term intoxication and related side-effects including violence, such as the US who have a specific indicator on binge consumption.

48. Use of illicit drugs

Status. An indicator included in the implementation section since 2008 and currently classified as an indicator of child health, health inequalities, preventable health risks, preventable health burden and mental health.

Rationale. A lifetime prevalence and last year prevalence indicator of use of illicit drugs.

Implementation and source. Data are gathered and processed by EMCDDA based on national surveys and the ESPAD survey in schools. Comparability depends on survey implementation modalities and cultural factors. Data are available for all MS, although not necessarily on all substances but series are available only in a limited number of countries.

Possible reasons for non-use. Lifetime prevalence data might be deemed poorly significant and population surveys have difficulties in capturing marginalised but dangerous use of drugs or newly emerging trends. There cannot be series long enough for reference.

Evidence of use for improvement in health outcomes. Estimates of drug use from general and school population surveys provides basic information to help to understand patterns of use, risk perceptions, social and health correlates, and consequences of use of illicit drugs and other psychoactive substances. Policy action to improve health outcome should be steered by the parallel problem drug use indicators. However, also the US has policy targets on drug users in general although it monitors only last month prevalence data in order to get rid of occasional users.

49. Consumption of fruit

Status. An indicator stably included in the implementation section. It is classified as an indicator for preventable health risks, chronic diseases and preventable health burden.

Rationale. An important lifestyle indicator measuring people eating fruits at least once a day.

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged EHIS indicator since 2014. Data will not be age-standardised.

Possible reasons for non-use. No historical series available, uncertainties about future vertical comparability over time. No regional breakdown available where policy is implemented at the regional level. Member States might prefer more detailed indicators from national HES data where available or simpler proxies based on apparent consumption.

Evidence of use for improvement in health outcomes. Evidence of improvement in health outcomes is available for cumulative daily intakes of fruit and vegetables as high as 600 g (the five take approach)²²⁵. Indicator also monitored for policy-making purposes in the US, based on health examination surveys with targets expressed in cups per 1000 calories.

50. Consumption of vegetables

Status. Another indicator stably included in the implementation section since 2008. It is currently classified as an indicator for preventable health risks, chronic diseases and preventable health burden.

Rationale. An important lifestyle indicator measuring people eating vegetables at least once a day.

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged EHIS indicator since 2014. Data will not be age-standardised.

Possible reasons for non-use. No historical series available, uncertainties about future vertical comparability over time. No regional breakdown available where policy is implemented at the regional level. Member States might prefer more detailed indicators from national HES data where available or simpler proxies based on apparent consumption.

Evidence of use for improvement in health outcomes. See indicator # 49 above.

51. Breastfeeding

Status. The indicator has been downgraded from the implementation section in 2008 to the work-in-progress section in 2012. It is currently classified as a maternal and child health, a preventable health risk and a preventable health burden indicator.

Rationale. A predictor of nutrition and infections in the child and of breast cancer in the mother.

Implementation and sources. WHO-HfA data are de facto available for less than 10 MS and come from national HIS that are not harmonised and therefore poorly comparable. It was not included as an item to be investigated through EHIS because of the likely cost of the exercise because of the sample required.

Possible reasons for non-use. Might be deemed not a national priority or too complex and costly to gather in the light of the limited room for policy intervention. Cultural biases and different country sensitivities to the issue of breastfeeding could also play a role in determining the level of interest.

²²⁵ Karen Lock, Joceline Pomerleau, Louise Causer, Dan R. Altmann, & Martin McKee, *The global burden of disease attributable to low consumption of fruit and vegetables: implications for the global strategy on diet*. WHO 2005. <http://www.who.int/bulletin/volumes/83/2/100.pdf>.

Evidence of use for improvement in health outcomes. The share of breastfeeding mothers can be influenced only by labour and social policies envisaging rights to breastfeeding breaks and providing for related facilities²²⁶. Public health educational interventions have some effectiveness in increasing the total duration of breastfeeding beyond the six months captured by the indicator²²⁷. It is possibly because of this limited relevance to public health policy strictly speaking that no similar indicator is monitored in the US for policy-making purposes and no target is attached to it.

52. Physical activity

Status. Included in the implementation section since 2008 and classified as an indicator of healthy ageing, health inequalities, preventable health risks, and preventable health burden.

Rationale. An important lifestyle indicator amenable to policy interventions but whose precise operationalization remains to be formulated.

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged EHIS indicator since 2014. Data will not be age-standardized.

Possible reasons for non-use. No historical series available, uncertainties about future vertical comparability over time. No regional breakdown available where policy is implemented at the regional level. Member States might prefer more detailed indicators linked to compliance with local recommendations or guidelines where available.

Evidence of use for improvement in health outcomes. Compliance with pre-defined guidelines and related standards has demonstrated correlation with health outcomes²²⁸. This is the reason why compliance with guidelines benchmarks is the key indicator monitored for policy-making purposes in the US.

53. Work-related health risks

Status. An indicator to be found in the implementation section both in 2008 and 2012. It is classified as an indicator of health inequalities, preventable health risks, preventable health burden and HIAP.

Rationale. An indicator to assess the subjective perception of risk at work, impressions of negative consequences of work on health and supportive behaviours from colleagues and managers in order to improve workplace conditions and therefore health.

Implementation and sources. Implemented by means of the Eurofound initiative sources based on the European Working Conditions regularly carried out in the EU 27 plus Norway and Croatia.

²²⁶ Melvyn L. Sterling *Factors that Influence Differences in Breastfeeding Rates*, Reports submitted to AMA, 2004, <http://www.ama-assn.org/resources/doc/csaph/a05csa2-fulltext.pdf>

²²⁷ Rosenberg KD, Stull JD, Adler MR, Kasehagen LJ, Crivelli-Kovach A, *Impact of hospital policies on breastfeeding outcomes*. Breastfeed Med. 2008. <http://www.ncbi.nlm.nih.gov/pubmed/18563999>

²²⁸ William L. Haskell, Steven N. Blair, James O. Hill *Physical activity: Health outcomes and importance for public health policy*, Preventive Medicine 49 2009, http://www.activelivingresearch.org/files/2_PM2009_Haskell.pdf

Possible reasons for non-use. Policy-makers might address more objective measures of work intensity or physical hazards.

Evidence of use for improvement in health outcomes. Much specialist literature indicate that workers constantly underestimate their exposure to risk for work accidents, since perceptions of risk are influenced by pre-existing, recent or readily available experiences²²⁹ or overestimation of personal immunity from harm²³⁰. However, there seems to be a lack of attention in the literature concerning the issue of the effect of health and safety policy combined with workers' job risk underestimation, and of the interactions between the two. Given the lack of a theoretical reference framework no similar indicator is monitored in the US.

54. Social support

Status. An indicator regularly included in the implementation section both in 2008 and 2012. It is currently classified as an indicator of healthy ageing, health inequalities preventable health risks, preventable health burden and mental health.

Rationale. An indicator aiming at measuring a protection factor in times of stress.

Implementation and sources. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged EHIS indicator since 2014.

Possible reasons for non-use. No historical series available, uncertainties about future vertical comparability over time. Relevance for planners might be too indirect.

Evidence of use for improvement in health outcomes. The strongest evidence that social support is related to health or disease comes from studies carried out on large populations demonstrating that social support is protective against all-cause mortality²³¹. It also appears that social support is negatively associated with cardiovascular death and that it protects against recurrent events and death among persons diagnosed with disease. However, the predictive relation between social supports and incidence of disease, specifically cardiovascular disease, has been inconclusive and inconsistent, as well as the one linking social support to cancer and other outcomes. Social support is mainly targeted by means of social and family policies rather than health interventions²³².

55. PM 10 exposure

Status. An indicator regularly included in the implementation section both in 2008 and 2012. It is currently classified as an indicator of child health, preventable health risks, health inequalities and preventable health burden.

²²⁹ Thaler, R.H., C.R. Sunstein, *Nudge – Improving Decisions about Health, Wealth and Happiness*. 2008 Chicago: Yale University Press.

²³⁰ Weinstein, N.D. *Optimistic biases about personal risks*, 1989 *Science*, 246, pp.1232–3

²³¹ Bert N. Uchino, *Social Support and Physical Health: Understanding the Health Consequences of Relationships*, 2004 Yale University Press

²³² Debra Umberson and Jennifer Karas Montez *Social Relationships and Health: A Flashpoint for Health Policy* *J Health Soc Behav.* 2010; 51(Suppl): S54–S66.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3150158/>

Rationale. A key environmental health indicator envisaged by the Directive on Clean Air and the Environmental Action Programme and collected for regulatory purposes in the MS.

Implementation and sources. Implemented in all MS but Cyprus and Luxembourg for reasons unknown as Eurostat metadata are not available. Eurostat regularly collects data based on standardised and mandatory methodology in the AirBase databases. No major issue of comparability reported but details of Eurostat data-processing unknown to ECHIM. The EU indicator measures the average over all measurements conducted in the year in question.

Possible reasons for non-use. It is possible that some MS deem that it is the total PM10-weighted people days measurement exceeding a given threshold and not the average that is relevant as an indicator for policy-making purposes.

Evidence of use for improvement in health outcomes. Studies have demonstrated an association between fine PM and acute mortality and morbidity. Some maintain that the PM2.5 fraction could be more relevant for strict health policy purposes, but these data are available for few locations only as they are not separately envisaged in the legislation. An outdoor air quality indicator is also considered the key environmental health indicator in the US with policy targets attached, but the indicator is construed in terms of total people days exceeding a given value rather than in terms of averages.

A.6 Health interventions – Health services

56. Vaccination coverage in children

Status. An indicator included in the implementation section both in 2008 and 2012. Classified as an ECHI indicator of health system performance, child health, health inequalities and preventable burden of disease.

Rationale. A key indicator of primary prevention also adopted by the OMC Social Protection Committee. Planned as the possible key health inequalities indicator in the WHO 2020 Health Strategy.

Implementation and sources. Data are collected in all relevant European countries by means of the WHO-CIFIC database and published in Health for All. Data are comparable only insofar as the underlying immunisation schemes are harmonised, but this is not done in WHO-HfA data. Moreover, there might be deviations from the agreed definitions and Countries differences in the way they gather the information (by means of surveys or registers). A few Countries have modified their national calculation systems which can cause break in series.

Possible reasons for non-use. This indicator is very likely to be used for policy-making purposes, although policy-makers might prefer national data sets better reflecting the different general vaccination programmes.

Evidence of use for improvement in health outcomes. Childhood vaccination programs have had a dramatic impact on child morbidity and mortality worldwide. DTP3²³³ is

²³³ A universal effort to extend vaccination coverage to all children began in 1974 with the vaccine against diphtheria-tetanus-pertussis (DTP), measles-containing vaccine (MCV), polio vaccine (Pol), and Bacillus Calmette-Guérin (BCG) and was then extended to Haemophilus influenza type b (Hib) infection, yellow fever, and hepatitis B.

commonly used as an indicator²³⁴ to assess the performance of national vaccination systems because it captures a system capacity to repeatedly vaccinate the same individual. This is also a key indicator in the field of infectious diseases and immunisation in the US where it is collected by means of a survey.

57. Influenza vaccination rate in elderly

Status. Indicator in the implementation section in 2008 and 2012. Classified as an indicator of health systems performance, healthy ageing and preventable burden of disease.

Rationale. An indicator on reducing burden of disease and mortality by means of prevention.

Implementation and sources. An EHIS survey pilot-tested between 2006 and 2010 in 18 MS and one EEA and to be implemented starting from 2014 in a slightly modified version. Breakdown at the regional level not available. Age standardised data will not be available.

Possible reasons for non-use. MS might prefer administrative data if available or would like to have wider coverage of age groups. The relevant level for policy-making intervention might be at the regional/local level where ECHI data are not provided. EHIS sources are not stable enough for use for policy-making purposes.

Evidence of use for improvement in health outcomes. Vaccination in the elderly is associated with hospitalization reductions due to pneumonia and influenza and with somewhat controversial²³⁵ reductions in all-cause mortality both during the influenza season and at other times of the year. Therefore, it is unclear whether they deserve to be assessed separately from other age groups. The key US indicator on influenza vaccination, for instance, covers all age groups.

58. Breast cancer screening

Status. An indicator that has remained in the implementation section both in 2008 and in 2012. Currently classified as an indicator of health system performance and planning, of healthy ageing, of chronic diseases and of preventable burden of disease.

Rationale. An indicator envisaged as a EU public health policy priority

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as a fully-fledged EHIS indicator since 2014 on a temporary basis until moving to register-based sources when the quality of the latter has improved.

Possible reasons for non-use. No historical series available, uncertainties about future vertical comparability over time. No regional breakdown available where policy is implemented at the regional level. Member States might prefer more detailed indicators from programme data where available. Furthermore, it covers from age 50 onwards which might not be in line with policy specifications.

²³⁴ Lim, S. S., Stein, D. B., Charrow, A., & Murray, C. J. *Tracking progress towards universal childhood immunisation and the impact of global initiatives: a systematic analysis of three-dose diphtheria, tetanus, and pertussis immunisation coverage.* *Lancet*, 2008, 372(9655), 2031-2046

²³⁵ Kenny Wong, Michael A. Campitelli, Thérèse A. Stukel, Jeffrey C. Kwong, *Estimating Influenza Vaccine Effectiveness in Community-Dwelling Elderly Patients Using the Instrumental Variable Analysis Method.* *Arch Intern Med.* 2012;172(6):484-491. <http://archinte.jamanetwork.com/article.aspx?articleid=1108809>

Evidence of use for improvement in health outcomes. Improvement in health outcomes has been recently demonstrated on adherents to cancer screening programs by means of data from cancer registries²³⁶. However, in the US the indicator is monitored for policy-making purposes also by carrying out health interview surveys whose outcomes are less evident²³⁷.

59. Cervical cancer screening

Same considerations as above apply, but it is also one of the indicators of the Social Protection Committee, health and long care strand. EHIS data are provided for eight age groups that could not perfectly fit with national recommendations or targets.

60. Colon cancer screening

Again, same considerations as above apply, and the indicator is calculated only from age 50 onwards. This is considered the key cancer indicator for monitoring cancer policy in the US.

61. Timing of first antenatal visits among pregnant women

An indicator that has just moved from the development to the work-in-progress section, proposed by the PERISTAT project but not implemented yet by any international organisation and still at a somewhat early development stage. Perspective importance for policy-making purpose remains to be seen because there are differences across MS as to the recommended timing of first antenatal visit, as well as on what this should entail in terms of diagnostic tests and since no consensus could be found, proposals have been voiced to remove it from the ECHI shortlist, but have been rejected although the indicator will no longer be included as a core indicator in the new PERISTAT project.

62. Hospital beds

Status. An indicator that has always remained in the implementation section both in 2008 and 2012. It is classified as a general indicator of healthcare and health services and as an indicator of health inequalities.

Rationale. Mainstream healthcare capacity indicator expressed in terms of beds per 100000 inhabitants.

Implementation and source. Long collected by Eurostat based on administrative data. Data available for all European countries also at the regional level. In spite of common WHO, OECD, Eurostat definition there is still substantial variability in what the different Countries report (e.g. private institutions, long term nursing care or one day care facilities, only occupied beds included, etc.). Breaks in series because some Countries changed their data gathering system over time to better align it to the requirements of the common definition.

Possible reasons for non-use. The indicator might be deemed poorly significant per se outside of the context of the overall organisation of health services and therefore too ambiguous for setting policy targets or monitoring and evaluating policies.

²³⁶ Foca F. et al. *Decreasing incidence of late-stage breast cancer after the introduction of organised mammography screening in Italy*. *Cancer*. 2013 Mar 15.

²³⁷ Autier P, et al. *Advanced breast cancer incidence following population-based mammographic screening*. *Ann Oncol* 2011;22:1726-1735

Evidence of use for improvement in health outcomes. There has been remarkably little published evaluative research in the countries of Europe and central Asia on the consequences of changes in healthcare delivery. Reduction in hospital beds has not been associated with reduced healthcare in Canada and missed admission of acute patients is linked to exceedingly high occupancy rates²³⁸. The US do not monitor physical capital indicators as public health infrastructure, but have made the radically different choice of measuring human capital indicators (skills and competencies, curricula, continuing education, etc.) instead.

63. Physicians employed (practising physicians)

Status. Considered in the ECHI implementation section both in 2012 and 2008. Now classified as an indicator of health services and health care, a possible indicator of health inequalities and a HIAP indicator.

Rationale. Mainstream supply indicator of accessibility of health services. Indirect indicator of health system performance. Also officially adopted by the EU Social Protection Committee.

Implementation and source. Long collected by Eurostat as physicians per 100000 inhabitants. No data for France, Greece, Ireland, Italy and Malta. Data available at the regional level. Comparability issues still largely unknown (e.g. head counts or full time equivalents, practicing or licensed, categories such as employed in public health included or not, double counting, etc.). According to Eurostat, some countries claim they are unable to cover private providers of care or can cover some regions only. Since 2010 jointly collected by EUROSTAT, OECD and WHO-EUROPE.

Possible reasons for non-use. Unclear whether the indicator is not used in the five MS concerned or is used in the version locally available and simply not transmitted because of non-compliance with Eurostat standards. Possibly deemed irrelevant where oversupply of physicians is well-known and access to physicians is not deemed an issue or is relevant for policy purposes only at the micromanagement level.

Evidence of use for improvement in health outcomes. Studies show a negative relationship between the supply of primary care and death from stroke, infant mortality and low-birth weight, and all-cause mortality. This relation however does not apply to specialist carers²³⁹. A similar indicator is still under development in the US and has no targets attached yet. The preferred indicator for policy purposes so far is demand-driven and survey-based: i.e. number of persons with a primary care provider or a specific source of ongoing care and their breakdown by age-group.

64. Nurses employed (practising nurses)

The same considerations as above apply, but data are available for a much lower number of countries (11 in the EU, Croatia and 2 EEA) and with notable limitations again justified in terms of lack of access to primary sources or on regional grounds. In this case it appears unlikely that supply figures could be considered poorly significant for policy purposes as they can highlight shortage issues, but estimate of future

²³⁸ http://www.euro.who.int/__data/assets/pdf_file/0011/108848/E85032.pdf

²³⁹ Barbara Starfield, Leiyu Shi, Atul Grover, and James Macinko: *The Effects Of Specialist Supply On Populations' Health: Assessing The Evidence.*

http://www.aafp.org/online/etc/medialib/aafp_org/documents/press/patient-care-budget-reduction/specialists-effects-populations-health.Par.0001.File.tmp/Effects-Of-Specialist-Supply-Starfield.pdf

demand in a given timeframe might be deemed more relevant, together with the level of coverage of current needs. However there is no consolidated relation between number of nurses employed and health outcomes, but an indirect one mediated by workloads and patient safety. Similar indicator also under development in the US.

65. Mobility of professionals

A key indicator when it comes to measuring the freedom of movement of health workers and professionals and a possible ECHI indicator of health sustainability and planning, health inequalities and HIAP, the indicator has never moved out from the development section. A number of methodological disagreements still exist at the European level and Member States can provide data with substantially different definitions. The indicator is not currently implemented by any international organisation, although there are expectations that the WHO will get involved by means of the Global Code of Practice on the International Recruitment of Health Personnel. Due to its very early development status, it has been proposed for removal from the ECHI shortlist and inclusion in the list of ECHI priorities for future development.

66. Medical technologies MRI Units and CT scans

Status. Regularly implemented since 2008, the indicator has the same classification as #62 above, but for health system performance.

Rationale. Proxy for level of technological development in healthcare facilities, the indicator measures the number of available tomography scanners and magnetic resonance imaging units per 100,000 inhabitants.

Implementation and source. Data are provided by Eurostat based on national administrative sources and are available for seventeen states including Iceland. Comparability and reliability of data may vary in spite of common definitions agreed with WHO and OECD because of differences in data gathering techniques at the national level and different coverage of healthcare facilities.

Possible reasons for non-use. The indicator might be deemed poorly significant or even redundant for policy purposes because there are no general recommendations on the optimal ratio and the threshold for risk of overtreatment is unclear.

Evidence of use for improvement in health outcomes. The matter is still the subject of basic research. The US does not monitor physical capital indicators as public health infrastructure, but rather human capital indicators (skills and competencies, curricula, continuing education, etc.)

67. Hospital in-patient discharges

Status. An indicator in the implementation section both in 2008 and 2012. It is classified as an indicator of health system performance and health planning.

Rationale. The most common measure to evaluate the utilisation of hospital services, which can also be employed to estimate the burden of disease, preventable hospitalisation, and in cost and efficiency assessments. It is one of the key indicators of the OMC on Social Inclusion and Social Protection.

Implementation and sources. Implemented in all MS but Greece for unreported reasons and long series published by Eurostat in its website on a regular basis.

Availability of regional data inhomogeneous. According to the available information, it is difficult to assess the actual degree of data comparability. There are differences in the classification systems used, in coding practices and standards and in underlying financial incentives that are not always adequately reported by MS.

Possible reasons for non-use. There are abrupt breaks in time series that could hinder the usefulness of benchmarking for policy purposes although a data processing methodology has been developed to partly remedy this. Age standardized data are not available from Eurostat sources.

Evidence of use for improvement in health outcomes. Together with the average length of stay, hospital discharges are important indicators of hospital activities. However their relation with health outcomes is not straightforward. Hospital discharges can be affected by a number of factors, including the demand for hospital services, the capacity of hospitals to treat patients, the ability of the primary care sector to prevent avoidable hospital admissions, and the availability of post-acute care settings to provide rehabilitative and long-term care services. So it can be understood only in a context. No policy target has been attached to this indicator in the US.

68. Hospital daycases

Status. An indicator in the implementation section both in 2008 and 2012. It is classified as an indicator of health system performance and health planning and as an indicator of preventable burden of disease.

Rationale. It complements the information above and is also included as an OMC Indicator on Social Inclusion and Social Protection.

Implementation and sources. Implemented in all MS but Greece, Romania and Bulgaria. Figures are available from Eurostat and in certain cases also for regions. According to available information, it is difficult to assess the actual degree of data comparability and double counting of the same patient is still possible. There are differences in the classification systems used, in coding practices and standards and in underlying financial incentives that are not always adequately reported by MS.

Possible reasons for non-use. There are abrupt breaks in time series that could hinder usefulness of benchmarking for policy purposes.

Evidence of use for improvement in health outcomes. There is no direct relation between the indicator and health outcomes. In terms of health outcomes, most studies reported broadly similar findings for community-based services and inpatient care²⁴⁰, although the findings for length of treatment varied. No indicator has been tracked in the US in this respect.

69. Hospital day cases as percentage of total patient population

Indicator needs to be calculated from EUROSTAT indicators #67 and #68 above which is not centrally carried out by Eurostat yet, but can be done at the MS level. In this case, ECHI classification also includes health planning. Same limitations in data comparability and possible use for policy-making purposes apply.

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<http://www.health.org.uk/public/cms/75/76/313/2539/Getting%20out%20of%20hospital%20full%20version.pdf?realName=khHFdl.pdf>

70. Average Length of Stay

Status. An indicator that has regularly remained in the implementation section both in 2008 and 2012. It is classified as a general indicator of health care and systems and as an indicator of preventable burden of disease.

Rationale. A key indicator for health planning purposes and efficiency assessment. Also partially influenced by the reimbursement system in place. It is one of the key indicators of the OMC on Social Inclusion and Social Protection.

Implementation and sources. Implemented by Eurostat in all MS but Greece and generally available on a regular basis in long series. Availability of regional data inhomogeneous. Data provided often do not entirely match with Eurostat definitions and differ by sources included in coverage and degree of completeness of data. Tendency of hospitals to transfer patients to other hospitals artificially shortens average length of stay if patient is not tracked down in the reporting system.

Possible reasons for non-use. There are abrupt breaks in time series that could hinder usefulness of benchmarking for policy purposes although a data processing methodology has been developed to partly remedy this. Age standardised data are not available from Eurostat sources. Focusing on average length of stay for specific diseases or conditions can remove some of the heterogeneity that may arise from the different mix and severity of conditions across countries.

Evidence of use for improvement in health outcomes. According to the OECD²⁴¹ the average length of stay in hospitals is often regarded as an indicator of efficiency, since a shorter stay may reduce the cost per discharge and shift care from inpatient to less expensive post-acute settings. However, shorter stays tend to be more service intensive and more costly per day. Too short a length of stay could also have adverse effects on health outcomes, or reduce the comfort and recovery of the patient. If this leads to a rising readmission rate, costs per episode of illness may fall little, or even rise. To this aim no indicator is being tracked in the US for policy purposes.

71. General practitioner utilisation

Status. Indicator stably in the implementation section both in 2008 and 2012. Currently classified as an indicator for health planning and for health inequalities.

Rationale. A demand-driven indicator of access to health services with possible substantial implications in terms of health system performance and costs, as well as health inequality.

Implementation and source. Pilot tested at various levels of detail as EHIS survey between 2006 and 2010 in 17 MS and Norway. To be implemented as EHIS indicator since 2014, although some would have preferred also a register-based version. Comparability hindered by lack of age standardised results and remaining cultural differences in definition issues on what can be considered a general practitioner in the different countries.

Possible reasons for non-use and available comparisons. No historical series available, uncertainties about future vertical comparability over time. In present formulation the indicator requires very large sample to get rid of seasonal biases and could be

²⁴¹ OECD, *Health at a Glance* 2012.

perceived as too costly. Simpler national series with relevant breakdown by age group might be preferred as is currently the case in the US or emphasis on cost purposes (consultations over the last four weeks) deemed unnecessary or biased (visits and phone consultations are computed together). The indicator is poorly significant for health outcomes. Studies²⁴² have found that poorer patients often have more frequent general practitioner visits, but nevertheless suffer from worse outcomes.

72. Selected outpatient visits

Status. An indicator regularly in the implementation section since 2008, it is classified as an indicator of health planning that can also be used for health inequality purposes.

Rationale. A typical cost indicator also used for health equity assessment.

Implementation and sources. To be implemented as EHIS indicator after having been pilot tested in 18 MS and two EEA between 2006 and 2010. No regional data are available. Could be subject to seasonal bias and does not currently include mental care health providers. There is the parallel possibility of implementing it as a morbidity indicator based on registry data, but this has been temporarily dropped.

Possible reasons for non-use. Considered second best compared to good registry data when available at the national level. Requires large and costly sample to get rid of seasonality problems and allow extrapolations.

Evidence of Use for improvement in health outcomes. The indicator does not lend itself to measure health outcomes, but for cost purposes. No similar indicator has been tracked in the US.

73 Surgeries: PTCA, hip, cataract

Source. An indicator long remained in the implementation section, has been classified as an ECHI indicator of health system performance, health planning and health inequalities.

Rationale. A complex indicator that can cover prevalence of the underlying diagnosis, but also accessibility, quality of care and cost issues and as such should be carefully interpreted.

Implementation and sources. A Eurostat indicator implemented in all MS but Greece and Malta as well as Iceland. No regional breakdown of data available. Comparability suffers from differences in how registries are compiled and underlying financial incentives.

Possible reasons for non-use. There are abrupt breaks in time series that could hinder usefulness of benchmarking for policy purposes although a data processing methodology has been developed to partly remedy this. Age standardised data are not available from Eurostat sources. ECHI data might not be available for the relevant level of analysis (regional or local) in case of substantial intra-national variance.

Evidence of use for improvement in health outcomes. The indicator could be deemed too ambiguous for policy purposes because of the parallel risk of over and underutilisation of services and the difficulty in setting a benchmark for reference. No similar indicator is considered a policy target in the US.

²⁴² OECD *Reviews of Health Care Quality Denmark 2013*

74. Medicine use

Source. An indicator that has long shifted from the development to the implementation section and vice versa, but whose 2012 implementation status is now unclear after the recent EHIS developments. It is classified as an indicator of health system performance and planning, of health inequalities and preventable burden of disease.

Rationale. Another complex indicator that can cover aspects of quality of care and costs, as well as over or under use of prescriptions and as such should be carefully interpreted.

Implementation and sources. Conceived to be temporary implemented as EHIS indicator after having been pilot tested in 18 MS and two EEA between 2006 and 2010. However the EHIS version proposed for the next 2014 wave is not compatible with the current version of the indicator that remains without sources. There is a parallel OECD database not deemed comparable enough but relying on primary sources.

Possible reasons for non-use. Policy-makers could prefer national registry-based sources as reported in OECD database irrespective of strict comparability concerns. HIS could be deemed a stable enough source because it is already planned that the indicator will move to register data as soon as possible.

Evidence of use for improvement in health outcomes. The indicator does not really lend itself to benchmarking for policy purposes because of the exceeding number of factors impacting on drug use and therefore health outcomes. No similar indicator is used as a target in the US.

75. Patient mobility

A key indicator for EU relevant cross-border health that has moved from the development to the work in progress section because data have been collected on a pilot basis by Eurostat in 17 MS but not been published due to exceeding heterogeneity of methodologies and sources used at the MS level. However, since most Countries do collect data on cross-border patient flows it seems likely that these could be used for domestic policy-making purposes irrespective of any comparability concern. The indicator is currently classified as a general healthcare and health systems indicator and as an indicator of health inequalities.

76. Insurance coverage

Status. An indicator that has remained stable in the implementation section since 2008. Classified as an ECHI indicator of health sustainability and health inequalities

Rationale. EU reference indicator in the OMC on access quality and sustainability.

Implementation and source. Routinely available from OECD Health at a Glance sources. There are still major differences in the way non-residents, homeless and the unemployed are accounted for.

Possible reasons for non-use. Coverage is defined as independent of the scope of cost-sharing and the basket of benefits included which can hinder relevance for domestic policy-making and make international comparisons hardly significant once a 100%

level has been reached or for systems based on compulsory coverage. It does not address nominal coverage with large waiting times.

Evidence of use for improvement in health outcomes. While research has surely established that the uninsured have worse health outcomes than the rest of the population, the specific effect of insurance on improving health outcomes is not unanimously accepted in the literature²⁴³ because of possible confounding factors (e.g., insured and uninsured persons differ systematically in various behaviours that affect health, such as diet, smoking, and exercise). In spite of this academic debate, the indicator is considered the key access to health policy indicator in the US system.

77. Expenditure on health

Status. An indicator of health sustainability and performance also classified as an indicator of preventable health burden that has remained regularly in the implementation section since 2008.

Rationale. The routine long term indicator of healthcare system sustainability and one of the key indicators adopted by the OMC of the Social Protection Committee.

Implementation and sources. Regularly published for all MS but Greece, Ireland, Italy, Malta and the UK. Unclear the reasons why. Breakdown at the regional level not available and currently under discussion. Data are relatively well harmonized and 24 EU/EFTA countries in Europe follow the same OECD methodology. Information is published by EUROSTAT also in Purchasing Power Parities terms to get rid of any bias due to the level of prices.

Possible reasons for non-use. It is extremely unlikely that the indicator is not used in the five MS concerned but it seems more likely that it is simply not transmitted because of non-compliance with Eurostat standards. Health expenditure in GDP terms is routinely monitored across Europe, although some could deem per capita data more significant. However, the indicator does not easily lend itself to be used as a benchmark for policymaking purposes because it also depends on variables outside public control and does not necessarily translate into better health outcomes.

78. Survival rates cancer

Status. An indicator that has remained stable in the implementation section and currently classified as an ECHI indicator of health system performance and health inequalities.

Rationale. A summary indicator of the overall effectiveness of cancer policy, it measures survival at least five years after diagnosis.

Implementation and source. The source is represented by the EUROCARE database managed by IARC that depends on data supply and extrapolations from available registries. Data available for 20 MS and 3 EEA countries, but not at the regional level. The completeness of follow-up between countries may differ and deaths can be missed leading to overestimation of survival.

Possible reasons for non-use. Generally speaking the same factors that hinder horizontal comparability may also hinder vertical comparability over time and

²⁴³ Card, David, Carlos Dobkin and Nicole Maestas. "The Impact of Nearly Universal Insurance Coverage on Health Care: Evidence from Medicare." *American Economic Review* 98, 5 (December 2008): 2242–58.

therefore relevance for policy-making purposes. When national registries are complete and updated direct access to data might be perceived as preferable to extrapolations.

Evidence of use for improvement in health outcomes. Increasing cancer survival rates remains a major priority for improving outcomes. One-year relative survival rates have been used as an indicator of early diagnosis, since death before one year is likely to be due to the disease being diagnosed at a late stage. Indicator monitored for policymaking purposes also in the US.

79. 30-day in-hospital case fatality AMI and stroke

Status. An indicator regularly included in the implementation section both in 2008 and 2012. It is classified as an ECHI indicator of health system performance and health inequalities.

Rationale. An indicator of the quality of treatment of chronic cardiovascular diseases in hospitals.

Implementation and sources. A OECD Health Care Quality indicator extended by ECHI to non-OECD countries. Data are published for 19 European countries. No regional breakdown available. Data are age and sex standardised. Not all countries can track patients outside hospitals or can monitor double hospitalisations. As far as comparability purposes are concerned, OECD limits itself to in-hospital mortality.

Possible reasons for non-use. Countries might rely on more complete indicators starting from the early recognition of patients by bystanders and including the effectiveness of emergency services, since these factors can bias the results of purely hospital-based data. In the present version, the fatality rate seems lower simply because emergency services are less rigorous. Whenever possible, countries may prefer domestic non comparable indicators also assessing the out-of-hospital survival rate.

Evidence of use for improvement in health outcomes. An indicator directly related to health outcomes, although it may be biased by reverse selection considerations. The US prefers to monitor the percentage of survivors referred to rehabilitation purposes but has no specific quality of care indicator for hospitals.

80. Equity of access to health services (unmet needs)

Status. An indicator in the implementation section both in 2008 and 2012. Currently classified as an indicator of health sustainability and performance, of health inequalities and a HIAP indicator.

Rationale. Based on the assumption that self-reported unmet need corresponds to actual need for medical care, it is a key indicator for equity as far as access to health services is concerned. Adopted by the OMC on Social Inclusion and Social Protection.

Implementation and source. Implemented in all MS and two EEA with data disaggregated by age and socio-economic status but not level of education. No regional data available. Published figure is not age-standardised. No separate figure published for dental services. EU-SILC survey.

Possible reasons for non-use. Data are not provided at the regional/local level where the health system is managed and information could be of use and has therefore to be

collected otherwise. Insufficient breakdown of causes of unmet need. No information is provided on excessive delay in satisfying needs.

Evidence of use for improvement in health outcomes. Whether unmet health care need is associated with an increased risk of adverse health outcomes is still unclear in the literature²⁴⁴, although more strongly argued for certain groups (e.g. people with disabilities)²⁴⁵. A similar indicator is considered a key indicator on access to health in the US but it also includes delays.

81. Waiting times for elective surgeries

One of the few ECHI indicators actually investigating the issue of delay in the access to services. It has been declassified from the implementation section to the development section. It is currently classified as an indicator of health performance and planning and of health inequalities. Due to difficulties in implementation and data gathering far to be solved some MS have objected to have the indicator still included in the shortlist. It was entirely based on a pilot OECD study implemented in 2000 in six Member States and then published in 2003. Since then the indicator has never been replicated and the OECD reports it has no immediate plans to introduce it as part of their routine data collection activities. Possible reason for non-use include excessive variability of the data at the national level and limited significance for all the settings not immediately linked to the provision of services (regional, local, healthcare unit). Comparability suffers from the same limitations as insurance coverage above. Indicators on waiting times at a much higher level of detail might represent such an important day-to-day management tool at the relevant operational level to make higher level aggregations poorly relevant for policy unless national minimum standards are defined.

82. Surgical wound infections

Indicator downgraded from the implementation to the development section and considered as a proxy for hygiene in hospital settings. It is classified as an ECHI indicator of health systems performance, preventable risks and preventable burden of disease. The OECD gave it up five years ago because it deems unlikely that comparable data will ever be available. However, the indicator was never proposed for removal from the ECHI shortlist. The ECDC collects data from surveillance sources for 14 countries but for certain categories only. Other sources are also deemed not strictly comparable due to definitions. ECHIM has considered switching to postoperative sepsis data currently collected by the OECD in seven Member States. For policy target purposes, the US uses the catheter-related bloodstream infections, whereas the OECD deemed them unreliable for comparative purposes due to the exceeding variations in the range of data available. It is possible that horizontal constraints to data comparability across the States are more serious than vertical constraints at the national level only and therefore local data are preferred for policy-making purposes.

83. Cancer treatment delay

Status. An indicator ready for the implementation section in 2008, but then declassified as a development indicator in 2012 and proposed for further

²⁴⁴ Paul Everett Ronksley, Claudia Sanmartin, Hude Quan, Pietro Ravani, Marcello Tonelli, Braden Manns, Brenda R Hemmelgarn *Association between perceived unmet health care need and risk of adverse health outcomes among patients with chronic medical conditions* Open Medicine, Vol 7, No 1 (2013)

²⁴⁵ WHO Disability and health Fact sheet N°352 November 2012

reclassification as work-in-progress. Currently classified as an indicator of health system performance, health inequalities and chronic diseases.

Rationale. Indicator about the quality of cancer treatment and possible problems with equity and access to treatment.

Implementation and source. Implemented at the national level only on a pilot basis by the EUROCHIP project based on extrapolations of data from cancer registries. Information is routinely collected in three MS and two EEA countries and would be theoretically possible in 37% of the available registries covering another six MS and Croatia. Substantial changes in data collection should be introduced in the remaining countries. Currently not implemented on a routine basis by any international organisation. Discussions are still ongoing.

Possible reasons for non-use. It is unclear whether the additional costs of collecting the indicator for the purposes of explaining differences in cancer survival is justified by the added value as compared to rough extrapolations from other routine indicators. It might be used at the micromanagement level in decentralised systems and national data might be deemed irrelevant.

Evidence of use for improvement in health outcomes. Significance of delay varies according to the type of cancer and the development stage. Generally considered irrelevant for early stage diagnoses. In the US this indicator is currently deemed immaterial for policy-making purposes.

84. Diabetes control

An OECD indicator measuring the quality of diabetes control based on retinal exam and implemented in seven MS only and for which no regular data gathering is envisaged, mainly due to the difficulty of obtaining data from patient records. The indicator was therefore downgraded from the implementation section to the development section. It is classified as an indicator of health system, performance, health ageing, health inequalities, chronic diseases and preventable burden of disease. Significance for policy purposes has been questioned because of missing diagnoses and because register data are biased by the degree of utilization by practitioners. OECD dropped the original idea of monitoring A1c because of the inadequate number of countries gathering data. The indicator is still shortlisted due to the parallel activities of the EUBIROD project, but should it fail to become sustainable, a proposal has already been made to move it from the shortlist to the list of ECHI priorities. On the contrary the US has elected HbA1c as the indicator of choice in monitoring diabetes and implements it by means of health examination surveys on a sample of the population as a whole.

A.7 - Health interventions: Health promotion

85. Policies on ETS exposure

Source. Always considered in the implementation section. It is classified as an indicator of preventable health burden.

Rationale. The indicator is a composite indicator of measures undertaken to reduce exposure to environmental tobacco smoke.

Implementation and source. Raw data available for all European countries in the WHO Euro-tobacco database, but the indicator has not been centrally computed yet.

Possible reasons for non-use. National policy-makers might deem composite indicators poorly informative or be more interested in enforcement aspects that are not covered.

Evidence of use for improvement in health outcomes. According to WHO reports and other sources, the use of surveys on smoking prevalence in the adult population can be used as a proxy of ETS exposure²⁴⁶. Exposure to ETS has a statistically significant effect on a range of health outcomes. Pilot studies have found that the health gains from a total eradication of ETS exposure in public places are small on a per-capita basis but substantial when applied to the entire non-smoking populations. The US indicator separately monitors all the aspects potentially concerned and directly reports on the number of states complying with the related provisions.

86. Policies on healthy nutrition

An atypical indicator that never moved out of the development section and was aimed at building a composite index of laws, regulations and good practices on promoting healthier nutrition as was done for tobacco smoke exposure. The indicator is currently classified as a child health, health inequalities, preventable health risks and preventable health burden indicator. However, for the time being there is no such thing as a preliminary agreement even on definition issues, calculation methodologies and possible data sources. In general terms, such indicators discount the problem that the adoption of formal measures do not imply similar levels of enforcement and that voluntary agreements cannot be weighted in effective terms with bans and are more likely to assess policy-makers' actions at the national level than to be used by policy-makers themselves. Some MS have already proposed that the indicator should not be included in the ECHI shortlist.

87. Policies and practices in healthy lifestyles

An atypical indicator that never moved out of the development section and is aimed at building a composite index of laws, regulations and good practices on promoting healthier lifestyles as was done for tobacco smoke exposure but on which for the time being there is much less consensus and no such thing as a preliminary agreement even on items to be included, calculation methodologies and possible data sources. The indicator is classified as a child health, health inequalities, preventable health risks and preventable health burden ECHI indicator, but was proposed for discontinuation and inclusion in the list of priorities for health information because of the very limited progress made in its development.

88. Integrated programmes in settings including workplace, schools, hospital

Same as above but with reference to not better specified health promotion programmes in dedicated settings to be defined. Scope of indicator and harmonised measurement means still to be defined. In this case, it is also classified as a HIAP indicator. Also proposed for discontinuation.

²⁴⁶ World Health Organization. *Tobacco free initiative. International consultation on environmental tobacco smoke (ETS) and child health.* Geneva: WHO; 1999

ANNEX B - Health indicators used by the open method of coordination - Health care and long term care

List of indicators agreed be employed within the framework of the EU Open Method of Coordination on social protection for measuring and identifying best practices in the provision of health care and long-term health care.

Commonly agreed indicators	Definition	Source
<u>NAT</u> : Self reported unmet need for medical care.	Total self-reported unmet need for medical care in terms of number of people who reported that at least once in the previous 12 months they felt they needed medical care and did not receive it either because they had to wait, or it was too expensive, or it was too far away.	EUROSTAT EU-SILC
<u>NAT</u> : Care Utilisation	The number of visits to a doctor (GP or specialist) during the last 12 months	OECD and National Data
<u>NAT</u> : Self reported unmet need for dental care	Total self-reported unmet need for dental care in terms of the number of people who reported that at least once in the previous 12 months they felt they needed dental care and did not receive it either because they had to wait, or it was too expensive, or it was too far to away.	EUROSTAT EU-SILC
<u>NAT</u> : Dental care utilisation	The number of visits to the dentist per capita.	OECD health data and national sources for non-OECD members. In future reporting exercises, EHIS data is to be used.
<u>NAT</u> : The proportion of the population covered by health insurance	The percentage of the population covered by public health insurance (defined as tax-based public health insurance and income-related payroll taxes including social security contribution schemes) And The percentage of the population covered by private health insurance including private mandatory health insurance, private employment group health insurance, private community-rated health insurance, and private risk-rated health insurance.	OECD and national data sources
<u>EU</u> : Life expectancy	The mean number of years that a newborn child (or that of a specific age) can expect to live if subjected throughout life to the current mortality conditions (age specific probabilities of dying)	EUROSTAT
<u>NAT</u> : Life expectancy by socio-economic status	Life expectancy as defined above but in terms of socio-economic status (such as the level of education or income quintile) (at birth = socio-economic status of parents).	National Sources Data
<u>NAT</u> : Healthy Life Years	The number of years that a person is expected to live in a healthy condition i.e. the number of	EUROSTAT

Commonly agreed indicators	Definition	Source
	years of life free of any activity limitation (also called disability-free life expectancy). This is a composite indicator based on self-perceived limitations in daily activities and is to be interpreted jointly with life expectancy.	
NAT: Healthy life years by socio-economic status	Healthy life years as defined above but presented by socio economic status such as level of education and income quintile. (at birth = socio economic status of parents)	National Data Sources
NAT: Self-perceived limitations in daily activities	The percentage sum of people reporting themselves as being limited or very limited in carrying out daily activities.	EUROSTAT EU-SILC
NAT: Self-perceived general health	The percentage sum of people reporting bad or very bad health.	EUROSTAT EU-SILC
EU: Infant Mortality	The ratio of the number of deaths of children under one year of age during the year to the number of live births in that year. The value is expressed per 1 000 live births.	EUROSTAT
NAT: Infant Mortality by socio-economic status	Infant mortality as defined as above but presented by socio-economic status of parents (such as the level of education, income quintile).	National data sources
EU: Vaccination coverage in children	Percentage of infants reaching their 1st birthday in the given calendar year who have been fully vaccinated against pertussis (whooping cough), diphtheria, tetanus (DPT) and poliomyelitis. And Percentage of infants reaching their 2nd birthday in the given calendar year who have been fully vaccinated against measles, mumps and rubella (MMR)	WHO-Health for All Database
EU (NAT in 2008): Cervical cancer screening	The percentage of women aged 20-69 that were screened for cervical cancer using a cervical smear test over the past 3 years.	OECD and National Data Sources
NAT: Cervical cancer survival rates	The percentage of those still alive five years after the disease has been diagnosed compared to a non-diseased comparison group of similar age-structure (relative rates)	ECHI data based on information provided by the international agency on research on cancer (IARC)
NAT: Colorectal cancer survival rates	The percentage of those still alive five years after the disease has been diagnosed compared to a non-diseased comparison group of similar age structure (relative rates).	OECD and National Data Sources
NAT: Satisfaction with health care services	The proportion of the population satisfied i.e. that find the following types of services good (very and fairly good): a) GPs/family doctors b) Specialists c) Hospitals	Eurobarometer 283

Commonly agreed indicators	Definition	Source
	d) Dental Care Services	
EU (NAT in 2008): Influenza vaccination for adults over 65+	Percentage of those aged 65+ that have been vaccinated against influenza in the last year	OECD and National Data Sources
EU (NAT in 2008): Breast cancer screening	Percentage of women aged 50-69 that were screened for breast cancer using mammography over the past year	OECD and National Data Sources
NAT: Breast cancer survival rate	The percentage of those still alive five years after the disease has been diagnosed compared to a non-diseased comparison group of similar age-structure (relative rates).	ECHI data based on information provided by the international agency on research on cancer (IARC)
NAT: Perinatal Mortality	Generally defined as the number of foetal deaths (over 1 000g) plus neonatal deaths (0-6 days) per 1 000 live births. However we are aware that some Member States define the term differently and would ask Member States to report their definitions so that we can note the differences.	EUROSTAT and WHO health for all database
NAT: Total health expenditure per capita	Total health expenditure per capita in PPP	OECD health data 2007 and WHO Health for All Database
NAT: Total health care expenditure as a % of GDP	Total public and private expenditure on health as % of GDP. Public health care expenditure includes government spending (including central government, state/provincial government and local/municipal government) and social security funds. Private health care expenditure includes private health insurance (private social insurance + private insurance other than social insurance), private households out of pocket expenditure, non-profit institutions and private corporations other than health insurance such as private companies funding occupational health care.	OECD health data 2007 and WHO Health for All Database
NAT: Total long-term care expenditure as a % of GDP	Expenditure on long-term nursing care (category HC.3 in the SHA) plus expenditure with administration and provision of social services in kind to assist living with disease and impairment (category HC.R.6.1 in the SHA), as a percentage of GDP	EUROSTAT based on SHA data
NAT: Projections of public expenditure on health care as a % of GDP	Age-related projections of health care, current level (% of GDP) and projected change in share of GDP (in percentage points) from 2010 to 2050.	EC/EPC (AWG) 2006
NAT: Projections of public expenditure on long-term care as % of GDP	Age-related projections of long-term care, current level (% of GDP) and projected change in share of GDP in percentage points (2010-2050).	EC/EPC (AWG) 2006

Commonly agreed indicators	Definition	Source
EU (NAT in 2008): Obesity	The percentage of obese persons in the population i.e. the percentage of the population with BMI $\geq 30\text{kg/m}^2$	National HIS, OECD Health Data 2007 and National Data Sources reported and "harmonised" by EUROSTAT
AT: Sales of generics	The percentage of the generics sales in all prescribed medicine sales	National Data Sources
NAT: Acute care bed occupancy rates	The number of acute care beds effectively occupied in inpatient institutions divided by the number of available acute care beds and multiplied by 100.	OECD health data, WHO-HFA database for non-OECD countries, and national data sources
NAT: Hospital average length of stay	The number of days stayed in the hospital divided by the number of hospital discharges or deaths in hospital.	EUROSTAT
EU (NAT in 2008): Regular smokers	The percentage of daily cigarette smokers in the population aged 15+	National HIS and OECD
EU (NAT in 2008): Alcohol consumption	The number of litres of pure alcohol per person a year	National HIS and OECD
NAT: Physicians	Total number of practising physicians per 100 000 inhabitants	EUROSTAT
NAT: Nurses and midwives	Total number of practising nurses and midwives per 100 000 inhabitants	EUROSTAT
NAT: Public and private expenditure as a % of total health expenditure	<p>a) Total public expenditure which includes government spending (HF.1.1 central government HF.1.1.1, state/provincial government HF.1.1.2 and local/municipal government HF.1.1.3) plus social security funds HF.1.2 according to SHA.</p> <p>b) Total private expenditure which includes private health insurance (private social insurance HF.2.1 + private insurance other than social insurance HF.2.2) plus private households out of pocket expenditure HF.2.3 plus non-profit institutions HF.2.4 and private corporates other than health insurance such as private companies funding occupational health care HF.2.5 according to SHA</p> <p>c) private health insurance expenditure HF.2.1 + HF.2.2</p> <p>d) out-of-pocket payments expenditure HF.2.3 as a percentage of total health expenditure</p>	OECD health data 2007 and WHO Health for All Database
NAT: Total expenditure on main types of activities or functions of care	<p>This means analysing the proportion of total current health care expenditure that is allocated to the following activities or functions of care.</p> <p>a) services of curative (HC.1) and b) services of rehabilitative care (HC.2) (together)</p> <p>c) ancillary services to health care (HC.4)</p>	EUROSTAT based on SHA, OECD based on SHA

Commonly agreed indicators	Definition	Source
	<p>d) medical goods dispensed to outpatients (HC.5)</p> <p>e) prevention and public health (HC.6) as a percentage of total current health expenditure.</p> <p>This analysis also looks at pharmaceutical expenditure in more detail by looking at expenditure on</p> <p>e) pharmaceuticals and other medical non-durables (HC.5.1) as a percentage of total current health expenditure and as a percentage of GDP</p>	

Note: EU= to be collected at the European level; NAT = to be collected at the national level

ANNEX C - Results of the bibliometric analysis

The table below combine in a unified database the results of the searches run in both PubMed and OVID. The searches were carried out using the following parameters:

- *ECHI in text, title or abstract*
- *ECHIM in title, text or abstract*
- *"European Community" AND "Health Indicators" in text or title*
- *"European Union" AND "Health Indicators" in text or title*
- *EC AND "Health Indicators" in text or title*
- *EU AND "Health Indicators" in text or title*
- *"European Community Health Indicators" in text or title*
- *"HEIDI wiki" in title, text or abstract*
- *European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)*

The "Category" column refers to the various categories of the ECHI literature defined as follows:

6. ECHI-related publications authored by first-hand participants in the ECHI project and the ECHIM JA.
7. Publications written in the context of other European projects that aim, inter alia, at producing public health indicators and possibly advocate for the inclusion of their indicators in the ECHI shortlist.
8. Articles documenting or advocating for the systematic use of indicators (with explicit reference to ECHI, or alternatively using ECHI as an incidental term of comparison) in policy making.
9. Articles delving into devising and using indicators in very specific public health areas, often on a country or sub-country basis.
10. Articles of various kinds, where the ECHI initiative (or an alternative indicator system) appears only tangentially. This subset of the literature has been classified under the label "miscellaneous".

Articles are displayed in alphabetical order following the surname of the first author by author sequence.



European
Commission

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
1	Abu-Omar K. Rutten A. Relation of leisure time, occupational, domestic, and commuting physical activity to health indicators in Europe. Preventive Medicine. 47(3):319-23, 2008 Sep.	3									X	36
2	Achterberg PW, Kramers PG, van Oers HA, European community health monitoring: the EUPHIX-model, Scandinavian Journal of Public Health. 2008 Sep;36(7):676-84	2	X									4
3	Allebeck, Peter, Which health data for Europe?, European Journal of Public Health. 22(5):611, October 2012	3	X									0
4	Anderson GF. Frogner BK. Johns RA. Reinhardt UE. Health care spending and use of information technology in OECD	5									X	63

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	countries. Health Affairs. 25(3):819-31, 2006 May-Jun.											
5	Arah, Onyebuchi A.; Westert, Gert P.; Hurst, Jeremy; Klazinga, Niek S., A conceptual framework for the OECD Health Care Quality Indicators Project, International Journal for Quality in Health Care. 18 (Supplement 1):5-13, September 2006	3	X									50
6	Aromaa A, on behalf of the ECHIM core group Implementation of joint health indicators in Europe - Joint Action for ECHIM. , Archives of Public Health 2012, 70:22	1	X									Archives of Public Health not found in Web of Science
7	Aromaa A. Koponen P. Tafforeau J. Vermeire C. HIS/HES Core Group. Evaluation of Health Interview Surveys and Health Examination Surveys in the European Union. European Journal of Public Health. 13(3 Suppl):67-72, 2003 Sep.	2									X	32
8	Aromaa A. Health observation and health reporting in Europe. Revue d'Epidemiologie et de Sante Publique. 46(6):481-90, 1998 Dec.	3									X	7

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
9	Bauer G, Davies JK, Pelikan J, The EUHPID Health Development Model for the classification of public health indicators, Health Promotion International, 2006 Jun;21(2):153-9.	2			X							11
10	Bauer, G.; Davies, J.K.; Pelikan, J.; Noack, H.; Broesskamp, U.; Hill, C., Advancing a theoretical model for public health and health promotion indicator development: Proposal from the EUHPID consortium, European Journal of Public Health. The European Union Health Monitoring Programme. 13 (Supplement 1):107-113, September 2003	2	X									12
11	Benach J. Gimeno D. Benavides FG. Martinez JM. Torne Mdel M. Types of employment and health in the European union: changes from 1995 to 2000. European Journal of Public Health. 14(3):314-21, 2004 Sep.	5									X	31
12	Benavides FG. Benach J. Diez-Roux AV. Roman C. How do types of employment relate to health indicators? Findings from the second European survey on working	2									X	119

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	conditions. Journal of Epidemiology & Community Health. 54(7):494-501, 2000 Jul.											
13	Boedeker, W.; Kreis, Julia, Work-related health monitoring in Europe from a public health perspective, European Journal of Public Health. The European Union Health Monitoring Programme. 13 (Supplement 1):91-94, September 2003	2	X									3
14	Bott OJ. Hoffmann I. Bergmann J. Gusew N. Schnell O. Gomez EJ. Hernando ME. Kosche P. von Ahn C. Mattfeld DC. Pretschner DP. HIS modelling and simulation based cost-benefit analysis of a telemedical system for closed-loop diabetes therapy. International Journal of Medical Informatics. 76 Suppl 3:S447-55, 2007 Dec.	5									X	4
15	Brussaard JH. Johansson L. Kearney J. EFCOSUM Group. Rationale and methods of the EFCOSUM project. European Journal of Clinical Nutrition. 56 Suppl 2:S4-7, 2002 May.	2									X	18

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
16	Brussaard JH. Lowik MR. Steingrimsdottir L. Moller A. Kearney J. De Henaau S. Becker W. EFCOSUM Group. A European food consumption survey method--conclusions and recommendations. European Journal of Clinical Nutrition. 56 Suppl 2:S89-94, 2002 May.	2									X	50
17	Buitendijk S, Zeitlin J, Cuttini M, Langhoff-Roos J, Bottu J, Indicators of fetal and infant health outcomes, European Journal of Obstetrics & Gynecology and Reproductive Biology. 2003 Nov 28;111 Suppl 1:S66-77.	3				X						54
18	Dauben HP. Forde OH. Loud ML. Isacsson SO. Paccaud F. Sanchez E. Steiger TS. Health promotion and disease prevention as a complement to community health indicators. Working group 1. International Journal of Technology Assessment in Health Care. 18(2):238-72, 2002.	3									X	3

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
19	De Henauw S. Brants HA. Becker W. Kaic-Rak A. Ruprich J. Sekula W. Mensink GB. Koenig JS. EFCOSUM Group. Operationalization of food consumption surveys in Europe: recommendations from the European Food Consumption Survey Methods (EFCOSUM) Project. European Journal of Clinical Nutrition. 56 Suppl 2:S75-88, 2002 May.	2									X	18
20	EUROCISS Working Group. Coronary and cerebrovascular population-based registers in Europe: are morbidity indicators comparable? Results from the EUROCISS Project. European Journal of Public Health. 13(3 Suppl):55-60, 2003 Sep.	2									X	1
21	Fabianova K. Benes C. Kriz B. A steady rise in incidence of pertussis since nineties in the Czech Republic. Epidemiologie, Mikrobiologie, Imunologie. 59(1):25-33, 2010 Feb.	4									X	2
22	Farchi S, Molino N, Giorgi Rossi P, Borgia P, Krzyzanowski M, Dalbokova D, Kim R, European Road Accident Working Group, Defining a	2						X				7

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	common set of indicators to monitor road accidents in the European Union, BMC Public Health. 2006 Jul 11;6:183											
23	Fleming DM. Pavlic DR. Information from primary care: its importance and value. A comparison of information from Slovenia and England and Wales, viewed from the 'Health 21' perspective. European Journal of Public Health. 12(4):249-53, 2002 Dec.	4									X	6
24	Fleming DM. Schellevis FG. Paget WJ. Health monitoring in sentinel practice networks: the contribution of primary care. European Journal of Public Health. 13(3 Suppl):80-4, 2003 Sep.	5									X	10
25	Gajic-Stevanovic M. Teodorovic N. Dimitrijevic S. Jovanovic D. [Assessment of financial flow in the health system of Serbia in a period 2003-2006]. [Serbian] Vojnosanitetski Pregled. 67(5):397-402, 2010 May.	4									X	0

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
26	Gissler M. Mohangoo AD. Blondel B. Chalmers J. Macfarlane A. Gaizauskiene A. Gatt M. Lack N. Sakkeus L. Zeitlin J. Euro-Peristat Group. Perinatal health monitoring in Europe: results from the EURO-PERISTAT project. Informatics for health & social care. 35(2):64-79, 2010 Mar.	2									X	6
27	Gurtler R. [Safety of food additives from a German and European point of view]. [German] <Sicherheit von Lebensmittelzusatzstoffen aus nationaler und EU-Sicht.> Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz. 53(6):554-60, 2010 Jun.	4									X	0
28	Hill, Chloe, Workshop 24: The development of European Health Promotion Monitoring System: the EUHPID project: 2. Links with the ECHI System, European Journal of Public Health. 11th Annual EUPHA Meeting: program and abstracts. 13 (Supplement 2):37, December 2003	2	X									0 EUPHA Program and abstracts not found in Web of Science

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
29	Huisman M, Mackenbach JP, Kunst AE, Socioeconomic inequalities in morbidity among the elderly; a European overview, Social Science & Medicine. 57(5):861-73, 2003 Sep.	5			X							124
30	Jané-Llopis E, Mental health promotion: concepts and strategies for reaching the population, Health Promot J Austr. 2007 Dec;18(3):191-7	5					X					0
31	Jensen JJ, Gulis G, Larsen M, Pedersen HS, Andersen PT, [New European model for cross-sectorial health initiatives], Ugeskr Laeger. 2010 Aug 9;172(32):2161-4	2						X				0
32	Kalnins I. Latvian community nurses practising in a time of turmoil: a thin line of defence for children at risk. International Nursing Review. 49(2):111-21, 2002 Jun.	4									X	0
33	Keune H, Ludlow D, van den Hazel P, Randall S, Bartonova A, A healthy turn in urban climate change policies; European city workshop proposes health indicators as policy integrators, Environmental Health. 2012 Jun 28;11	2						X				2

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	Suppl 1:S14											
34	Kilpeläinen K, Tuomi-Nikula A, Thelen J, Gissler M, Sihvonen AP, Kramers P, Aromaa A, Health indicators in Europe: availability and data needs, 2012, European Journal of Public Health. 22(5):716-21, 2012 Oct.	1	X									1
35	Kisser R, Latarjet J, Bauer R, Rogmans W, Injury data needs and opportunities in Europe, International Journal of Injury Control & Safety Promotion. 16(2):103-12, 2009 Jun.	5						X				3
36	Köhler L, Rigby M, Indicators of children's development: considerations when constructing a set of national Child Health Indicators for the European Union, Child: Care, Health and Development, 2003 Nov;29(6):551-8.	3						X				8
37	Korkeila J, Lehtinen V, Bijl R, Dalgard OS, Kovess V, Morgan A, Salize HJ, Establishing a set of mental health indicators	3				X						21

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	for Europe, Scand J Public Health. 2003;31(6):451-9.											
38	Krafft T. Garcia Castrillo-Riesgo L. Edwards S. Fischer M. Overton J. Robertson-Steel I. Konig A. European Emergency Data Project (EED Project): EMS data-based health surveillance system. European Journal of Public Health. 13(3 Suppl):85-90, 2003 Sep.	2									X	4
39	Kramers PG, (2003) 'The ECHI project: health indicators for the European Community', European Journal of Public Health, Sep;13(3 Suppl):101-6	1	X									30
40	Kramers, P.; on behalf of the ECHI team, Workshop 10: Health indicators at sub-national levels: ECHI and ISARE: Health indicators at national and subnational levels, European Journal of Public Health. 11th Annual EUPHA Meeting: program and abstracts. 13 (Supplement 2):21, December 2003	2	X									0 EUPHA Program and abstracts not found in Web of Science

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41	Kuulasmaa K, Tolonen H, Koponen P, Kilpeläinen K, Avdicová M, Broda G, Calleja N, Dias C, Gösswald A, Kubinova R, Mindell J, Männistö S, Palmieri L, Tell GS, Trichopoulou A and Verschuren WMM, An overview of the European Health Examination Survey Pilot Joint Action, Archives of Public Health. 2012 Aug 28;70(1):20	1						X				Archives of Public Health not found in Web of Science
42	Lack N, Blondel B, Mohangoo AD, Sakkeus L, Cans C, Bouvier-Colle MH, Macfarlane A, Zeitlin J, Reporting of perinatal health indicators for international comparisons-enhancing the appearance of geographical plots, European Journal of Public Health. 2013 Jan 7	3						X				0
43	Leterme, Yves. Testori Coggi, Paola, Health at a glance: Europe 2012, 2012	5	X									Not a journal article
44	Linehan, Christine; Walsh, P. N.; Van Schrojenstein Lantman-de Valk, H. M. J.; Kerr, M. P.; Dawson, Frances; on behalf of the Pomona-1 Group, Are People with Intellectual Disabilities Represented in European Public Health	2	X									9

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	Surveys?, Journal of Applied Research in Intellectual Disabilities. 22(5):409-420, September 2009											
45	Madsen, Mette a; Gudnason, Vilmondur b; Pajak, Andrzej c; Palmieri, Luigi d; Rocha, Evangelista C. e; Salomaa, Veikko f; Sans, Susana g; Steinbach, Konrad h; Vanuzzo, Diego i; on behalf of the EUROCISS Research Group, Population-based register of acute myocardial infarction: manual of operations, European Journal of Cardiovascular Prevention & Rehabilitation. 14 (Supplement 3):S3-S22, December 2007	2		X								4
46	Magee, Hugh F., The Hospital Data Project: Comparing hospital activity within Europe, European Journal of Public Health. The European Union Health Monitoring Programme. 13 (Supplement 1):73-79, September 2003	2	X									3

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
47	Martinez-Leal R. Salvador-Carulla L. Linehan C. Walsh P. Weber G. Van Hove G. Maatta T. Azema B. Haveman M. Buono S. Germanavicius A. van Schrojenstein Lantman-de Valk H. Tossebro J. Carmen-Cara A. Moravec Berger D. Perry J. Kerr M. The impact of living arrangements and deinstitutionalisation in the health status of persons with intellectual disability in Europe. Journal of Intellectual Disability Research. 55(9):858-72, 2011 Sep.	2									X	4
48	Mattke, Soeren; Epstein, Arnold M.; Leatherman, Sheila, The OECD Health Care Quality Indicators Project: history and background, International Journal for Quality in Health Care. 18 (Supplement 1):1-4, September 2006	5	X									22
49	Mazur J. Mierzejewska E. [Modern approaches to child and adolescent health assessment at population level]. [Polish] <Wspolczesne podejscia do oceny stanu zdrowia dzieci i mlodziezy na poziomie populacji.> Medycyna Wieku	4									X	Journal not in Web of Science

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	Rozwojowego. 8(3 Pt 1):459-84, 2004 Jul-Sep.											
50	Mazzucco W. Cusimano R. Macaluso M. La Scola C. Fiumano G. Scondotto S. Cernigliaro A. Corsello G. La Torre G. Vitale F. A retrospective follow up study on maternal age and infant mortality in two Sicilian districts. BMC Public Health. 11:817, 2011.	4									X	1
51	McCarthy, Mark, Targets for health in Europe: the debate continues, European Journal of Public Health. 22(4):455-456, August 2012	3								X		1
52	Micheli A, Capocaccia R, Martinez C, Mugno E, Coebergh JW, Baili P, Verdecchia A, Berrino F, Coleman M, Cancer control in Europe: a proposed set of European cancer health indicators, European Journal of Public Health. 13(3 Suppl):116-8, 2003 Sep.	3				X						14

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
53	Noonan-Walsh P, Kerr M, van Schroyenstien Lantman-de Valk H, Health indicators for people with intellectual disabilities: A European perspective, EUROPEAN JOURNAL OF PUBLIC HEALTH 2003; 13 (3 SUPPLEMENT): 47-50	2	X									22
54	Ochoa A, Imbert F, Ledésert B, Pitard A, Grimaud O, Health indicators in the European Regions, Eur J Public Health. 2003 Sep;13(3 Suppl):118-9	3				X						4
55	Ottolenghi L, Muller-Bolla M, Strohmer L, Bourgeois D, Oral health indicators for children and adolescents: European perspectives, European Journal of Paediatric Dentistry, 2007 Dec;8(4):205-10.	3				X						1
56	Pastor AM. Galindo SB. Hernandez ML. Navarro AM. Bernal CC. Aleman JA. [Association between the consumption of tobacco and alcohol and physical exercise while at university]. [Spanish] <Relacion entre el consumo de tabaco y alcohol y el ejercicio fisico con el paso por la universidad.>	4									X	0

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	Atención Primaria. 41(10):558-63, 2009 Oct.											
57	Perry J, Linehan C, Kerr M, Salvador-Carulla L, Zeilinger E, Weber G, Walsh P, van Schroyen Lantman-de-Valk H, Haveman M, Azema B, Buono S, Căra AC, Germanavicius A, Van Hove G, Määttä T, Berger DM, Tossebro J, The P15 - a multinational assessment battery for collecting data on health indicators relevant to adults with intellectual disabilities, Journal of Intellectual Disability Research. 2010 Nov;54(11):981-91	3						X				7
58	Pitard, A. 1; Imbert, A. 2; Ledesert, B. 3; Ochoa, A. 4; Isare II steering group, Workshop 10: Health indicators at sub-national levels: Isare II: feasibility of gathering regional data, European Journal of Public Health. 11th Annual EUPHA Meeting: program and abstracts. 13 (Supplement 2):21,	2	X									0 EUPHA Program and abstracts not found in Web of Science

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	December 2003											
59	Primatesta, Paola a; Allender, Steven b; Ciccarelli, Paola c; Doring, Angela d; Graff-Iversen, Sidsel e; Holub, Jiri f; Panico, Salvatore g; Trichopoulou, Antonia h; Verschuren, W.M. Monique i; on behalf of the EUROCISS Research Group, Cardiovascular surveys: manual of operations, European Journal of Cardiovascular Prevention & Rehabilitation. 14 (Supplement 3):S43-S61, December 2007	2		X								3
60	Quattrin R. Loik F. Panariti M. Brusaferrero S. Which child health and non child health indicators are appropriate for programming health services at a district level?. Igiene e Sanita Pubblica. 63(4):403-18, 2007 Jul-Aug.	3									X	Journal not in Web of Science

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
61	Rehm, Jurgen; Scafato, Emanuele, Indicators of alcohol consumption and attributable harm for monitoring and surveillance in European Union countries. <i>Addiction</i> , 106 (Suppl. 1):4-10, March 2011	3		X								4
62	Rigby MJ, Köhler LI, Blair ME, Metchler R, Child health indicators for Europe: a priority for a caring society, <i>European Journal of Public Health</i> . 2003 Sep;13(3 Suppl):38-46.	3			X							16
63	Risk A. Dzenowagis J. Review of internet health information quality initiatives. [Review] [41 refs] <i>Journal of Medical Internet Research</i> . 3(4):E28, 2001 Oct-Dec.	5									X	73
64	Robine JM, Cambois E, Nusselder W, Jeune B, Van Oyen H, Jagger C, The joint action on healthy life years (JA: EHLEIS), <i>Archives of Public Health</i> . 2013 Feb 4;71(1):2	2						X				Archives of Public Health not in
65	Rutten A. Vuillemin A. Ooijendijk WT. Schena F. Sjostrom M. Stahl T. Vanden Auweele Y. Welshman J. Ziemainz H. Physical activity monitoring in Europe. <i>The European Physical Activity</i>	2									X	34

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	Surveillance System (EUPASS) approach and indicator testing. Public Health Nutrition. 6(4):377-84, 2003 Jun.											
66	Sannerstedt R. Lundborg P. Danielsson BR. Kihlstrom I. Alvan G. Prame B. Ridley E. Drugs during pregnancy: an issue of risk classification and information to prescribers. Drug Safety. 14(2):69-77, 1996 Feb.	5									X	31
67	Saxena S. van Ommeren M. Lora A. Saraceno B. Monitoring of mental health systems and services: comparison of four existing indicator schemes. Social Psychiatry & Psychiatric Epidemiology. 41(6):488-97, 2006 Jun.	3									X	6
68	Scanzano P, Caracci G, Casertano L, Splendori F, Gillespie F, Fara GM, [Public health: from the past toward new frontiers]. [Italian] <Sanita Pubblica: dal passato alle nuove frontiere.> Annali di Igiene. 17(2):87-94, 2005 Mar-Apr.	4	X									Journal not in Web of Science

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
69	Siesling S, Kwast A, Gavin A, Baili P, Otter R, Availability of stage at diagnosis, cancer treatment delay and compliance with cancer guidelines as cancer registry indicators for cancer care in Europe: Results of EUROCHIP-3 survey, International Journal of Cancer. 2012 Nov 26	2						X				0
70	Sjostrom, Michael; Poortvliet, Eric; Nelson, Michael, Monitoring Public Health Nutrition in Europe: Nutritional indicators and determinants of health status, Journal of Public Health. Vol.13(2), Mar 2005, pp. 74-83	3	X									0
71	Surján G, Szilágyi E, Kovács T, A pilot ontological model of public health indicators, Computers in Biology & Medicine. 36(7-8):802-16, 2006 Jul-Aug.	3	X									3
72	Surján G, Szilágyi, Kovács T, Kincses G, Conceptual framework of health indicators: the IDA model., Studies in Health Technology and Informatics. 2004;107(Pt 2):1230-4.	3	X									0

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
73	Szamatulska K, [Health status of mothers and children in Poland compared to other European Union countries on the basis of EUROPERISTAT indicators], Medycyna Wieku Rozwojowego. 14(2):113-28	2						X				Journal not in Web of Science
74	Temmerman M, Foster LB, Hannaford P, Cattaneo A, Olsen J, Bloemenkamp KW, Jahn A, da Silva MO, Reproductive health indicators in the European Union: The REPROSTAT project, European Journal of Obstetrics & Gynecology and Reproductive Biology. 2006 May 1;126(1):3-10	2						X				9
75	Trewin C, Strand BH, Grøholt EK, Norhealth: Norwegian health information system, Scandinavian Journal of Public Health. 2008 Sep;36(7):685-9	4	X									4
76	van Buuren, S.; Eyres, S.; Tennant, A.; Hopman-Rock, M., Assessing comparability of dressing disability in different countries by response conversion, European Journal of Public Health. The European Union Health Monitoring	2	X									6

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
	Programme. 13 (Supplement 1):15-19, September 2003											
77	van der Wilk EA, Verschuuren M., Adding value to figures: a web-based European public health information system, Journal of Telemedicine and Telecare. 2010;16(1):35- 41	5	X									3
78	van Schroyen Lantman-de Valk H, Linehan C, Kerr M, Noonan-Walsh P, Developing health indicators for people with intellectual disabilities. The method of the Pomona project, Journal of Intellectual Disability Research. 2007 Jun;51(Pt. 6):427-34	2	X									1
79	van Schroyen Lantman-de Valk, H. M. J., Selection of health indicators relevant for persons with intellectual disability (ID), Journal of Intellectual Disability Research. 48(4-5):341, June 2004	2	X									0

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
80	Vardavas CI. Connolly G. Karamanolis K. Kafatos A. Adolescents perceived effectiveness of the proposed European graphic tobacco warning labels. European Journal of Public Health. 19(2):212-7, 2009 Apr.	5									X	13
81	Verschuuren, M.; Kramers, P.; Gudfinnsdottir, G. K.; Aromaa, A., Providing a solid evidence base for policy makers: ECHI initiative, Eurohealth; 2010. 16: 3, 4-7. 11 ref.	1	X									Journal not in Web of Science
82	Verschuuren M., Gissler M., Kilpelainen K, Tuomi-Nikula Annti, Sihvonen Ari-Pekka, Ghirini S., Kirsch N, Prochorskas R, Scafato E., Kramers P., Aromaa A. Public Health Indicators for the EU: the joint action for ECHIM (European Community Health Indicators & Monitoring) Archives of Public Health May 2013	1		X	X							Journal not in Web of Science
83	Wahlbeck K, European comparisons between mental health services, Epidemiology & Psychiatric Science. 20(1):15-8, 2011 Mar.	5							X			Journal not in Web of Science

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
84	Wilkinson J, Berghmans L, Imbert F, Ledésert B, Ochoa A, the members of the ISARE II project team, Health indicators in the European regions--ISARE II, European Journal of Public Health. 2008 Apr;18(2):178-83	2						X				3
85	Wilkinson JR, Berghmans L, Imbert F, Ledésert B, Ochoa A, the members of the ISARE III project team, Health indicators in the European regions: expanding regional comparisons to the new countries of the European Union - ISARE III, Public Health. 2009 Jul;123(7):490-5	2				X						4
86	Wills JM. Storcksdieck genannt Bonsmann S. Kolka M. Grunert KG. European consumers and health claims: attitudes, understanding and purchasing behaviour. [Review] Proceedings of the Nutrition Society. 71(2):229-36, 2012 May.	5									X	3
87	Wojtyniak B. Gorynski P. Seroka W. Highlights on the health status of the Polish population in 1999/2000. Przegląd Epidemiologiczny. 56(1):179-92, 2002.	4									X	Journal not in Web of Science

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88	Wolfe I. Thompson M. Gill P. Tamburlini G. Blair M. van den Bruel A. Ehrich J. Pettoello-Mantovani M. Janson S. Karanikolos M. McKee M. Health services for children in western Europe. Lancet. 381(9873):1224-34, 2013 Apr 6.	5									X	3
89	Wojnarowska B. Malkowska-Szkutnik A. Mazur J. [Subjective health of adolescents aged 11-15 years in Poland and other countries of the European Union]. [Polish] <Zdrowie subiektywne mlodziezy w wieku 11-15 lat w Polsce i innych krajach Unii Europejskiej.> Medycyna Wieku Rozwojowego. 12(2 Pt 1):559-67, 2008 Apr-Jun.	4									X	Journal not in Web of Science
90	Zeitlin J, Wildman K, Bréart G, Alexander S, Barros H, Blondel B, Buitendijk S, Gissler M, Macfarlane A and the PERISTAT Scientific Advisory Committee, PERISTAT: indicators for monitoring and evaluating perinatal health in Europe, European Journal of Public Health. 13(3 Suppl):29-37, 2003 Sep.	2				X						24

No.	Publication details	Category	ECHI in text, title or abstract	ECHIM in title, text or abstract	"European Community" AND "Health Indicators" in text or title	"European Union" AND "Health Indicators" in text or title	EC AND "Health Indicators" in text or title	EU AND "Health Indicators" in text or title	"European Community Health Indicators" in text or title	"HEIDI wiki" in title, text or abstract	(European Union or European Community or EC or EU) AND (health indicator* or health information* or health monitor*) AND (benchmark* or compar*)	Times cited counts for the Web of Science and Web of Knowledge
91	Zeitlin J, Wildman K, Bréart G, Perinatal health indicators for Europe: an introduction to the PERISTAT project, European Journal of Obstetrics & Gynecology and Reproductive Biology. 2003 Nov 28;111 Suppl 1:S1-4	2				X						12
92	Zeitlin J, Wildman K, Bréart G, Selecting an indicator set for monitoring and evaluating perinatal health in Europe: criteria, methods and results from the PERISTAT project, European Journal of Obstetrics & Gynecology and Reproductive Biology. 2003 Nov 28;111 Suppl 1:S5-14	2			X							17

ANNEX D – Interview and Survey Guides

This annex provides a consolidated checklist of the questions that has been posed to key informants in the framework of semi-structured in-depth interviews and questionnaire surveys. The questions have been structured around the main judgment criteria that have been selected for each evaluation question of the ToR, in order to facilitate the understanding of the concrete aspects that the Contractor intends to address in the discussion.

Evidently, not all the questions listed have been posed to each interviewee. The specificities of the national contexts and the variety of the types of informants involved have required a high degree of 'customisation' of discussion guides.

Judgement Criteria	Questions for interviews / surveys			
<p>1.1 Availability of indicator-based national strategic framework on public health, or concrete plans to develop it in the near future.</p>	<ul style="list-style-type: none"> • To what extent is an indicator-based approach systematically used for health policy-making in your country? • Is so, for what purpose? Defining and monitoring health policies and strategies? Assessing the performance of the health system? Evaluating policies and providing feedback to policy-makers? Is there any documental evidence of this? • Was the use of indicators for policy-making inspired by similar examples from other countries? Or was it inspired by international guidelines? <p>In the event your country has a decentralised system for public health programming and management:</p> <ul style="list-style-type: none"> • Is there a common national framework for the adoption of indicator-based regional strategies available? And to what extent are there differences in the use of indicator-based approaches between regional policy-making authorities? 			
<p>1.2 Degree of implementation of the abovementioned national framework (i.e. availability of monitoring data and historical series, or plans to make them available).</p>	<p>In the event a general indicator-based approach to programming monitoring and evaluating health is available:</p> <ul style="list-style-type: none"> • To what extent are monitoring data and historical series for all retained indicators available? • Are there concrete plans for the collection in the near future of monitoring data that are not currently collected? Or otherwise to expand the monitoring system? 			
<p>1.3 Main prospected use of indicators in policy-making, i.e. descriptive use, target-setting use or explanatory use.</p>	<p>In the event a general indicator-based system is available/planned:</p> <ul style="list-style-type: none"> • To what extent is it / will it be used to monitor current trends and forecast future needs? Is there any documental evidence of this use? • To what extent is it / will it be used for benchmarking with other countries or with an EU average? Is there any documental evidence of this use? • To what extent is it / will it be used to define quantifiable objectives and targets of policy actions in either absolute or relative terms? Does this make explicit reference to closing the gap with any European average value or reaching an objective defined at the EU level? Is there any documental evidence of this use? 			
<p>2.1 Extent of use of specific categories of indicators in the national health policy-making process.</p>	<p>In the event a general indicator-based strategy is available:</p> <ul style="list-style-type: none"> • To what extent are the following macro-families of indicators used: <table border="1" data-bbox="671 1912 1286 2016"> <tr> <td>Demographic and socioeconomic</td> </tr> <tr> <td>Health Status</td> </tr> <tr> <td>Health Determinants</td> </tr> </table>	Demographic and socioeconomic	Health Status	Health Determinants
Demographic and socioeconomic				
Health Status				
Health Determinants				

Judgement Criteria	Questions for interviews / surveys																		
	<table border="1" data-bbox="673 338 1286 412"> <tr> <td data-bbox="673 338 1286 371">Performance of the Health Systems</td> </tr> <tr> <td data-bbox="673 371 1286 412">Implementation of Health Policies</td> </tr> </table> <p data-bbox="485 443 1246 477">In the event a general indicator-based strategy is not available:</p> <ul data-bbox="485 477 1469 533" style="list-style-type: none"> As far as you know, to what extent are the above macro-families of indicators implicitly used for the definition of the overall country's policy objectives? 	Performance of the Health Systems	Implementation of Health Policies																
Performance of the Health Systems																			
Implementation of Health Policies																			
<p data-bbox="156 539 464 689">2.2 Assessment of factors influencing the use or non-use of specific categories of indicators.</p>	<ul data-bbox="485 539 1390 600" style="list-style-type: none"> To what extent are the following factors possibly influencing the use for policy-making of specific categories of indicators? <table border="1" data-bbox="485 629 1437 1547"> <tr> <td data-bbox="485 629 746 725">Demographic and socioeconomic indicators</td> <td data-bbox="746 629 1437 725">Some MS might consider them as context indicators, while others might deem them irrelevant as core indicators for health decision-making purposes.</td> </tr> <tr> <td data-bbox="485 725 746 786">General mortality indicators</td> <td data-bbox="746 725 1437 786">They might be deemed poorly relevant as compared to avoidable mortality.</td> </tr> <tr> <td data-bbox="485 786 746 882">Lifestyle-related mortality</td> <td data-bbox="746 786 1437 882">The estimates underlying them (and the related modelling) might be deemed exceedingly speculative to prove a reliable basis for action.</td> </tr> <tr> <td data-bbox="485 882 746 1025">Indicators on non-communicable diseases</td> <td data-bbox="746 882 1437 1025">They might be deemed of some use if information on incidence is available or if the indicator allows a true estimate of the prevalence in the general population irrespective of patients' level of awareness (e.g. by means of a health examination survey).</td> </tr> <tr> <td data-bbox="485 1025 746 1115">Morbidity indicators</td> <td data-bbox="746 1025 1437 1115">Similarly to the above, interest in them might be limited to avoidable morbidity or to indicators on related effective interventions only.</td> </tr> <tr> <td data-bbox="485 1115 746 1211">Indicators on self-perceived health status</td> <td data-bbox="746 1115 1437 1211">They might be deemed intrinsically unreliable because of cultural biases.</td> </tr> <tr> <td data-bbox="485 1211 746 1346">Composite life expectancy indicators (e.g. healthy life years)</td> <td data-bbox="746 1211 1437 1346">They might be considered as poorly reliable when based on data subject to cultural biases or when the modelling is too speculative.</td> </tr> <tr> <td data-bbox="485 1346 746 1429">Health determinants</td> <td data-bbox="746 1346 1437 1429">Data on determinants might be differently acceptable for use whether they are self-reported or the results of objective/clinical examinations.</td> </tr> <tr> <td data-bbox="485 1429 746 1547">Indicators on the implementation of health policies</td> <td data-bbox="746 1429 1437 1547">Domestic interest in them might be limited for policy-makers themselves who are perfectly aware of the progress reached in certain areas without needing any indicator.</td> </tr> </table>	Demographic and socioeconomic indicators	Some MS might consider them as context indicators, while others might deem them irrelevant as core indicators for health decision-making purposes.	General mortality indicators	They might be deemed poorly relevant as compared to avoidable mortality.	Lifestyle-related mortality	The estimates underlying them (and the related modelling) might be deemed exceedingly speculative to prove a reliable basis for action.	Indicators on non-communicable diseases	They might be deemed of some use if information on incidence is available or if the indicator allows a true estimate of the prevalence in the general population irrespective of patients' level of awareness (e.g. by means of a health examination survey).	Morbidity indicators	Similarly to the above, interest in them might be limited to avoidable morbidity or to indicators on related effective interventions only.	Indicators on self-perceived health status	They might be deemed intrinsically unreliable because of cultural biases.	Composite life expectancy indicators (e.g. healthy life years)	They might be considered as poorly reliable when based on data subject to cultural biases or when the modelling is too speculative.	Health determinants	Data on determinants might be differently acceptable for use whether they are self-reported or the results of objective/clinical examinations.	Indicators on the implementation of health policies	Domestic interest in them might be limited for policy-makers themselves who are perfectly aware of the progress reached in certain areas without needing any indicator.
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<p data-bbox="156 1554 464 1742">3.1 Self-perceived awareness of ECHI shortlist, related documentation, and Heidi data tool by policy-makers</p>	<ul data-bbox="485 1554 1477 1899" style="list-style-type: none"> To what extent are you aware of the existence of ECHI? To what extent are you familiar with the documentation related to specific ECHI indicators falling into your area of competence (e.g. exact definition, calculation method, data type and source, etc.)? Are you aware of the existence of the Heidi data tool? If yes, have you ever accessed it? Based on your knowledge, who else in the national/ subnational relevant authorities is possibly concerned and/or familiar with ECHI? Based on your knowledge, what is the general awareness of ECHI among policy-makers in your country? To what extent, in your view, there is an information gap on this matter in your country? 																		
<p data-bbox="156 1906 464 2020">3.2 Effectiveness of visibility/dissemination tools in reaching target groups (e.g. websites,</p>	<ul data-bbox="485 1906 1477 2027" style="list-style-type: none"> As far as you know, are ECHI published on the website of the relevant public authorities in your country? As far as you know, have ECHI been presented / discussed during periodical meetings of health authorities? If so, for what purpose? 																		

Judgement Criteria	Questions for interviews / surveys			
conferences and meetings, circulation of reports, studies and notes etc.)	<ul style="list-style-type: none"> As far as you know, have ECHI been used by national authorities in statistical publications, benchmarking studies or other health information resources addressing decision-makers? With which results? Overall, how do you rate the visibility and the dissemination effort made in your country to bring ECHI to the attention of relevant policy-makers? 			
4.1 Extent of scientific literature related to ECHI	<ul style="list-style-type: none"> As far as you know, has ECHI been addressed by specialised scientific literature in your country? (with special focus on the use of indicators for policy-making / benchmarking) If so, can you provide the references to it? 			
5.1 Availability of monitoring data and time series, or concrete plans for the future.	<ul style="list-style-type: none"> According to ECHI reports [<i>specific indicators / sets of indicators</i>] are not currently collected in your country. Has there been any significant change in the past year? As far as you know, are there plans for collecting them in the future? 			
5.2 Type of evidence available of inclusion of the indicator in policy-making process (verbal declaration, written documents), or concrete plans for the future.	<ul style="list-style-type: none"> To what extent [<i>specific indicators / sets of indicators</i>] are used in the policy-making process in your country? Do you have evidence of their inclusion in written policy documents? If so, could you provide reference to it? If not, are there concrete plans to use them in the near future? Besides their possible inclusion in policy documents, which other evidence of formal or informal use of ECHI in general or [<i>specific indicators / sets of indicator</i>] for policy-making purposes can be found? As far as you know, which among the following types of policy-makers are / should be especially concerned by ECHI in your country? <table border="1" data-bbox="488 1043 1471 1308"> <tr> <td>Departments responsible for 1) programming of resources and 2) financing of the health system (including health insurers) or their staff offices responsible for studies or international affairs, or for monitoring and evaluation</td> </tr> <tr> <td>Departments responsible for drafting health prevention strategies and policies, general or sector-specific, conceived at the national or the regional /local level, or their offices specifically in charge of producing studies, responsible for international affairs or for monitoring and evaluation</td> </tr> <tr> <td>Regional / local level authorities (or other relevant subnational level authorities)</td> </tr> </table> <ul style="list-style-type: none"> To what extent policy-makers in your country are making an unconscious use of ECHI indicators, i.e. using these indicators without knowing that they are part of the ECHI shortlist? To what extent the above issue may apply to [<i>specific indicators / sets of indicator</i>] falling under your area of responsibility? 	Departments responsible for 1) programming of resources and 2) financing of the health system (including health insurers) or their staff offices responsible for studies or international affairs, or for monitoring and evaluation	Departments responsible for drafting health prevention strategies and policies, general or sector-specific, conceived at the national or the regional /local level, or their offices specifically in charge of producing studies, responsible for international affairs or for monitoring and evaluation	Regional / local level authorities (or other relevant subnational level authorities)
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Regional / local level authorities (or other relevant subnational level authorities)				
5.3 Purpose of the use of the indicator.	<ul style="list-style-type: none"> To what extent is / will [<i>specific indicators / sets of indicator</i>] be used to monitor current trends and forecast future needs? To what extent is / will [<i>specific indicators / sets of indicator</i>] be used for benchmarking with other countries or with an EU average? To what extent is / will [<i>specific indicators / sets of indicator</i>] be used to define quantifiable objectives and targets of policy actions in either absolute or relative terms? Do these action plans make explicit reference to closing the gap with any European average value or reaching an objective defined at the EU level? To what extent is / will [<i>specific indicators / sets of indicator</i>] be used to assess the effectiveness and impact of policy actions / health system performance [<i>as applicable</i>]? What other possible uses are being / will be made of [<i>specific indicators / sets of indicator</i>] in the policy-making process? 			
5.4 Extent of coverage of the indicator on the underlying policy issue.	<ul style="list-style-type: none"> To what extent are indicators other than [<i>specific indicators / sets of indicator</i>] used for policy-making purposes in the area / sector under your responsibility? To what extent can these be considered the key / among the 			

Judgement Criteria	Questions for interviews / surveys							
	<p>key indicators in this policy area?</p> <ul style="list-style-type: none"> To what extent are indicators similar to the ECHI indicators still in the development section [<i>specific indicators / sets of indicator</i>] being used for policy-making in the area / sector under your responsibility? 							
5.5 Extent of systematic use of the indicator - against sporadic use (broken down by policy-making actors / levels).	<ul style="list-style-type: none"> To what extent is the use of ECHI in general or [<i>specific indicators / sets of indicator</i>] in particular systematic in your country? In the event of systematic use, to what extent is this driven by a commitment to implementing a given policy agreed at the supranational level (WHO, EU...) whose monitoring is based on common indicators? 							
6.1 Assessment of indicator usefulness for policy-making in accordance with selected criteria.	<ul style="list-style-type: none"> With reference to the ECHI indicators actually used in the past for policy-making in your country / region and/or specific sector of responsibility, as applicable, how do you rate ex-post their overall usefulness? To what extent is the possible usefulness of [<i>specific indicators / sets of indicator</i>] due to the following success factors? <table border="1" data-bbox="488 819 1471 1272"> <tr> <td>Specific relevance for policy-making purposes (i.e. the indicator satisfies a concrete need for information)</td> </tr> <tr> <td>Lack of previous availability of the indicator or more limited availability / or at a greater cost: without ECHI the indicator would have not become available in reasonable times</td> </tr> <tr> <td>Interest in comparability with other European countries, as the possibility of comparing the indicators with other European countries represents a source of added value</td> </tr> <tr> <td>Quality of existing indicators has improved thanks to the methodological work behind ECHI</td> </tr> <tr> <td>Better reputation of the ECHI indicators is due to its European nature and the international recognition of related validation mechanisms</td> </tr> <tr> <td>Better user-friendliness as compared to other sources</td> </tr> </table>	Specific relevance for policy-making purposes (i.e. the indicator satisfies a concrete need for information)	Lack of previous availability of the indicator or more limited availability / or at a greater cost: without ECHI the indicator would have not become available in reasonable times	Interest in comparability with other European countries, as the possibility of comparing the indicators with other European countries represents a source of added value	Quality of existing indicators has improved thanks to the methodological work behind ECHI	Better reputation of the ECHI indicators is due to its European nature and the international recognition of related validation mechanisms	Better user-friendliness as compared to other sources	
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6.2 Assessment of main reasons for non-use by policy-makers (broken down by policy-making actors / levels)	<ul style="list-style-type: none"> To what extent are ECHI indicators actually collected in your country / region but not really used for policy-making purposes? To what extent may the non-use of [<i>specific indicators / sets of indicator</i>] be due to the following constraints? <table border="1" data-bbox="488 1435 1471 2027"> <tr> <td>Absence of an underlying policy implemented in the country</td> </tr> <tr> <td>Reservations on indicator's reliability or suitability for policy-making purposes (including methodological disagreements where these might apply, e.g. on composite indicators)</td> </tr> <tr> <td>Lack of historical series for vertical comparisons or of sufficient stability of indicator</td> </tr> <tr> <td>Insufficient cost-effectiveness compared to simpler proxies</td> </tr> <tr> <td>Duplication with other parallel national/international sources of perceived better quality or already in use</td> </tr> <tr> <td>Lack of breakdown at the relevant geographical level for decision-making purposes</td> </tr> <tr> <td>Insufficient frequency of the indicator</td> </tr> </table>	Absence of an underlying policy implemented in the country	Reservations on indicator's reliability or suitability for policy-making purposes (including methodological disagreements where these might apply, e.g. on composite indicators)	Lack of historical series for vertical comparisons or of sufficient stability of indicator	Insufficient cost-effectiveness compared to simpler proxies	Duplication with other parallel national/international sources of perceived better quality or already in use	Lack of breakdown at the relevant geographical level for decision-making purposes	Insufficient frequency of the indicator
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Lack of breakdown at the relevant geographical level for decision-making purposes								
Insufficient frequency of the indicator								

Judgement Criteria	Questions for interviews / surveys			
	No particular reason but limited familiarity with ECHI			
7.1 Influence of ECHI shortlist on possible modifications of official national indicator sets (change of indicator definition / collection method, addition of new indicators).	<ul style="list-style-type: none"> To what extent have ECHI in general contributed to changing the national set of indicators used for policy monitoring in your country? Is there any documental evidence of it? To what extent have [<i>specific indicators / sets of indicator</i>] contributed to a change of the national sets of indicators used for the monitoring of the relevant sectoral policies in your country? In particular with reference to: <table border="1" data-bbox="488 595 1474 730"> <tr> <td>Addition of indicators not previously used</td> </tr> <tr> <td>Modification of own indicators previously used (which have since been dropped as a consequence)</td> </tr> <tr> <td>Modification of the methodology for collection / calculation of monitoring data</td> </tr> </table> <ul style="list-style-type: none"> Is there any documental evidence of these modifications? 	Addition of indicators not previously used	Modification of own indicators previously used (which have since been dropped as a consequence)	Modification of the methodology for collection / calculation of monitoring data
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Modification of own indicators previously used (which have since been dropped as a consequence)				
Modification of the methodology for collection / calculation of monitoring data				
7.2 Extent of use of ECHI indicators in sectoral reporting and generic national health reporting exercises.	<ul style="list-style-type: none"> Have ECHI indicators in general and [<i>specific indicators / sets of indicator</i>] in particular ever been used in the framework of national health reporting exercises? If yes, to what extent were they used for the reporting of: <table border="1" data-bbox="488 954 1474 1122"> <tr> <td>Generic national health reporting exercises</td> </tr> <tr> <td>Sectoral health reporting exercises for specific 'vertical policies' (e.g. injury prevention)</td> </tr> <tr> <td>Sectoral health reporting exercises for specific 'horizontal policies' (e.g. health inequalities, HiAP)</td> </tr> </table> To what extent was this use substantially driven by existing underlying EU policies adopted by the country, which explicitly require monitoring and periodical reporting activities? 	Generic national health reporting exercises	Sectoral health reporting exercises for specific 'vertical policies' (e.g. injury prevention)	Sectoral health reporting exercises for specific 'horizontal policies' (e.g. health inequalities, HiAP)
Generic national health reporting exercises				
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8.1 Assessment of the need to streamline the ECHI shortlist and rationale thereof.	<ul style="list-style-type: none"> Is the ECHI shortlist complete enough in your view? Are there other important areas / types of indicator that in your view are not sufficiently covered? Conversely, is there in your view room for further streamlining the ECHI list? In which areas, in particular? What in your view would be the optimal length of the shortlist? 			
8.2 Degree of interest in implementing ECHI indicators still under development or in the work-in-progress section.	<ul style="list-style-type: none"> The following [<i>specific indicators / sets of indicator</i>] are currently in the ECHI 'work-in-progress' section (i.e. there is agreement on the indicator but practical aspects need to be solved prior to its implementation). Do you actually use them (or a similar version developed in your country) for policy-making purposes? If so, how do you rate their usefulness? If not, are there concrete plans to adopt them in the near future? The following [<i>specific indicators / sets of indicator</i>] are currently in the ECHI 'development' section (i.e. no agreement has been reached yet on the final formulation of the indicator). Do you actually use indicators developed in your country that address the same policy issue? If not, are there concrete plans to adopt them in the near future? Irrespective of the current use of indicators developed in your country, what is in your view the added value of completing the implementation of these indicators as ECHI? 			
8.3 Assessment of proposals for the development of new ECHI indicators.	<ul style="list-style-type: none"> With reference to your specific area of competence, are there other indicators that are not in the shortlist that you would recommend to include in the future? What is the single most important indicator to be included? What exactly would be the added value for policy-making purposes of having them included in the ECHI shortlist? 			
9.1 Availability of studies demonstrating a	<ul style="list-style-type: none"> Are you aware of scientific literature analysing the impact of indicator-based policies on the improvement of health outcomes, in your specific sector / area 			

Judgement Criteria	Questions for interviews / surveys
<p>correlation between systematic use of indicators and improvements in health outcomes, by policy area.</p>	<p>of competence? If so, could you provide the reference to it?</p> <ul style="list-style-type: none"> In case, has this literature influenced policy-making approach in your specific sector / area of competence, e.g. toward the adoption of a management-by-objective approach (i.e. with specific, quantifiable target for each policy objectives in terms of both outcome and process)? Has it influenced the choice of indicators? If so, how? If not, for what reason?
<p>9.2 Types of indicators most often quoted to prove this correlation (JA 9.1) or to steer management-by-objectives in the health field.</p>	<ul style="list-style-type: none"> As far as you know, and with reference to your specific sector / area of competence, which indicators are particularly useful to assess the real effect of health policy on health outcomes? If a management-by-objective approach is adopted in your specific sector / area of competence, which type of indicators are in use?
<p>9.3 Evidence of policy change supported by indicators.</p>	<p>In the event that studies demonstrating a correlation between systematic use of indicators and improvements in health outcomes are available in your specific sector / area of competence at the national level:</p> <ul style="list-style-type: none"> Is there any concrete evidence of a policy change based on a rigorous and indicator-based assessment of the possible health outcomes associated to different policy options? If yes, could you provide the reference to it? If not, for what reason?
<p>10.1 Added value of ECHI related to its relationship with EHIS.</p>	<ul style="list-style-type: none"> To what extent are health interview surveys (HIS) used in your country/region, and with special reference to your specific sector / area of competence? <p>In the event HIS are actually used:</p> <ul style="list-style-type: none"> Is this a sporadic / pilot use or a systematic use? What is the added value of having the corresponding indicators included in the ECHI shortlist? In the event of non-inclusion of these indicators in the portfolio of data systematically collected by Eurostat (EHIS), will they continue to be collected by your country? <p>In the event HIS are not actually used:</p> <ul style="list-style-type: none"> What are the main reasons for non-use? What is the added value (if any) for your country of having some HIS indicators collected by Eurostat as part of the EHIS initiative? To what extent the fact that EHIS data are collected at national level and not at subnational level reduces their importance for policy-makers at subnational level? Would you recommend the inclusion of other HIS-based ECHI Indicators in the portfolio of data collected under the EHIS initiative?
<p>10.2 Added value of ECHI related to its relationship with EHES.</p>	<ul style="list-style-type: none"> To what extent are health examination surveys (HES) used in your country/region, and with special reference to your specific sector / area of competence? <p>In the event HES are actually used:</p> <ul style="list-style-type: none"> Is this a sporadic / pilot use or a systematic use? What is the added value of having the corresponding indicators included in the ECHI shortlist? In the event of non-inclusion of these indicators in the portfolio of data systematically collected by Eurostat, will they continue to be collected by your country? <p>In the event HES are not actually used:</p> <ul style="list-style-type: none"> What are the main reasons? What could be the added value of ECHI in promoting the adoption of HES collecting comparable data across Europe?

Judgement Criteria	Questions for interviews / surveys					
	<ul style="list-style-type: none"> • Would you recommend the inclusion of HES-based ECHI Indicators in the portfolio of data collected by Eurostat? 					
<p>10.3 Added-value of ECHI in the framework of the improved availability or quality of registries ECHI has entailed.</p>	<ul style="list-style-type: none"> • To what extent are registries used in your country/region, and with special reference to your specific sector / area of competence? <p>In the event registries are available:</p> <ul style="list-style-type: none"> • As far as you know, to what extent are data comparable with the data collected in other regions/countries? • What is the possible added value of ECHI in contributing to the harmonization of data across registries? • What is the possible added value of ECHI in contributing to quality improvement of the registries data? 					
<p>11.1 Possible effects of discontinuing ECHI.</p>	<p>In your view, what would be the likely consequence of a discontinuation of the ECHI initiative in terms of:</p> <ul style="list-style-type: none"> • Actual comparability of health monitoring data across Europe. • Use of benchmarking data by policy-makers of the participating countries. • Use of ECHI indicators for other purposes (e.g. to establish own monitoring and reporting indicators) by policy-makers of the participating countries. 					
<p>11.2 Assessment of policy-makers interests in the continuation of ECHI in general and of specific tasks and activities to be undertaken in the future.</p>	<ul style="list-style-type: none"> • What is the importance that you attribute to the following possible tasks / activities that might be undertaken under a renovated ECHI initiative? <table border="1" data-bbox="488 981 1471 1339"> <tr> <td>Maintaining and improving the ECHI indicators shortlist (e.g. solving remaining problems of definition and data availability, updating the shortlist, revising indicator documentation, ensuring coherence with overlapping initiatives, etc.)</td> </tr> <tr> <td>Maintaining the central health indicator database and data presentation tool (i.e. Heidi data tool)</td> </tr> <tr> <td>Promoting and supporting MS in the use of ECHI (in particular by policy-makers and health professionals)</td> </tr> <tr> <td>Collaborating with international organisations (e.g. mainstreaming ECHI in the European Health Information System that the Commission, WHO Regional Office for Europe and OECD have agreed to develop; harmonising data delivery obligations with ECDC, EMCDDA etc.)</td> </tr> <tr> <td>Implementation work within MS</td> </tr> </table> <ul style="list-style-type: none"> • What other activities/tasks do you think an ECHI initiative should undertake in the future? • All in all, to what extent do you recommend the establishment of a permanent ECHI system at the European level? • In the event you recommend the establishment of such a system, to what extent would you be willing, in principle, to cover part of its costs? 	Maintaining and improving the ECHI indicators shortlist (e.g. solving remaining problems of definition and data availability, updating the shortlist, revising indicator documentation, ensuring coherence with overlapping initiatives, etc.)	Maintaining the central health indicator database and data presentation tool (i.e. Heidi data tool)	Promoting and supporting MS in the use of ECHI (in particular by policy-makers and health professionals)	Collaborating with international organisations (e.g. mainstreaming ECHI in the European Health Information System that the Commission, WHO Regional Office for Europe and OECD have agreed to develop; harmonising data delivery obligations with ECDC, EMCDDA etc.)	Implementation work within MS
Maintaining and improving the ECHI indicators shortlist (e.g. solving remaining problems of definition and data availability, updating the shortlist, revising indicator documentation, ensuring coherence with overlapping initiatives, etc.)						
Maintaining the central health indicator database and data presentation tool (i.e. Heidi data tool)						
Promoting and supporting MS in the use of ECHI (in particular by policy-makers and health professionals)						
Collaborating with international organisations (e.g. mainstreaming ECHI in the European Health Information System that the Commission, WHO Regional Office for Europe and OECD have agreed to develop; harmonising data delivery obligations with ECDC, EMCDDA etc.)						
Implementation work within MS						
<p>11.3 Assessment of possible organisational arrangements for ECHI continuation.</p>	<p>In the event you recommend the establishment of a permanent ECHI system at the European level:</p> <ul style="list-style-type: none"> • What would be in your view the best organisational arrangements? • What role would you allocate to the various partners currently involved (EC, Eurostat, ECHIM experts, MS authorities, international organisations)? • Which criteria would you adopt to judge the performance of a future ECHI system? 					

ANNEX E – List of organisations surveyed²⁴⁷

Country	Organisation
Austria	<ul style="list-style-type: none"> - Department of Quality Management and Health Systems Research, Austrian Federal Ministry of Health - Statistik Austria, Health Statistics
Belgium	<ul style="list-style-type: none"> - OD Public health and Surveillance, Scientific Institute of Public Health - Flemish Community, DG Health and Health Care - DG de la Santé de la Communauté française - Walloon region, Health Observatory - Quality department, Federal Public Service Health - Federal Public Service Health - Federal Ministry of Health, International Affairs - Statistics Belgium
Bulgaria	<ul style="list-style-type: none"> - IT Director Centre for Health Information - National Center for Public Health Protection - "Medical activities" of the Ministry of Health - National Statistics Institute - National Center of Public Health and Analyses
Croatia	<ul style="list-style-type: none"> - Croatian Institute of Public Health - Government of the Republic of Croatia – Office for Combating Narcotic Drugs Abuse - Croatian National Institute on Public Health
Cyprus	<ul style="list-style-type: none"> - Health Monitoring Unit & MECC Principal Investigator of Cancer Registry - Health Statistics/CYSTAT
Czech Republic	<ul style="list-style-type: none"> - Institute of Health Information and Statistics of the Czech Republic - Health Insurance Section, Ministry of Health - Section of Public Health
Denmark	<ul style="list-style-type: none"> - Danish Health and Medicines Authority, section for Disease Prevention and Local Health Services - Department of Epidemiology and Surveillance, National Institute of Occupational Health - Danish Statistics Office, Statistical Officer for Health, Division of Population - National Board of Health
Estonia	<ul style="list-style-type: none"> - Health Information and Analysis Department, Ministry of Social Affairs - National Institute for Health Development - Estonian Institute of Public Health

²⁴⁷ The representatives of these organisations who were interviewed are not mentioned for reasons of data protection.

Country	Organisation
	<ul style="list-style-type: none"> - Health Policy Analyst at Praxis
Finland	<ul style="list-style-type: none"> - National Ministry of Social Affairs - THL Health Indicator Expert - Advisor at SOSTE - National Institute for Health and Welfare (THL)
France	<ul style="list-style-type: none"> - Ministry of Health, Youth and Sports, High Council of Public Health (HCSP); Focal point for international health databases for the DREES - Strategy and Research Unit - Epidemiology and Analyses of Public Health Risks, Chronic Diseases and Disabilities - Department of Environmental Health, Institute For Public Health (INVS) - Specialised Commission on Chronic Diseases (CSMC) - Specialised Commission on Prevention, Education and Health Promotion (CSPEPS), Catholic University of Lille - Specialised Commission on Communicable Diseases (CSMT) - Epidemiology Center of the medical causes of death (CépiDc), National Institute of Health and Medical Research - INSERM, the French National Institute of Health and Medical Research - Sub-directorate "observation solidarity" responsible for studies and statistics solidarity DREES - Specialised Commissions on Prevention and Health Determinants; on Evaluation and Strategy (CSESP); on Prevention, Education and Health Promotion (CSPEPS) - Social inequalities in Healthcare Utilization, Institute for Research and Documentation in Health Economics (IRDES)
Germany	<ul style="list-style-type: none"> - Robert Koch Institute, Department for Epidemiology and Health Monitoring Unit 24 Health Interview Surveys and European Cooperation - Division for Basic Issues, Health Monitoring System, EU and International Affairs Federal Ministry of Health - Bavarian State Office for Health and Food Safety - Health Reporting in Bavaria - Department of Prevention and Innovation, Federal State Health agency of the North Rhine-Westphalia - Health Reporting, Ministry of Labour, Social Affairs and Equal Mecklenburg-Vorpommern - Health Coverage Department, DESTATIS

Country	Organisation
Greece	<ul style="list-style-type: none"> - ECHI focal point for Greece - ECHIM and General Health Indicators Officer - Manager of Health Map Initiative - Ministry of Health - Epidemiologist at National School of Public Health (E.S.D.Y.) - Hellenic Statistical Authority (EL.STAT.), Population and Labour Market Statistics Division, Household Surveys Section
Iceland	<ul style="list-style-type: none"> - Division of Health Information, Directorate of Health - Ministry of Welfare, Department of Quality and Prevention - Department of Co-ordination and Development, Ministry of Welfare - Department of Economic Analysis and Budget, Ministry of Welfare, - Statistics Iceland, Division Labour market, living conditions and demography
Ireland	<ul style="list-style-type: none"> - Department of Health and Children - Institute of Public Health
Italy	<ul style="list-style-type: none"> - National Institute of Health - National Centre for Disease Prevention and Control (CCM), Prevention and Communication Department, Ministry of Health - Regional Epidemiological Observatory, Marche Region - Central Directorate of Epidemiology, Health and Social Affairs Department, Friuli Venezia Giulia Region - Agenzia regionale di sanità (ARS) della Toscana - Agenzia Regionale Sanitaria Regione Liguria Area Epidemiologia e Prevenzione - National Statistical Institute (ISTAT) - Ministero della Salute, Dipartimento della Prevenzione e Comunicazione - Coordinamento redazionale Rapporto Osservasalute
Latvia	<ul style="list-style-type: none"> - Centre for Disease Prevention and Control of Latvia - Ministry of Health, Health Care Department Division of Primary Health Care - Central Statistical Bureau of Latvia - Strategic planning, Ministry of Health - Ministry of Health, Department of public health
Lithuania	<ul style="list-style-type: none"> - Health Statistics Department, Health Information Centre of the Institute of Hygiene - Drug, tobacco and alcohol control department Head of Strategy, monitoring and analysis unit Lithuanian REITOX - Department of Social and Health Statistics, Statistics Lithuania

Country	Organisation
Luxembourg	<ul style="list-style-type: none"> - Ministry of Health – Directorate of Health - STATEC - Secrétariat Général, Direction de la Santé du Luxembourg
Malta	<ul style="list-style-type: none"> - Public Health Medicine Environmental Health Policy Co-ordination Unit - Ministry of Health
Netherlands	<ul style="list-style-type: none"> - National Institute for Public Health and the Environment (RIVM) Senior advisor at Department for Public Health Forecasting - Statistics Netherlands, Directorate for Socio-Economic and Spatial Statistics, Public Sector Statistics - Statistical Office (CBS), Heerlen, Netherlands - MoH
Norway	<ul style="list-style-type: none"> - Department of Health Statistics, Norwegian Institute of Public Health - Department of statistics, eHealth & IT Division, Directorate of Health
Portugal	<ul style="list-style-type: none"> - Directorate for Information and Analysis / Direção de Serviços de Informação e Análise - Department of Epidemiology, National Institute of Health Dr. Ricardo Jorge - Departamento de Promoção da Saúde e Prevenção de Doenças Não Transmissíveis (DPS), Instituto Nacional de Saúde Dr. Ricardo Jorge (INSA)
Romania	<ul style="list-style-type: none"> - Health Prevention and Evaluation - Centre for Health Policy and Public Health, Institute for Social Research, Faculty of Political, Administrative and Communication Sciences - Institute of Public Health Bucharest - Public Health and Management Department, University of Medicine and Pharmacy - National School of Public Health, Management and Professional Development
Slovakia	<ul style="list-style-type: none"> - Safarik University, Faculty of Medicine, Institute of Public Health Department of Social Medicine, Graduate School Kosice Institute for Society and Health (KISH) - Public Health Authority of the Slovak Republic - Institute of Health Policy, Ministry of Health - Health Section, Department of Health, Ministry of Health - National Health Information Center

Country	Organisation
Slovenia	<ul style="list-style-type: none"> - Head of Centre for Health and Healthcare Research, Institute of Public Health - National Institute of Public Health Slovenia, Health Data Centre - Institute for Macroeconomic Analyses - Directorate of Public Health, Ministry of Health of the Republic of Slovenia
Spain	<ul style="list-style-type: none"> - Institute of Health Information, Ministry of Health; - Public Health, Quality and Innovation, Ministry of Health, Social Services and Equality; Institute for Health Information - Quality, Planning, Ordination and Inspection, Ministry of Health and Social Affairs – Castilla La Mancha - Agency for Health Information, Assessment and Quality Health, Agency for Healthcare Quality and Evaluation of Catalonia, Catalan Government, Department of Health - International Technical Coordination Unit, Secretariat-General of Health and Consumer Affairs, Ministry of Health, Social Services and Equality - Public Health, Quality and Innovation, Ministry of Health, Social Services and Equality - National Institute of Statistics, Subdirectorate General Statistics Dissemination - Quality and Cohesion. Ministry of Health, Social Services and Equality
Sweden	<ul style="list-style-type: none"> - National Board of Health and Welfare - Åre local public health authority - Statistics Sweden (SCB)
United Kingdom	<ul style="list-style-type: none"> - Health Improvement Analytical Team, Department of Health - Health Statistics and Analysis Unit, Welsh Government - Health Improvement Programme Manager, Tobacco, Scotland - Office of National Statistics - Drugs, Department of Health
International	<ul style="list-style-type: none"> - European Commission - DG SANCO - European Commission – Eurostat - International Alliance of Patients’ Organizations (IAPO) - AGE Platform Europe - EuroSafe - General Secretary - European AIDS Treatment Group (EATG) - European Public Health Alliance (EPHA) - European Alcohol Policy Alliance - Secretary general - Mental Health Europe - OECD - WHO Europe