

HEALTH STRATEGIES
FOR THE YEAR 2010

Health Plan for Catalonia

Abridget version

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Abridget version



Generalitat de Catalunya
**Departament
de Salut**

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Index

1. Presentation	1
2. Establishment of health priorities for the first decade of the 21st century .	3
3. Evaluation of the health and risk-reduction targets for the year 2000	9
4. Health and risk-reduction targets for the year 2010	34
4.1. Promotion of healthy habits	35
4.2. Chronic diseases and accidents	37
4.3. Prevention and control of communicable diseases	45
4.4. Improvement of maternal and infant health	49
4.5. Healthy aging	50
4.6. Health protection	52
4.7. Emerging health problems	54
4.8. The good use of medicines	56
4.9. Organ donation and transplantation	57
5. Strategies to make health policies effective	59
6. Professionals and institutions who have participated in the elaboration of the Health Plan for Catalonia	67

Presentation

During the last twenty years, much experience in health planning has been accumulated in the developed countries. The fruit of this experience has been the adoption of planning by health targets and the consolidation of health plans as guidelines and frames of reference for national and regional health policies.

Today, it is accepted that the economic resources of health systems are limited, whereas health care needs are growing exponentially as scientific knowledge advances and new, more sophisticated and more expensive diagnostic, therapeutic and preventive technologies become available. Thus, planning is essential as the only way of guaranteeing the adequate use of available resources.

In Catalonia, the Catalan Health Care Organisation Act, approved in 1990 by the Catalan Parliament, established that the Health Plan would be the fundamental instrument of health policy of the Catalan Government. The Plan would establish the targets of health policy in Catalonia and the priority activities to be developed to achieve them.

As established by the above-mentioned Law, the Department of Health of the Catalan Government published, in 1991, the Framework Document for the Elaboration of the Health Plan for Catalonia, where the health and risk-reduction targets to be achieved by the year 2000 in Catalonia were established. Later, the 1993-1995, 1996-1998 and 1999-2001 Health Plans were published, where the priority lines of intervention for each of these three-year periods were established and the operational targets linked to the activities to be developed to achieve the general targets established for the year 2000 were fixed. The Health Plan also includes the preliminary projects drawn up by the health regions.

The evaluation of the results of the targets formulated for the year 2000 in the Framework Document and the Health Plan has shown a reasonably good final balance. Of the health and risk-reduction targets evaluated, 67.3% were achieved completely and 8.9% partially.

With the document Health Strategies for 2010: Health Plan for Catalonia 2002-2005, which I have the honour and satisfaction of presenting, a new stage in the health planning of Catalonia begins which will include the first ten years of the 21st century.

This document presents a summary of the book *Health Strategies for the Year 2010. Health Plan for Catalonia 2002-2005* (<http://www.gencat.net/sanitat>), where, in addition to the targets for 2010, the operational targets and the interventions and activities which will be developed during the period 2002-2005 are presented.

2

The establishment of health priorities for the first decade of the 21st century

Introduction

At the beginning of the 21st century, the health of the Catalan population corresponds to the characteristic pattern of developed Western countries. During the last century, important changes in the pattern of morbidity and mortality took place. Improvements in socioeconomic conditions and technological and scientific advances and the development of preventive and medical services contributed to the increase in life expectancy, while also improving people's quality of life. Life expectancy at birth in Catalonia in the year 2000 was 79.9 years (76.5 in men and 83.2 in women) and disability-free life expectancy was 67.89 years (66.78 in men and 69.0 in women).

Infectious diseases, which in the past were the main cause of disease and death and which mainly affected children, have been supplanted by other causes. Currently, chronic and degenerative illnesses in adults and the elderly are the greatest problem. Health problems related to habits and life styles, including accidents and substance abuse, which especially affect the young, are also having a great impact on the health of the Catalan population.

Selection of the priority interventions

The main criterion guiding the choice of the interventions included as priorities in the Health Plan for Catalonia 2002-2005 was the potential of improvement of life expectancy in good health.

This criterion places a clear priority on interventions to reduce chronic diseases, accidents and infectious diseases with the greatest incidence, and especially AIDS and vaccine-preventable diseases (table 1). The final order of the priority health problems affecting the Catalan population is shown in table 2. The potential for improvement of positive health as a consequence of the interventions (in the case of modification of health-related life styles) was also an important criterion (table 3). The main priorities are the fight against smoking, where progress has been very slow during the past ten years, the promotion of healthy nutritional habits in line with the classic Mediterranean diet and the promotion of physical activity. These two last interventions will be fundamental in facing the extraordinary increase observed in the prevalence of overweight and obesity during recent years.

Other criteria judged as fundamental by today's society have also been included: the quality of life and protection against potentially-avoidable health risks. The first criterion means that problems such as dental health, musculoskeletal diseases, mental health and aging are now considered a priority. The second implies priority interventions on a healthy environment, nutritional safety and, especially, on emergent health problems such as legionellosis, variant Creutzfeldt-Jakob disease and the re-emergence of foodborne diseases. The use of medicines and organ transplants are also considered susceptible to intervention.

Formulation of general health and risk reduction targets

The general health and risk reduction targets have been formulated in the long term, for 2010, taking into account the experience acquired in the previous stage in the formulation of the objectives for the year 2000.

Firstly, it was decided to take into account but not to systematically assume the targets formulated by the WHO-Europe or the European Union. These bodies formulate targets taking into account the global situation of the problem, without considering the great differences between member states. Secondly, only targets whose evaluation will provide quantifiable indicators of the problem are included.

Table 1. Prioritization of health problems in Catalonia in relation to the available indicators (2000)

	Mortality Absolute numbers (%)	Hospital morbidity Absolute numbers (%)	Cases reported to the Notifiable Disease Reporting System (NDRS)	Years of potential life lost from 1 to 70 years (YPLL ₁₋₇₀) (%)
Chronic diseases				
Stroke	5,103 (9.2%)	15,543 (2%)		6,162.5 (3.1%)
Coronary heart disease	5,399 (9.8%)	23,822 (2.9%)		11,597.5 (5.7%)
COPD and asthma	2,758 (0.5%)	27,156 (3.4%)		2,522.5 (1.2%)
Diabetes mellitus	1,338 (2.4%)	6,309 (0.8%)		1,687.5 (0.8%)
Suicide	452 (0.8%)			8,600 (4.3%)
Lung cancer	2,849 (5.2%)	5,124 (0.6%)		15,230 (7.5%)
Breast cancer	1,017 (1.9%)	5,170 (0.6%)		6,177.5 (3.1%)
Cirrhosis	1,204 (2.2%)	1,829 (0.2%)		9,315 (4.3%)
Accidents				
Road traffic accidents	820 (1.5%)	8,388 (1.0%)		24,149 (12.0%)
Vaccine-preventable infectious diseases				
Diphtheria			0	
Acute poliomyelitis			0	
Rubella			2	
Meningococcal meningitis C	8 (0.01%)		46	304 (0.57%)
<i>Haemophilus influenzae</i> type b			3	
Measles			1	
Hepatitis A			171	
Hepatitis B			73	
Tetanus	3 (0.01%)		5	2.5 (0.0%)
Mumps			115	
Varicella	2 (0.0%)		33,672	70 (0.13%)
Pertussis			193	
Non vaccine-preventable infectious diseases				
AIDS	249 (0.45%)	1,697 (0.2%)	419	7,127 (3.5%)
Tuberculosis	74 (0.13%)	1,112 (0.10%)	1,744	182.5 (0.09%)
Sexually-transmitted diseases	2 (0.0%)	59 (0.01%)	4,303	0
Nosocomial infections		46,743 (7%)*		
Legionella	5 (0.01%)	145 (0.017%)	213	70 (0.013%)
Foodborne diseases	0	88 (0.01%)	1,884	

YPLL: years of potential life lost; COPD: chronic obstructive pulmonary disease.

*Estimate.

Health problem	A	B	C	D	A + B	C × D	(A + B) × C × D
Cardiovascular	7	8	3	1.5	15	4.5	67.5
Mental health	8	8	2	1.5	16	3.0	48.0
Cancer	5	10	2	1.5	15	3.0	45.0
Accidents	5	10	2	1.5	15	3.0	45.0
Diabetes	5	8	3	1.0	13	3.0	36.0
Tuberculosis	2	4	3	1.5	6	4.5	27.0
Vaccine-preventable diseases	2	4	4	1.0	6	4.0	24.0
AIDS	1	10	2	1.0	11	2.0	22.0
Mother and baby	2	2	3	1.5	4	4.5	18.0
Dental health	10	2	3	0.5	12	1.5	18.0
Sexually-transmitted diseases	3	2	3	1.0	5	3.0	15.0
Nosocomial infections	1	4	3	1.0	5	3.0	15.0
Occupational health	3	4	2	1.0	7	2.0	14.0
COPD	5	8	2	0.5	13	1.0	13.0
Alcohol and drugs	5	8	1	1.0	13	1.0	13.0
Cirrhosis of liver	1	6	2	0.5	7	1.0	7.0
Bone and joint disease	9	4	1	0.5	13	0.5	6.5
Legionellosis	1	4	2	0.5	5	1.0	5.0
Foodborne diseases	1	2	3	0.5	3	1.5	4.5

Table 2. Priorities of the Health Plan for Catalonia 2002-2005

A = magnitude, according to general morbidity (prevalence/incidence) (1-10).

B = severity, according to mortality, years of potential life lost, disability and subjective perception of social and economic burden (1-10).

C = effectiveness, according to the assessment of experts on the effectiveness in Catalonia of the measures of proven efficacy to prevent or treat health problem (1-4). Refers only to the part attainable by the system.

D = potential to increase healthy life expectancy divided in 3 categories: 0.5 = low, 1.0 = intermediate and 1.5 = high.

Within these health problems prioritized by the Health Plan for Catalonia, three levels of priority are considered: the five first are high priority, the five following of intermediate priority and the rest, of lower priority.

Risk factor	Attributable mortality	Potential increase of HLE	Potential increase in positive health
Smoking	16.4% ^a	Very high	Very high
Physical inactivity	11.7% ^b	High	High
Alcohol abuse	5.5% ^c	High	Very high
Diet	? ^d	High	High

Table 3. Main behavioural risk factors considered in the Health Plan for Catalonia

^aDepartment of Health. Dona i Tabac. Barcelona: DHSS, 2001.

^bAttributable mortality in market economy countries. (Murria JL, Lopez AD. The global burden of disease. Washington: Harvard School of Public Health, World Health Organization, World Bank, 1996.)

^cRevuelta E, Godoy P, Farreny M. Evolución de la mortalidad atribuible al consumo de alcohol en Cataluña 1988-1997. Aten Primaria 2002; 30: 112-8.

^dNo global estimates available, but attributable mortality is considered high since a third of the cases of cancer are attributed to it.

HLE: healthy life expectancy.

With respect to the levels to reach in each of the targets formulated, the evaluation of the results of the targets formulated for the year 2000 and the opinion of experts on the foreseeable evolution of the problem in forthcoming years (evolution of the descriptive epidemiology of the problem, the effectiveness of the interventions and the possibility of more-effective short term interventions) was taken into account. In some cases, where the perspectives of reducing the size of the problem are not favourable (as in foodborne diseases), the target formulated was that of maintaining current levels.

In total, 177 general targets to be achieved by 2010 are formulated. To achieve them it will be necessary to develop interventions whose effectiveness and efficiency are proven, whose application in the population is feasible and whose acceptance by the target population is ensured.

Consensus with scientific societies, professional bodies and citizens

The opinions of scientific societies and professional bodies have been taken into account in the choice of problems and priority interventions. In fact, as in the previous stage of planning, a consensus with the relevant scientific societies and professional bodies has been arrived at.

Citizens have also participated in this process by means of the Catalan Health Survey 2002, their participation in discussion groups and through the internet.

3

Evaluation of the health and risk-reduction targets for the year 2000

Evaluation is one of the fundamental elements of the planning process. Its importance is twofold: firstly, because it allows study of the extent to which the previously established targets were achieved and, secondly, because it is the key element in directing the formulation of new targets for the future.

The health targets were defined on the basis of reduction of health problems considered as a priority for the Catalan population and, in general, this refers to mortality rates or disease incidence. In the case of the risk reduction targets, these refer to risk factors and were based on the distribution of these factors in the population or, where necessary, according to the levels of control of the risk factors achieved.

However, the impact of the interventions is limited, and the evolution of the frequency of a health problem cannot be explained considering only these interventions. There are many non health activities which affect the health status of the population and it is not easy or even possible to always separate their individual impact. However, when targets based on existing knowledge of the potential impact of specific health interventions are formulated, it is reasonable to assume that the results obtained are, at least partially, attributable to the interventions carried out.

The process of planning based on targets, as carried out in the health plans elaborated during the last decade, supposes a greater political commitment to the health of the population and, in addition, allows comparisons with comparable countries and communities. This framework serves to increase knowledge but also acts as a stimulus to social debate on the most-frequent health problems and has led to greater participation by various sectors in the elaboration of the health plans, which has probably never been achieved before. On the other hand, when the targets are formulated in such a way as to make them attainable, this also implies clarification of what it is proposed to achieve and how, which should be of great help to health service management.

The evaluation of the attainment of the health targets for the year 2000 was carried out by analysing the evolution of the indicators of each target. The targets were considered completely achieved when the levels of the indicator showed changes equal to or greater than those expected during the period 1989-2000 (A in the tables). When the achieved levels were not those established, but the trend desired was observed with a level of at least 50% of the previously defined change, the target was considered partially achieved (PA in the tables). Otherwise, it was considered that the target was not achieved (NA in the tables).

Some targets were defined by the levels established to be reached for different diseases and, in these cases, as different indicators had to be analysed, the results consider each indicator as a different target.

There are five targets related to diet which could not be evaluated until the end of the Survey of Diet and Nutrition of Catalonia 2003 and these were classified as pending evaluation (PE in the tables).

Overall, aside from the five targets that will only be evaluated at the end of the Survey of Diet and Nutrition, in five cases there was no adequate indicator for evaluation (indicator not available, INA in the tables). Sixty-nine (68.3% of those evaluated) of the targets were completely achieved and eight (7.9% of those evaluated) partially achieved. Twenty-four (23.8% of those evaluated) of the targets were not achieved (table 1). The main results of the evaluation of the health and risk-reduction targets of the Health Plan for Catalonia for the year 2000 are summarized below.

As shown in table 1, five health or risk-reduction targets could not be evaluated. It was not possible to evaluate the target on iron-deficiency anaemia in fertile women since the Health Examination carried out did not provide sufficient information for the classification of anaemia

Table 1. Summary of the evaluation of the targets for the year 2000 of the Health Plan for Catalonia

Situation of the targets in the year 2000		Number of targets
Targets not evaluated	Not evaluable	5
	Evaluable in 2003	5
Targets evaluated	Not achieved	24 (23.8%*)
	Partially achieved	8 (7.9%*)
	Completely achieved	69 (68.3%*)
TOTAL		111

*Of the 101 targets evaluated.

to be obtained. Neither could the indicator on mortality due to non-HIV infectious disease in injection drug users be evaluated. It was not possible to determine the incidence of end-stage renal disease in diabetics since, although there is a well-established register of renal patients in Catalonia, the register only shows how many patients with renal failure have diabetes, but not the incidence of renal failure in diabetics. Neither was it possible to obtain an indicator for Catalonia comparing the results of pregnancy in diabetic and non-diabetic women (table 2). There are five other targets related to diet and nutrition that cannot be evaluated until information from the current survey on nutritional habits, due in mid-2003, is available (table 2).

Table 2. Targets of the Health Plan for Catalonia for the year 2000 that could not be evaluated as no adequate indicator was available, and targets related to diet and nutrition that will be evaluated in 2003

Indicator	Evaluation
• To reduce the prevalence of iron-deficiency anaemia in fertile women (< 2%) and in children (< 1%)	INA
• To obtain the same levels of perinatal mortality and congenital abnormalities in the gestation of known diabetic women as in non-diabetic women	INA
• To reduce new cases of chronic renal failure in diabetics by a minimum of 25%	INA
• To reduce mortality due to non-HIV infectious pathology in injection drug users by at least 50%	INA
• To reverse the rising trend in the rates of respiratory tuberculosis in the native population (cases per 100,000 inhabitants)	INA

Indicator	Base level	Target level	Evaluation
• To reduce the proportion of fat in the diet to < 35% of energy and of saturated fats to < 10% of total calories	41.5% ¹⁹⁸⁶⁻⁸⁷	< 35%	PE
	15.0% ¹⁹⁸⁶⁻⁸⁷	< 10%	
• To reduce consumption of refined carbohydrates to 60 g/person/day	91.9 ¹⁹⁹³		PE
• To increase the calorific contribution of complex carbohydrates to > 50% of daily calorific intake	42.0% ¹⁹⁸⁶⁻⁸⁷	≥ 50%	PE
• To increase fibre intake to 30 g/person/day	16.8 ¹⁹⁹³	≥ 30%	PE
• To maintain levels of salt intake and reduce them when over 6 g/day			PE

The targets related to leisure-time physical exercise were not generally achieved. Although it is true that in three of the five targets the expected trend was followed and that in one almost 50% of the anticipated change was obtained, the trend shows that substantial changes in the pattern of leisure-time physical exercise did not occur (table 3).

EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To increase the prevalence of adults who walk 30 min/day (per 100) by 50%	61.0	60.5 ¹	≥ 91.5	NA
• To increase the prevalence of people aged > 14 years who do leisure-time physical exercise (per 100) by 50%	41.0	49.0 ¹	≥ 61.5	NA
• To reduce the prevalence of people aged > 14 years absolutely sedentary during leisure-time (per 100) > 40%	27.0	21.7 ²	≤ 16.2	PA
• To increase the prevalence of adults who do vigorous leisure-time physical activity > 3 times per week (per 100) by 50%	13.0	13.6 ²	≥ 19.5	NA
• To reduce the abandonment of physical exercise during leisure-time in people aged < 35 years (per 100) by 30%	77.8	78.0 ¹	≤ 54.5	NA

¹Catalan Health Examination 2002.

²Catalan Health Survey 2002.

Table 3. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to physical activity. Catalonia, 1989-2000

The targets related to obesity and overweight were also not achieved. In this case, whereas targets of reduction of these factors in the adult general population (18-74 years) were formulated, the data show that, during the period, the prevalence of both overweight and obesity increased considerably in the Catalan population. The data from the Survey of Diet and Nutrition of Catalonia, which will end in 2003, will provide complementary information that, together with the survey on physical activity, will allow evaluation of obesity and overweight indicators (table 4).

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the prevalence of overweight by 20% (per 100)	27.8	38.9	≤ 22.2	NA
• To reduce the prevalence of obesity by 25% (per 100)	11.9 ¹	17.0 ²	≤ 8.9	NA

¹Population > 14 years.

²Population 18-74 years.

Table 4. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to overweight and obesity. Catalonia, 1989-2000

The targets related to cardiovascular health were mainly achieved. Only in the case of mortality due to renal failure, which remained stable, were the expected levels not reached. The targets on general cardiovascular mortality and mortality due to cerebrovascular accidents were achieved (figures 1-3). It is noticeable that the evolution of cerebrovascular mortality was very favourable, with a reduction of more than twice that expected. The data from the Health Examination indicate that the targets of risk reduction for hypercholesterolemia and hypertension were also achieved (table 5).

Figure 1. Evolution of the mortality due to cardiovascular diseases in people aged < 65 years. Catalonia, 1983-2000

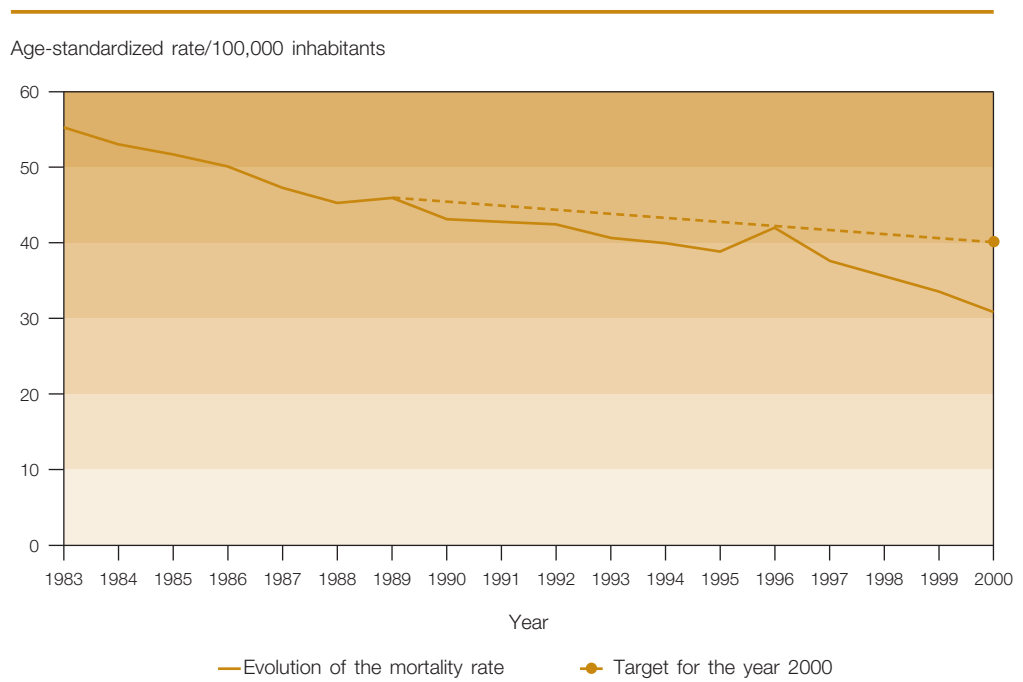
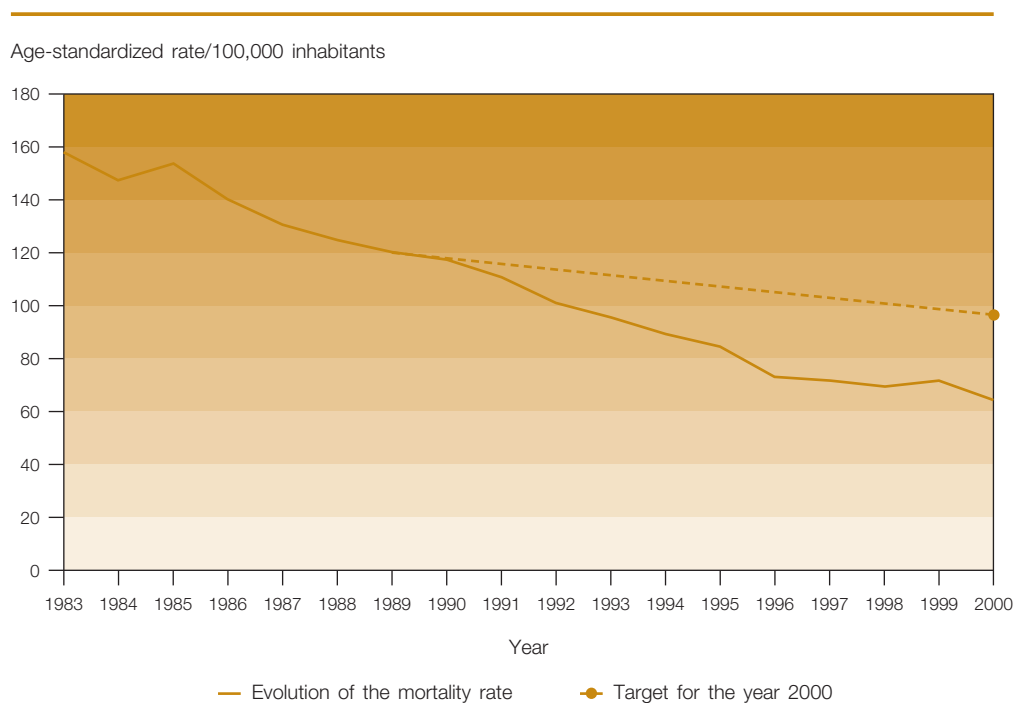


Figure 2. Evolution of the mortality due to cerebrovascular diseases. Catalonia, 1983-2000



EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

Age-standardized rate/100,000 inhabitants

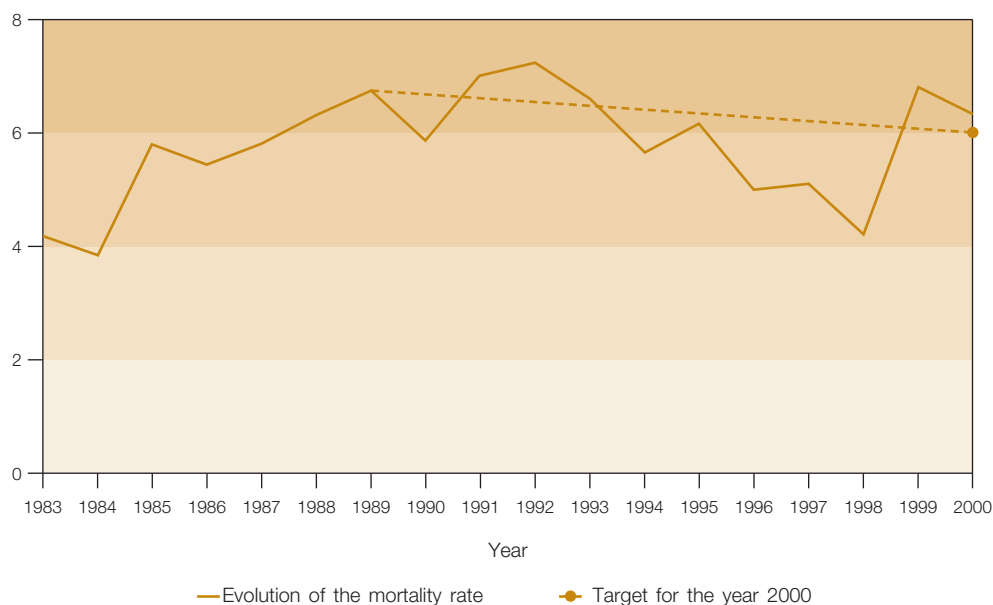


Figure 3. Evolution of the mortality due to chronic renal failure. Catalonia, 1983-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce mortality due to diseases of the circulatory system in people aged < 65 years by 15% (per 100,000)	46.6	31.4	≤ 39.6	A
• To reduce cerebrovascular mortality by 20% (per 100,000)	120.6	69.7	≤ 96.5	A
• To reduce mortality due to chronic renal failure by 5% (per 100,000)	6.4 ¹⁹⁹⁰	6.4	≤ 6.1	NA
• To increase the proportion of treated hypertensives by 50%	40% ¹⁹⁹⁰	64.2% ¹	≥ 60%	A
• To increase the proportion of controlled hypertensives by 75% (BP < 60/95 mmHg)	20% ¹⁹⁹⁰	38.5% ¹	≥ 35%	A
• To reduce average plasma cholesterol (35 to 64 years) to < 220 mg/dl	228 ¹⁹⁹⁰	202.6 ¹	< 220	A
• To reduce the prevalence of hypercholesterolemia to < 20% (> 250 mg/dl) (per 100)	> 20.0 ¹⁹⁹⁰	16.5 ¹	< 20	A

¹Catalan Health Examination 2002.

Table 5. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to cardiovascular diseases, arterial hypertension and hypercholesterolemia. Catalonia, 1989-2000

The targets on mortality due to cancer, both all cancer in people aged < 65 years and lung cancer in men and breast cancer in women, of all ages, were achieved (figures 4-7). The evolution of the mortality due to cervical cancer shows a reduction during the period studied which was lower than the target established and thus the target can be considered only partially achieved (table 6).

Figure 4. Evolution of the mortality due to cancer in people < 65 years. Catalonia, 1983-2000

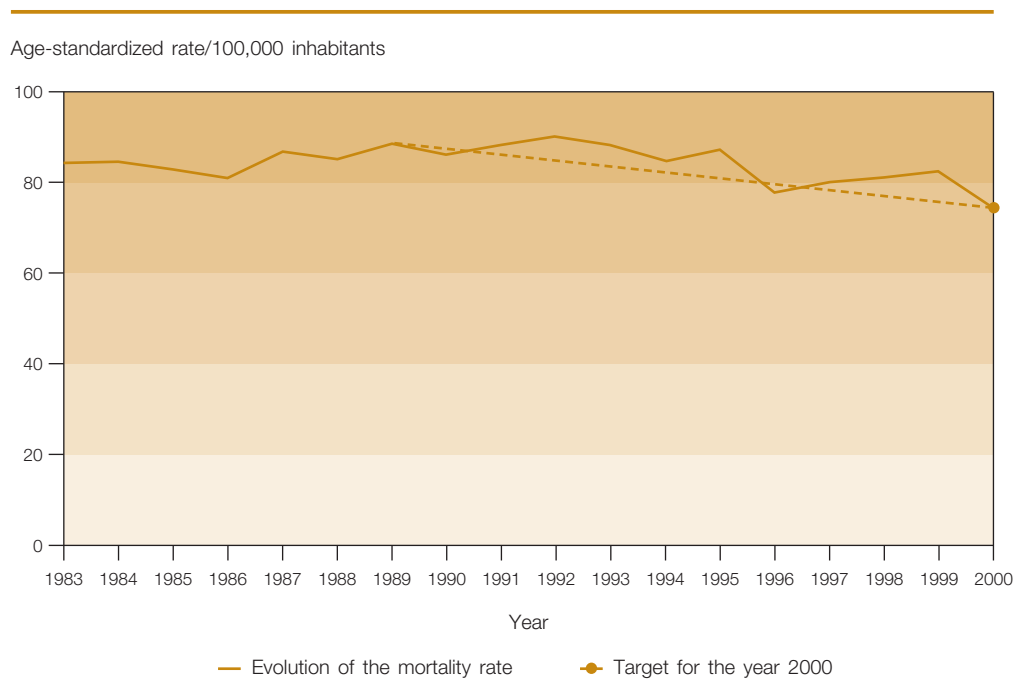
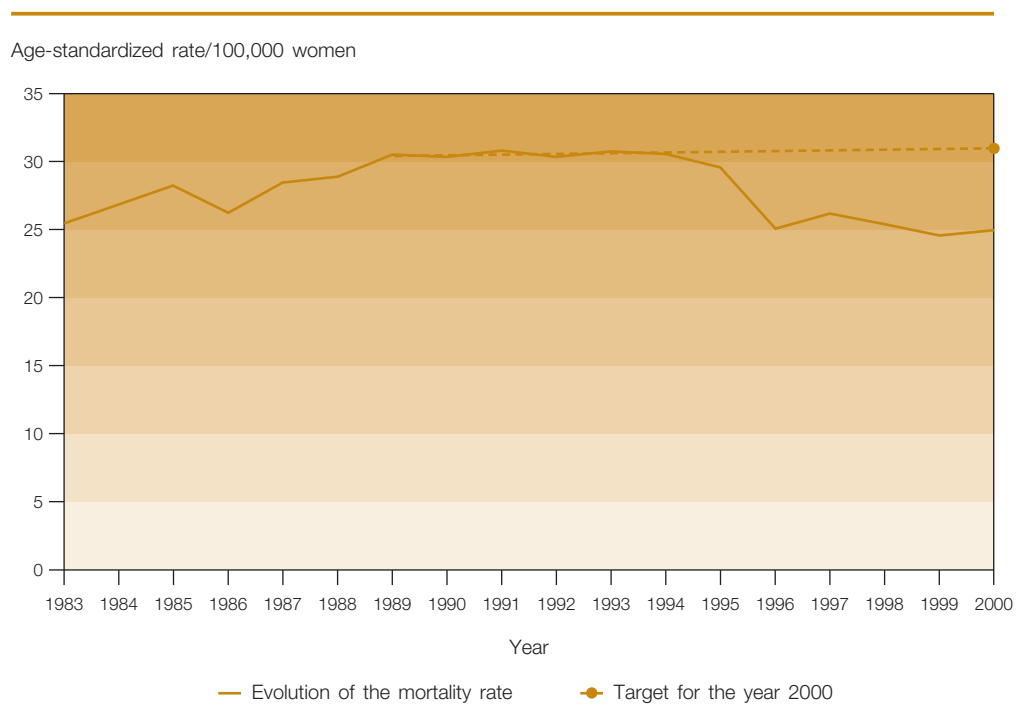


Figure 5. Evolution of the mortality due to breast cancer in women. Catalonia, 1983-2000



EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

Age-standardized rate/100,000 men

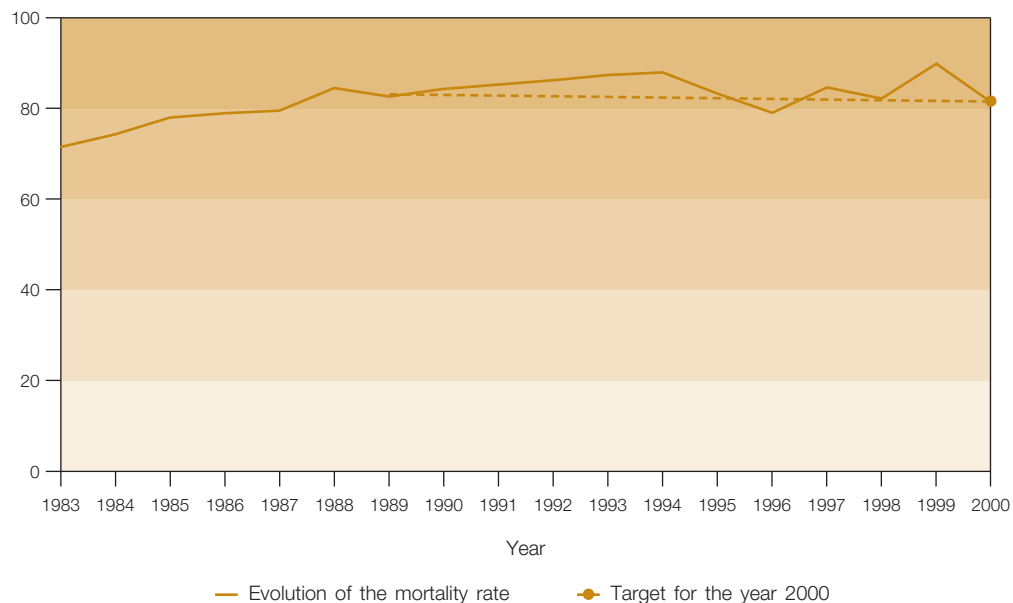


Figure 6. Evolution of the mortality due to lung cancer in men. Catalonia, 1983-2000

Age-standardized rate/100,000 inhabitants

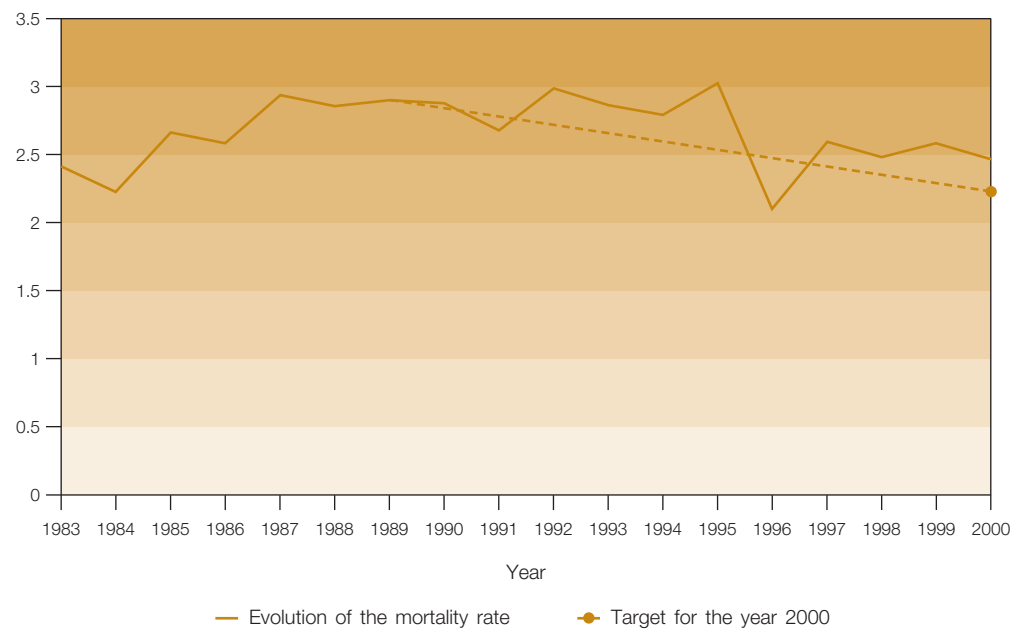


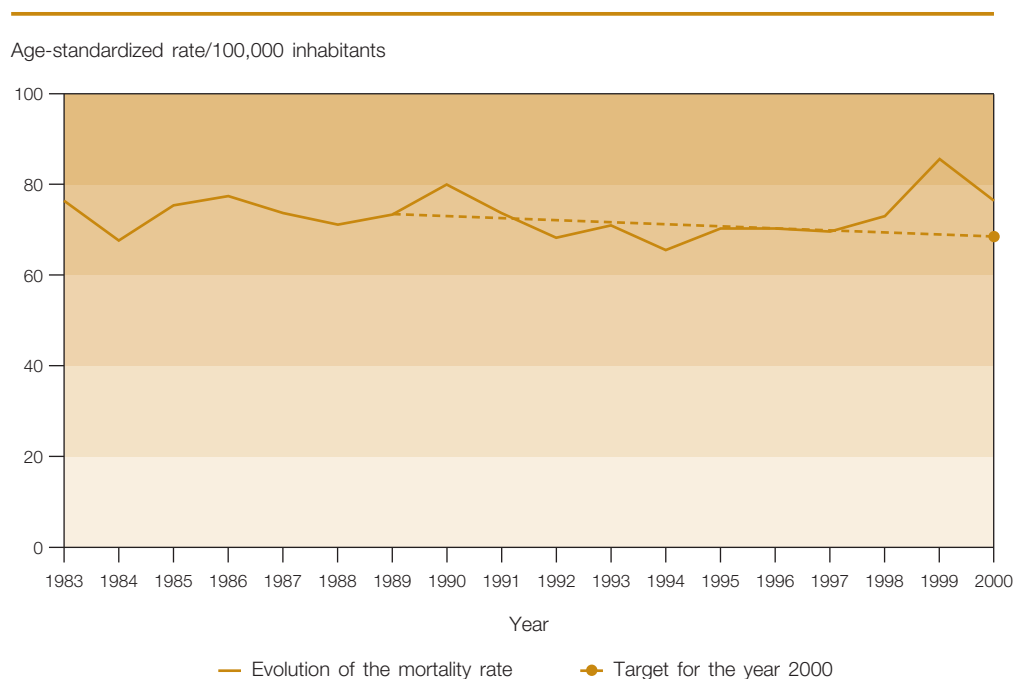
Figure 7. Evolution of the mortality due to cervical cancer in women. Catalonia, 1983-2000

Table 6. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to cancer. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the mortality due to cancer in people aged < 65 years by 15% (per 100,000)	89.1	74.5	≤ 75.7	A
• To stabilize the increasing trend of mortality due to breast cancer in women and lung cancer in men (per 100,000)	♀ 30.9 ♂ 83.6	♀ 24.9 ♂ 82.6	♀ ≤ 30.9 ♂ ≤ 83.6	A/A
• To reduce the mortality due to cervical cancer by 25% (per 100,000)	2.9	2.5	≤ 2.2	PA

Mortality due to diseases of the respiratory system remained stable during the decade and, therefore, the target established was not achieved (figure 8). With respect to the main risk factor of this pathology, the prevalence of smoking observed in 2002 in people aged over 14 years and especially those in the 15-24 age group was greater than the target established following the recommendations of the European Office of the WHO. Even so, the target for smoking cessation in the general population was achieved. The targets related to the prevalence of smoking in the exemplary professions show that these were achieved in the case of physicians and pharmacists, whereas the targets for teachers and nurses were partially achieved (table 7).

Figure 8. Evolution of the mortality due to respiratory diseases. Catalonia, 1983-2000



EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce mortality due to respiratory diseases by 10% (per 100,000)	74.9	74.1	≤ 67.4	NA
• To reduce the prevalence of smoking in the general population (> 14 years) to 20%	33.7 ¹⁹⁹⁰	32.1 ¹	≤ 20	NA
• To reduce the prevalence of smoking in the population aged 15-24 years to 18%	38.3 ¹⁹⁹⁰	40.0 ¹	≤ 18	NA
• To increase the proportion of smoking cessation in the general population to 30% (in > 14 years)	20.3% ¹⁹⁹⁰	30.4% ¹	≥ 30%	A
• To reduce the prevalence of smoking in physicians to 25%	38.0 ¹⁹⁹⁰	24.5 ²	≤ 25	A
• To reduce the prevalence of smoking in nurses to 30%	40.4 ¹⁹⁹⁰	35.1 ²	≤ 30	PA
• To reduce the prevalence of smoking in teachers 25%	36.8 ¹⁹⁹⁰	29.8 ²	≤ 25	PA
• To reduce the prevalence of smoking in pharmacists to 25%	32.3 ¹⁹⁹⁰	20.4 ²	≤ 25	A

¹Catalan Health Survey 2002.

²Survey of smoking in professions 2002.

Table 7. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to respiratory diseases and smoking. Catalonia, 1989-2000

The targets on mortality due to accidents, poisonings and violence, were achieved, both with respect to the general trend and to the specific trends for road traffic accidents, drownings and falls (figures 9-12). In the case of the mortality due to road traffic accidents in young men, the target was considered achieved although the reduction was slightly smaller than anticipated (34.7% as opposed to 35%) (table 8).

Age-standardized rate/100,000 inhabitants

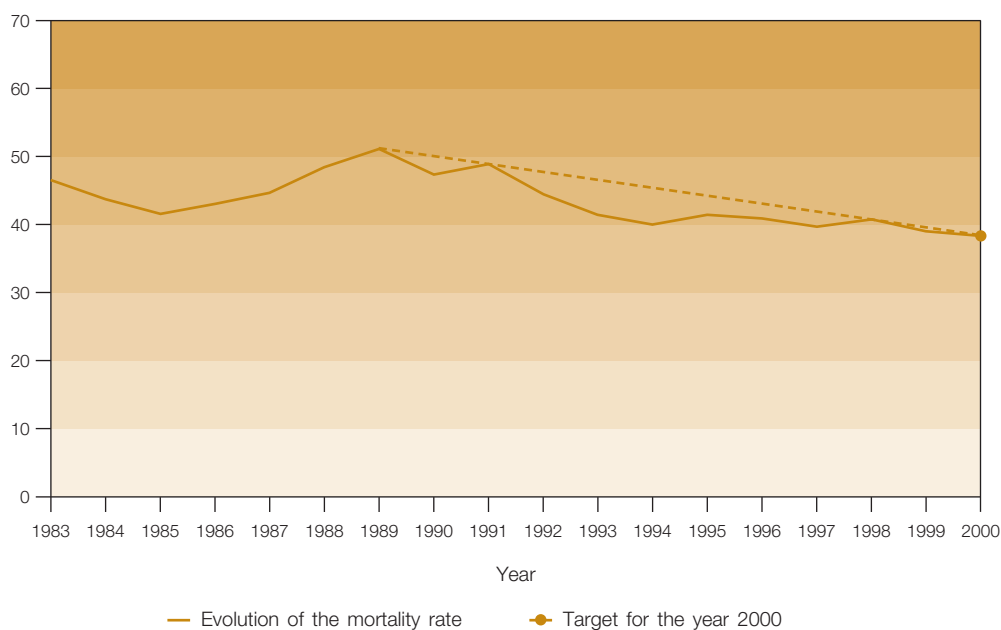


Figure 9. Evolution of the mortality due to external causes. Catalonia, 1983-2000

Figure 10. Evolution of the mortality due to road traffic accidents in men aged 15-24 years. Catalonia, 1983-2000

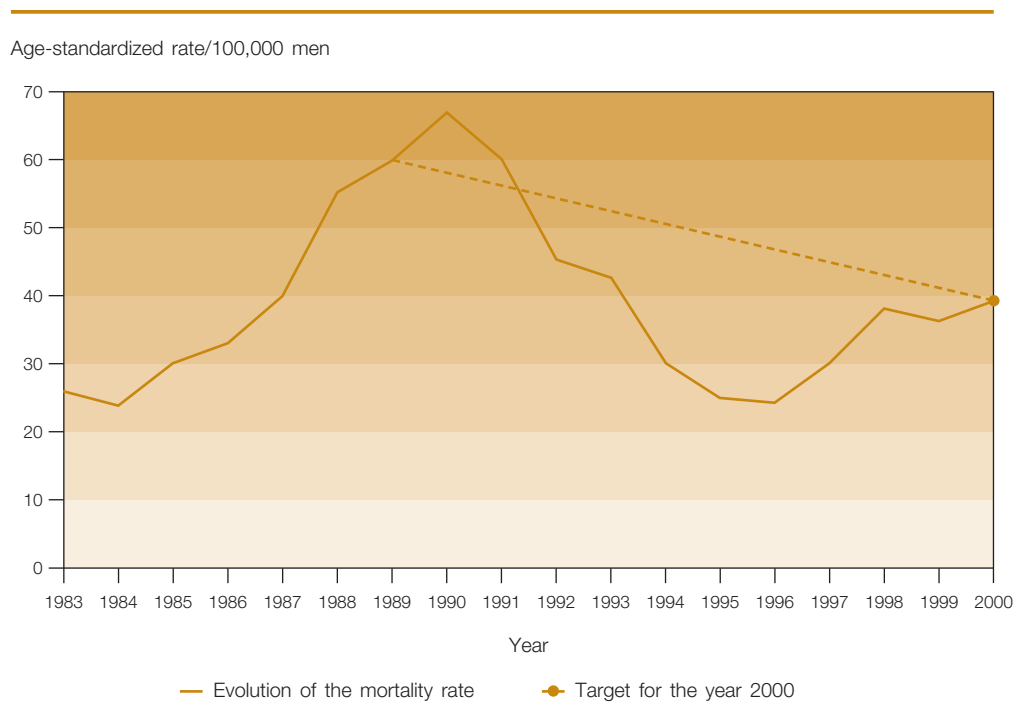
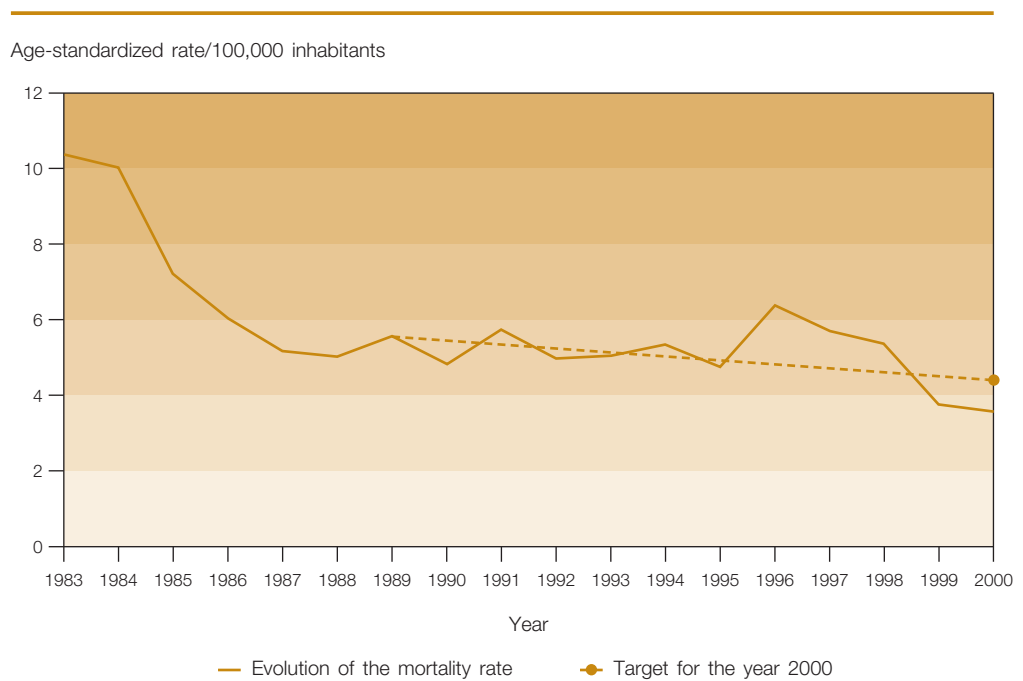


Figure 11. Evolution of mortality due to unintentional falls. Catalonia, 1983-2000



EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

Age-standardized rate/100,000 inhabitants

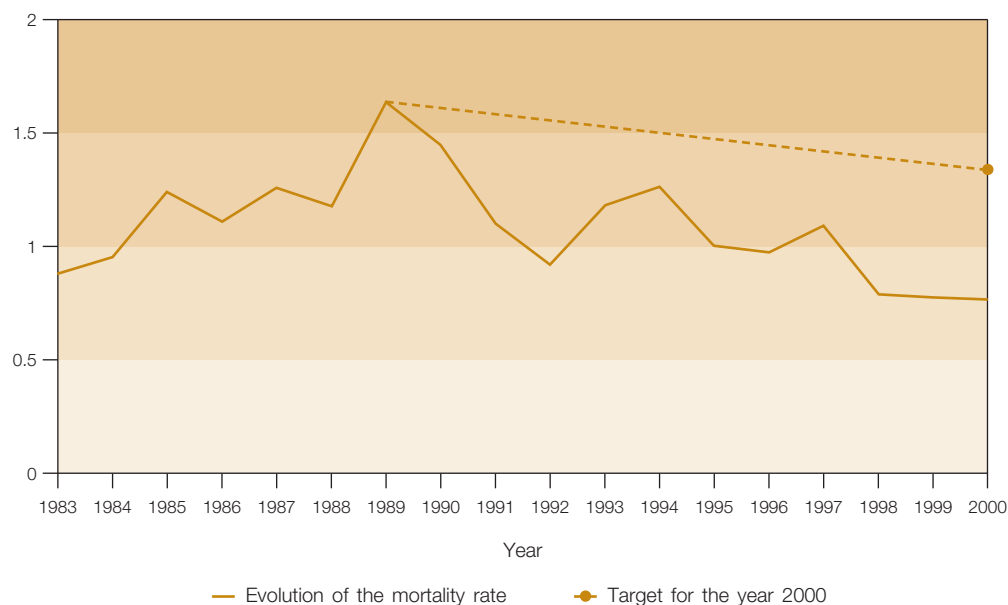


Figure 12. Evolution of the mortality due to drownings and submersions. Catalonia, 1983-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the mortality due to external causes by 25% (per 100,000)	51.1	38.1	≤ 38.3	A
• To reduce the mortality due to road traffic accidents in men aged 15-24 years by 35% (per 100,000)	59.5	38.8	≤ 38.6	A
• To reduce the mortality due to drownings and submersions by 25% (per 100,000)	1.7	0.8	≤ 1.3	A
• To reduce mortality due to unintentional falls by 15% (per 100,000)	5.4	3.2	≤ 4.6	A

Table 8. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to external causes. Catalonia, 1989-2000

The targets on diseases of the digestive system were achieved both with respect to mortality due to liver cirrhosis (figure 13) and to reported morbidity due to hepatitis B (table 9).

The targets on alcohol abuse, such as the incidence of foetal alcoholic syndrome and the prevalence of excessive consumption in the general population and young people, were achieved (table 10). Due to the methodological difficulties of calculating mortality attributable to alcohol ingestion from the data available, the permanence of the target on this factor was not considered adequate.

Figure 13. Evolution of the mortality due to cirrhosis and chronic liver diseases. Catalonia, 1983-2000

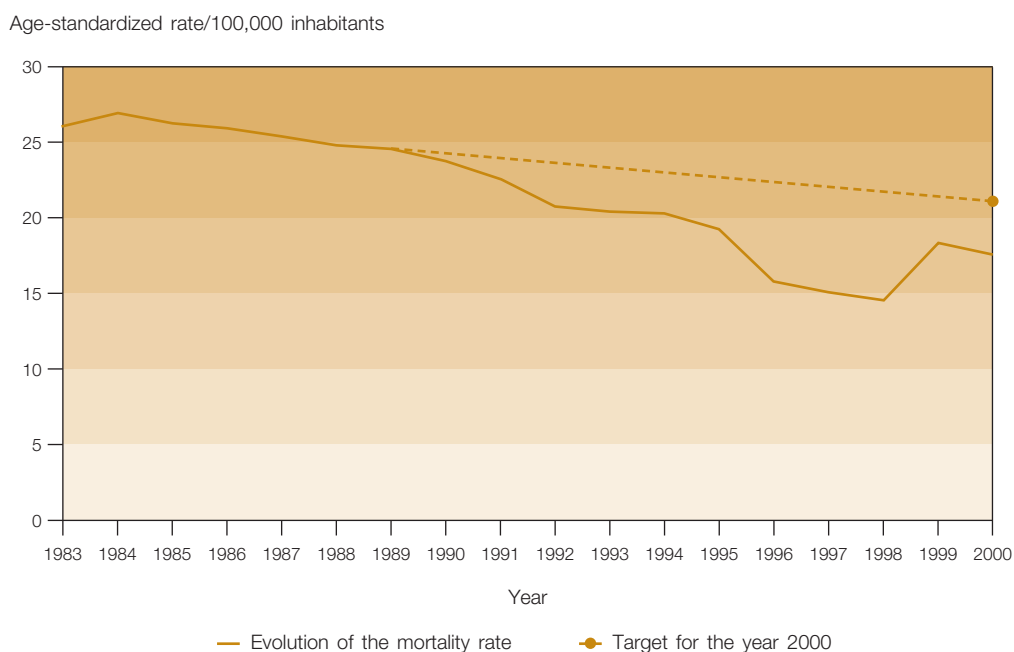


Table 9. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to diseases of the digestive system. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the mortality due to liver cirrhosis by 15% (per 100,000)	24.7	17.1	≤ 21.0	A
• To reduce the morbidity due to hepatitis B to 30% of the reported 1990 level (per 100,000)	3.5 ¹⁹⁹⁰	1.2	≤ 1.1	A

Table 10. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to alcohol abuse. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the incidence of foetal alcoholic syndrome by 25% (per 1,000 childbirths)	0.2 ¹⁹⁹³	0.1	≤ 0.2	A
• To reduce the prevalence of consumers of > 75 cc of pure alcohol per day in the general population aged 15-65 years to 4.5% (per 100)	7.1 ¹⁹⁹⁰	4.5 ¹	≤ 4.5	A
• To reduce the prevalence of consumers of > 75 cc of pure alcohol per day in people aged 15-29 years by 25% (per 100)	9.7 ¹⁹⁹⁰	3.0 ¹	≤ 7.3	A

¹Catalan Health Survey 2002.

EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

With respect to the targets on drug use, the targets on mortality due to adverse reactions (figure 14) and to opiate dependence were partially achieved. However, the targets on withdrawal syndrome in babies and the prevalence of cannabis users among young people were not achieved (table 11).

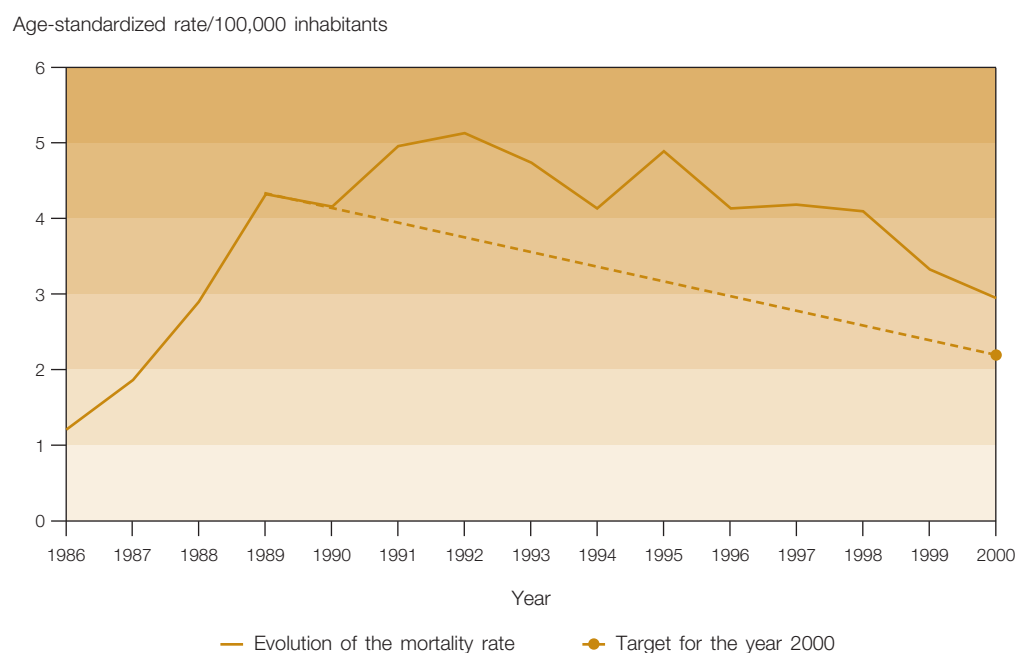


Figure 14. Evolution of the mortality due to adverse reactions to drugs. Catalonia, 1986-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the mortality due to adverse reactions to drugs by at least 50% (per 100,000)	4.2 ¹⁹⁹⁰	2.9	≤ 2.1	PA
• To reduce the incidence of opiate withdrawal syndrome in babies by 40% (per 1,000 childbirths)	1.6 ¹⁹⁹³	1.8	≤ 1.0	NA
• To reduce the prevalence of opiate dependence (15-29 years) to a maximum of 0.4 (heroin use during last 30 days) (per 100)	1.7 ¹⁹⁹⁵	0.2 ¹⁹⁹⁹	≤ 0.4	PA
• To reduce the prevalence of cannabis users (15-29 years) by 25% (cannabis use during last 30 days) (per 100)	5.7 ¹⁹⁹⁵	8.5	≤ 4.3	NA

Table 11. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to drug abuse. Catalonia, 1989-2000

The targets on the reduction of HIV infection were not essentially modified, but from 1996 onwards their formulation was corrected, due to the difficulties in obtaining some information, and to the changes in the dynamics of the infection. These targets were achieved except in the case of seroprevalence in homosexual men. The targets on high risk sexual practices and the care of AIDS patients, increased survival and the reduction of vertical transmission were also achieved (table 12).

Table 12. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to AIDS. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the incidence of HIV infection by all routes of transmission. Sentinel population:				
– Prevalence of anti-HIV antibodies in babies (per 100)	0.3 ¹⁹⁹⁴	0.2 ¹	< 0.3	A
– Prevalence of HIV in saliva, in injection drug users (recruited in the street) (per 100)	51.0 ¹⁹⁹³	39.3	< 51.0	A
– Seroprevalence of HIV in saliva of homosexual men (per 100)	14.2 ¹⁹⁹⁵	17.9	< 14.2	NA
• To reduce the frequency of high risk practices for HIV infection by injection and sexual routes (% non-use of condom/% IDU)	4.3% ¹⁹⁹⁵ 66.3% ¹⁹⁹³	1.4% 46.5%	< 4.3% < 66.3%	A A
• Care for HIV patients and infected people must be adequate for the different phases of the natural history of the disease and there must be coordination between different health levels.		(²)		A
• To delay the appearance of new cases of AIDS and increase the survival of people infected by HIV (case-fatality rate at 6 months of AIDS diagnosis) (per 100)	21.3 ¹⁹⁹⁰	12.8 ¹	< 21.3	A
• To reduce the rate of vertical transmission of HIV. (Prevalence of anti-HIV antibodies in babies) (per 100)	0.3 ¹⁹⁹⁴	0.2 ¹	< 0.3	A

¹1999.

²Establishment of a comprehensive health service by the Department of Health.

IDU: injection drug users.

The targets established for vaccine-preventable diseases, such as diphtheria, neonatal tetanus, poliomyelitis, pertussis, mumps, rubella, congenital rubella, indigenous measles, and the prevalence of hepatitis B infection and the HBsAg antigen were all achieved (table 13).

Table 13. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to vaccine-preventable diseases. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To maintain the elimination of diphtheria, neonatal tetanus and poliomyelitis (number of reported cases)	0/0/0 ¹⁹⁹⁰	0/0/0	0/0/0	A/A/A
• To substantially reduce the number of cases of (number of reported cases):				
– Tetanus	12 ¹⁹⁹⁰	5		A
– Pertussis	10,460 ¹⁹⁹⁰	193		A
– Mumps	4,403 ¹⁹⁹⁰	115	Substantial	A
– Rubella	2,464 ¹⁹⁹⁰	3	reduction	A
• To eliminate indigenous measles and congenital rubella (number of reported cases):				
congenital rubella	1 ¹⁹⁹⁰	0	0	A
indigenous measles	1,242 ¹⁹⁹⁰	1	0	A
• To reduce the prevalence of HBsAg in the population > 14 years to 1.5%	1.3 ¹⁹⁹⁴	0.9 ¹	1.5	A
• To reduce the prevalence of hepatitis B virus infection in the 15-24 years age group to 1%	9.3% ¹⁹⁸⁶	0.9	1.0	A
• To eliminate rubella in fertile women (15-49 years)	2 ¹⁹⁹⁷	0	0	A

¹2001.

EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

In the case of sexually transmitted diseases (STD), the targets for the incidence of syphilis, congenital syphilis, gonorrhoea and other STD were completely achieved. With respect to the target on the incidence rate of ophthalmia neonatorum, in the year 2000 the incidence was 0.3 per 100,000 inhabitants and therefore the objective was not achieved, in spite of the substantial reduction in the rate (table 14).

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the incidence of syphilis by 30% (per 100,000)	7.1	1.5	≤ 4.9	A
• To reduce the incidence of gonorrhoea by 25% (per 100,000)	78.9	3.6	≤ 59.3	A
• To reduce the proportion of gonorrhoea caused by betalactamase-producing strains of <i>Neisseria gonorrhoeae</i> by 50%	20.4%	6.1%	≤ 10.2%	A
• Eliminate ophthalmia <i>neonatorum</i> (per 100,000)	0.5	0.3	0	NA
• Eliminate congenital syphilis (per 100,000)	0.01 ¹⁹⁹⁰	0.0	0	A
• To reduce the incidence of other sexually-transmitted diseases by 20% (per 100,000)	113.2	65.5	≤ 90.4	A

Table 14. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to sexually-transmitted diseases. Catalonia, 1989-2000

The target of reduction of mortality due to work-related accidents was achieved (figure 15), but not that of reduction of the morbidity due to work-related accidents, which remained stable during the period (table 15).

Rate/100,000 wage-earners (Survey of active population)

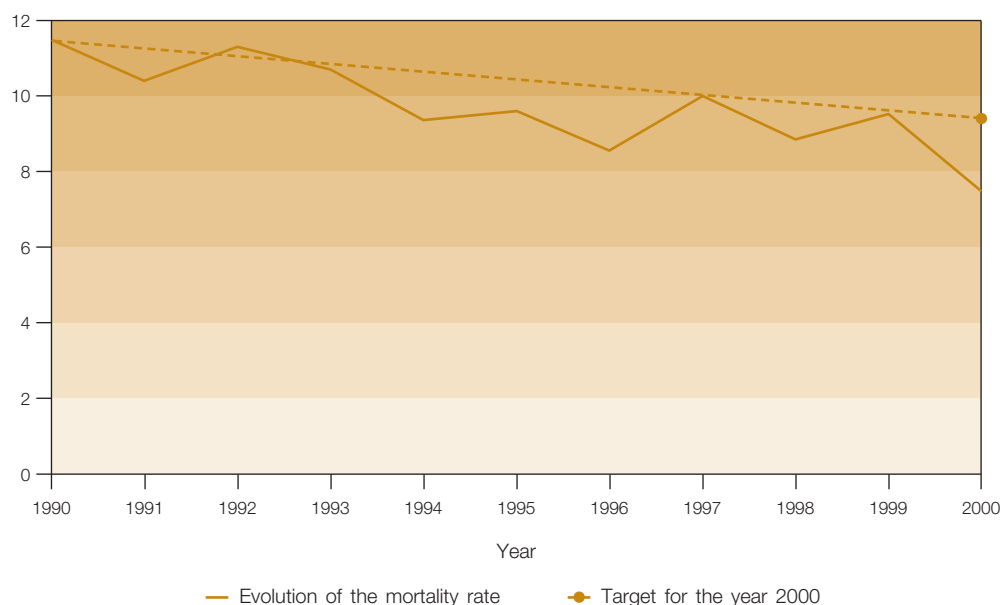


Figure 15. Evolution of the mortality due to work-related accidents. Catalonia, 1990-2000

Table 15. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to occupational health. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the rate of morbidity due to work-related accidents causing absence from work by 15% (per 1,000)	92.6 ¹⁹⁹⁰	90.5	≤ 78.7	NA
• To reduce the mortality rate due to work-related accidents by 20% (per 100,000)	11.5 ¹⁹⁹⁰	7.5	≤ 9.2	A

The reduction of the mortality due to tuberculosis was greater than the target established (figure 16). However the incidence rate of respiratory tuberculosis was not stabilized and it was only possible to partially evaluate the target of annual risk of infection in children aged 6-7 years (table 16).

Figure 16. Evolution of the mortality due to tuberculosis. Catalonia, 1989-2000

Evolution of cases per 100,000 inhabitants

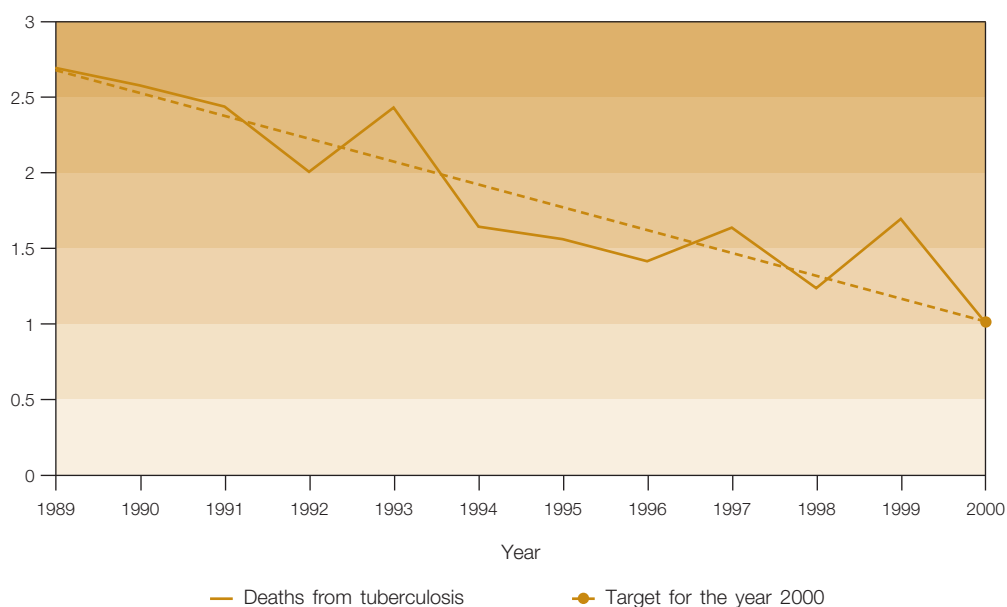


Table 16. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to tuberculosis. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce mortality due to tuberculosis to below one case per 100,000 inhabitants, as long as a significant increase in the transmission of multiresistant bacilli does not take place	2.7	0.97	< 1	A
• To reduce the prevalence of tuberculosis infection and to obtain a reactivation in the reduction of the annual risk of infection (ARI) in children aged 6-7 years (positive in screening of children aged 6 years in Barcelona) (per 100)	0.9 ¹⁹⁹¹⁻⁹²	0.5 ¹	< 0.9	A

¹1997-1998.

EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

In light of the results obtained in the 1997 epidemiological study, the targets formulated for the prevalence of caries-free children and reduction of the DMFT index (decayed, missing or filled teeth) in 12-year-old children, were achieved. In the case of 6-year-old children free from caries, the prevalence in 1997 did not reach the expected levels for the year 2000, and therefore this target was considered partially achieved (table 17).

Indicator	Base level	Level 2000	Target level	Evaluation
• A minimum of 50% of schoolchildren of 12 years must be free of caries (per 100)	38.0 ¹⁹⁹¹	53.4	≥ 50	A
• A minimum of 75% of schoolchildren of 6 years must be free of caries (per 100)	54.0 ¹⁹⁹¹	70.2	≥ 75	PA
• The DMFT index in schoolchildren of 12 years must be lower than 2	1.7 ¹⁹⁹¹	0.9	< 2	A

Table 17. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to dental health. Catalonia, 1989-2000

With respect to the targets established for diabetes, based on the recommendations of the European Office of the WHO in the Saint Vincent Declaration, the evaluation was extraordinarily difficult. As mentioned, in two of the targets, chronic renal failure in diabetics and perinatal mortality and congenital abnormalities in diabetic mothers, it was considered that the targets could not be evaluated with the information available. In three of the targets, the indicators used were approximate and they remained stable, except in the case of coronary heart disease in diabetics, where the target was considered partially achieved. The target of increasing the frequency of known diabetes in the adult population was achieved (table 18).

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the mortality due to coronary heart disease in diabetics by 20% (per 100)	11.9 ¹⁹⁹³	10.0	≤ 9.6	PA
• To reduce new cases of amaurosis in diabetics by 25% or more (per 100)	2 ¹⁹⁹³	2	≤ 1.5	NA
• To reduce amputations due to diabetic gangrene by 50% (per 1.000)	18.6 ¹⁹⁹³	18.7	≤ 9.3	NA
• To increase the number of known diabetics by a minimum of 25%, by ensuring that 60% of diabetics are known by screening of risk groups	50% ¹	62.6	≥ 60%	A

¹Estimate 1993.

Table 18. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to diabetes. Catalonia, 1989-2000

In general, all the targets established on the environment and food hygiene were achieved, except in the case of reported morbidity due to enteritis and diarrhoea, the reduction of food poisoning outbreaks and the eradication of toxic and microbiological parameters of the public water supply. In the case of trichinosis, the target was not considered achieved because, although during 1990-2000 no case of trichinosis was recorded, in the year 2000 four cases were recorded, due to the consumption of wild boar meat that had not been analysed for trichina. This meat, therefore, at no time entered the commercial food chain but was restricted to consumption by relatives and friends of the hunters. Although the target cannot be considered achieved, it is clear that, in principle, the trend is positive, if the four cases in the year 2000 constitute an isolated phenomenon (table 19).

Table 19. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to the environment and food hygiene. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• Reported morbidity due to typhoid fever to be lower than 1 case per 100,000 inhabitants/year	2.1	0.5	< 1	A
• Reported morbidity due to enteritis and diarrhoea to be lower than 4,500 cases per 100,000 inhabitants/year	5,305.9 ¹⁹⁹⁰	5,636.8	< 4,500	NA
• To reduce reported outbreaks of food poisoning by 30%	113	110	≤ 45	NA
• The reported morbidity due to brucellosis to be lower than 3 cases per 100,000 inhabitants/year	3.3	1.9	< 3	A
• Eliminate trichinosis in Catalonia	0 ¹⁹⁹⁰	4	0	NA
• No case of acute secondary poisoning nor of chemical contamination of foods should occur derived from the bad use of products for plants and animals	0 ¹⁹⁹⁵	0	0	A
• Health controls on 100% of recycled water		100% controlled		A
• All public swimming pools must fulfil existing health regulations (number of inspections, 100% of public swimming pools)	1,500	2,075		A
• To reduce the number of beaches currently classified as C and D by 70%	13 beaches	5 beaches	< 4	PA
• To eradicate non-compliance with toxic or microbiological parameters in the public water supply of Catalonia:				
– Water samples where the heavy metals (chromium, mercury, nickel and/or selenium) surpass the limits established in Royal decree 1138/90		0.3%		
– Water samples where lead surpasses the levels established by Royal decree 1138/90		1.2%		NA
– Water tests where aromatic hydrocarbons surpass the maximum limits		0%		
• Health control of 100% of human dwellings (number of inspection, 100% of children's camps and hostels)	590	765		A
• All meat leaving slaughter houses in Catalonia must be free of residues derived from administration to cattle of illegal growth hormones (percentage of samples with illegal residues)	8.6%	0%		A
• The facilities and equipment of all slaughter houses must comply in all respects with current health and hygiene regulations		100% authorized		A
• All establishments that distribute manufactured foods, both direct to the public or catering, must be subject to health controls				
Number of inspections, 100% of the total:				
– Central kitchens	2,953	2,631		
– Collective dining rooms	10,955	14,276		
– Retailers	15,320	13,001		A

EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

The targets on reduction of maternal, infant and perinatal mortality were achieved, with rates clearly lower than those established being recorded (figures 17-19). On the other hand, an increase in the frequency of chronological premature birth and low birth-weight was observed. The target of reduction of the index of pregnancies in women under 18 years of age was not achieved, since an increase was observed during the last decade (table 20).

Age-standardized rate/100,000 live births

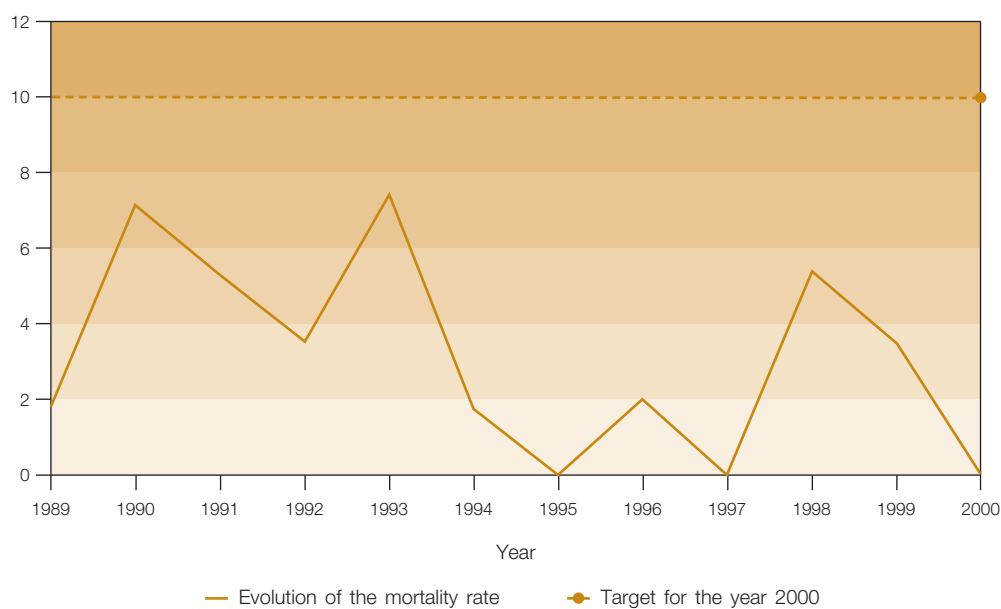


Figure 17. Evolution of maternal mortality related to pregnancy, childbirth and puerperium. Catalonia, 1989-2000

Age-standardized rate/100,000 live births

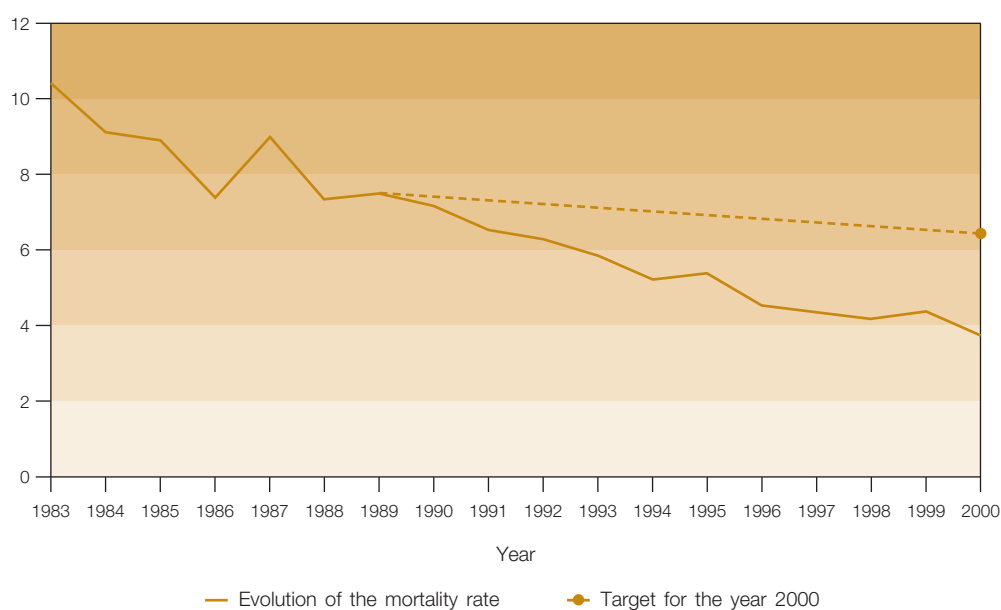


Figure 18. Evolution of infant mortality. Catalonia, 1983-2000

Figure 19. Evolution of perinatal mortality. Catalonia, 1986-2000

Age-standardized rate/1,000 births

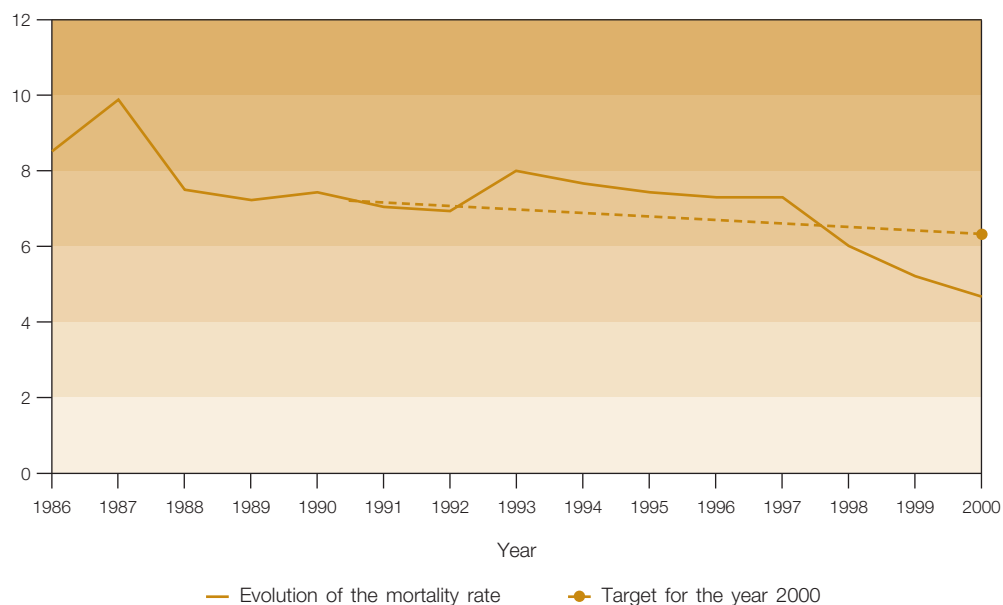


Table 20. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to maternal and infant health. Catalonia, 1989-2000

Indicator	Base level	Level 2000	Target level	Evaluation
• To maintain maternal mortality related to pregnancy, childbirth and puerperium to 10/100,000 live births	1.8	0	< 10	A
• To reduce perinatal mortality to 6.5 per 1,000 births	7.0	4.6	≤ 6.5	A
• To reduce infant mortality to 6.5 per 1,000 live births	7.3	3.4	≤ 6.5	A
• To reduce the prevalence of chronological prematurity to below 5% (per 100)	5.5 ¹⁹⁹³	7.6	< 5.0	NA
• To reduce the prevalence of low birth-weight to below 5% (per 100)	5.8 ¹⁹⁹³	7.6	< 5.0	NA
• To reduce the index of pregnancies in women < 18 years to under 4 per 1,000	4.0 ¹⁹⁹⁰	7.9	< 4.0	NA

EVALUATION OF THE HEALTH AND RISK-REDUCTION TARGETS FOR THE YEAR 2000

In Catalan hospitals all the targets on nosocomial infections were achieved, both in the case of the general prevalence and in the specific targets for intensive care units, surgical areas and surgical wounds, always considering as a starting point the levels observed during 1988, and from the data provided by the prevalence study of nosocomial infections (EPINCAT) made annually by volunteers from a wide range of hospitals (table 21).

Indicator	Base level	Level 2000	Target level	Evaluation
• To reduce the prevalence of nosocomial infections in Catalan hospitals by at least 15% (per 100)	12.1 ¹⁹⁸⁸	8.1	≤ 10.3	A
• To reduce the prevalence of patients affected by nosocomial infection in Catalan hospitals by at least 15% (per 100)	10.8 ¹⁹⁸⁸	7.0	≤ 9.2	A
• To reduce the prevalence of nosocomial infection in ICU in Catalan hospitals by 10% (per 100)	42.8 ¹⁹⁸⁸	32.6	≤ 38.5	A
• To reduce the prevalence of nosocomial infection in operating theatres in Catalan hospitals by at least 20% (per 100)	15.1 ¹⁹⁸⁸	7.2	≤ 12.1	A
• To reduce the prevalence of infections in clean surgical wounds to less than 3%	5.5 ¹⁹⁸⁸	2.2	≤ 3.0	A

Table 21. Evaluation of the targets of the Health Plan for Catalonia for the year 2000 related to nosocomial infections. Catalonia, 1989-2000

An overview of the non-achieved targets shows that many were related to habits and life styles; thus, with respect to the targets related to physical exercise, in general, the indicators evolved in the direction marked by the targets, although at a slower rate than that established. For example, the level of physical activity was a little higher in the year 2000 than in 1989. With respect to the lack of attainment of the targets, the initial targets were established on the basis of international recommendations and information but objective data for Catalonia which allowed consideration of the speed of the changes advocated was not available at that moment and, in light of the results, the specific interventions carried out during these years were not sufficiently effective. In addition, the level of physical activity of the Catalan population is similar to that observed in studies made in comparable countries. The level of physical activity is influenced by a multitude of factors and, in fact, a worldwide increase in sedentary behaviour is being observed. Only in those countries of Europe where interventions to increase the level of physical activity of the population in different areas have been made over a longer period are positive results observed.

With respect to overweight and obesity, there is a universal trend towards westernization, with loss of traditional life styles and the adoption of less active habits associated with socioeconomic development. The surroundings act as an element favouring obesity, both with respect to nutritional intake and to a greater consumption of food richer in fats and in total calories. In addition, improvements in transport and, in general, in work and domestic tasks have facilitated a reduction in daily calorific expenditure.

Mortality due to chronic renal failure fluctuated throughout the period and this is, at least partly, attributable to the small number of people who die from this cause. A similar case is that of cervical cancer. The number of deaths due to this cancer is very low and the rates show fluctuations that make it very difficult to anticipate the evolution for a specific year. The maintenance of these types of targets, which bear little relation to frequent causes of mortality, in future health plans, should be considered.

The target on respiratory mortality was not achieved. Although the trend was quite favourable, in recent years an increase in mortality has taken place which may be partly explained by

the incorporation of the 10th International Classification of Diseases. It should also be remembered that certain preventive measures, such as pneumococcal vaccination in the risk population and the elderly are still not reflected in the evolution of mortality for this group of diseases.

The targets related to the prevalence of smoking in the general population and the young were clearly not achieved. These targets were formulated in an attempt to follow the process of homologation with the general target promoted at that moment by the Regional Office of Europe of the WHO. Only Sweden, and only then if chewing tobacco is not considered, achieved these targets. The trends observed in Catalonia show an increase among the young and especially in women.

The targets on drug abuse are especially difficult to evaluate and there is no doubt that the evolution of the characteristics of drug use and the type of drugs consumed today could not be foreseen ten years ago. The indicator of opiate withdrawal syndrome showed marked fluctuations during the period and, in addition, this evolution may have been greatly influenced by increased coverage of the register of hospital discharges. Nevertheless, with the information available, it is possible to state that the target was not achieved. Cannabis consumption increased during recent years and the target was not achieved. This phenomenon is not exclusive to Catalonia, but has been observed in most European Union countries.

The health target on work-related accidents was not achieved, although it seems that the rates remained quite stable, above all, with respect to non-severe accidents. The number of industrial accidents seems to be related to working conditions, both with respect to temporary staff and to safety measures.

The direct adoption of the targets proposed by the WHO in the Saint Vincent Declaration has meant that some of the targets on diabetes could not be evaluated due to lack of adequate information sources. To evaluate the targets as formulated, there must be a broad cohort of diabetic patients who, when followed throughout the period would allow evaluation of the different targets. The inherent difficulties of this type of study meant it could not be carried out. However, the sources that allowed an approximation of the evaluation of some targets indicated a stable trend.

Within the area of the environment and food hygiene, the targets of reduction of outbreaks of foodborne diseases and the number of people affected by these outbreaks were not achieved. Improvements in the systems of reporting and epidemiological surveillance were decisive in these results.

With respect to maternal and infant health, the targets on the prevalence of premature birth and low birth-weight were not achieved. During the last ten years, substantial changes have been observed, both in the considerable increase in the age of mothers, and in the higher number of multiple pregnancies, in many cases after artificial fertilization. The target of reduction of pregnancies in women < 18 years of age was not achieved, although compared with comparable countries, our rates were one of the lowest.

4

Health and risk-reduction targets for the year 2010

We present here the health and risk-reduction targets for Catalonia for the year 2010. These are designed to provide a response to the priority health problems deriving from the increasing aging of the population, chronic diseases, disabilities and the factors conditioning health, such as life styles, the social setting and the environment.

In order to make the health policies effective, a multisector approach is required and this implies the cooperation of all the sectors with responsibility in the health area. However, it is necessary for the health system to assume the leadership of this process in order to ensure improving health, greater equity and user satisfaction.

To attain these targets, the Health Plan also establishes medium-term operational targets and interventions for the period 2002-2005. These may be consulted in *Health Strategies for 2010. Health Plan for Catalonia 2002-2005* at <http://www.gencat.net/sanitat>

Promotion of healthy habits

Smoking

In the developed countries, smoking is the first preventable cause of loss of health and avoidable and premature deaths. Smoking is one of the most important risk factors for the main chronic cardiovascular and respiratory diseases, as well as for a large number of neoplasias.

In Catalonia it has been estimated that 8,931 deaths were attributable to smoking in 1997, representing 16.4% of all deaths in that year. Of these, 7,484 occurred in men and 1,447 in women, corresponding to 27.4% and 5.7%, respectively, of all deaths in men and women aged ≥ 35 years.

In Catalonia, in 2002, the prevalence of smokers aged ≥ 15 years was 32.1% (38.0% in men and 26.6% in women).

Men aged 25-34 years and women aged 15-24 years are those with the highest prevalence (respectively 48.6% and 42.5%). Although smoking is more frequent in men, it is necessary to emphasize the increase in women between 15 and 24 years, who smoke more than men of the same age.

The evolution of smoking in Catalonia in recent years shows a rising trend in women and a falling trend in men, very similar to the evolutionary trends of the smoking epidemic in Spain.

Health and risk-reduction targets

1. By 2010, smoking prevalence among the population aged ≥ 15 years should be reduced to 28%.
2. By 2010, smoking prevalence among young people of 15-24 years should be reduced to 32%.
3. By 2010, smoking prevalence among women aged ≥ 15 years should be reduced to 22%.
4. By 2010, smoking prevalence among men aged ≥ 15 years should be reduced to 34%.
5. By 2010, the quit rate in the population aged ≥ 15 years of 35% should be obtained.
6. By 2010, smoking prevalence among physicians should be reduced to 20%.

7. By 2010, smoking prevalence among nursing staff should be reduced to 30%.
8. By 2010, smoking prevalence among pharmacists should be reduced to 17%.
9. By 2010, smoking prevalence among teachers should be reduced to 25%.

Dietary habits

The Mediterranean diet is a model of a healthy diet associated with a lower incidence of chronic and degenerative diseases. The nutritional and non-nutritional components of the Mediterranean diet come from the combination and synergy of specific foods: cereals, olive oil, bread and wheat products, vegetables, fruits, dairy products (milk, cheese), dry fruits, wine, fish and meat (in small amounts) and spices.

The provisional results of the Survey of Diet and Nutrition 2002-2003 show that in recent years in Catalonia there has been an increase in the consumption of fat-free milk and dairy products, cereals, olive oil, dry fruits and legumes and a reduction in the consumption of meat and offal. However, there was a negative evaluation of the reduced consumption of fish, fruit, green vegetables and beans.

Health and risk-reduction targets

1. By 2010, per capita consumption of vegetables should be increased to over 300 g/day.
2. By 2010, per capita consumption of fruits should be increased to over 400 g/day.
3. By 2010, consumption of sweet products should be reduced to or three or less times a day.
4. By 2010, dietary fibre consumption should be increased by 25%.
5. By 2010, the contribution of folates should be increased by 30%.
6. By 2010, the contribution of saturated fat to the diet should be reduced to below 10% of calorie intake.
7. By 2010, the risk of vitamin and mineral deficits should be reduced by 25%.

Physical exercise

Regular moderate physical activity is beneficial for most people and reduces the risk of suffering or dying from heart disease, diabetes, colorectal cancer and hypertension. On average, people who are physically active survive those who are not. Regular physical activity also helps to maintain functional independence in the elderly and improves the quality of life of people of all ages. Bad physical condition increases the risk of death in people with other risk factors such as smoking, diabetes and diseases of the heart and lungs.

In 2002, 50.6% of the population aged 18-74 years reported doing some leisure-time physical exercise (56.7% of men and 44.2% of women). Of these, 8.4% do vigorous daily physical activities (10.0% of men and 7.5% of women); 24.1% do vigorous exercise 4-6 times per week (29.6% of men and 17.6% of women) and 52.0%, 2-3 times per week (47.8% of men and 57.2% of women)

Also, 62.8% of the population aged 18-74 years walk at least 30 minutes per day. With increasing age, an increase in the proportion who walk more than 30 minutes per day is ob-

served, although this is true more in men than women. This means that until 44 years of age, women walk more than men, and from 45 years onwards, men walk more than women.

Health and risk-reduction targets

1. By 2010, the prevalence of absolutely sedentary people aged 18-74 years should be reduced to below 16%.
2. By 2010, the prevalence of people aged 18-74 years who do leisure-time physical exercise should be increased to over 55%.
3. By 2010, the prevalence of people aged 18-74 years who walk more than 30 minutes daily should increase to over 75%.
4. By 2010, the prevalence of people aged 18-74 years who do moderately- intensive leisure-time physical activities 5 or more times per week or an equivalent amount should be increased by 14%.

Chronic diseases and accidents

Cardiovascular diseases

In Catalonia, cardiovascular diseases (CVD) constitute the first cause of mortality in the whole population and in women, and the second cause in men after cancer. In the year 2000, 32.8% of mortality was attributable to cardiovascular disease, with a crude rate of 293.5 deaths per 100,000 inhabitants (270.6 in men and 315.4 in women). As in most Mediterranean countries, mortality rates from these diseases have traditionally been lower than in Anglo-Saxon countries and the north and centre of Europe.

Among the cardiovascular diseases, the most frequent were cerebrovascular disease with a rate of 82.7 deaths per 100,000 inhabitants (71.5 in men and 93.3 in women) and coronary heart disease with a total of 87.5 per 100,000 (102 per 100,000 in men and 73.4 per 100,000 in women). Coronary heart disease is more frequent in the 65-74 years age group and in men, whereas cerebrovascular disease is more frequent in people aged over 75 years and in women. Although these diseases are more frequent in the elderly, they cause an important loss of potential years of life, being the third cause between 1 and 70 years, after cancer and external causes.

Cardiovascular diseases are the first cause of hospitalization, representing 11.9% of the total. In addition, they are the second reason for primary health care consultation, with hypertension being the most frequent.

Cardiovascular diseases share several risk factors, such as hypertension, smoking, hypercholesterolemia and obesity. In addition, sedentary lifestyles and diabetes are additional factors for cardiac disease.

In Catalonia, in recent years (Catalan Health Survey) the proportion of people who report periodic blood pressure measurement has risen from 24.4% in 1994 to 49.3% in 2002. The percentage of people with measured cholesterol levels has also risen from 17.8% to 45.3%.

According to the medical records of people attended by the reformed primary health care network in the year 2000, 32.9% had a diagnosis of hypertension and 24.2% a diagnosis of hypercholesterolemia. A total of 32.3% of hypertensives and 31.2% of patients with hyperc-

hypercholesterolemia were controlled (SBP < 140 mmHg and DBP < 90 mmHg. Cholesterol LDL < 160 mg/dl).

Health and risk-reduction targets

1. By 2010, mortality due to coronary heart disease should be reduced by 15%.
2. By 2010, mortality due to cerebrovascular disease should be reduced by 15%.
3. By 2010, mortality due to chronic renal failure in people aged < 75 years should be reduced by 5%.
4. By 2010, the proportion of well-controlled hypertensives should be increased by 50% (< 140/90 mmHg).
5. By 2010, the proportion of people with well-controlled hypercholesterolemia should be increased by 50%.

Cancer

In Catalonia, cancer is the most-frequent cause of death in men and the second cause of death in women. In the year 2000, 15,088 deaths were due to cancer, which represents a rate of 244.5 deaths per 100,000 inhabitants (310 in men and 181.8 in women). The first cause of cancer mortality in men was lung cancer and, in women, breast cancer, followed by colon cancer in second place in both sexes.

It is estimated that, in Catalonia, in the year 2000, about 27,500 new cases of cancer were diagnosed (except non-melanoma skin cancer). Cancer incidence in Catalonia shows an increasing trend in both men and women. The risk of suffering cancer increases with age and the majority of cases occur in adults and the elderly (> 50% in the > 65 years age group). The life-long risk of developing cancer is around one in two in men and one in three in women.

Cancer incidence in Catalonia can be estimated from the Tarragona and Girona Cancer Registers, the Catalan Death Register and the incidence/mortality ratio. Globally, the data from Girona and Tarragona are similar, with gross rates of around 500 new cases per 100,000 in men and 350 new cases per 100,000 in women.

The most-frequent cancers were lung (17%), prostate (15%) and colorectal cancer (14%) in men and breast (28%) and colorectal cancer (15%) in women. Smoking-related cancers (oral cavity and pharynx, larynx, pancreas, lung, bladder and kidney) represented 45% of cancers in men and 11% in women. Genitourinary and breast cancer represented 42% of cancers in women.

It is anticipated that in 2005 around 19,800 cases will be diagnosed in men and 13,460 in women. This supposes an increase of 20% in men and 14% in women in 4 years. This increase is distributed unequally according to age groups. The greatest quantitative increase takes place in people aged ≥ 65 years, with an increase of 23% in men and 18% in women. In middle-aged people, the growth is more moderate. By cancers, colorectal cancer rises substantially in both sexes, lung cancer increases in men and breast cancer in women. Smoking-related cancers increase substantially in both men and women. A less-marked increase is also seen in hematologic cancers.

Health and risk-reduction targets

1. By 2010, the incidence of smoking-related cancers should be reduced by 5%.
2. By 2010, the trends of the incidence of colorectal and breast cancer should be stabilized.

3. By 2010, cancer mortality in people aged < 65 years should be reduced by 15%.
4. By 2010, the reduction in mortality of smoking-related cancers and prostate cancer in men should be maintained at 10%.
5. By 2010, mortality due to breast and cervix uteri cancer in women, and colorectal cancer in men and women should be reduced by 10%.
6. By 2010, the reduction in mortality due to stomach and endometrial cancer should be maintained.
7. By 2010, overall five-year cancer survival should be increased by 15%, mainly in breast, colorectal and prostate cancer.
8. By 2010, protocols to control pain and other symptoms in advanced cancer should be developed and applied in all Catalan hospitals.

Respiratory diseases

In Catalonia, in the year 2000, diseases of the respiratory system were the third cause of mortality in both sexes after cancer and diseases of the circulatory system, with a rate of 97.4 deaths per 100,000 inhabitants (77 in women and 118.8 in men). By age groups, diseases of the respiratory system are among the first three causes of mortality in both sexes from 65 years of age onwards.

By specific causes, COPD and asthma are the most-frequent, with a specific rate of 44.69 deaths per 100,000 inhabitants.

In the year 2000, diseases of the respiratory system continued to be the third cause in number of discharges (10.1%) after diseases of the circulatory (11.9%) and digestive (11.1%) systems. In that year, there were 18,421 discharges due to COPD in people aged ≥ 65 years, representing a substantial overall increase (27.7%) in the rate of hospitalization due to COPD from 1997.

With respect to perceived morbidity, according to the Catalan Health Survey 2002, respiratory diseases of the upper airway (10.5%) and influenza (25.2%) were the most-frequent causes of restricted activity during last the 15 days. Asthma and bronchitis were reported as chronic disorders in 5.7 and 6.5%, respectively, of the population aged ≥ 15 years.

Health and risk-reduction targets

1. By 2010, mortality due to influenza, acute infectious diseases of the respiratory system and pneumonia should be reduced by 10% in the population aged ≥ 60 years.
2. By 2010, mortality due to chronic obstructive pulmonary disease should be reduced by 10% in the population aged > 40 years.

Injuries due to accidents and violence

External causes were the fourth cause of overall mortality in Catalonia in the year 2000, especially in younger people, being the first cause of death in men aged 1-44 years and women aged 1-34 years.

The standardized mortality rate due to this cause in the general population was 42 per 100,000 inhabitants (59.3 for men and 25.5 for women, the number of deaths due to external causes).

es in Catalonia was 2,594, or 4.7% of all deaths. These figures represent a reduction of more than 25% in mortality with respect to 1989. It is the second cause of years of potential life lost, after tumors (53,604 years –42,211 in men and 11,393 in women).

In Catalonia, the main group of deaths within external causes are road traffic accidents, which caused 820 deaths (617 men and 203 women).

The diagnostic group “injuries and poisonings” was the fourth most-frequent reason for hospitalization, with 62,649 discharges, 7.7% of the total, with an average stay of 8.3 days, being the main cause of admission in the 15-24 years age group. Among trauma admissions, unintentional falls (22,090 discharges) and road traffic accidents (8,388 discharges) were the most frequent.

In the year 2000, 25% of the Catalan population states having suffered one or more accident in the last year, while 36.2% report needing medical care as a consequence of accidents. Accidents mainly affect children and the elderly. In children < 15 years of age, the incidence in the last fifteen days was 17.7% in boys and 16.1% in girls. In this age group, falls and blows are the most-frequent accidents. In people > 64 years of age, the proportion of women suffering accidents (15.9%) is almost double that of men (9.6%).

Health and risk-reduction targets

1. By 2010, mortality due to injuries by unintentional causes in the three main population groups should be reduced by 20%.
2. By 2010, mortality due to road traffic accidents involving motor vehicles in the three main population groups should be reduced by 50%.
3. By 2010, mortality due to road traffic accidents involving motor vehicles in men and women aged 15-24 years should be reduced by 50%.
4. By 2010, mortality due to road traffic accidents involving motor vehicles associated with an excessive blood alcohol level of drivers should be reduced by 50%.
5. By 2010, the prevalence of severe injuries caused by road traffic accidents involving motor vehicles in the three main population groups (0-14 years, 15-64 years and > 64 years) should be reduced by 25%.
6. By 2010, mortality due to unintentional falls in people aged ≥ 65 years should be reduced by 20%.
7. By 2010, the incidence of unintentional falls causing injuries attended by the health services people aged ≥ 65 years should be reduced by 10%.
8. By 2010, the incidence of femoral neck fractures in people aged 65-84 years should be reduced by 20%.

Mental health problems

The high prevalence of mental disorders is related to the rapid social changes our society is undergoing. The aging population and socioeconomic transformations such as economic, political and ethnic tensions, unemployment, poverty, migration, lack of family and social support, solitude and the breakdown of social networks all contribute to increasing levels of suicide, antisocial behaviour, violence, the use of tobacco, alcohol and drugs, depression and other mental health problems.

In Catalonia, in the year 2000, the mortality rate of MD was 42.9 deaths per 100,000 inhabitants (28.1 in men y 57.1 in women).

Among the causes of mortality related to mental health problems, suicide and self-inflicted injuries have a great impact, producing 452 deaths in Catalonia in the year 2000, when the mortality rate of suicide and self-inflicted injuries was 7.3 per 100,000 inhabitants (11 in men and 3.9 in women). In general, a progressive increase in suicide rates is observed with increasing age. The highest rates of mortality due to suicide are observed from 75 years of age onwards and in young people, for whom it constitutes the second cause of death (43 deaths in the 15-24 years age group), after road traffic accidents. Suicide entailed an average loss of 26.4 years of life per death.

With respect to morbidity due to mental disorders, information from psychiatric hospitals and general hospitals in Catalonia shows that in the year 2000, there were around 20,000 discharges due to mental disorders.

According to the Catalan Health Survey 2002, the prevalence of mental disorders, measured as the probability of being a case at interview, was 17.9% in people aged > 15 years (20% in women and 15.6% in men). These results situate Catalonia in an intermediate level in relation to population-based studies in Spain and other countries. By age groups and sex, the probability of suffering MD was higher in women of all age groups. According to social class, a greater probability was observed in the lower social classes and especially in women from these classes.

Health and risk-reduction targets

1. By 2010, the mortality rate of suicide should be reduced by 10%.
2. By 2010, the mortality rate of suicide in people aged < 25 years should be reduced by at least 10%.
3. By 2010, the mortality rate of suicide in people aged \geq 65 years should be reduced by at least 10%.
4. By 2010, repeated suicide attempts should be reduced by 15%.

Diabetes mellitus

Diabetes mellitus is a chronic metabolic disease which constitutes an important health problem due to its increasing prevalence, high morbidity and mortality and role as a cardiovascular risk factor; it also has a high social and health cost. It courses with hyperglycemia secondary to an absolute or relative insulin deficit. If it evolves freely, it causes severe complications in the short and long term: in the short term, badly controlled diabetes can cause hyperglycemic decompensation and in the long term, complications such as retinopathy, nephropathy, neuropathy and cardiovascular disease. As a consequence, people with diabetes have a high risk of suffering blindness, chronic renal failure, myocardial infarctions, cerebrovascular accidents and amputations.

In the year 2000, there were 1,338 deaths due to diabetes mellitus, a mortality rate of 21.7 (23.4 in women and 19.8 in men) per 100,000 inhabitants. In the Catalan Health Survey 2002, the reported prevalence of diabetes was 5.6% in the population aged > 14 years.

Health and risk-reduction targets

1. By 2010, the case-fatality rate of coronary heart disease in people with diabetes aged < 75 years should be reduced by 15%.

2. By 2010, the average age of new cases of chronic renal failure in people with diabetes should be delayed by 5 years (DM1) or 3 years (DM2).
3. By 2010, amputations in people with diabetes aged 45-74 years should be reduced by 50%.
4. By 2010, the proportion of diabetic adults who know they have the disease should be increased by 20%.

Obesity

Obesity has become an important public health problem, with an associated disease burden so heavy (type 2 diabetes, hypertension, dyslipidemia, etc.) that it is currently the second cause of preventable mortality. Recently, according to preliminary data from the second edition of the study on dietary habits in people aged > 10 years (ENCAT 2002-2003), the prevalence of obesity oscillates between 12 and 16%, although data from the Catalan Health Examination (2002) estimate a prevalence of 17.4% in people aged 18-74 years.

The increased prevalence of obesity in children, above all in preadolescents, is worrying and has been analysed in the developed countries and is a priority subject on the public health agenda of many countries. According to the enKid study (1998-2000)⁵¹, the prevalence of obesity in Spain in the 2-24 years age group was 13.9%, and in Catalonia 9.5%.

Health and risk-reduction targets

1. By 2010, the population average of BMI should be reduced to below 25 kg/m².
2. By 2010, the prevalence of obesity (BMI ≥ 30 kg/m²) in adults aged 18-74 years should not be more than that of 2002.
3. By 2010, the prevalence of obesity in children and adolescents should not increase and should be < 10%.

Excessive consumption of alcohol

The excessive consumption of alcohol is responsible for high morbidity and mortality in Catalonia. Although mortality attributable to alcohol is difficult to quantify due to the lack of consensus on the fractions attributable to specific diseases, a recent Catalan study established that during the period 1988-1997, a total of 28,788 deaths, representing 5.5% of total deaths, was attributable directly or indirectly to alcohol consumption.

Alcohol consumption is very prevalent in Catalonia. A total of 61.1% of people aged 15-64 years reported having consumed alcohol during the last 30 days (70.4% of men and 51.8% of women). In young people aged 14-18 years, the prevalence of alcohol consumption during the last 30 days is slightly higher in girls (58.3%) than in boys (57.8%), underlining the fact that women are gradually drinking more⁹.

To determine the prevalence of risk consumption is not easy and depends largely on the criteria used. The latest data available, although conservative, show that between 4.5% (6.6% of men and 2.5% of women) and 6.4% (8.7% of men and 4% of women) aged 15-65 years in Catalonia are risk drinkers, that is, they consume more than 280 g of alcohol weekly in the case of men and more than 168 g in the case of women.

Another indicator that helps to quantify the magnitude of the alcohol problem in Catalonia is the rate of accidents. Alcohol is involved directly not only in road traffic accidents, but in a third

of occupational accidents. With respect to road accidents, recent Spanish studies estimate the percentage of blood alcohol levels higher than 0.5 g/l in drivers dying from road accidents at 32.6%. Also, alcohol is the substance that motivates most treatment initiations in the Catalan Drug Addiction Network, with 42% (5,189 people) of all the initiations recorded during 2001.

Health and risk-reduction targets

1. By 2010, mortality due to road traffic accidents associated with excessive blood alcohol levels in drivers should be reduced by 50%.
2. By 2010, hospital morbidity due to liver disease produced by alcohol should be reduced by 10%.
3. By 2010, the prevalence of excessive alcohol consumers (> 280 g in men and > 168 g in women) should be reduced by 10% in people aged > 15 years.
4. By 2010, the prevalence of excessive alcohol consumers in people aged 15-29 years should be reduced by 10%.

Drug dependence

Substance abuse and dependence causes organic and psychiatric complications directly associated with the substance and/or the route of administration, and in addition, often has other social and family repercussions derived from the conditions of consumption. Thus, although drug abuse affects a relatively low proportion of the population, its health and social consequences continue to be of great importance.

In the year 2000, the mortality rate for this cause of death was 2.93 deaths per 100,000. The same year, 12,310 persons initiated treatment in Catalan Drug Addiction Network centres; 3,262 treatments were for heroin dependence.

Health and risk-reduction targets

1. By 2010, mortality due to adverse drug reactions should be reduced by 30%.
2. By 2010, the prevalence of HIV infection among heroin users detected in CDAN centres should be reduced by 30%.
3. By 2010, the prevalence of HIV infection among cocaine users detected in CDAN centres should be reduced by 15%.
4. By 2010, the prevalence of illegal drug users in the population aged 15-64 years should be reduced by 20%.
5. By 2010, the prevalence of illegal drug users in the population aged 15-29 years should be reduced by 20%.

Oral health

During the last 20 years, a reduction in the prevalence of caries in children was observed, although epidemiological data indicate that this health problem still has a high prevalence in schoolchildren in Catalonia.

The percentage of schoolchildren free from caries has continued to rise, in part due to the preventive programs established. According to the last epidemiological survey carried out in

Catalonia, 53.1% of 12-year-old schoolchildren and 70.2% of 6-year-olds are free from caries. The DMFT index at 12 years is 0.9 and the restoration index is 44.6%.

Health and risk-reduction targets

1. By 2010, at least 80% of schoolchildren aged 6 years should be free of caries.
2. By 2010, at least 60% of 12-year-olds should be free of caries.
3. By 2010, the DFMT index should be maintained below 1 at 12 years of age.
4. By 2010, the restoration index at 12 years of age should be > 65%.

Health problems of the musculoskeletal system

Musculoskeletal diseases are not only the chronic diseases most-frequently reported by adult population but, in addition, those which have the greatest impact on the quality of physical and mental life and on functional capacity related to mobility or the ability to carry out daily activities, favouring a more sedentary attitude by the sufferer.

Nearly 60% of the adult Spanish population report some chronic disease known or diagnosed by a health professional, and the musculoskeletal diseases are, globally, the most-frequent, followed by hypertension and hypercholesterolemia.

In Catalonia, according to the Catalan Health Survey 2002, the proportion of people reporting chronic lumbar back pain was 27.0% (22.2% in men and 31.6% in women). With respect to vertebral pain, the prevalence was 25% (17.1% in men and 33.6% in women), and the proportion of people reporting osteoarthritis or other rheumatic disease was 22.4% (15.1% in men and 29.3% in women) with the proportions increasing with age, especially in women.

The proportion of people aged > 15 years who report osteoporosis was 3.7%.

Age is an important factor when considering the relation between bone density and the risk of fractures. It is calculated that more than 70% of women aged > 80 years have densitometric osteoporosis. Hip fractures are associated with high degrees of disability and mortality, whereas vertebral fractures are associated with pain and the restriction of activity.

Health and risk-reduction targets

1. By 2010, the incidence of femoral neck fractures in the people aged 65-84 years should be reduced by 20%.

Occupational health problems

The exposure of workers to the multiple risks and environmental conditions encountered in the working environment can result in a health loss, both from work-related accidents and professional or work-related diseases.

The evolution of work-related accidents in Catalonia indicates a progressive and sustained increase in recent years. In 2001 there were 76.4 accidents resulting in absenteeism per thousand working persons. There were 155 fatal accidents.

Professional diseases have shown rising trend in recent years, affecting all production sectors. Figures indicate a possible slowing in this trend due to the stability of these processes

in the industry and construction sectors, which contrast with the continually rising trend in the service sector which generates an ever-larger number of jobs.

Health and risk-reduction targets

1. By 2010, the rate of morbidity due to work-related accidents resulting in absence from work should be reduced by 10%.
2. By 2010, the mortality rate of work-related accidents in the work place should be reduced by 10%.

Prevention and control of communicable diseases

Vaccine-preventable diseases

Active immunization occupies a fundamental place in the prevention of communicable diseases. Currently, more than 25 safe, effective vaccines are in use in humans and constitute a basic instrument of current preventive medicine.

The vaccine-preventable diseases for which goals have been set for the year 2010 are: diphtheria, tetanus, neonatal tetanus, poliomyelitis, pertussis, measles, postnatal rubeola, serogroup C meningococcal disease, *Haemophilus influenzae* B type, hepatitis B, hepatitis A, varicella, pneumococcal pneumonia and influenza.

In the last five years, no case of diphtheria, poliomyelitis or congenital rubella were reported. The reported cases of tetanus fell from 11 to 5.

There has been a substantial reduction in diseases preventable by the MMR vaccine (measles, rubella and mumps). The incidence of pertussis has also fallen considerably.

There has been a substantial reduction in the prevalence of a history of hepatitis B virus infection (antiHBc+) in the 15-24 years age group, from 9.3% in 1986 to 0.9% in 2001. There has also been a substantial reduction in reported hepatitis B morbidity in the 10-19 years age group, from 2.5 per 100,000 at the beginning of the 1990s, to less than 0.5 per 100,000 currently, a reduction of 80% in the number of reported cases.

Health and risk-reduction targets

1. By 2010, the elimination of diphtheria, neonatal tetanus, wild poliomyelitis and indigenous measles should be maintained.
2. By 2005, indigenous postnatal rubella and vaccine-induced poliomyelitis should be eliminated in the indigenous population.
3. By 2010, cases of meningococcal serogroup C disease in people < 19 years of age should be eliminated in the indigenous population.
4. By 2010, there should be a substantial reduction in the indigenous population of the annual number of cases of tetanus (< 2), pertussis (< 50) and mumps (< 50).
5. By 2010, invasive *Haemophilus influenzae* type b disease should be eliminated in people < 19 years of age in the indigenous population.

6. By 2010, the reported morbidity due to hepatitis B in the indigenous population should be reduced to below 0.5 per 100,000.
7. By 2010, the prevalence of HBsAg in the indigenous population aged ≥ 15 years should be reduced to below 0.5%.
8. By 2010, the prevalence of a history of infection by hepatitis B virus (antiHBc+) in the 15-24 years age group should be reduced to below 0.5%.
9. By 2010, the incidence of hepatitis A in the indigenous population should be reduced to under 1 per 100,000.
10. By 2010, the incidence of varicella should be reduced to below 100 per 100,000 inhabitants.
11. By 2010, the incidence of bacteremic pneumococcal pneumonia in children aged < 2 years should be reduced to below 2 per 100,000.
12. By 2010, the incidence of pneumococcal meningitis in children < 2 years of age should be reduced to below 1 per 100,000.
13. By 2010, the incidence of invasive pneumococcal disease in people aged ≥ 65 years should be reduced by 40% to below 16.7 per 100,000.
14. By 2010, mortality due to influenza, acute infectious diseases of the respiratory system and pneumonia in people aged ≥ 60 years, should be reduced to below 15 per 100,000 inhabitants (except in the case of an influenza pandemic).
15. By 2010, the proportion of cases of pertussis in adolescents and adults (population aged > 10 years) should be maintained at below 15% of the total reported cases.

HIV infection

It is estimated that HIV infection currently affects 30,000 people in Catalonia and continues to be a priority public health problem due to the demographic, economic and health impact that the disease supposes.

As in other western countries, coinciding with the introduction of highly active antiretroviral therapy guidelines (HAART) and the consequent increase of the incubation period of the syndrome, the incidence of AIDS in Catalonia diminished consistently from 1996 onwards. By the year 2000, a reduction of 67% had taken place with respect to the cases diagnosed in 1995. In addition, mortality due to AIDS in Catalonia, which had progressively increased from the beginning of the epidemic to 1995, began to fall from 1996 onwards and by 1998 it was no longer the first cause of death in young adults aged 20-39 years.

There has been a change in the pattern of transmission, with an important heterosexual subepidemic occurring in Catalonia. A high percentage (almost 40%) of people recently diagnosed with a severely weakened immune status (CD4 lymphocytes lower than 200 mm) has been detected, indicating a delay in diagnosis of the infection and the need to increase the coverage of the diagnostic test. In addition, the confirmed increase in people recently diagnosed coming from other countries (24% of new diagnoses) means that an intervention in a new at-risk group is necessary.

Health and risk-reduction targets

1. By 2010, new AIDS cases in Catalonia should be reduced by 30% in injection drug users, by 20% in homosexual men and by 15% in heterosexual men and women.

2. By 2010, the time of survival of subjects infected by HIV should be maintained and survival at 18 months in AIDS cases increased by 5%.
3. By 2010, the potential years of life lost due to AIDS should be maintained below 2001 levels in the population aged 13-65 years.
4. By 2010, the frequency of high-risk practises for HIV infection by drug injection and sexual transmission should be reduced.
5. By 2010, vertical transmission of HIV should be maintained below 2.5%.
6. By 2010, as a result of reduced incidence, and increased survival, the prevalence of HIV infections in sentinel populations representative of the general population, should be maintained stable.

Sexually-transmitted diseases

Sexually-transmitted diseases (STD) are those diseases of infectious or parasitic nature in which sexual transmission is epidemiologically important, although in some of them it is not the main route of transmission. Therefore, the concept of STD includes the diseases classically known as venereal diseases (syphilis, gonorrhoea, soft chancre, lymphogranuloma venereum and inguinal granuloma) and other diseases caused by various agents including bacteria, viruses, fungi, protozoos and arthropods, the most recent of which is infection by the human immunodeficiency virus (HIV), which is treated in a separate chapter.

Asymptomatic or clinically inapparent forms of these diseases are frequent, especially in women, in whom only 10-30% of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* infections present symptoms (mucopurulent cervicitis or salpingitis). These infections can be effectively controlled by early diagnosis and antibiotic treatment. However, when untreated they can cause complications and sequelae that are more important in women, such as pelvic inflammatory disease which, in addition to its possible clinical severity, can cause ectopic pregnancies, infertility and sterility.

The incidence rate for syphilis, congenital syphilis, gonorrhoea, ophthalmia neonatorum and clamydia trachomatis fell drastically from 1989 to 2000.

Health and risk-reduction targets

1. By 2010, the incidence of syphilis should be reduced by 10%.
2. By 2010, the incidence of gonorrhoea should be reduced by 10%.
3. By 2010, the incidence of genital infection by *Chlamydia trachomatis* should be reduced by 10%.
4. By 2010, ophthalmia neonatorum should be eliminated.
5. By 2010, the elimination of congenital syphilis should be maintained.
6. By 2010, the incidence of other sexually transmitted diseases should be reduced by 15%.

Tuberculosis

Tuberculosis continues to be an important public health problem. A third of the world's population is infected by *Mycobacterium tuberculosis* and it is the most-frequent cause of mor-

tality due to infectious disease, caused by a single micro-organism, in the general population and in people infected by human immunodeficiency virus (HIV).

In the last ten years, tuberculosis mortality in Catalonia has fallen to a rate of less than one case per 100,000 inhabitants in the year 2000.

From 1988 to 1992, a substantial increase in tuberculosis incidence took place, mainly due to AIDS, but from 1993 onwards the incidence has fallen and was 27.4 cases per 100,000 inhabitants in 2001, which is, however, still the highest rate in the European Union. This reduction however, has been halted by the substantial increase in the number of patients diagnosed among the immigrant population from developing countries.

The immediate consequence of this high number of sources of infection is that the risk of infection in the community is high, although many tuberculosis patients are not very integrated within the community, since the risk factors themselves, associated with the disease, mean they remain marginalized. In the year 2000, 42.2% of all patients and 43.4% of patients with positive sputum-smear pulmonary tuberculosis presented some of the most-frequently associated risk factors such as AIDS, injection drug use, alcoholism, homelessness and, in recent years, immigration for economic reasons.

Cases of tuberculosis with AIDS have fallen considerably, whereas cases of tuberculosis in between immigrants rose four-fold in the period 1992-2000. Cases associated with alcoholism and homelessness presented no significant changes.

Health and risk-reduction targets

1. By 2010, mortality due to tuberculosis should be maintained below one case per 100,000 inhabitants.
2. By 2010, incidence rates of respiratory tuberculosis in the general population should be reduced by 25% to obtain a rate < 16 cases per 100,000 inhabitants.
3. By 2010, incidence rates of sputum-smear positive pulmonary tuberculosis in the general population should be reduced by 40% to obtain a rate of 8 cases per 100,000 inhabitants.
4. By 2010, the isolation of drug-resistant bacilli should be reduced by 25%.

Nosocomial infections

Nosocomial infections are those infectious processes acquired during a hospital stay, which were not present nor in the incubation period at admission. They may also present after discharge. These infections produce notable suffering, personal and family problems, and represent an important complication for hospitals due to the high economic cost they entail, since they increase the length of stay of patients affected and the number of therapeutic and diagnostic procedures they must undergo.

A high proportion are difficult to avoid, since they usually appear in severe patients, fragile elderly people, polytrauma patients, transplanted patients and, generally patients instrumentalised or those undergoing complex, intensive or long-lasting medical and surgical therapies. They represent a negative aspect associated with all the beneficial effects that hospital care represents. This does not imply in any way a tolerance or acceptance of these infections as an irreducible fact.

The average global prevalence of patients with nosocomial infections in the hospitals of Catalonia in the period 1998-2000 was 6.9%, very similar to that observed in all Spanish hospitals in the same period (6.8%). These figures of around 7% are within what may be considered the endemic area of nosocomial infections in Europe.

Health and risk-reduction targets

1. By 2010, the global prevalence of patients with nosocomial infection should be lower than 7%.
2. By 2010, the incidence of surgical infection in hip and knee replacements should be lower than 1.5%.
3. By 2010, the incidence of surgical infection in programmed colon surgery should be lower than 15%.
4. By 2010, the incidence of surgical infection in caesarean sections should be lower than 3%.
5. By 2010, the incidence of pneumonia associated with mechanical ventilation in ICU should be lower than 15/1,000 days of mechanical ventilation.
6. By 2010, the incidence of primary bacteremia and bacteremia associated with central vascular catheters in ICU should be lower than 5/1,000 days of central vascular catheter.
7. By 2010, the incidence of admitted patients with methicillin-resistant *Staphylococcus aureus* infection should be lower than 4 per 1,000.

Improvement of maternal and infant health

In Catalonia, infant mortality continues to fall, following the trend that has taken place throughout the last century. In the year 2000, the infant mortality rate was 3.4 deaths per 1,000 live births. This figure situates Catalonia among the countries with the lowest infant mortality, only surpassed by some Nordic countries and Japan.

Perinatal mortality has fallen substantially, from 8.7 deaths per 1,000 live and still births in 1986 to 4.6 in the year 2000. On the other hand, in the last decade, direct maternal mortality has been maintained at very few annual cases.

In recent years, the main contribution to the reduction of infant mortality has been the reduction of the frequency of the two first causes of death in the first year of life: conditions originating in the perinatal period and congenital diseases, which fell from 4.3 to 2.3 per 1,000 and from 2.9 to 1.0 per 1,000, respectively, between 1987 and 1999. Sudden infant death, with a very-low frequency, is the third cause of death.

In Catalonia, the prevalence of premature births and low birth weight and very low birth-weight babies have increased continually since 1993 (7.6 and 7.6 per 100 newborns, respectively in the year 2000). The increase in premature births is closely related to the increase in multiple births. In the year 2000, 53.1% (1,303) of multiple childbirths were low birth-weight and 46.3% (1,078) were premature. The increase in multiple pregnancies is partly due to artificial insemination, where increasing the probability of a successful pregnancy supposes an increase in multiple gestations (32% in 1999), which entails an increase in preterm and low birth weight babies. Some diseases that affect the mother, such as diabetes, hypertension, coronary heart disease, nephropathy and alterations of the uterus and the placenta are also related to premature birth and low birth weight.

In Catalonia, the rate of adolescent pregnancies and voluntary interruption of pregnancy shows an increasing tendency. In the year 2000, the rate of pregnancies was 7.9 per 1,000 women aged < 18 years, 65.4% of which ended in abortion. Abortions have increased from 1.3 per 1,000 women aged < 18 years in 1990 to 5.1 in the year 2000. In spite of the increase

observed, Catalonia is among the countries with the lowest rates of pregnancies in adolescents, whereas comparable countries such as the United Kingdom, the United States, Canada and the eastern European countries have a rate higher than 10.

Health and risk-reduction targets

1. By 2010, maternal mortality should be maintained at below 7 per 100,000 live births.
2. By 2010, perinatal mortality should be maintained at below 6 per 1,000 live and dead births.
3. By 2010, infant mortality should be reduced to below 4 per 1,000 live births.
4. By 2010, the prevalence of low birth-weight should be maintained at below 7 per 100 live births.
5. By 2010, the prevalence of very low birth-weight should be maintained at below 1 per 100 live births.
6. By 2010, the prevalence preterm newborns should be maintained at below 7 per 100 live births.
7. By 2010, the prevalence of newborns of < 33 weeks of gestation should be reduced to below 1 per 100 live births.
8. By 2010, the index of pregnancies in women aged < 18 years should be reduced to below 7 per 1,000.

Healthy aging

One of the characteristics of the Catalan population is aging. Demographic forecasts indicate that at the end of the first decade of the 21st century in Catalonia, nearly one million two hundred thousand people will exceed 65 years of age. The increase in the number of elderly does not have to imply necessarily many more ill and dependent people, since while life expectancy increases, improvements in the health status and delays in the appearance of morbidity and dependency can also occur.

In the year 2000, life expectancy was 76.5 years in men and 83.2 in women and 79.9 years for both sexes. The Catalan population has a high longevity, but part of the time people can hope to live will be in conditions of more or less severe disability. In the year, 2000 disability-free life expectancy at birth for the whole of the population was situated at 67.9 years (66.8 in men and 69.0 in women).

The mortality rate in people aged ≥ 65 years was 42.0 per 100,000 inhabitants (48.2 deaths per 100,000 men and 37.7 per 100,000 women). Cardiovascular diseases, cancer and respiratory diseases are the main causes of death among the elderly.

The mortality rate due to mental and behavioural disorders was 42.9 per 100,000 inhabitants, and the highest number of deaths was concentrated in the ≥ 75 years age group (rates per 100,000 inhabitants of 405.7 in men and 582.3 in women) with senile and vascular dementia and non-specific dementia accounting for around 95% of these deaths. Among diseases of the nervous system, Alzheimer's disease represented 54.3% of the total deaths in this group, with a rate of 17.2 deaths per 100,000 inhabitants (10.8 in men and 23.3 in women) and is higher in the ≥ 75 years age group.

Among the causes of avoidable mortality, unintentional falls are especially relevant, causing, in 1999, 203 deaths in people aged ≥ 65 years (84 men and 119 women). Deaths by road traffic accidents are also important, causing the death of 118 men and 70 women.

The ≥ 65 years age group is the greatest user of health services. In the year 2000, 279 people per 1,000 in this age group were admitted to an acute hospital at least once. The most frequent causes of admission in the 65-79 years age group were, in men, diseases of the circulatory system and in men aged ≥ 80 years, diseases of the respiratory system. In women, the main cause was diseases of the nervous system and organs of the senses and in women aged ≥ 80 years, diseases of the circulatory system. A total of 88.3% of elderly people saw their general practitioner at least once during the year 2000 and nearly 30% visited the primary health care centre six or more times.

In patients admitted to social health services, the most-frequent processes are neoplasias (20%), followed by diseases of the circulatory system (18%), especially cerebrovascular disease. In third place are mental disorders (13.8%) represented almost exclusively by senile dementia and non-specific dementias, followed by poisonings and injuries, among which the most-frequent are femoral fractures.

According to the Catalan Health Survey 2002, in which 1,440 people aged ≥ 65 years were interviewed, 54.6% of men and 41.9% of women reported having good health, and 9.9% of men and 14.7% of women reported having bad health, whereas, in the general population, 4.3% made this assessment of their health status.

A total of 33.2% of men and 43.6% of women aged ≥ 65 years present some disability. The proportion of people who report having one or more disabilities increases substantially after 80 years of age and in all the groups is greater in women than in men. The disabilities reported most frequently are those related to the musculoskeletal system followed by severe limitations of sight and hearing. A total of 91.7% of men and 96.2% of women aged ≥ 65 years present some chronic disease, which is more frequent in women than in men.

With respect to therapeutic drug use, during the two days previous to the survey, 36.1% of people aged ≥ 65 years consumed three or more therapeutic drugs.

Health and risk-reduction targets

1. By 2010, disability-free life expectancy of men and women aged 65 years should be increased by at least 10%.
2. By 2010, the mortality rate due to unintentional falls in people aged ≥ 65 years should be reduced by 20%.
3. By 2010, the mortality rate due to adverse drug reactions in people aged ≥ 65 years should be reduced by 10%.
4. By 2010, mortality due to tetanus in people aged ≥ 65 years should be reduced to below three cases annually.
5. By 2010, the incidence of invasive pneumococcal disease in people aged ≥ 65 years should be reduced by 40% to below 16.7 per 100,000.
6. By 2010, unintentional falls in people aged ≥ 65 years should be reduced by 10%.
7. By 2010, the incidence of femoral fractures in people aged ≥ 65 years should be reduced by 20%.
8. By 2010, the prevalence of undernourishment in people aged ≥ 65 years should be reduced by 10%.

Health protection

Environmental health

The environment is one of the determining factors of health and has complex and interrelated effects on health. A healthy environment needs the active participation of individuals and the community, as well as cross-sector collaboration and coordination.

Interdepartmental and cross-sector work is a decisive factor for health protection against environmental risks. Coordination between the Department of the Environment and the Department of Health is vital and must be encouraged and optimized.

Health protection activities are carried out in accordance with the proposals of the programme for the continuing application of Agenda 21, approved in 1997 by the General Assembly of the United Nations, and include ensuring the supply of drinkable water, controlling and managing waste products, and controlling the use of hazardous chemicals, pesticides, etc.

Health and risk-reduction targets

1. By 2010, reported morbidity due to typhoid fever should be less than 0.5 cases per 100,000 inhabitants/year.
2. By 2010, outbreaks of waterborne disease in facilities used by children and young people should be reduced by 30%.
3. By 2010, the incidence of legionellosis should be reduced by 30%.
4. By 2010, the size of legionellosis outbreaks should be reduced by 50%.
5. By 2010 reported outbreaks of intoxication caused by the fumigation of buildings should be reduced by 30%.
6. By 2010, all companies supplying water for human consumption in Catalonia should establish systems of self-regulation of the quality of the water they provide.
7. By 2010, all the distribution networks of water for public consumption should supply water with a nitrate content within the parameters of current legislation.
8. By 2010, controls on the hygienic and health conditions of facilities used by children and young people should be maintained.
9. By 2010, controls on the hygienic and health conditions of camp sites should be maintained.
10. By 2010, town councils should control the hygienic and health conditions of tattoo and piercing parlours.
11. By 2010, it should be ensured that persons working in tattoo and piercing parlours have the necessary training in accordance with the relevant norms.
12. By 2010, all companies using biocides should be recorded in the official register controlling companies using pesticides in accordance with current regulations.
13. By 2010, all health sector facilities should have introduced management of chemical, biocontaminating and cytotoxic waste.

14. By 2010, all high-risk facilities should be registered and have programmes of maintenance, cleaning and disinfection.
15. By 2010 all high-risk facilities should undergo a periodic check-up carried out by companies authorized by the General-Directorate of Public Health.
16. By 2010, all beaches should fulfil European norms on the health quality of their water.
17. By 2010, the inspections necessary to verify the homogenous application of the legislation that establishes health norms in public swimming pools will be programmed and carried out.
18. By 2010, all facilities for the recycling of waste water should undergo an evaluation of the health risk and have adequate risk management.

Food safety

Food safety is an increasingly global concern. Safe and healthy foods contribute significantly to the health and well-being of the population and are demanded by consumers.

The increasing industrial nature of the food industry, and the complexity of the food production process, together with emergent risks (BSE, dioxins) have shown the need for special attention to be paid to food safety by taking a global approach that includes all the food chain, from primary production to sale to the consumer, in order to provide a high level of protection for health.

The food industry has become the main insurer of the salubrity of foods through systems of self-regulation and training programmes on food hygiene for foodhandlers.

The Catalan law on food safety provides for the development of the plan of food safety with the target of obtaining the highest level of food safety and guaranteeing consumers that the foods they eat are free from biological, chemical and other hazards.

Health and risk-reduction targets

1. By 2010, an increase in the total number of outbreaks of foodborne diseases should be avoided.
2. By 2010, the elimination of the transmission of trichinosis to humans by consumption of meat sold by authorized establishments should be maintained.
3. By 2010, there should be no case of transmission of trichinosis to humans by consumption of game not controlled by the health authorities.
4. By 2010, reported morbidity due to brucellosis should be below 1 case per 100,000 inhabitants.
5. By 2010, the absence of cases of acute poisoning due to the consumption of foods contaminated by bad use of phytosanitary and zoosanitary products should be maintained.
6. By 2010, the control of all pigs and horses killed for investigation of trichinosis, as established by current regulations, should be maintained.
7. By 2010, all game species capable of transmitting trichinosis sold by establishments located in Catalonia should be investigated for trichinosis before their sale.

8. By 2010, all people who may consume game species capable of transmitting trichinosis should know the health risks derived from if there is no previous analysis for trichinosis.
9. By 2010, all people with a risk of contracting brucellosis (farmers, slaughterhouse workers) should be informed and know the measures to prevent the disease.
10. By 2010, all meat and animal products produced in Catalonia should be free of illegal animal medicine or below the maximum limits established by the current regulations.
11. By 2010, producers of animals destined for human consumption should be informed of the risks derived from the fraudulent and incorrect use of zoosanitary and phytosanitary products.
12. By 2010, all foods produced in Catalonia should be free of phytosanitary product residues or below the maximum limits established by current regulations.
13. By 2010, control of the amount of heavy metals, polycyclic aromatic hydrocarbons, dioxins and, in general, persistent toxic products in foods produced in Catalonia should be maintained.
14. By 2010, human exposure to dioxins, PCB and foreign substances should be reduced.

Emerging health problems

Foodborne diseases

The differential characteristics of foodborne diseases are that they are transmitted by foods, caused by pathogenic micro-organisms or their toxins, that generally the foods are an active support for microbial multiplication or liberation of toxins and that they create predominantly digestive symptoms.

Most people are susceptible to foodborne diseases, although specific population groups, such as children, the elderly or people with immunodeficiencies of any type are especially susceptible and may have more severe symptoms, as they have a greater predisposition to dehydration or sepsis, which aggravates the prognosis substantially.

In the last decade, *Salmonella* was the agent most frequently involved (54.5%) in the reported outbreaks in Catalonia, followed by *Clostridium perfringens* and *Staphylococcus aureus*. The etiology could not be determined in 36.6% of the outbreaks. The total number of outbreaks remained more or less stable until 2001, when it increased remarkably, together with the number of persons affected and hospitalized. Thus, there were 110 outbreaks reported in the year 2000 with 1,884 people affected and 88 hospitalized which rose to 150 outbreaks with 2,281 people affected and 155 hospitalized in 2001.

In 2001, outbreaks in the family and in catering establishments were the most frequent (59 and 60, respectively) and mayonnaise and similar products were those most frequently identified as the vehicle of the outbreaks. The most-frequent factors identified as contributing to the outbreaks of foodborne disease produced outside the family were unhygienic food handling (25.3%) and the use of unpasteurized eggs (14.7%).

With respect to the early reporting of outbreaks, which is essential for adequate investigation and identification of the vehicle and contributing factors, figure 5 shows the days of delay between the suspicion by the health services and the communication to the epidemiological surveillance units. A total of 23.3% of the cases were reported in less than 24 hours and 58.6% in less than 48 hours.

Health and risk-reduction targets

1. By 2010, the number of reported outbreaks of foodborne diseases should remain stable.
2. By 2010, the number of outbreaks of foodborne disease by *Salmonella* produced in catering establishments and children's holiday camps should be reduced by 25%.

Legionellosis

The inhalation of aerosols from contaminated water is the principal mode of transmission. The facilities most often colonized by *Legionella* are evaporative cooling towers, condensers and hospital hot water distribution systems. Other environmental sources that have been related to cases of legionellosis are wave-producing swimming pools, ornamental fountains, hydro-massage baths, and humidifiers.

However, as often happens with infectious diseases, not everybody who inhales contaminated aerosols will develop the disease. The risk factors for greater susceptibility to the disease are old age, male gender, smoking, chronic respiratory disease, alcoholism, immunosuppression, solid organ transplant, malignant carcinoma, chemotherapy, diabetes and renal failure.

In Catalonia, incidence data for legionellosis are available from 1988, when it was included in the list of notifiable diseases. Since then, the incidence has shown a rising trend, above all from 1996, when the rapid diagnostic tool for the detection of the antigen in urine became available. The incidence rose from 0.1 per 100,000 in 1989 to 3.6 in 2001.

The most-frequent risk factor is smoking more than 10 cigarettes (39%), followed by chronic bronchitis (25.4%), diabetes (9.8%) and cancer (9%).

With respect to community outbreaks, from 1997 to 2001, a constant increase was observed, rising from two outbreaks in 1997 to 18 outbreaks in 2001. With respect to the size of these outbreaks, a constant increase was observed from 1997 to 2000, from an average of two cases per outbreak in 1997 to 10.3 in the year 2000; in 2001 the figure fell to 3.4.

Health and risk-reduction targets

1. By 2010, the incidence of legionellosis should be reduced by 30%.
2. By 2010, the size of outbreaks should be reduced by 50%.
3. By 2010, the case-fatality rate of *Legionella* should be lower than 10%.

Transmissible spongiform encephalopathies

Transmissible spongiform encephalopathies (TSE) are fatal neurodegenerative diseases of animals (scrapie, bovine spongiform encephalopathy, chronic wasting disease of the American mule deer and elk) and of human beings (Creutzfeldt-Jakob disease, kuru, variant Creutzfeldt-Jakob disease). TSE can be transmitted, with very long periods of incubation, by inoculation or ingestion of the tissues affected between individuals of the same and different species. TSE are different from other communicable diseases because they are caused by prions, the only component of which that has been identified is a protein very resistant to environmental exposure and to normal sterilization techniques. The reservoir of prions is the infected individuals and the maximum concentrations are found in the central nervous system during the final stages of the disease.

The most-frequent human TSE is sporadic Creutzfeldt-Jakob disease (CJD), where it is not possible to identify the mechanism that causes the appearance of the prion and it is suggested that generation may be spontaneous.

In 1996, the appearance of a new human TSE variant Creutzfeldt-Jakob disease (vCJD), related to the transmission of BSE to humans through the gastric tract was identified.

TSE became an important public health problem when vCJD was identified, demonstrating that although most human TSE do not have an infectious origin, epidemiological surveillance to detect possible changes in the epidemiological, clinical or neuropathological profiles associated with transmission is necessary.

Human TSE are infrequent, with an incidence of around one case per million persons/year. Therefore, epidemiological surveillance of human TSE must have specific characteristics and it must count on all the tools necessary to identify the cases in which the diagnosis is suspected, confirm or discard this diagnosis completely and arrive at an accurate etiological classification. The greater attention paid to these diseases and the development of the medical services and epidemiological surveillance determined an increase in the identification of cases; thus, an apparent increase in the incidence has been observed over time in those countries where epidemiological surveillance has been carried out for long periods, probably reflecting an improvement in the identification of cases.

By May 27, 2003, no case of vCJD in Catalonia had been identified and the only iatrogenic case of CJD, by a dura mater graft, was diagnosed in 1993. The other transmissible spongiform encephalopathies (sporadic and familiar) have caused 87 deaths in Catalonia between 1993-2002.

Health and risk-reduction targets for 2010

Because of the very long incubation period of the TSE, which can be decades, it is impossible to plan health targets for a period of ten years, as it is not possible to discard the appearance of cases related to infections that occurred many years ago. However, the Health Plan for Catalonia 2002-2005 establishes operational targets basically aimed at increasing controls on bovines, ovines and goats, increasing training activities for veterinarians and updating guides and protocols of actuation.

The good use of medicines

Medicines are one of the main therapeutic resources in the health process, since many preventive interventions and most cures include the use of medicine as an intermediate mechanism to obtain a specific health target.

Numerous studies, the majority carried out in the United States, show the importance of medication errors, the severe clinical consequences they suppose for patients and the high cost they generate. However, there are no data corresponding to Catalonia or to the countries of our setting.

Adverse reactions are harmful and unintentional reactions that take place when a medicine is administered to a human being. Drug surveillance is a public health activity whose aim is to identify, quantify, evaluate and prevent the risks associated with the use of licensed medicines.

In the period 1989-1999, according to data from the Catalan Death Register, 2,647 people died due to accidental poisoning by drugs and there were 24,344 cases of poisoning by

drugs with severe adverse effects needing specialized medical care and hospital admission. These data are similar to those of studies carried out in other autonomous communities.

The number of hospital discharges due to poisoning by drugs was 3,109 in 1999 and 3,232 in the year 2000. By drug group, the psychotropic drugs were the most numerous, accounting for 35.6% of the total.

Health and risk-reduction targets

1. By 2010, the increasing trend of morbidity due directly to the use of medicines should be reversed.

Organ donation and transplantation

Catalonia has successful organ and tissue procurement and transplantation programmes, meaning that Catalan patients are among those with most possibilities of receiving a transplant worldwide.

In 2002, in Catalonia, a total of 681 organ transplants were carried out and there were 234 valid donors, supposing a rate of 36 donors per million inhabitants, higher than the Spanish average and among the highest in the world.

Although the rate of donation in Catalonia is high, there are two limiting factors. Firstly, in 2002, in Catalonia, the rate of refusals was 22%, which, although well below the Spanish average, meant that many transplants were lost. Secondly, the general aging of the population and, therefore, of potential donors (in 2002 the average age of donors was over 50 years), means that a large number of potential donors are not valid and if they are, not all organs are suitable for transplantation, meaning that currently, less organs are harvested from a donor.

Health and risk-reduction targets

1. By 2010, a rate of kidney transplantation ≥ 60 per million inhabitants should be reached.
2. By 2010, a rate of liver transplantation ≥ 35 per million inhabitants should be reached.

5

Strategies to make health policies effective

To give coherence to the proposals of the Health Plan, the institutions with responsibility for health, and especially the health system, need to direct their actions in a coordinated and coherent way to achieve the targets of the plan. The direction of services, the organization of institutions, the involvement of health professionals and the public, commitment and cross-sector work, progress in information systems and evaluation of the results of the health system in terms of health, satisfaction and cost are fundamental elements in the process.

Orientation of the services in accordance with the health policy

The health system must offer the public, fairly and efficiently, health services of quality that respond to the needs derived from the demographic and epidemiological changes, scientific and technological innovations and public expectations, in a constantly evolving scenario of increasing needs and limited resources.

The Catalan Health Service, responsible for guaranteeing health care, must have a portfolio of services that responds to the needs. One of the instruments for the projection of the proposals of the Health Plan is the service purchase contract which specifies the commitment of the different lines of services to the achievement of the targets. Its potential for the application of health strategies in the services buyer should be seen as a nexus and reinforcing element between planning and management, buyer and supplier.

The contracting process allows modulation of the execution of the Health Plan and specification in the health regions by defining the type of services contracted. In addition it allows the establishment of evaluation mechanisms, guaranteeing the effectiveness and efficiency of the services provided. This defines the contents of the Health Plan and the criteria of evaluation that will have to be incorporated in contracts in accordance with the specific and coherent territorial needs, using a criterion of territorial equality.

The projection of the proposals of the Health Plan in the purchase of services should continue to be articulated around the three axes of the plan: health promotion and disease prevention, greater fairness, the efficiency and quality of the services and user satisfaction.

The effective incorporation in services of preventive activities and the promotion of healthy habits related to the priority health problems defined in the Health Plan is one of the most emblematic features. The proposed interventions are related to vaccinations, screenings, health education and the promotion of healthy life styles and habits and interventions in specific population groups.

Clinical criteria and recommendations are a fundamental instrument in implementing preventive activities, since they are based on the available evidence, contribute to reducing clinical variability and improving equal access, efficiency, the use of services and the quality of care received. With the participation of scientific societies and professional bodies, progress should be made in drawing up recommendations on the activities to apply in the different health areas. The Department of Health, together with scientific bodies and societies, will renew the consensus on the preventive activities to be developed.

The adoption of criteria and protocols to deal with priority health problems and problems of coordination between the different services and health levels should be introduced in service purchase contracts to improve the efficiency and quality of the care process.

The contracts should consider both the health needs and the personal expectations of users, emphasizing accessibility, reduction of bureaucracy, information, personal treatment, and the need to establish mechanisms to determine the opinions, suggestions and complaints of users.

In summary, the contract, in addition to being the main way of ensuring the Health Plan is operative in the services, is also an important dynamic factor in directing the work of health professionals by health targets and introducing the culture of evaluation at all the levels of health organization.

Health professionals

The motivation and training of health professionals is a key element for the success of the new health policies. The drawing up of the Health Plan has counted on the participation of health professionals from both medical and management areas, who have contributed their vision, knowledge and experience of health problems, interventions and user relationships. It is vital to include a multidisciplinary vision, involving non-health professionals, such as those involved in education, urbanism, work, economics, sociology and communications, among others.

The continuing education of primary health care professionals on the new health policies is channelled through all the organisms and institutions interested in the subject. Among these, the Institute of Health Studies, the health administration body responsible for the continuing education of professionals working in the public sector, the Academy of Medical Sciences and the Centre of Collegial Studies of the College of Physicians of Barcelona, who all centre their efforts on the continuing education of health professionals is especially relevant. The role of the universities, both in undergraduate and postgraduate studies, should also be emphasized, especially the introduction of a new course titled "Introduction to the health system" in the curriculum of the Medical Faculty of Barcelona and the work carried out with the university schools of nursing for the inclusion, in undergraduate and postgraduate training programmes, of specific areas of the Health Plan.

The role of health professionals in the clinical application of the proposals of the Plan is fundamental, as is their participation in the definition and elaboration of recommendations and protocols for the treatment of priority health problems, such as preventive activities, mental health, the organization and coordination of emergency and continuing care, the organization of home care, etc. The support and promotion that health professionals, through professional bodies and scientific societies, give to health strategies, is important. However, professionals should be more aware of the proposals of the Health Plan, and it will be necessary to develop strategies of communication and participation aimed at clinicians and managers. The proposals of the White Book on the Health Professions in Catalonia, aimed at making innovative proposals on the human resources of the health system, are centred on two elements: on the one hand, the flexibility that should allow continuous and efficient adaptations to the changing health needs and, on the other hand, cross-sector perspectives that should contribute to ensuring that professionals can make the proposals of the Health Plan effective, both in qualitative and quantitative terms.

The public

The position of the public towards health and the health system is evolving. The citizen of the future will be better informed on the possibilities and limits of preventive, diagnostic and therapeutic activities, rehabilitation and social reintegration, and will participate more in the individual and collective decisions related to the health system and its activities.

The proposals of the Health Plan are aimed at:

- Favouring the incorporation of healthy life-styles and habits through health education and cooperation with the mass media so that health-related information contributes effectively to the training and health education of the public.

- Improving the relationship between professionals and patients with regards to communication, information and treatment, and giving more importance to the decisions of the patient on their own health and body, the protection of privacy and psychological support for patient's families.
- Increasing knowledge of the expectations and satisfaction of the public in relation to the health services and health policy. The most valuable instrument for this is the systematic implementation of surveys of satisfaction with the health services and the Catalan Health Survey.
- Prioritizing measures to improve the care process in the most vulnerable groups: hospitalized children and adolescents, elderly people admitted to social health centres and chronic and terminal patients.
- Establishing measures and instruments that recognize the rights and duties of the user. A guide of recommendations has been drawn up on informed consent (1997) and the rights and duties of the public in relation to health and health care established (2001). Free choice of family physician and the right to a second opinion are other factors which are currently being worked on.
- Improving access to services to avoid delays which could entail risks for the patient and an unacceptable emotional burden for the professionals, patients and their families. Recently, a substantial reduction in waiting lists for specific procedures has been achieved, but more work is needed to continue this reduction in the most-frequent surgical procedures.

Until now, public participation in the Health Plan has been through the organs of formal participation in the Health Council of the Catalan Health Service when approving the first draft of the Plan. Other ways for the public to express their opinions on the most important health problems have been the Web of the Department of Health and the Catalan Health Survey. In addition, several public groups have been organized to debates what they consider to be the most relevant health problems and the measures that need to be developed. In the future, it will be necessary, however, to open more routes for the participation and involvement of the public and the Health Plan can benefit from the possibilities offered by the new technologies which, without a doubt, will produce a change in relations in the health system.

In addition, public participation in the improvement of individual health should be stimulated. The collaboration of the different social sectors and the need for transparent information and accounting to favour the involvement of the public and stimulate debate on health and health services is vital. The role of the mass media is fundamental in the creation of opinion and transmission of information on health topics.

Cross-sector cooperation

It is widely accepted that the health status of the population and inequalities in health care depend on many factors, including socioeconomic conditions, work, education, urbanism, the quality of the environment, access to health services and social support, among others.

Protection against environmental risks and the reduction of behavioural risk factors depend, in many instances, on decisions and actions in non-health sectors (environment, agriculture, industry, government, work, social security, transport, economy and property, etc.).

To improve the health and the quality of life of the population, these conditioners must be acted on and that requires coordination and cooperation between the different sectors with responsibility in the area of health.

The HCOC law establishes that the Health Plan is the indicative instrument and the framework of reference for all public health activities in Catalonia, thus recognizing the cross-sector character of health.

Given the cross-sector involvement in the maintenance of health, the Health Plan promotes work with different departments of the Generalitat and other institutions involved in health which have participated in the elaboration and application of the Health Plan: the Programme of Education for Health in Schools of the Department of Education, the Catalan Institute of Road Safety of the Department of the Interior, the Catalan Institute of Woman, the Department of Labour, the unions, the Catalan Council of Social Security and Occupational Health, the Interdepartmental Commission of Safety and Occupational Health, the Centre of Medical Assessments Evaluations, the Main Directorate of Justice for the Young of the Department of Justice, the General Secretariat of Youth of the Department of the Presidency, the Department of Social Welfare, municipal authorities and various NGOs working in the development of preventive activities and health promotion. It is necessary to emphasize, however, that there are areas in which responsibility is exclusive to the Spanish Government (tax policies on tobacco and alcohol, legislation on traffic, illegal drug use, policies on social security, housing, etc.).

County councils and municipal authorities also have an important role in cross-sector cooperation (protection against environmental risks, public information and health education, promotion of facilities for physical exercise such as sport facilities, etc.). These organizations are close to the public and know their problems well and can help to find solutions. In fact, community participation has been carried out fundamentally through these institutions and the unions.

Although different sectors have participated, this collaboration has been unequal and in the next few years, advances must be made in cross-sector involvement in the drawing up and achievement of the targets established in the Health Plan.

One tool that should be introduced is health impact assessment (HIA) of specific strategies and projects after identification of the possible adverse effects on health and how to overcome them by corrective measures. HIA are becoming important in Europe and other developed countries such as Canada, Australia and New Zealand. The European Union has set out the challenge of developing HIA in its policies and in the Treaty of Amsterdam. HIA should be developed in Catalonia with the aim of contributing a greater degree of rationality to the decisions that are taken in the different sectors.

Finally, it will be necessary to count increasingly on the society in the implementation of health policies and, above all, on the voluntary sector. Support is vital as these bodies can give much support in many specific areas such as the aging of the population, the disabled or those with chronic diseases.

Information and evaluation

The availability of quality information and its accessibility are essential in identifying health problems, detecting changes and trends, adapting resources to needs and evaluating the results in terms of health, effectiveness and efficiency.

At the beginning of the 1980s, the information available mainly made reference to quantitative data aimed at the management of the health system and of little use in evaluating health targets. During last the two decades, substantial efforts have been made to obtain information on the health of the population and on the operation and use of services (improvement of the Death Register), implementation of the MBSD (acute hospitals, social health and mental health centres), the Register of Kidney Patients, the Survey on Smoking, the Catalan Health Survey and the Survey of Health Professionals, among others.

In spite of the development of the health information system, there are certain deficiencies, especially in relation to specific aspects such as socioeconomic levels, sex, information rela-

tive to small areas, problems of quality of the data, lack of integration of the information coming from the health service and information from other sectors. New indicators are needed to improve knowledge of the health status of the population, especially those concerned with quality of life, well-being and satisfaction with services.

Currently, evaluation consumes many human and material resources and organization and integration is needed for greater efficiency in obtaining and analysing information. An evaluation and information strategy with a global perspective that considers the interests and needs of the different levels of the health organization and other sectors with responsibility in the health area is necessary, and the responsibilities of each sector must be defined.

A Central Results Organization is proposed which would be autonomous and would centralize all information on the activities contracted and billed, the complexity of the diagnosis and procedures, the economic results, opinion surveys, etc. The objective would be to obtain reliable indicators of health care, economic and structural results to evaluate both health service providers and the results obtained.

6

ANNEX

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