

# National Health Plan 2012 – 2016

## 4.1. Goal for the Health System - Obtaining Health Gains

(January 2012)



National Health Plan  
2012–2016

## 4.1. OBTAINING HEALTH GAINS

|                                      |    |
|--------------------------------------|----|
| 4.1.1. CONCEPTS.....                 | 2  |
| 4.1.2. FRAMEWORK.....                | 12 |
| 4.1.3. GUIDELINES AND EVIDENCE ..... | 17 |
| 4.1.4. VISION FOR 2016 .....         | 20 |

*"80% of the results are obtained through intervention on 20% of the most important problems." (Pareto Principle)*

### 4.1.1. CONCEPTS

**WHAT IS THE RESPONSIBILITY OF THE HEALTH SYSTEM AND THE NHP?**

1. **Improving the level of health of all citizens is one of the main objectives of a Health System (HS).**
2. However, its context is complex, with limited resources, constant evolution of knowledge and technology, dynamic profile of health needs (due to, for example, ageing, the increase of prevalence of chronic disease, new threats for health), difficult determination (in aspects such as quality of life, self-perceived health, satisfaction) and under strong influence of social factors external to health, such as economy, culture and international situation.
3. This complexity determines that it is necessary to regularly **define the areas concerning which a programmed intervention results in better health for the population.** The NHP has that responsibility: to identify the gains to be obtained, in order to guide the HS to make the most appropriate use of the available resources.

**WHAT ARE POTENTIAL HEALTH GAINS?**

4. **Health Gains (GeS)** are understood as positive outcomes in health indicators, and include references about their evolution.
  - These express the improvement in outcomes (Nutbeam D, 1998) and translate as gains in years of life, reduction of disease episodes or shortening their duration, reduction of temporary or permanent incapacity situations, increase of physical and psycho-social functionality and also reduction of avoidable suffering and improvement of health-related or health-conditioned quality of life (MS, 2000).
5. **Potential Health Gains (GPS)** are those gains resulting from the ability to intervene over avoidable, controllable or quickly solvable causes. These are calculated considering the time evolution at national, regional or local level, in an inequality reduction logic.

**WHAT ARE PROSPECTS FOR OBTAINING HEALTH GAINS?**

6. The prospects for obtaining GeS include the definition of GPS, targets, articulation with stakeholders, identification of determinants models and corresponding priority interventions (Box 4.1.1.).

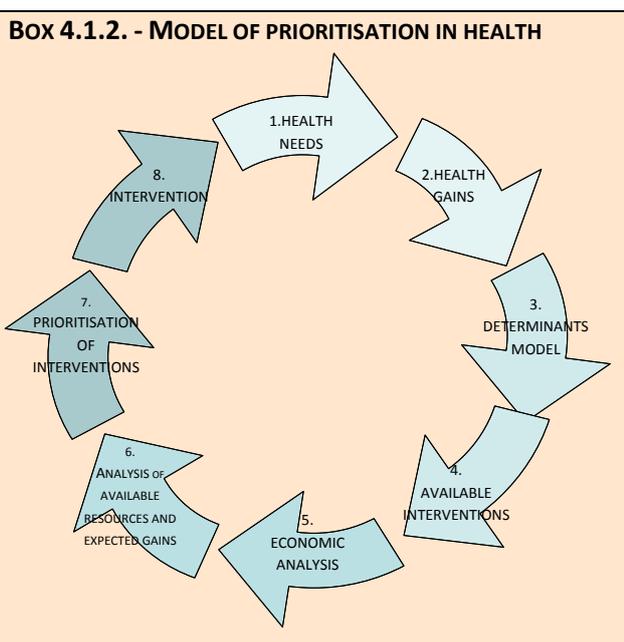
**BOX 4.1.1. PROSPECTS FOR OBTAINING HEALTH GAINS**

- Planning process with the definition of: Potential Health Gains; Priorities; Targets.
- Articulation between stakeholders;
- Determinants models and priority interventions.

**- HEALTH PLANNING PROCESS**

7. In the **health planning process, at all levels** (national, regional, local, vertical, etc.), there is the responsibility to identify health needs, GPS and priority interventions capable of obtaining such gains with the available resources.

• This is an interactive and complex process that can be depicted schematically (Box 4.1.2.):



- **DEFINITION OF HEALTH NEEDS**, as the health potential of the individual or of populations upon which some improvement in health status can be obtained;
- **IDENTIFICATION OF GPS**: identification of priority areas where the Health System can take actions leading to gains;
- **HEALTH DETERMINANTS MODEL** where one identifies, for the various potential gains, which are the determinants (risk, socioeconomic, access and health services quality factors, etc.) with a higher influence and interaction between each other and with other contexts;
- **AVAILABLE INTERVENTIONS**: the perspective of determinants and interventions should be extended and include a multidisciplinary and multi-sectorial scope;
- **ECONOMIC ANALYSIS**, that allow to relate the expected gains to the necessary resources;
- **ANALYSIS OF AVAILABLE RESOURCES AND EXPECTED GAINS**: Available resources, networks and the alignment between stakeholders, the existence of *quick-wins*, social expectations and strategic gains in other areas should be taken into account in the prioritisation decision on interventions;
- **PRIORITISATION**, justified as the combination of interventions capable of obtaining the highest health gains with the available resources;
- **INTERVENTION**, corresponding to the plan operationalisation. It should be monitored and its impact assessed.

**- ESTIMATION OF POTENTIAL HEALTH**

8. The estimation of GPS is included in the **monitoring strategy of the NHP** (Box 4.1.3.), with the following aims:

- GAINS**
- i) To identify the areas and, subsequently, the interventions with higher potential for obtaining health gains, including the perspective of reduction of inequalities;
  - ii) To establish the relationship between the health needs and the response of the HS (**adequacy**) and between the latter and the use of resources (**performance**);
  - iii) To define responsibilities, objectives, targets and interventions of the HS stakeholders through determinants models;
  - iv) To be based on the existing information, but part of an updatable and evolving process.

**BOX 4.1.3. - NHP MONITORING STRATEGY**

Three sets of indicators are defined:

- 1) **Health Gains indicators** (health indicators whose behaviour is significantly attributable to the action of the Health System);
- 2) **Health Status and Health System Performance indicators** (resources, action taken by health services, satisfaction, etc.). The NHP 2004-10 continuity indicators are included, as well as others considered relevant;
- 3) **Indicators of execution of NHP 2012-2016 actions and recommendations.**

**- INDICATORS FOR THE ESTIMATION OF GPS**

9. **GPS present a multidimensional perspective**, including mortality, morbidity, incapacity, satisfaction, Health System response and sustainability. However, the concept of GeS is dynamic, depending on the definition of health, disease and intervention capacity. As new diagnosis or interventions are developed and accepted, new areas with prospects of gains appear. Likewise, the capacity of an information system to cross social and demographic data and characteristics or to understand the relevance of factors throughout life allows understanding, with more accurateness and coverage, the impact of social determinants and life contexts on the health status and, thus, better identifying the gains.

10. Box 4.1.4. lists the selected indicators. The methodology used to calculate the identified indicators is described in chapter "NHP Indicators and Targets".

| <b>BOX 4.1.4. - POTENTIAL HEALTH GAIN INDICATORS</b> |  |               |
|--|--|---------------|
| <b>GROUP</b>   | <b>INDICATOR</b>   | <b>SOURCE</b> |
| <b>MORTALITY</b>                                     | <b>Number of Potential Years of Life Lost (PYLL)</b><br>- Avoidable causes through primary prevention;<br>- Avoidable causes through healthcare. | INE           |
| <b>MORBIDITY</b>                                     | <b>Hospital admission rate per 100,000 inhabitants</b><br>- Hospital admissions for ambulatory care-sensitive conditions.                        | ACSS - DRG    |
| <b>INCAPACITY</b>                                    | Disability pensioners.   | MSSS - CNP    |

**- PREMATURE MORTALITY** 11. The premature mortality indicator **Potential Years of Life Lost (PYLL)** has been used to assess the magnitude, vulnerability and transcendence of health phenomena, i.e.: the number of deaths (magnitude), the moment of occurrence, with regard to the age of death, with stronger highlight to deaths occurred at younger ages which, *a priori*, are

avoidable (vulnerability). On the other hand, the more premature death is, the higher the social value assigned to it (transcendence) (Araújo E *et al*, 2009).

- **The analysis of PYLL (premature mortality) due to avoidable causes** allows identifying priority intervention areas that have higher potential health gains;
- AVOIDABLE MORTALITY**
- The concept of **avoidable mortality** emerged in 1970 in the USA to assess the Health Status and the performance of the Health System, being adopted and adapted by several researchers who identified a set of causes (disease, incapacity or death) considered avoidable through preventive or curative care (Rutstein D *et al*, 1976; Treurniet H *et al*, 2004; Nolte *et al*, 2004).;
  - In 2011, the OECD compared the two most recent lists of healthcare sensitive causes of death (Nolte and McKee - NMK, 2008; Tobias and Yeh - TY, 2009), establishing the main differences. The options for the calculation of potential gains in the NHP are based on this study, and were considered the causes common to both lists regarding infectious, circulatory, respiratory and digestive diseases. The malignant neoplasm of the testicle was added to the malignant neoplasms group, and death due to accident caused during a medical or surgical procedure was added to the external causes group. For *Diabetes Mellitus*, the same age limit was established (70 years), although E. Nolte considers death due to this cause avoidable through adequate healthcare, if occurring before the age of 50.
    - Thus, the following avoidable causes of death, sensitive to healthcare, were selected: intestinal infections, tuberculosis, other infections (diphtheria, tetanus, poliomyelitis), septicaemia, malignant neoplasm of colon and rectum, skin, female breast, cervix uteri and testis, *Hodgkin's* disease, leukaemia, thyroid disease, *Diabetes Mellitus*, epilepsy, chronic rheumatic heart disease, hypertensive disease, IHD, cerebrovascular diseases, respiratory disease, peptic ulcer, appendicitis, abdominal hernia, cholelithiasis and cholecystitis, nephritis and nephrosis, pregnancy, birth and puerperium complications, maternal death, conditions originating in the perinatal period, congenital anomalies of the circulatory system, accidents in patients during medical or surgical procedures;
    - Concerning causes of death avoidable through primary prevention, the following were considered: malignant neoplasm of trachea, bronchus and lung, liver cirrhosis and motor vehicle accidents;
    - **HIV-AIDS** and suicide were also added to this list of causes, as it is considered that primary prevention actions and actions in the scope of healthcare may have an impact on their reduction;
    - This analysis identifies 74 years as age limit for considering many causes avoidable. As in the calculation of PYLL according to the OECD methodology 70 was established as the maximum age, the latter was considered.
- AVOIDABLE HOSPITAL ADMISSIONS**
12. **Avoidable hospital admissions** also reflect the performance of the Health System, allowing, on one hand, to monitor morbidity, needs, variations of access or of quality of the primary care provided and, on the other hand, to allocate resources and define the type of interventions with higher impact (Billings J *et al*, 1993).
- Avoidable hospital admissions represent a set of situations that should be avoided because the disease or condition was prevented from occurring (primary prevention) or

because there was a good access and follow-up in outpatient care (secondary or tertiary prevention) (Page *et al*, 2007);

- High values of avoidable hospital admissions reflect the need to improve the performance of primary healthcare and outpatient care. However, there are other factors that affect those values, such as age and gender, socioeconomic level, incidence and prevalence, access to care and human, technological and physical resources available (Page A *et al*, 2007);
- **Hospital admissions for ambulatory care-sensitive conditions** refer to those admissions avoidable through prophylactic or therapeutic interventions developed within Primary Healthcare and outpatient care. Appropriate Primary Healthcare may prevent the appearance of a disease, enhance the control of an acute episodic or chronic disease or prevent hospital admission.
  - Among the listings described in literature, that of the *Canadian Institute for Health Information* was selected, since it is the one that best fits the information available in Portugal. It includes grand mal status and other epileptic convulsions, chronic obstructive pulmonary disease (COPD), asthma, diabetes, heart failure and pulmonary oedema, hypertension, and *angina pectoris* (0-74 years) (CIHI, 2010).

- **INCAPACITY** .13. Besides the traditional mortality and morbidity measures, the indicators of **incapacity** play a relevant role in the analysis of the Health Status of a population and of the System performance.

- The concept of incapacity is complex because it reflects an **interaction between the physical and mental characteristics of an individual and those of the society in which the individual is integrated**. More than affecting the health status, incapacity has repercussions in a country's social and economic development;
- Incapacity (temporary or permanent) includes **impairment, activity limitation or participation restriction**. Impairment is a problem in the body function or structure; activity limitation, a difficulty found in the execution of a task or action; participation restriction, a problem felt by an individual in several life situations (WHO, 2011).
  - **Temporary incapacity** for the performance of common tasks may be defined as a restriction, for a short period of time, of the individual's usual functional capacity (Goffredo G *et al*, 2008). It can be measured indirectly through several indicators coming from administrative sources (example of the number of absent days due to illness or the numbers of hours without **working** due to disease collected from the MSSS databases) or from self-reporting (example, INS);
  - **Long-term/permanent incapacity** is defined as the inability to perform the individual's common tasks for an extended period of time or chronically (INS, 2006). Similarly to temporary incapacity, for the calculation of permanent incapacity, it is possible to consider data from MSSS (example of absolute or relative disability pensioners) or from the National Health Interview Survey (INS) (self-reported) (Kivimaki M *et al*, 2003). However, the analysis of work absenteeism due to disease has the limitation of considering only active population, reason why it should be supplemented with other indicators, namely those from the INS (self-report). The absence from work due to medically proven disease, as is the case of disability pensioners, is a strong predictor of the health status.

---

- **DEFINITION OF PRIORITIES** .14. The NHP proposes, as a basis for the identification of GPS, the consideration of areas where there are higher inequalities between levels (see section on FRAMEWORK). Thus:

- **NATIONAL PRIORITY AREAS** are identified as those where Portugal has a wider difference (*gap*) compared with other countries with better values;
- **REGIONAL PRIORITY AREAS** are those where a region finds itself with a wider difference when compared to other with better values;
- The same process is applied to the definition of **local** or **institutional priority areas**, using as reference the comparable unit of the same level with better values.

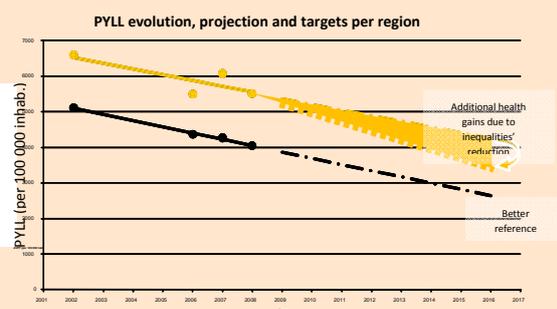
- **DEFINITION OF TARGETS** .15. **Targets are defined as expectations in terms of pathway and values to attain.** The target definition process should follow rules common to the several levels (national, regional, local and institutional), so as to maintain the coherence and the value creation chain between levels. The GPS calculation method and the definition of targets may be applied to the several health indicators with regular measurements, considering social and demographic stratifications. This takes place according to the following stages:

- **Projecting the indicators' trend**, allowing to create an **expectation of progress, assuming that the conditions are maintained.** This way, it becomes possible to seek interventions that improve performance in the short, medium and long-term and to monitor their impact. It also allows identifying deviations from the projected course, to study them and to intervene.
  - An exponential regression was applied to the available data as the most appropriate statistical method for their characteristics.
  - Given the complexity underlying the collection of health outcomes, the **projection of indicators is a simple estimation of the continuity of that indicator's evolution trend**, sometimes stratified (by age group, gender or geographic region), whenever possible or relevant.
- Identifying, in a certain level, the unit with the best performance as the **guiding reference** (FIGURE 4.1.1.). For units with similar structure and responsibility, this comparison is desirable and reinforces the processes of identification of best practices and reduction of inequalities.
  - This comparison process also becomes **more robust** regarding the possible impact of situations that may affect the Health System as a whole (e.g. epidemics, socioeconomic crises, legislative changes, scientific and technological innovation, etc.);
  - The information regarding the disability pensioners is only broken down by district. In order to obtain an estimation per ARS, each district was associated to the corresponding health region and, in cases where there are municipalities divided between different ARS, the percentage of the population (used in the denominator: 18-64 years) of the district residing in each of the municipalities was estimated. This procedure was applied to the districts of Aveiro, Viseu, Guarda, Leiria, Santarém and Setúbal.

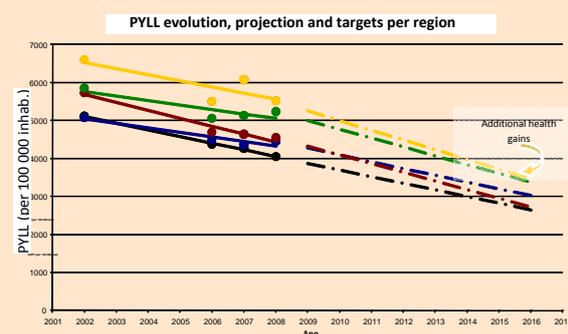
- Calculation of the target, reducing to 50% the difference between the value projected for 2016 in each unit (e.g. ARS) and the unit of reference (best value projected for 2016). The national target proposed is the result of an average of the value of units (e.g. ARS) weighed by the population of the denominator (<70 years for PYLL and hospital admissions, 18-64 years for disability pensioners);
- The established targets may be regularly revised, maintaining the same convergence objectives;
- The GPS are obtained by adding the difference estimated for each year and in each unit (e.g. ARS), from 2010 to 2106, between the expected evolution (projected value) and the evolution resulting from the progressive reduction of inequalities to 50% in 2016 (target). The indicated gains are thus cumulative.

#### FIGURE 4.1.1. - TARGET DEFINITION PROCESS (ILLUSTRATION)

Evolution of the PYLL indicator by health region. In the first figure, the performance projection of a health region is compared to the region showing the best performance (in this case, the lowest value).



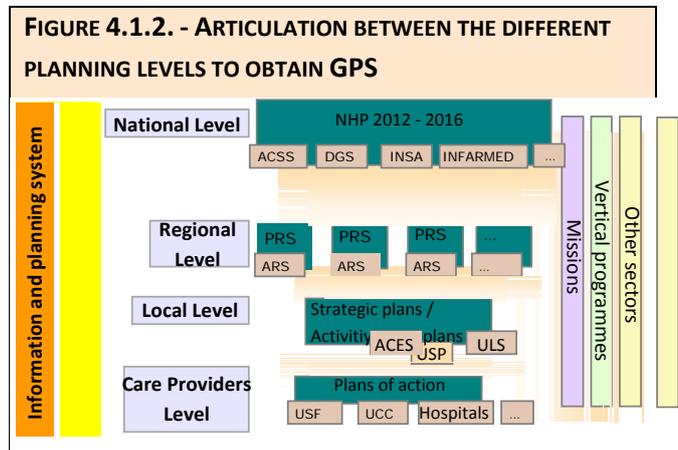
GeS are estimated through the reduction of differences between regions. Thus, an expected pathway is established and targets are set based on the convergence with the best performance value.



The bottom figure represents the gains by applying the same process to all units of a certain level.

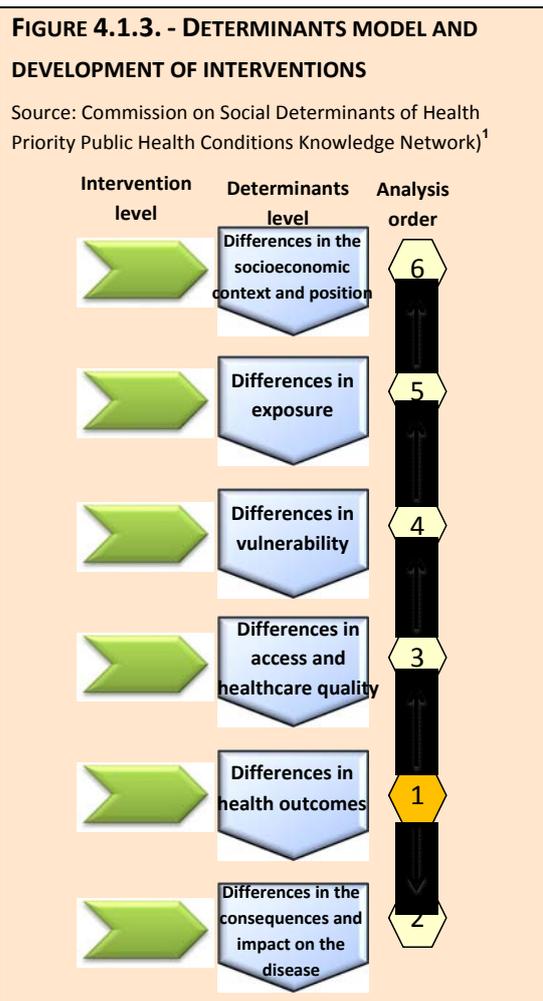
- **THE ALIGNMENT PROCESS** .16. The definition of targets at one specific level should be reflected on the definition of targets at subsidiary levels, ensuring that the contribution of the several levels is well identified and valued in a hierarchical chain (FIGURE 4.1.2.).

- The targets defined at one specific level or unit may not be their exclusive responsibility. The necessary interventions may require the action of upper levels (central or regional actions, for example);
- Although each level (national, regional, local) can only select and commit itself to attain a limited number of targets (e.g. through contractualisation), it should maintain the monitoring of integrated and comparative performance.



**DEFINITION OF THE DETERMINANTS MODEL AND INTERVENTIONS** .17. THE DETERMINANTS MODEL (FIGURE 4.1.3.) aims to establish the connection between the areas of higher GPS, identify available interventions and define priorities among those that enable a higher health value. It is a process that also guides the scope of intervention of the health sector, other sectors and stakeholders.

- The process of identification of determinants and associated interventions has as a starting point the analysis of differences in health outcomes (item 1);
- It is important to analyse the differences in the consequences and in the negative impact of disease (e.g. treatment, control, rehabilitation, reintegration) that may generate health losses (item 2). The simple analysis of the natural history of disease, of the factors associated to incidence or prognosis, is not sufficient or appropriate, by itself, for the identification of determinants and interventions;
- When considering the determinants, attention should be paid to differences in the access and quality of health services (item 3), in vulnerability (e.g. social exclusion, literacy) (item 4), in exposure (e.g. environmental conditions, working conditions, obstacles to the adoption of healthy lifestyles) (item 5), in the context and socioeconomic position (e.g. income, education, spatial planning, social support) (item 6);
- Thus, for each health problem or area of planning, the informed determinants model should be clear or adapted to the national, regional or local reality, according to the scope of the plan.



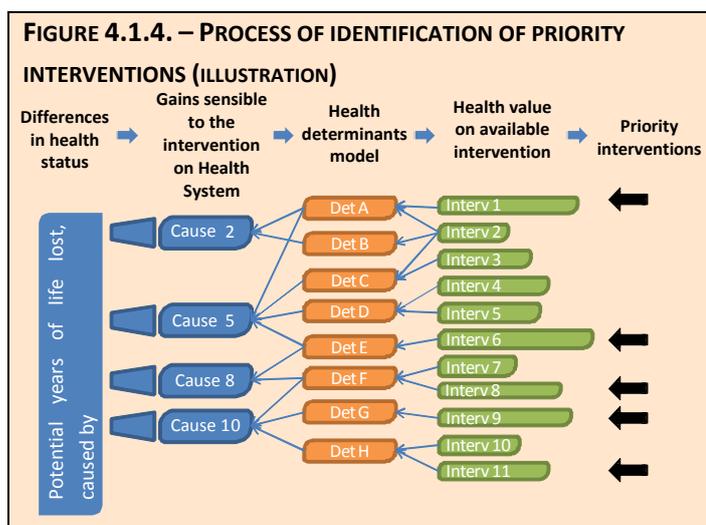
.18. The Health System has the responsibility of prioritising the response to areas of higher GPS, and the allocation of resources should have the aim of supporting the set of interventions that can obtain more gains (priority interventions). Given the limitation of resources and the system's complexity, there is inevitably a limitation in the number of possible interventions in each planning cycle.

<sup>1</sup> Adapted from Commission on Social Determinants of Health Priority Public Health Conditions Knowledge Network. Scoping paper: Priority Public Health Conditions. Available at [http://www.who.int/social\\_determinants/resources/pphc\\_scoping\\_paper.pdf](http://www.who.int/social_determinants/resources/pphc_scoping_paper.pdf), accessed in February, 2011.

- IDENTIFICATION OF PRIORITY INTERVENTIONS .19. The **process of selection of priority interventions** may be represented as follows (FIGURE 4.1.4.):

**INTERVENTIONS**

- The **differences in the health status** are sorted between units of a certain level (e.g. between countries, regions, ACES, care-providing institutions, etc.);
- The **causes suitable for intervention are identified**, namely those sensitive to healthcare and primary prevention;



For each cause, the **most important determinants for which there are interventions** are identified. One determinant can be associated to one or more causes or present itself as a set of determinants (e.g. school education, access to primary healthcare);

- As previously mentioned, the **concept of determinant should be extended**, so as to include behavioural, environmental, socioeconomic determinants, etc., and not only those of exclusive responsibility of health services;
- An intervention may have as its subject one or more determinants and may be a set of intervention strategies (e.g. a set of clinical orientation guidelines, cancer screening, educational campaigns);
- An analysis is made to those **interventions with higher expected return in health gains per cost** (according to the most appropriate and available dimensions, through cost-benefit, cost-effectiveness and cost-utility analyses, etc.), which will depend on the nature of the intervention, but also on the fact that it is able to attain several determinants that, in turn, operate over several relevant causes;
- The available resources should be distributed by the interventions with higher return per cost. Such **interventions are considered a priority**;
- Other strategic questions should be considered, in a strict and transparent way, such as the history and the resources already available, the need for partnerships, the need for creation of resources and scale economy, structural implications in the medium and long-term, social support and acceptability, etc., which may interfere in the decision about which interventions should be considered a priority.

## 4.1.2. FRAMEWORK

### - PREMATURE MORTALITY (PYLL)

- .1. In Portugal, in the last decade, **premature mortality**, measured by the PYLL, has decreased in 30%. The main groups of causes, in 2009, were: i) malignant neoplasms; ii) external causes; iii) circulatory diseases; iv) certain conditions originating in the perinatal period; v) infectious and parasitic diseases; vi) digestive diseases; vii) respiratory diseases; viii) congenital and chromosomal anomalies; ix) diseases of the nervous system and of the sensory organs x) endocrine, nutritional and metabolic diseases.
- .2. When specific causes are analysed, the following stand out, for presenting a **higher number of PYLL**: transport accidents with motor vehicles, certain conditions originating in the perinatal period, malignant neoplasms of the female breast and trachea, bronchus and lung, HIV-AIDS, chronic liver disease, suicide (intentional self-harm), and cerebrovascular and ischemic heart diseases.
- .3. A high proportion of PYLL is also due to **deaths classified as having undetermined causes**, such as "symptoms, signs, abnormal exams and ill-defined causes" and "otherwise unspecified malignant neoplasms". Excessively high values without a defined diagnosis, as well as injuries where the intent is not determined, malignant neoplasms of ill-defined, secondary and unspecified sites, or heart failure compromise the utility of information and have been identified as indicators of bad quality in completing mortality registrations according to the cause (Mathers C *et al*, 2005). This situation highlights the importance of dematerialisation of death certificates, a process that is in an advanced implementation stage in Portugal.

### MORTALITY AVOIDABLE THROUGH PRIMARY PREVENTION OR HEALTHCARE

- .4. Among the **causes of death considered sensitive to primary prevention and healthcare** (Box 4.1.5), those registering the highest number of PYLL in Mainland Portugal were identified:

**BOX 4.1.5. - STANDARDISED RATE OF POTENTIAL YEARS OF LIFE LOST (PER 100,000 INHABITANTS) DUE TO CAUSES SENSITIVE TO PRIMARY PREVENTION OR HEALTHCARE, IN MAINLAND PORTUGAL, CONCERNING YEAR 2009.**

| CAUSE OF DEATH   | PYLL RATE |
|--|-----------|
| Transportation accident involving motor vehicles       | 241.7     |
| Certain conditions originating in the perinatal period | 236.3     |
| Malignant neoplasm of the female breast                | 159.7     |
| Malignant neoplasm of the trachea, bronchus and lung   | 144.4     |
| HIV/AIDS   | 128.5     |
| Chronic liver disease                                  | 128.5     |
| Suicide  | 123.8     |
| Cerebrovascular diseases                               | 119.9     |
| Ischemic heart disease                                 | 105.9     |
| Malignant neoplasm of colon, rectum and anus           | 86.6      |
| Pneumonia  | 58.5      |
| Malignant neoplasm of cervix uteri                     | 40.3      |
| <i>Diabetes Mellitus*</i>                              | 40.0      |

\* According to Ellen Nolte's criteria (2004), death due to Diabetes Mellitus is only avoidable through appropriate healthcare before the age of 50. In this case, 70 years old was considered the limit age.

Source: INE, 2011

accidents with motor vehicles, certain conditions originating in the perinatal period, malignant neoplasms (with special relevance to female breast, trachea, bronchus and lung, colon, rectum and anus and cervix uteri), chronic liver disease and cerebrovascular and ischemic heart diseases. These are associated to primary prevention, namely the use of tobacco and alcohol or to appropriate healthcare, such as access, control of risk factors and timely treatments.

**POTENTIAL HEALTH  
GAINS THROUGH  
REDUCTION OF  
AVOIDABLE  
MORTALITY  
- AT NATIONAL  
LEVEL**

5. From a perspective of potential gains by comparison with other countries (comparison units) and reduction of inequalities, the values for Portugal should have those of other countries as a reference. The following text box compares the PYLL due to causes sensitive to primary promotion and healthcare in Portugal and in EU countries that are part of OECD, concerning the year 2007. The listed causes are sorted in descending order according to the difference between the two studied groups, i.e., those who present a higher potential for improvement in Portugal. HIV/AIDS and suicide were added to these causes, because they are considered possible subjects of primary and/or secondary prevention actions. Suicide and ischemic heart disease present better results in Portugal than the average of the 5 best values from the analysed countries. Nonetheless, suicide has recorded a growing trend between 2000 and 2009.

**BOX 4.1.6. – SORTING OF THE STANDARDISED RATE OF PYLL (PER 100,000 INHAB.) DUE TO CAUSES THAT ARE SENSITIVE TO PRIMARY PREVENTION AND TO SELECTED HEALTHCARE (MAINLAND PORTUGAL AND EU COUNTRIES THAT ARE MEMBERS OF OECD, DATA CONCERNING THE YEAR 2007).**

| CAUSE OF DEATH   | PORTUGAL | AVERAGE OF THE TOP 5 COUNTRIES IN THE EU | PT-EU DIFFERENCE |
|--|----------|--|------------------|
| HIV/AIDS   | 166      | 2  | 164              |
| Land transport accidents                               | 298      | 182                                      | 116              |
| Chronic liver disease                                  | 144      | 52                                       | 92               |
| Cerebrovascular diseases                               | 127      | 69                                       | 58               |
| Malignant neoplasm of colon, rectum and anus           | 85       | 56                                       | 29               |
| Pneumonia*   | 48       | 19                                       | 29               |
| Certain conditions originating in the perinatal period | 186      | 148                                      | 28               |
| Malignant neoplasm of the female breast                | 164      | 145                                      | 19               |
| Malignant neoplasm of cervix uteri                     | 35       | 16                                       | 19               |
| Malignant neoplasm of the trachea, bronchus and lung   | 141      | 125                                      | 16               |
| <i>Diabetes Mellitus</i>                               | 40       | 25                                       | 15               |
| Ischemic heart disease                                 | 124      | 153                                      | - 29             |
| Suicide  | 114      | 152                                      | - 38             |

NOTE: The 2007 figures of the EU countries that are OECD members represent the last available year in the OECD Health Data 2010 database.

\* The OECD data are for Pneumonia or *Influenza*. The figures ascribed to *Influenza* are very low and do not affect rates.

Sources: INE, February 2011 (rates for Mainland Portugal) and OECD Health Data, June 2010.

.6. Through the process described in the section on CONCEPTS, the following gains and targets are identified at national and regional level (Box 4.1.7.) for avoidable mortality due to causes sensitive to primary prevention and healthcare:

**Box 4.1.7. – STANDARDISED RATE OF PYLL (PER 100,000 INHAB.) DUE TO CAUSES SENSITIVE TO PRIMARY PREVENTION AND HEALTHCARE (HEALTH REGIONS, DATA CONCERNING 2009)**

| CAUSE OF DEATH                                       | PROPOSED TARGET AND CUMULATIVE GAINS ESTIMATED FOR 2016 | MAINLAND | NORTH | CENTRE | LVT   | ALENTEJO | ALGARVE |
|--|---|----------|-------|--------|-------|----------|---------|
| HIV/AIDS   | Target  | 45.0     | 36.8  | 27.1   | 61.8  | 26.2     | 64.0    |
|  | Gains   | 241.5    | 25.2  | 1.5    | 94.3  | RV       | 120.5   |
| Land transport accidents                             | Target  | 100.1    | 73.8  | 114.1  | 108.6 | 133.9    | 162.1   |
|  | Gains   | 620.5    | RV    | 100.8  | 97.2  | 158.9    | 263.6   |
| Chronic liver disease                                | Target  | 93.6     | 103.5 | 86.0   | 73.8  | 80.3     | 215.6   |
|  | Gains   | 612.7    | 101.8 | 37.9   | RV    | 21.8     | 451.2   |
| Cerebrovascular disease                              | Target  | 59.1     | 56.7  | 53.9   | 62.2  | 75.5     | 55.8    |
|  | Gains   | 93.5     | 1.4   | RV     | 19.6  | 70.6     | 1.9     |
| Malignant neoplasm of colon, rectum and anus         | Target  | 77.1     | 70.5  | 78.6   | 78.2  | 79.3     | 114.5   |
|  | Gains   | 232.8    | RV    | 28.2   | 26.9  | 30.6     | 147.1   |
| Pneumonia  | Target  | 31.0     | 22.6  | 33.7   | 36.7  | 39.4     | 36.5    |
|  | Gains   | 191.1    | RV    | 38.5   | 48.8  | 58.8     | 45.0    |
| Conditions originating in the perinatal period       | Target  | 174.3    | 141.4 | 144.5  | 215.5 | 220.3    | 175.5   |
|  | Gains   | 560.8    | RV    | 10.7   | 156.4 | 275.7    | 118.0   |
| Malignant neoplasm of the female breast              | Target  | 118.3    | 108.6 | 100.5  | 135.6 | 118.4    | 124.1   |
|  | Gains   | 291.6    | 27.3  | RV     | 122.6 | 61.2     | 80.5    |
| Malignant neoplasm of cervix uteri                   | Target  | 18.9     | 16.8  | 20.2   | 10.5  | 63.8     | 52.4    |
|  | Gains   | 111.4    | 6.4   | 9.7    | RV    | 53.4     | 42.0    |
| Malignant neoplasm of the trachea, bronchus and lung | Target  | 131.7    | 134.0 | 117.1  | 137.3 | 97.8     | 156.9   |
|  | Gains   | 532.4    | 126.3 | 64.5   | 137.3 | RV       | 204.3   |
| Diabetes Mellitus                                    | Target  | 18.7     | 15.3  | 20.7   | 19.8  | 38.1     | 10.5    |
|  | Gains   | 177.9    | 15.0  | 35.4   | 30.8  | 96.7     | RV      |

\* Gains are cumulative over the years covered by the NHP (2012-2016) RV, Reference Value  
Source: Compiled from data provided by the INE

- AT REGIONAL LEVEL
7. Box 4.1.8. identifies the causes of death responsible for higher standardised rates of PYLL (per 100,000 inhabitants) in Mainland Portugal and corresponding order numbers in Health Regions.

**BOX 4.1.8. – STANDARDISED RATE OF PYLL (PER 100,000 INHAB.) DUE TO CAUSES SENSITIVE TO PRIMARY PREVENTION AND HEALTHCARE (HEALTH REGIONS, DATA CONCERNING 2009)**

| CAUSE OF DEATH   | MAINLAND |       | NORTH |       | CENTRE |       | LVT  |       | ALENTEJO |       | ALGARVE |       |
|--|----------|-------|-------|-------|--------|-------|------|-------|----------|-------|---------|-------|
|  | ORD.     | RATE  | ORD.  | RATE  | ORD.   | RATE  | ORD. | RATE  | ORD.     | RATE  | ORD.    | RATE  |
| Transportation accident involving motor vehicles           | 1        | 241.7 | 2     | 167.1 | 1      | 301.8 | 2    | 247.1 | 1        | 414.6 | 1       | 438.4 |
| Certain conditions originating in the perinatal period     | 2        | 236.3 | 1     | 213.1 | 2      | 153.7 | 1    | 281.4 | 2        | 334.6 | 3       | 187.8 |
| Malignant neoplasm of the female breast                    | 3        | 159.7 | 5     | 141.5 | 4      | 134.1 | 3    | 187.6 | 5        | 150.4 | 4       | 185.0 |
| Malignant neoplasm of the trachea, bronchus and lung       | 4        | 144.4 | 3     | 160.1 | 6      | 102.4 | 4    | 150.2 | 7        | 102.9 | 6       | 180.8 |
| Chronic liver disease                                      | 5        | 128.5 | 4     | 150.1 | 3      | 135.9 | 7    | 97.7  | 6        | 119.0 | 5       | 181.1 |
| Cerebrovascular diseases                                   | 6        | 119.9 | 6     | 105.1 | 5      | 113.9 | 6    | 132.5 | 4        | 157.6 | 7       | 129.6 |
| Ischemic heart disease                                     | 7        | 105.9 | 8     | 68.0  | 10     | 53.4  | 5    | 138.7 | 3        | 249.3 | 2       | 207.2 |
| Malignant neoplasm of colon, rectum and anus               | 8        | 86.6  | 7     | 80.3  | 7      | 89.4  | 8    | 89.0  | 8        | 93.0  | 8       | 103.7 |
| Pneumonia  | 9        | 58.5  | 9     | 49.9  | 9      | 53.8  | 9    | 65.2  | 10       | 56.7  | 9       | 83.2  |
| Malignant neoplasm of cervix uteri                         | 10       | 40.3  | 10    | 29.7  | 12     | 41.9  | 11   | 41.0  | 9        | 78.4  | 10      | 81.5  |
| Congenital anomalies in the circulatory system             | 11       | 37.9  | 11    | 28.8  | 8      | 54.6  | 10   | 43.6  | 11       | 50.1  | 24      | 0.0   |
| Septicaemia  | 12       | 27.4  | 12    | 28.3  | 18     | 12.0  | 12   | 31.3  | 14       | 30.9  | 12      | 42.3  |
| Leukaemia  | 13       | 25.0  | 14    | 17.5  | 11     | 45.2  | 13   | 26.4  | 19       | 7.9   | 13      | 29.0  |
| Nephritis and nephrosis                                    | 14       | 18.3  | 13    | 19.6  | 17     | 13.2  | 14   | 16.9  | 15       | 23.0  | 14      | 27.6  |
| Epilepsy   | 15       | 16.5  | 15    | 17.3  | 13     | 26.3  | 17   | 9.3   | 12       | 43.1  | 24      | 0.0   |
| <i>Diabetes Mellitus</i> [0-49 years]                      | 16       | 12.1  | 18    | 10.2  | 19     | 11.3  | 16   | 12.2  | 13       | 37.2  | 19      | 5.0   |
| Tuberculosis   | 17       | 10.0  | 16    | 10.8  | 23     | 3.1   | 15   | 13.0  | 21       | 6.5   | 18      | 9.0   |
| Accident in patients during medical or surgical procedures | 18       | 8.4   | 17    | 10.4  | 15     | 16.2  | 19   | 5.0   | 23       | 1.0   | 22      | 3.3   |
| Hypertensive diseases                                      | 19       | 7.7   | 19    | 8.6   | 20     | 10.4  | 20   | 4.9   | 20       | 6.5   | 16      | 13.9  |
| Malignant neoplasm of testis                               | 20       | 7.4   | 24    | 2.4   | 14     | 20.0  | 18   | 8.3   | 25       | 0.0   | 24      | 0.0   |

Source: INE, 2011

- HOSPITAL ADMISSIONS FOR AMBULATORY CARE-SENSITIVE CONDITIONS**
8. The last decade (2000-2009) has also seen a decrease in the rate of **hospital admissions for ambulatory care-sensitive conditions** per 100,000 inhabitants (Box 4.1.9.), going from 29.7 to 28.3 (relative decrease of 4.7%).
9. In 2009, the main causes of hospital admissions avoidable through appropriate outpatient care were diabetes, asthma and chronic obstructive pulmonary disease. Between 2000 and 2009, hospital admissions due to diabetes were the only type that registered a relative increase (3%). In contrast, arterial hypertension and *angina pectoris* registered, in the same period, expressive decreases.

**BOX 4.1.9. – STANDARDISED RATE OF HOSPITAL ADMISSIONS (PER 100,000 INHAB.) DUE TO AMBULATORY CARE-SENSITIVE CONDITIONS IN MAINLAND PORTUGAL (2000-2009)**

| Causes                        | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009        |
|-------------------------------|------|------|------|------|------|------|------|------|------|-------------|
| <i>Diabetes Mellitus</i>      | 34.3 | 38.9 | 39.7 | 39.4 | 39.9 | 39.3 | 35.9 | 38.3 | 37.1 | <b>30.0</b> |
| <b>Asthma</b>                 | 39.9 | 39.8 | 36.4 | 35.5 | 34.6 | 30.4 | 36   | 29.8 | 28.6 | <b>29.5</b> |
| <b>COPD</b>                   | 35.2 | 35.4 | 34.2 | 34.2 | 29.3 | 32   | 27.5 | 31.7 | 30.6 | <b>29.4</b> |
| <b>Epilepsy and grand mal</b> | 29.7 | 30.3 | 30.2 | 31.4 | 27.9 | 30.8 | 29.2 | 29   | 31.4 | <b>28.3</b> |
| <b>Heart failure</b>          | 28.5 | 27.6 | 27.3 | 24.9 | 26.4 | 26.3 | 27.5 | 29.9 | 28.3 | <b>27.9</b> |
| <i>Angina pectoris</i>        | 37.5 | 33.3 | 27.1 | 24.9 | 24.8 | 22.3 | 23.1 | 28.1 | 28.8 | <b>23.3</b> |
| <b>Hypertension</b>           | 20.6 | 20.5 | 17.9 | 16.7 | 14.9 | 14.7 | 14.5 | 14.4 | 13.6 | <b>11.3</b> |

Source: Compiled from the DRG databases, ACSS.

.10. Through the process described in the section on CONCEPTS, the following gains and targets are identified at national and regional level (Box 4.1.10.) for hospital admissions for ambulatory care-sensitive conditions:

**Box 4.1.10. - PROPOSED TARGET AND ESTIMATED GAINS\* FOR 2016 FOR THE STANDARDISED RATE OF HOSPITAL ADMISSIONS FOR AMBULATORY CARE-SENSITIVE CONDITIONS (/100,000 INHAB.)**

| CAUSE OF HOSPITAL ADMISSIONS FOR AMBULATORY CARE-SENSITIVE CONDITIONS | PROPOSED TARGET AND CUMULATIVE GAINS ESTIMATED FOR 2016 | MAINLAND     | NORTH       | CENTRE      | LVT         | ALENTEJO     | ALGARVE     |
|---|---|--------------|-------------|-------------|-------------|--------------|-------------|
| <i>Diabetes Mellitus</i>  | Target  | 25.5         | 19.4        | 25.8        | 25.7        | 52.6         | 45.0        |
|   | Gains   | <b>236.9</b> | RV          | <b>22.3</b> | <b>22.2</b> | <b>105.6</b> | <b>86.8</b> |
| <b>Asthma</b>   | Target  | 20.1         | 16.9        | 28.5        | 17.3        | 20.7         | 37.4        |
|   | Gains   | <b>123.8</b> | RV          | <b>40.4</b> | <b>0.5</b>  | <b>13.1</b>  | <b>69.8</b> |
| <b>COPD</b>   | Target  | 17.9         | 19.1        | 19.3        | 16.9        | 17.5         | 11.2        |
|   | Gains   | <b>95.9</b>  | <b>27.1</b> | <b>28.0</b> | <b>19.5</b> | <b>21.3</b>  | <b>RV</b>   |
| <b>Epilepsy and grand mal</b>   | Target  | 25.2         | 27.2        | 24.6        | 20.9        | 24.3         | 46.3        |
|   | Gains   | <b>131.3</b> | <b>21.8</b> | <b>12.8</b> | <b>RV</b>   | <b>11.7</b>  | <b>85.0</b> |
| <b>Heart failure</b>  | Target  | 25.3         | 21.1        | 25.8        | 29.5        | 25.1         | 25.1        |
|   | Gains   | <b>72.9</b>  | RV          | <b>16.5</b> | <b>28.5</b> | <b>13.9</b>  | <b>14.0</b> |
| <i>Angina pectoris</i>  | Target  | 16.4         | 10.2        | 36.4        | 10.9        | 22.7         | 32.1        |
|   | Gains   | <b>206.8</b> | RV          | <b>87.2</b> | <b>1.0</b>  | <b>43.5</b>  | <b>75.1</b> |
| <b>Hypertension</b>   | Target  | 6.4          | 4.8         | 7.9         | 6.5         | 8.6          | 11.4        |
|   | Gains   | <b>51.4</b>  | RV          | <b>9.3</b>  | <b>5.4</b>  | <b>13.5</b>  | <b>23.2</b> |

\* Gains are cumulative over the years covered by the NHP (2012-2016)

RV, reference value.

Source: Compiled from the DRG databases.

.11. Between 2000 and 2009, the number of **disability pensioners** in the population from age 18 to 64 (per 100,000 inhab.) decreased 23.9%, going from 55.6‰ to 42.3‰.

INCAPACITY

---

### 4.1.3. GUIDELINES AND EVIDENCE

AT THE LEVEL OF  
POLITICAL  
DECISION-  
MAKING

- .12. **The areas identified as those with higher potential health gains should be subject to a determinants models analysis and to an identification of interventions with a cost-benefit relation** that may allow allocating resources and investment in order to obtain those gains.
- This process should have national benchmarks and, whenever appropriate, regional and/or local adaptations;
  - These national strategy models, in line with regional health plans from the ARS and with local plans, such as those of ACES, should include:
    - Risk factors/determinants and their impact on outcomes;
    - Available interventions and cost-benefit analysis;
    - Alternative strategies (multi-sectorial, if appropriate) and opportunities and limitations;
    - Potential gains and necessary resources;
    - Monitoring indicators;
    - Impact assessment;
    - Implications for clinical orientation guidelines.
  - Whenever possible and relevant, actions with several determinants as targets should be integrated;
  - The interventions should preferably be integrated in institutions, making use of their resources, and not form vertical structures. Well-defined or one-off situations are an exception, such as: need for a quick response (epidemics, disasters); directed to specific groups (children and youth, elderly); for one-off reforms (emergencies); or the need for special skills (When do vertical programmes have a place in health systems? Atun A, Bennett S, Duran A, WHO 2008);
  - These interventions should be very well defined in their scope, governance and engagement model, duration, information, monitoring and impact assessment process, as well as concerning the expected gains at national, regional or local level, as appropriate.
    - Whenever possible and appropriate, the expected gains should be broken down into local and institutional performance objectives and targets that may help mobilise and organise the local health institutions and strategies (e.g. inter-institutional teams, internal contractualisation, etc.);
    - Whenever possible and appropriate, a Health System perspective should be assumed, seeking to reinforce the capacity and the mandate of the involved stakeholders, the contribution of the different interested stakeholders (e.g. scientific associations, patient and professional associations), networking and dissemination of best practices;
    - Promoting networking and work in integration with other institutions, among several levels and multi-sectorial work whenever appropriate;
    - Assessing the impact of institutional services and interventions. The assessment should be previously defined, based on explicit models that allow disseminating best practices, *benchmarking* and the valorisation of institutional contribution to obtain health gains.
- .13. **Targets and objectives should be set, with regions and institutions, including performance, planning instruments and the expectation of obtaining health gains**, so as to value those aspects in the contractualisation and distribution of resources, and as to align and articulate institutions

---

and professionals in order to obtain the identified health gains.

- **Regional, local and institutional plans should mention, in their objectives, the targets and activities aimed to implement NHP guidelines** and those of other health plans, programmes and policies, at various levels, so as to establish the corresponding degree of attribution between institutional activity and observed gains;
- **Contractualisation and objectives and targets setting processes, at various levels, should be informed and reasoned**, preferably with longitudinal and compared information; performance analyses of the institutions in question and institutions of reference; best practices and recommendations for the institutions; engagement plans for institutions in networks, local strategies or intervention projects; monitoring plans; in order to empower institutions so as to obtain additional health gains and improve performance. The way how contractualisation processes help institutions improve their performance and obtain health gains should be known and analysed.

.14. Conditions should be created for the several **information systems to allow interoperability between systems, as well as monitoring and assessment.**

- The ability to identify areas with potential health gains depends on the information available for analysis. Priority is given to systematised and timely access to data concerning:
  - Mortality and morbidity broken down by risk factors and determinants, including social determinants;
  - Morbidity, risk factors and determinants per individual, regardless of the point of contact with the Health System, and characterising the health experience over the course of life;
  - Morbidity, for the calculation of incidence and prevalence of temporary and permanent incapacity according to the cause, risk factors and determinants;
  - 5-year cancer survival, at national level.
- The INS should be done in 2013-14.

.15. The **quality of information should be systematically improved**, through systems architecture and training of professionals, with the following objectives:

- To develop the process of reduction of errors and variability in the classification of events;
- To eliminate duplicate records;
- To reduce the recording of ill-defined conditions.

.16. The **Regional Plans of the five Health Regions should be aligned between the National Plan** and the local plans, and the implementation of strategies should follow the guidance of areas considered a priority, at national level.

- The ARS should define regional areas of potential health gains, identified among those which, in each region, show significant differences when compared to the region with the best outcomes;
- The GPS identification and local targets definition processes should be articulated with the process used in the definition of regional and national targets.

- 
- AT THE LEVEL OF HEALTH INSTITUTIONS**
- .17. The institutions should enable themselves to **understand their ability to contribute for health gains at the level of their mandate and at higher levels** (local, regional and national), as a way to promote their value and the value of their professionals.
- It should be possible to understand the contribution of institutions to obtain additional gains, as well as to assess and disseminate their practices;
  - **The institutions' information systems should articulate between themselves and enable an integrated information system** that promotes monitoring of the adequacy and performance of institutions, as well to obtain health gains.
- .18. The institutions should **adopt and maximise the effect of recommendations, guidelines and policies aimed at achieving health gains**, whether in the scope of their mandate or cooperating with other institutions, within and outside the health sphere.
- .19. The institutions should promote the **orientation of internal resources towards obtaining health gains in priority areas from interventions with proven cost-benefit or research of interventions considered promising**.
- The promotion of the training of professionals, teamwork, continuous quality improvement processes, internal contractualisation, research and performance monitoring and assessment processes becomes particularly important.
- AT THE LEVEL OF HEALTH PROFESSIONALS**
- .20. **Ensuring high quality records**, understanding their value, not only for direct, long-term and multidisciplinary care of the citizens, but also for the information, organization and performance of the Health System.
- .21. Promoting **continuous improvement of performance in the areas and interventions considered priorities**.
- Considering **advanced, multidisciplinary and applied training**, according to the context, associated to more specific and local indicators of adequacy and performance of professionals.
- .22. **Developing, researching, assessing and disseminating innovative strategies** for specific situations and contexts in the scope of the areas considered priorities.
- Through comprehensive determinants and intervention models, **multidisciplinary and inter-institutional work** should be considered, whenever appropriate, as a way to integrate resources and create synergies for innovation and reinforcement of the Health System capacity.
- AT THE LEVEL OF CITIZENS**
- .23. **Mobilising themselves, at several levels, around the areas where there are increased delays and health losses**, as **social objectives**, many of which are signs or results of socioeconomic, educational or family and social support inequalities.
- Underlying the NHP process of calculation of gains and targets is the reduction of inequalities, be they geographical or of other nature, so obtaining such gains may be envisaged as social imperatives that should mobilise political, institutional and civil society resources.
-

#### 4.1.4. VISION FOR 2016

The areas of potential health gains are a motive of focus and alignment at all levels. There is an articulated strategy of the health sector and other sectors. The indicators related to structure, process, intermediate and final results show those efforts, rewarding the Health System's ability to converge its actions towards economic and social welfare development.

**Portugal is coming close to the best European values in the areas identified as having potential health gains**

There are comprehensive and concrete conceptual models in the identified areas and their determinants. The possible cost-effective interventions were implemented, based on national strategic recommendations that embody national as well as international evidence. Their impact, interventions and necessary resources, monitoring and assessment are well defined. They have a perspective of integration, alignment and empowerment of the Health System, avoiding one-off, unsustainable or non-integrated interventions. They acknowledge the sharing of determinants and intervention strategies. There is a mapping of national, regional and local policies and strategies, of indicators and of impact assessments in a continuous work to assist in decision-making, contractualisation and local health strategies at all levels.

**There are national recommendations that define the cost-effective strategies for the areas identified as having potential gains**

Regional Health Plans, as well as Local Plans, are in line with the national strategy and contribute in an articulated manner, for the attainment of national targets. The regions have also developed specific strategies in the areas identified as having potential regional gains and have defined their impact, interventions and necessary resources, monitoring and assessment. There is a mapping of regional and local policies and strategies, of indicators and of impact assessments.

**The regions develop specific strategies in the areas identified as having potential regional gains and define their impact, interventions and necessary resources, monitoring and assessment.**

Each institution identifies opportunities for intervention and improvement of access, quality and citizen engagement. This is the basis of the services and interventions proposal in contractualisation, considering also the perspective of sustainability. The institutions promote and are part of networks, partnerships and local health strategies, as a way of capitalising inter-institutional and inter-sectorial gains and synergies. They monitor the impact of their actions, being valued for the contribution they provide. High impact interventions are proposed as best practices and their model is disseminated. Citizens and professionals feel the value of institutions in the attainment of such gains.

**The institutions articulate efforts, monitor interventions and assess the impact of their activity**

There is a perspective of integration and development of information systems, in order to empower the several levels of decision-making so as to identify potential health gains, priority interventions and monitor activity and performance. This perspective is based on an information systems development plan, reviewed annually, resulting from the engagement of the different interested parties. The reliability of information systems enables the reformulation of policies and priorities and the improvement of the Health System's quality in terms of decision, performance and monitoring. A better understanding and capacity to mobilise society and institutions around objectives and determinants is progressively built, because it becomes clear that they have an influence on citizens' health, economy and potential well-being.

**Integrated information systems empower planning, decision-making and monitoring of HS performance**