

Chapter 6

Application of RAPID Guidance on an International Policy

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As higher level in terms of geo-political integration policy making goes as larger the impact of policies and consequently benefits and hazards related to policies can be. In the globalized world nations states give up their policy making roles on certain areas of policy making to higher, international or transnational level of policy making. Therefore a policy risk assessment tool should be able to assess risks related to such international or transnational policies and strategies. Previous chapters of this book described development of RAPID guidance both top-down and bottom-up methodology on level of national policies. This sub-chapter is going to discuss testing of the top-down RAPID guidance on level of a European Union (EU) policy. The EU Health Strategy 2008–2013 “Together for health” was subjected to the assessment after a negotiation process with the Executive Agency for Health and Consumers (EAHC) and the Directorate for Health and Consumer Protection (DG SANCO) of the European Commission.

The main objective of testing the developed policy risk assessment tool on a real case on international level was to identify weaknesses and missing elements which could be applicable on international level, but not necessarily relevant on national level policies. After interview with DG SANCO colleagues, the project group underwent an

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Table 6.1 Health outcomes mentioned in the EC Health Strategy

Health outcome	Where to find in EC health strategy
Specific diseases including genetic disorders	Objective 1
Alzheimer's	Objective 1
Injuries	Objective 2
Communicable diseases	Objective 2
Specific diseases	Objective 2

intensive discussion process to conduct the assessment. The different approaches reflected the aim to test applicability of the RAPID guidance on international level.

Implementation is always one of key factors to influence achievements of policies; in case of international policies even more. If implementation is not defined in a policy or strategy it is unlikely any change will be achieved. Lack of implementation mechanisms, tools, methods, is therefore a kind of hazard to question potential achievements of any policy. On policy level therefore more questions about implementation were added into RAPID guidance tool. It is important to describe in depth who is in charge for implementation both on international and national level; targets groups of implementers must be part of a policy in the same way as target group for action and impact. Target groups for implementation and impact are in most cases different; in case of the implementation it is mostly staff of Ministries of health, who is a target group whereas as of impact the Health strategy claims the EU citizen as a target group. Similar as implementation information upon monitoring and evaluation should be assessed on policy level within a policy risk assessment. Lack of measurable goals, lack of indicators and a monitoring system can questions achievements of a policy.

Assessment of the EC Health Strategy as Whole Document

Complex policies can be assessed as of health risks and impacts either as a whole or by specific objectives. The present assessment shows how to analyze the EC Health Strategy as a whole—by means of the RAPID tool. A main part of the RAPID methodology is the definition, inclusion and prioritization of health outcomes, risk factors and health determinants. The EC Health Strategy includes nearly all health outcomes even if only a few of them are specifically defined (see Table 6.1).

The risk factors and resources mentioned in the strategy are nearly covering all determinants of health. Especially in objective 1 “key issues” to tackle are listed which include most health relevant risk factors or determinants: “*Healthy ageing must be supported by actions to promote health and prevent disease throughout the lifespan by tackling key issues including poor nutrition, physical activity, alcohol, drugs and tobacco consumption, environmental risks, traffic accidents, and accidents in the home*” (EC 2007, p. 7).

This makes it difficult to include or exclude risk factors and health outcomes only on the basis of the Strategy. Therefore we decided to identify the most relevant health outcomes for Europe in general (share of Burden of Disease—BoD) and the current attributable fraction of BoD for risk factors mentioned in the EC strategy.

This overview is presented in following sub-chapters, using the indicators healthy life years (HLY) and disability-adjusted life year (DALY). Additionally, the Burden of Disease studies of WHO were used to identify the most important risk within EU-27. Based on this overview it is possible to examine to what extent the EC Health Strategy can contribute to reduce the differences between EU-27 countries for two main health indicators (HLY and DALY) and to exploit the full potential health gains.

Distribution of Diseases Within Europe

To assess the potential health gains of the EU Health Strategy it is important to have an overview of the distribution of diseases within Europe.

Healthy Life Years (HLY) in EU-27

The indicator Healthy Life Years (HLY) was used to compare EU-27 countries. HLY are the “*expected remaining years lived from a particular age without long-term activity limitation*”. HLY “*takes into account both mortality and ill-health, providing more information on burden of diseases in the population than life expectancy alone*” (EC, Heidi Data Tool, http://ec.europa.eu/health/indicators/indicators/index_en.htm).

Here the HLY at birth is used. For 2008 we see large differences in healthy life expectancy between the EU-27 countries (see Fig. 6.1).

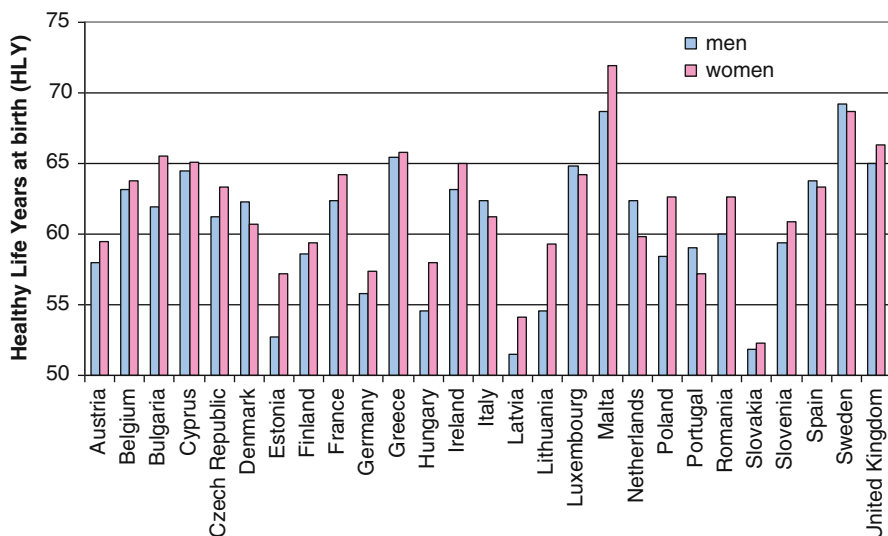


Fig. 6.1 Healthy life years at birth (HLY) in the EU-27 countries 2008 (own illustration, data adapted from the HEIDI Data Tool)

Table 6.2 Highest and lowest healthy life years (HLY) of EC-27 countries

Country	HLY — men 2008	HLY — women 2008
Sweden	69.2	–
Latvia	51.5	–
Malta	–	71.9
Slovakia	–	52.3
Difference = Potential health gain	17.7	19.6

Box 1: The disability-adjusted life year

The disability-adjusted life year (DALY) extends the concept of potential years of life lost due to premature death to include equivalent years of “healthy” life lost by virtue of being in states of poor health or disability (3). One DALY can be thought of as one lost year of “healthy” life, and the burden of disease can be thought of as a measurement of the gap between current health status and an ideal situation where everyone lives into old age, free of disease and disability.

DALYs for a disease or injury cause are calculated as the sum of the years of life lost due to premature mortality (YLL) in the population and the years lost due to disability (YLD) for incident cases of the disease or injury. YLL are calculated from the number of deaths at each age multiplied by a global standard life expectancy for each age. YLD for a particular cause in a particular time period are estimated as follows:

$$\text{YLD} = \text{number of incident cases in that period} \times \text{average duration of the disease} \times \text{weight factor}$$

The weight factor reflects the severity of the disease on a scale from 0 (perfect health) to 1 (death). The weights used for the GBD 2004 are listed in Annex Table A6 of Mathers et al. (11).

In the standard DALYs reported here and in recent *World Health Reports*, calculations of YLL and YLD used an additional 3% time discounting and non-uniform age weights that give less weight to years lived at young and older ages (6). Using discounting and age weights, a death in infancy corresponds to 33 DALYs, and deaths at ages 5-20 years to around 36 DALYs.

Fig. 6.2 Definition of the DALY indicator (WHO 2008a, b)

Regarding potential maximum health gains, we compare the “best” and the “worst” countries (see Table 6.2).

Disability-Adjusted Life Years (DALY) in EU-27

One of the most extensive studies is the WHO Global Burden of Disease Study (WHO GBD). It measures burden of disease using the disability-adjusted life year (DALY). DALY is a time-based measure and combines years of life lost due to premature mortality (YLL) and years of life lost due to time lived in states of less than full health (YLD) (WHO 2008a, b) (Fig. 6.2).

WHO GBD covers more than 100 diseases (defined by ICD code). These diseases are divided into three main categories: (1) *communicable, maternal, perinatal and nutritional conditions (includes 39 defined diseases)*; (2) *non-communicable diseases (includes 57 diseases)* and (3) *injuries (includes 9 causes of injuries)*.

An initial comparison of DALY rates (DALY per 100,000 population) shows that the *non-communicable diseases* play the most important role regarding the burden

Table 6.3 DALY rates (DALY per 100,000 population by cause, WHO 2009)

EU27	DALY rate all causes	Communicable, maternal, perinatal and nutritional conditions		Non-communicable diseases	Injuries
Austria	12,069	495		10,583	990
Belgium	12,948	543		11,239	1,166
Bulgaria	18,296	943		16,044	1,308
Cyprus	12,010	833		10,275	902
Czech Republic	14,326	526		12,378	1,422
Denmark	13,447	486		11,971	990
Estonia	18,900	1,183		14,649	3,068
Finland	13,205	504		10,981	1,720
France	12,262	579		10,517	1,167
Germany	12,536	488		11,312	736
Greece	11,826	495		10,404	928
Hungary	17,941	693		15,688	1,560
Ireland	11,692	653		10,155	884
Italy	11,245	495		9,984	766
Latvia	19,615	1,150		15,341	3,125
Lithuania	18,401	1,090		13,861	3,450
Luxembourg	12,341	670		10,452	1,219
Malta	11,141	600		9,875	666
The Netherlands	11,486	578		10,294	614
Poland	14,911	699		12,454	1,759
Portugal	13,615	923		11,582	1,110
Romania	17,685	1,447		14,450	1,788
Slovakia	15,340	767		12,978	1,595
Slovenia	14,002	552		11,929	1,521
Spain	11,352	609		9,883	860
Sweden	11,478	481		10,164	833
UK	12,871	674		11,489	708
ALL average	13,961	709		11,886	1,365

of disease in Europe. In all countries of EU-27 they account for 80–90 % of the whole burden of disease in this country (Table 6.3).

Regarding possible health gains, we compare again the “best” and the “worst” countries. The “best” country, Malta has 11,141 DALY per 100,000 population for all causes. The country with the “worst” DALY rate, Latvia, has 19,615 DALY per 100,000 population for all causes. The difference between these two values is 8,474 DALY per 100,000 population (all causes) and can be interpreted as potential health gain (see Table 6.4).

To explore where the health gains can be reached concretely we need to have a closer look on specific diseases or disease categories. The three main categories of BoD-studies (*communicable, maternal, perinatal and nutritional conditions; non-communicable diseases* and *injuries* are further divided into 2–14 subcategories).

Table 6.4 EU-27 countries with highest and lowest DALY rate

EU-27 countries with highest and lowest DALY		DALY rate all causes
High	Latvia	19,615
	Estonia	18,900
	Lithuania	18,401
	Bulgaria	18,296
	Hungary	17,941
	Romania	17,685
Low	Greece	11,826
	Ireland	11,692
	The Netherlands	11,486
	Sweden	11,478
	Spain	11,352
	Italy	11,245
	Malta	11,141

Table 6.5 Main non-communicable diseases subcategories which contribute as first, second or third importance to total DALY in a country

	1	2	3	Sum
Neuropsychiatric conditions	18	9	0	27
Cardiovascular diseases	9	11	7	27
Malignant neoplasms	0	7	18	25
Sense organ diseases	0	0	1	1
Unintentional injuries	0	0	1	1

Finally, per subcategory, there are 1–16 ICD-coded diseases (or causes of injuries) listed.

Within the *non-communicable diseases* three subcategories are crucial for the burden of disease in Europe:

1. Neuropsychiatric conditions.
2. Cardiovascular diseases.
3. Malignant neoplasms.

In 25 countries of EU-27 these subcategories are the first, second or third important contribution to the total DALY. Exceptional cases are Cyprus with *Sense organ diseases* and Lithuania with *Unintentional injuries*, each on the third rank (see Table 6.5).

On average (EU-27), *malignant neoplasms* account for 2,072 DALY per 100,000 population, *neuropsychiatric conditions* for 3,179 and *cardiovascular diseases* for 2,888 DALY per 100,000 population. Regarding potential health gains, we compare the “best” and the “worst” countries again: Cyprus has the lowest DALY rate for *malignant neoplasms* (971) while Hungary has the highest rate (3,044). The difference between these two values (~potential health gain) is 2,073 DALY per 100,000 population. For *neuropsychiatric conditions* the “best” country is Italy (2,546), the “worst” Finland (3,709), the difference amounts to 1,163 DALY per 100,000 population. For *cardiovascular diseases* the DALY rate of 6,924 in Bulgaria is the highest and the rate of 1,415 in France is the lowest, with a difference of 5,509 DALY (see Table 6.6).

Table 6.6 DALY rates, three major non-communicable diseases (DALY per 100,000 population by cause, WHO 2009)

EU27	Malignant neoplasms	Neuropsychiatric conditions	Cardiovascular diseases
Austria	1,882	3,211	1,828
Belgium	2,193	3,183	2,129
Bulgaria	2,162	3,166	6,924
Cyprus	971	2,591	2,258
Czech Republic	2,571	2,970	3,358
Denmark	2,350	3,199	2,093
Estonia	2,329	3,493	4,676
Finland	1,612	3,709	2,305
France	2,234	3,439	1,415
Germany	2,114	3,088	2,392
Greece	1,897	2,607	2,764
Hungary	3,044	3,645	4,193
Ireland	1,725	3,286	1,735
Italy	2,056	2,546	1,941
Latvia	2,340	3,418	5,705
Lithuania	2,175	3,455	4,319
Luxembourg	1,798	3,260	2,002
Malta	1,688	2,661	2,022
The Netherlands	2,112	3,013	1,707
Poland	2,368	3,229	3,245
Portugal	2,032	2,982	2,416
Romania	2,115	3,156	5,009
Slovakia	2,144	3,667	3,422
Slovenia	2,452	3,283	2,464
Spain	1,890	2,760	1,556
Sweden	1,680	3,387	2,004
UK	2,007	3,432	2,083
ALL average	2,072	3,179	2,888

In the 18 countries where *neuropsychiatric conditions* are the main causes of total DALY a closer look shows that *unipolar depressive disorders* lead to the most DALY within this group (see Table 6.7).

With the indicator HLY it is possible to get an overview of differences in health status between countries. The difference in HLY between the “best” (highest HLY) and the “worst” (lowest HLY) country can be interpreted as health gain potential: the highest HLY should be possible to reach for all countries; of course adequate measures are needed.

The health gain potential seems to be enormous: nearly 20 healthy life years seem to be possible.

A possible next step to assess the causes of these differences would lie in a comparison between policies and measures in “best” and “worst” countries. But it is not possible to break this indicator down into single disease or disease groups and link causal-effect-relationships for single risk factors to the healthy life expectancy.

Table 6.7 Main neuropsychiatric conditions which are the first, second or third important cause of DALY in a country

Neuropsychiatric conditions	Number of countries with rank			
	1	2	3	Sum
Unipolar depressive disorders	18	0	0	18
Alzheimer and other dementias	0	10	6	16
Alcohol use disorders	0	7	8	15
Drug use disorders	0	0	2	2
Schizophrenia	0	1	0	1
Bipolar disorder	0	0	1	1
Migraine	0	0	1	1

Table 6.8 Potential health gains based on the comparison of HLY and DALY rates between EU-27 countries

Health outcome	Potential health gain
HLY at birth for men	17.7 HLY
HLY at birth for women	19.6 HLY
All causes	8,474 DALY
Malignant neoplasms	2,073 DALY
Neuropsychiatric conditions	1,163 DALY
Cardiovascular diseases	5,509 DALY

For further assessment the indicator disability-adjusted life year (DALY) offers more detailed information.

With the DALY indicator it is possible to compare the contribution of different diseases to the total burden of disease in one country and between countries. So the DALY indicator offers more detailed information about the concrete diseases which lead to differences in healthy life expectancy.

The difference in DALY rate between the “best” (lowest DALY rate) and the “worst” (highest DALY rate) country could also be interpreted as health gain potential: the lowest DALY rate should be possible to reach for all countries, of course with adequate measures (see Table 6.8).

Major Risk Factors for Health in the EU-27 Countries

The leading risk factor in the EU-27 is tobacco (WHO 2005); it is the leading cause of the total burden of disease expressed in DALY in 16 out of 27 countries. In the remaining countries tobacco is the second or third cause of the total burden of disease (see Table 6.9).

In average tobacco accounts for 12.7 % of all DALY of a country in EU-27 (range 5.6 %—Cyprus to 20.9 %—Hungary). The prevention potential is vast, as demonstrated in the Hungarian assessment in Chap. 3.

Other leading risk factors are related to lifestyle, too. The top 5 in each country are accounting for ~50 % of all DALY.

Table 6.9 Major risk factors in EU-27 countries

Risk factor	Number of countries, where the risk factor attributes to the total burden of disease on ...			
	Rank 1	Rank 2	Rank 3	Sum
Tobacco	16	6	5	27
High blood pressure	4	10	7	21
Alcohol	7	9	4	20
High BMI	0	1	7	8
High cholesterol	0	1	4	5

Table 6.10 Strategies mentioned in the EC Health Strategy

No.	Actions	Objective
1	Measures to promote the health of older people and the workforce and actions on children's and young people's health (Commission)	1
2	<i>Development and delivery of actions on tobacco, nutrition, alcohol, mental health and other broader environmental and socio-economic factors affecting health</i> (Commission, Member States)	1
3	New Guidelines on Cancer screening and a Communication on European Action in the Field of Rare Diseases (Commission)	1
4	Follow up of the Communication on organ donation and transplantation (Commission)	1
5	Strengthen mechanisms for surveillance and response to health threats, including review of the remit of the European Centre for Disease prevention and Control (Commission)	2
6	Health aspects on adaptation to climate change (Commission)	2
7	Community framework for safe, high quality and efficient health services (Commission)	3
8	Support member states and regions in managing innovation in health systems (Commission)	3
9	Support implementation and interoperability of e-health solutions in health systems (Commission)	3

To What Extent can the EC Health Strategy Contribute to Tap the Full Potential Health Gains?

Based on this overview, we were able to examine to what extent the EC Health Strategy can contribute to reduce the differences between EU-27 countries for two main health indicators (HLY and DALY) and to tap the full potential health gains. In the first three parts of this chapter the most relevant diseases for EU-27 and the most important risk factor were identified.

In this fourth part of the chapter, the actions of the strategy to tackle diseases and risk factors are identified (see Table 6.10).

To assess the impact of these actions on health outcome we have to define how they influence health determinants, risk factors and health outcomes. A problem is that most of the actions are not concrete enough to show these connections. As an example to demonstrate how the impacts of these actions could be estimated, the second action “Development and delivery of actions on tobacco, nutrition, alcohol, mental health and other broader environmental and socioeconomic factors affecting health” was chosen.

Tobacco is the major health risk factor within the EU-27. Tackling this factor promises the largest health gain: 6–20 % of all DALY per country. It is not very probable to achieve 100 % tobacco-free environments in the EU and to tap the full prevention potential.

Conclusions

Main objective of this assessment was to test the developed policy risk assessment tool (RAPID tool or methodology) on the case of EC Health Strategy. The EC Health Strategy is a very special case for using the RAPID tool. An important aspect of the RAPID tool is to assess affected health determinants, risk factors and health outcomes, define the connections between them and prioritize. The EC Health Strategy includes nearly all health outcomes and health determinants, so it was very difficult to exclude and prioritize. Another difficulty was that the Strategy included very broad objectives, clear aims are missing, and only a few health outcomes were mentioned concretely (“specific diseases”).

The approach to define important diseases and risk factors using comprehensive indicators like DALY and HLY was a very suitable extension of the RAPID tool.

We were able to show a large health gain potential for major diseases and related to major risk factors. Actions defined in the EC Health Strategy can contribute to achieve health gains but it has to be defined in what extent. In general the potential health gains regarding actions on lifestyle risk factors can be assumed as very large. A possible next step in assessment could be a comparison between policies and measures in “best” and “worst” countries to identify reasons for differences.

We have shown the enormous health gain potential by tackling specific major diseases and tackling main risk factors. But it is the wrong conclusion to neglect other diseases and risk factors. For example, the communicable diseases could lead to a huge amount of DALY if there are outbreaks. The number of DALY might be very low because of existing well implemented surveillance mechanisms. On the other hand a low DALY rate or a small amount of DALY is not necessarily a product of a good prevention or treatment policy. For some diseases underreporting might be a cause of a low DALY rate.

Assessment of EC Health Strategy by Specific Objectives

Four specific, single issue assessments were conducted on three objectives of the EC Health strategy:

- Two related to “Strengthen mechanisms for surveillance and response to health threats, including review of the remit of the European Centre for Disease prevention and Control”—case of meningococcal meningitis and influenza pandemic preparedness.
- One on “Support Member States and Regions in managing innovation in health systems”—cardiovascular disease mortality and morbidity.
- One on “Development and delivery of actions on tobacco, nutrition, alcohol, mental health and other broader environmental and socioeconomic factors affecting health”—tobacco policy.

In all four cases a national policy or programme was clearly linked to the EC Health strategy; the Slovenian public health policy, Romanian influenza preparedness plan, Polish invasive cardiology program and the Hungarian anti-tobacco legislation were identified as national counterparts of the EC health strategy. This confirms the finding from interviews with DG SANCO representatives on need to include different levels of policies into main policy step while conducting policy risk assessment of an international policy.

To integrate all the characteristics of the discussion developed previously, be more specific and facilitate the understanding of argumentation on the need of inclusion of different policy levels the following scheme presents all policy levels, target groups (European Commission and Member States), actions for the two target groups and specific influenza pandemic countermeasures.

The first policy level is the EC Health Strategy followed by its second objective “Protecting citizens from health threats” from the two target group perspective (second policy level). For each of these two, using official documents actions related to the Health Strategy Objective and specific pandemic influenza countermeasures and health outcomes (third and fourth policy level) were identified.

The first policy level identified in the Health Strategy targets the European Commission in order to display the goals to be achieved by member states in respect of health care.

The second level of policy drifts from the European Commission to Member States. An important aspect characterizing this level consists in the fact that is bipolar, catching simultaneously the European institutional level as well as member states health institutions.

The third policy level is identified as the specific actions for each of the two actors of the second level.

The fourth policy level is the ultimate level of implementing health services and is drifting from the ones above it. It also represents the translation into practice of all the rules and principles regarding the health protection system and related to

both member states and European Commission apparatuses. European Commission's actions of applying a mechanism of surveillance in order to prevent health threats imply in the fourth level of health policy a decreased prevalence of influenza pandemics. It is natural that the measures taken in order to diminish the prevalence of health threats at macro level to be universally available for all member states so as to act equally and apply the same steps in reducing the widespread of influenza pandemics. Analyzing the facts from this perspective, we can identify two objectives to focus on to European level: travel and trade restrictions and general personal hygiene.

Travel and trade restrictions are welcomed in case of influenza pandemics because they represent the heart of social and business activities nowadays, and the main measures which should be taken in case of outbreak consists of travel advice so as to offer information about the risks people are exposed to, entry screening to identify and control the infected people, borders closure to stop the widespread of the virus and ultimately international travel restrictions so as to block it to become a global issue.

Promoting general personal hygiene is also a feasible action, which can be put in practice by all the citizens of Europe. Some of the measures identified in the scheme are part of the natural course of personal daily hygiene, consisting in hand washing so as to protect the human body from ingesting bacteria and respiratory hygiene. Other measures are focusing on protecting the citizens in case of pandemics, advising them to wear masks in order to prevent the contact with the virus and self-isolation so as to protect other people from getting the virus.

These are the measures proposed by Health Strategy document which may be applied in case of pandemic influenza break out, insisting on the one hand on prevention and providing protection for European citizens, and on the other hand on establishing the measures should be taken in such situation to act immediately and cease the illness.

The other aspect of the fourth policy level regarding member states is focusing on the implementation of the measure but at a national level. The main goal identified is to change the incidence of pandemic influenza. The same pattern as in Romanian top-down case study, inscribing in the scheme the two measures proposed at the national level, namely, school closure and vaccination was followed. Adopting these two steps may have a great impact on the ordinary course of the society, but they are mandatory to prevent, control and cease a case of pandemic influenza at national level.

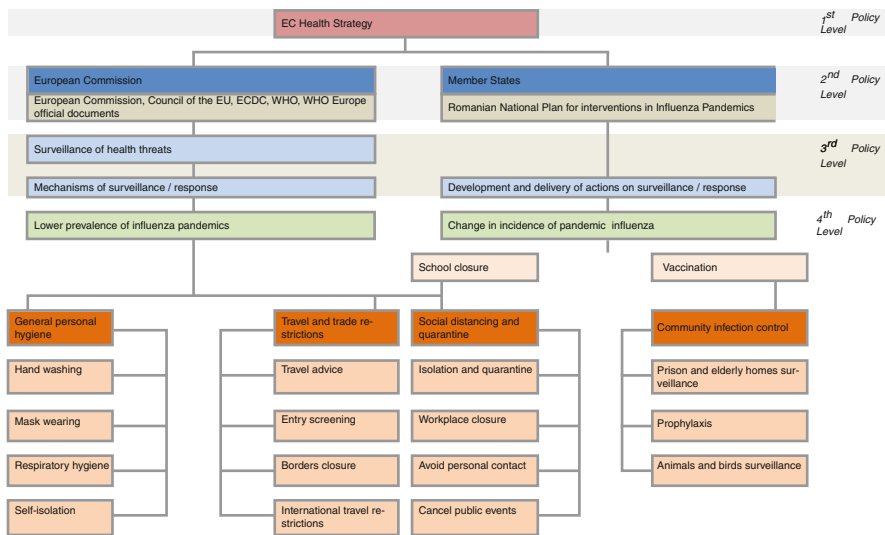
School closure may constitute a limitation for continuing the usual social life, firstly causing social distancing and quarantine. Even though the magnitude of such action could paralyze the entire social order, it is increasingly important to appeal to isolation and quarantine so as to separate from the healthy people and avoid infesting them. Workplace closure is also a manner for preventing the extent of disease, moreover avoiding personal contact could decrease the percentage of infected people. Another measure taken on national level, which may have a great contribution in stopping pandemics, may reside in cancelling the public events.

Starting a vaccination campaign could be the most preventive achievement in order to assure and shelter population's health. Furthermore, surveillance for prisons

and elderly homes, prophylaxis and animal and bird surveillance for thwarting the transmission of the virus from animals to human beings should be included.

The four health policy levels are functioning after top-down mechanism; policy content is translated into practice on the one hand, at member states level by vaccination campaign and school closure and on the other hand at European level by promoting general personal hygiene notions and by asserting travel and trade restrictions.

The main objective of the detailed explanation of the scheme delivered below lies in the attempt to offer a justification for strengthening the role and the implication of the European Commission in managing situations involving pandemics (Together for Health: A Strategic Approach for the EU 2008–2013, 2007).



From Policy to Level of Determinants of Health is Crucial

The determinants were selected upon literature review and discussion process.

Determinants of health are influencing each other so the top down model is rather a circle or loop model. Therefore one policy with just one positive impact on one determinant is likely to launch a chain reaction on few determinants and the other way around. The assessment of surveillance of meningococcal meningitis illustrated well the “circle or loop mechanism.”

Strengthened surveillance mechanisms and response to health threats would have positive impact on socio-economic status, which is one of the most important socio-economic determinant and that influences public health. Socio-economic determinants of health (for example housing conditions) have strong impact on the environmental determinant of health (for example indoor environment). Poor and less affluent population groups tend to be more often affected by inadequate housing

conditions and higher environmental burden in their residential environments. Social status and low income is strongly associated with increased exposure to environmental risks in the private home or related to residential location. Living and housing conditions are the basis of many factors influencing easier transmission of meningococcal. Epidemiological findings suggest strong associations between housing conditions and health effects. Social status has impact on the behavioural and personal determinants of health. It is known that smoking and excessive drinking is more common among less affluent people.

This process must be considered while doing policy risk assessment and has been included into RAPID guidance tool.

Another important issue to consider for assessment of policies on international level could be the differences regarding the economic development. The differences between EU member states are involving different pathways of applying the policy. These differences could contribute at improving interrelations between European countries so as to maintain permanent communication and regulate the implementation process in order to equally put the policy in practice. The process of applying the policy could encounter difficulties because of the dissimilarities regarding the Member States healthcare systems and also, the national economical contribution due to the variance of state budget income. Availability and accessibility of appropriate methods and mechanisms does differ by health care systems and needs to be considered also as part of assessment as the cardiologic treatment methods assessment has shown.

Time is another important factor to consider while doing risk assessment of international (and any) policies. Depending on type of the health effect the time period needs to take in account not only the known latency period (onset of exposure to onset of disease) but also the time period from development of a policy to its full implementation. Changes in determinants of health and consequently risk factors occur only after a policy is fully implemented delaying so the onset of exposure. It is rather rare that short term effects could be seen in the immediate period of time (1–2 weeks) from applying the policy because the urgent character demanded by its content and, most often long term effects could be observed at institutional level after a longer period of time (1 year). Time period is extremely relevant in cases like the tobacco policy for example.

In the study, the health impact of the tobacco tax policy was evaluated applying integrated quantitative impact assessment. The full impact structure of the hypothesized policy action of increasing price of tobacco products by 10 % was mapped. Influenced health determinants, risk factors and health outcomes were identified and prioritized so as to select one causal chain of high importance for detailed quantitative assessment. In this process, the guidance provided by the methodological tool developed in a previous phase of the RAPID project was used and found to be applicable for the task.

The selected impact chain included substance use as determinant, active smoking as risk factor and lung cancer as health outcome. Quantitative exposure and outcome assessment was found feasible for the selected causal pathway. The study used -0.5 and -0.34 price elasticity that is 5 and 3.4 % reduction in tobacco use induced by

10 % price increase among males and females, respectively. The calculated measure was attributable death determined for the baseline and the projected scenario after the price increase. The difference, perceived as the health gain of the policy measure, was calculated to be 12,326 lives (7,668 among males and 4,658 among females) that can be saved annually as a result of increasing tobacco prices by 10 % in all member states of the European Union.

The health consequences of tobacco smoking pose a high burden on the European population, especially in older age groups, since smoking-related diseases of public health importance are typically chronic conditions that need long lag phase for development. Therefore, the importance of tackling the issue of smoking becomes more and more evident in an aging population. The inclusion of smoking into the First objective “Fostering good health in an aging Europe” of the EU Health Strategy, as a factor to be dealt with, is supported by the finding of this study. The selected tobacco policy proved to be effective measure providing example for how to manage the public health problem caused by smoking in the European population in the future.

In the study, quantitative assessment was integrated in the policy health impact assessment process in a structured way and proved to be feasible for four health outcomes that are diseases of high public health priority. Full chain approach and prioritization on each level of the impact chain proved to be essential for systematic quantification and the followed guidance provided valuable help in this process. Some difficulties were noted in the consistent rigid separation of health determinants and risk factors that can be hardly discussed in an isolated way in some cases. It has also been pointed out that those who intend to use the guidance with limited previous practice in health impact assessment may find the methodological instructions (How to do) insufficient. In spite of the noted shortcomings of the applied tool, the demonstrated methodology offers a practicable example for using quantitative assessment integrated in the health impact assessment of policies carried out on EU level.

Discussion of the Risk Assessment Process

The RAPID guidance proved to be a useful tool to assess potential risks related to EC Health strategy. The guidance allowed identifying major hazards and outlining possible impacts (in selected cases lead to quantification of impact). It seems to be obvious that a full chain policy risk assessment using the RAPID guidance needs to combine these approaches; the policy level could be described by risk assessment approach, yet quantification of risks need more work. For practice even identification of hazards, which might question success of policy in terms of its impact, is a positive phenomenon. The remaining three levels, determinants of health, risk factors and health effect, could be assessed by more impact assessment methodology.

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