



Highlights on health in San Marino 2005

Highlights on health give an overview of a country's health status, describing recent data on mortality, morbidity and exposure to key risk factors along with trends over time. The reports link country findings to public health policy considerations developed by the WHO Regional Office for Europe and by other relevant agencies. *Highlights on health* are developed in collaboration with Member States and do not constitute a formal statistical publication.

Each report also compares a country, when possible, to a reference group. This report uses the 27 countries with very low child mortality and very low adult mortality, designated Eur-A by WHO, as the reference group. Eur-A comprises Andorra, Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Germany, Greece, Finland, France, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

To make the comparisons as valid as possible, data, as a rule, are taken from one source to ensure that they have been harmonized in a reasonably consistent way. Unless otherwise noted, the source of data in the reports is the European health for all database of the WHO Regional Office for Europe. Other data and information are referenced accordingly.

Keywords

HEALTH STATUS
BURDEN OF DISEASE
COMPARATIVE STUDY
SAN MARINO

EUR/05/5046413G
<http://www.euro.who.int/highlights>

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Contents

	<i>Page</i>
Summary: findings and policy considerations.....	1
Selected demographic and socioeconomic information.....	2
Population profile.....	2
Life expectancy (LE) and healthy life expectancy (HALE).....	3
Burden of disease.....	5
Main conditions.....	5
Main risk factors.....	5
Mortality.....	6
Infant, neonatal and child mortality.....	6
Maternal mortality.....	6
Excess mortality.....	6
Main causes of death.....	7
References.....	9
Annexes.....	10
<i>Annex. Age pyramid</i>	10
<i>Annex. Selected mortality</i>	11
<i>Annex. Mortality data</i>	12
Technical notes.....	15
Glossary.....	17



Summary: findings and policy considerations

Life expectancy

WHO estimates that a person born in San Marino in 2002 can expect to live 81 years on average: 84 years if female and 77 years if male. National estimates for the years 1995–2000 give even higher life expectancy figures. Both the estimated and nationally reported figures for life expectancy in San Marino are above the Eur-A averages for both sexes. Also, people in San Marino spend seven years (11% of life expectancy) with illness.

As the length of life increases, older people can respond with lifestyle changes that can increase healthy years of life. Correspondingly, health care systems need to shift towards more geriatric care, the prevention and management of chronic diseases and more formal long-term care. Since people are living longer, measures to improve health and prevent disease need to focus on people of working age.

Ageing and employment policies (OECD, 2004)

What are the main risk factors for disability in old age and how can disability be prevented? (Health Evidence Network, 2003a)

Infant mortality

Both infant and neonatal mortality rates in San Marino are low. WHO and the United Nations Children's Fund have estimated the infant mortality rate to be 5 deaths per 1000 live births, which is equal to the Eur-A average and is in the same range as the average national figure for the last three years with data, 1998–2000.

Antenatal care is one of the most important services in health care. Nevertheless, it can be expensive, and interventions may be excessive, unneeded and unproven. A simplified model of antenatal care, based on evidence of benefit, is available.

Managing newborn problems: a guide for doctors, nurses and midwives (WHO, 2003a)

The WHO reproductive health library, version 6 (WHO, 2003b)

What is the efficacy/effectiveness of antenatal care? (Health Evidence Network, 2003b)

What is the effectiveness of antenatal care? (Supplement) (Health Evidence Network, 2005)

Main causes of death

Between 1995 and 2000, the main noncommunicable diseases accounted for about 85% of all deaths in San Marino and external causes for about 5%. No deaths from communicable diseases were reported for that period. In total, 48% of all deaths were caused by diseases of the circulatory system and 31% by cancer. Ill-defined causes accounted for more than 10% of all deaths, hampering international comparisons of statistics on cause of death. Also, mortality rates for cardiovascular diseases, cancer and external causes are lower than the Eur-A average rates.

Preventive care, delivered through a country's primary care system, can reduce all-cause mortality and premature mortality, particularly from CVD.

A strategy to prevent chronic disease in Europe: a focus on public health action: the CINDI vision (WHO Regional Office for Europe, 2004a)

Towards a European strategy on noncommunicable diseases (WHO Regional Office for Europe, 2004b)

What are the advantages and disadvantages of restructuring a health care system to be more focused on primary health care services? (Health Evidence Network, 2004)

Selected demographic and socioeconomic information

Population profile

In mid-2000, San Marino had about 27 000 people, with over 90% of the population living in urban areas, which is among the highest percentages in Eur-A countries.

In 2000, 15% of the population were 0–14 years old, and 16% were over 65 years old (Annex. Age pyramid).

The birth rate in San Marino in 2003 is essentially the same as the Eur-A average for that year, and the natural population increase and net migration are positive and above the corresponding Eur-A averages (Table. Selected demographic indicators).

Selected demographic indicators in the San Marino and Eur-A,
2003 or latest available year

Indicators	San Marino (2000)	Eur-A		
	Value	Average	Minimum	Maximum
Population (in 1000s)	27.0	–	–	–
0–14 years (%)	15.0	–	–	–
15–64 years (%)	68.9	–	–	–
65+ years (%)	16.2	–	–	–
Urban population (%) ^b	90.4	78.5	50.8	100.0
Live births (per 1000)	10.8	10.7	8.6	21.7
Natural population growth (per 1000)	3.8	1.1	–2.9	15.9
Net migration (per 1000) ^a	7.3	3.5	–0.5	8.8

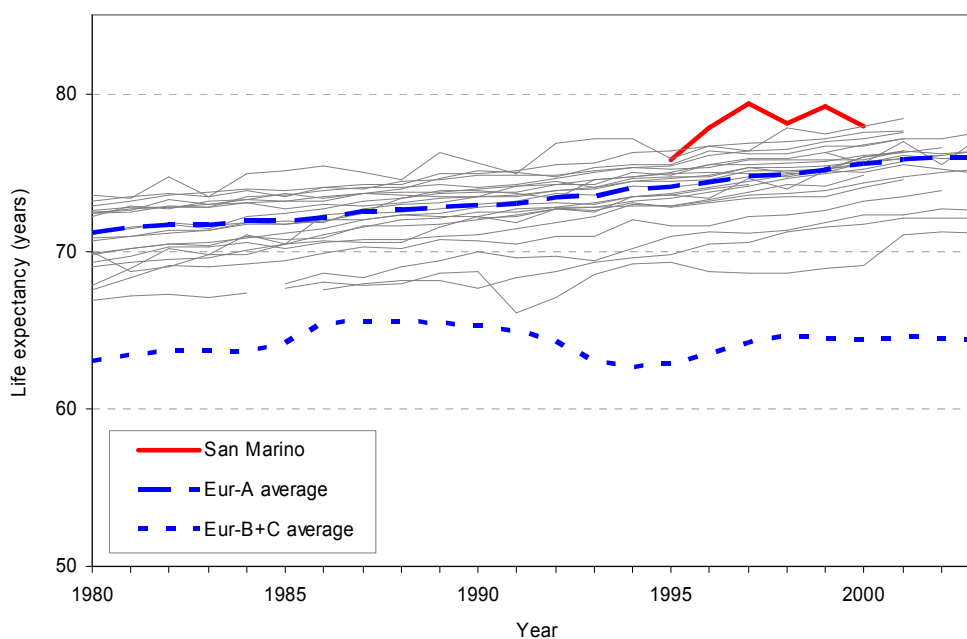
^a 2002; ^b 2001.

Sources: Council of Europe (2005); WHO Regional Office for Europe (2005).

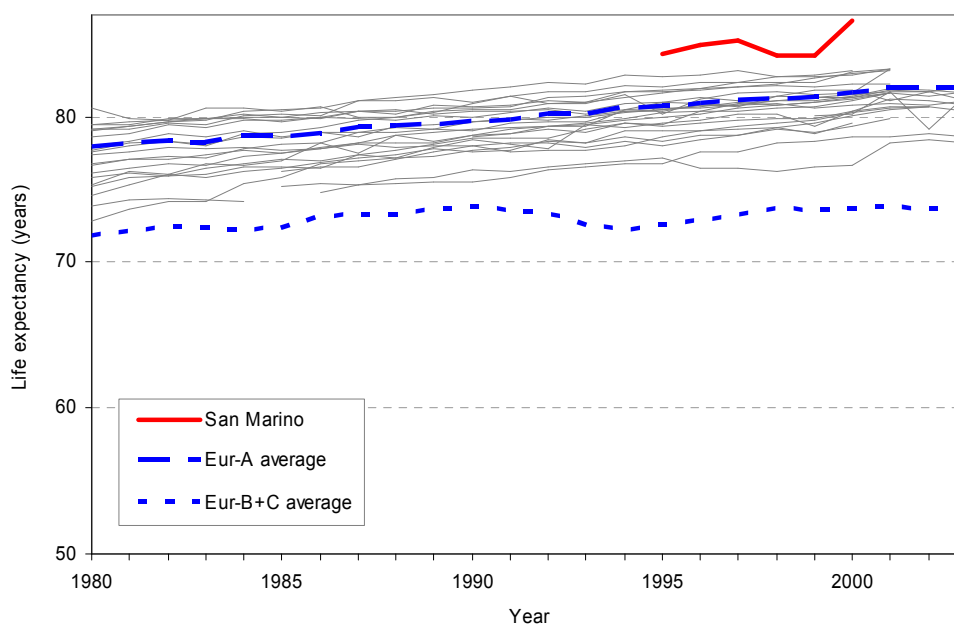
Life expectancy (LE) and healthy life expectancy (HALE)

According to WHO (WHO, 2003c) estimates, a person born in San Marino in 2002 can expect to live 80.7 years on average: 84.0 years if female and 77.2 years if male. National estimates for the years 1995–2000 give even higher life expectancy (LE) figures. Also, both the estimated and nationally reported LE figures in San Marino are higher than the Eur-A average for both sexes (Figure. Life expectancy for males; Figure. Life expectancy for females).

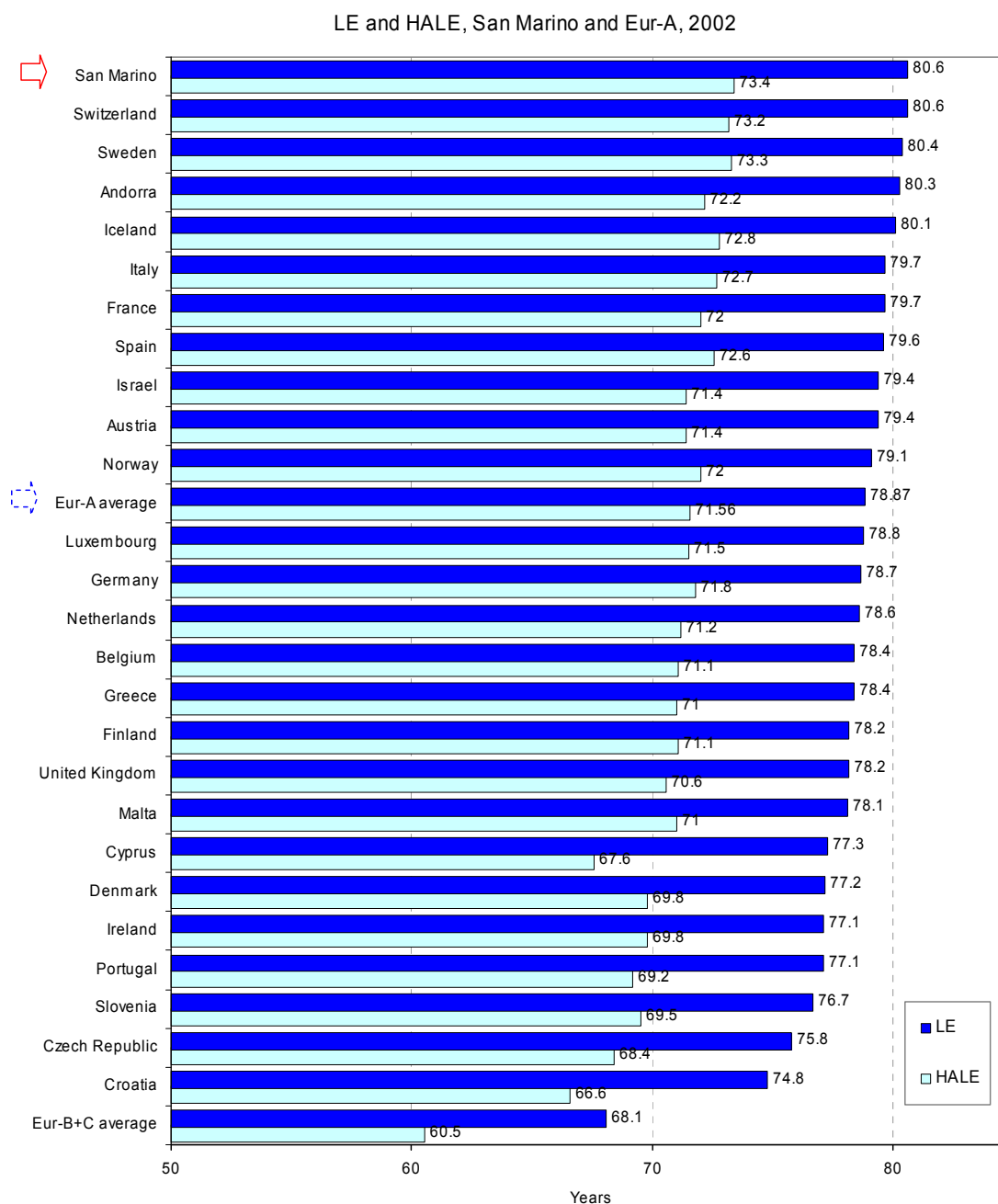
Life expectancy at birth for males, San Marino, Eur-A and Eur-B+C averages, 1980 to latest available year



Life expectancy at birth for females, San Marino, Eur-A and Eur-B+C averages, 1980 to latest available year



In addition to LE, it is increasingly important to know the expected length of life spent in good health. WHO uses a relatively new indicator for this purpose – healthy life expectancy (HALE), subtracting estimated years of life spent with illness and disability from estimated LE. For San Marino, WHO (WHO, 2003c) estimates that people can expect to be healthy for about 89% of their lives. They lose an average of 7.2 years to illness - the difference between LE and HALE. This loss is approximately the same as the Eur-A average (7.3 years) and the Eur-B+C average (7.6 years) (Figure. LE and HALE).



Since females live longer and since the possibility of deteriorating health increases with age, females lose more healthy years of life (8.1 years) than males (6.3 years). Nevertheless, the longer LE for females in San Marino gives them five extra years of healthy life. For people aged 60 years, the gender difference is smaller, but females (19.9 years) live still more than three years longer healthy compared with males (16.2 years) according to the WHO estimates (WHO, 2003c).

Burden of disease

The burden of disease in a population can be viewed as the gap between current health status and an ideal situation in which everyone lives into old age, free of disease and disability. Causing the gap are premature mortality, disability and certain risk factors that contribute to illness. The analysis that follows elaborates on the burden of disease in the population. The disability-adjusted life-year (DALY) is a summary measure that combines the impact of illness, disability and mortality on population health.

Main conditions

The following table shows the top 10 conditions (disability groups), in descending order, that account for approximately 90% of the burden of disease among males and females in San Marino. Cardiovascular diseases (CVD) and malignant neoplasms account for the highest burden of disease among males, and neuropsychiatric conditions and CVD account for the highest burden of disease among females. Because mortality from neuropsychiatric conditions is minor, disability in daily living comprises the bulk of their burden on the population's health (Table. Ten leading disability groups).

Ten leading disability groups as percentages of total DALYs for both sexes in San Marino (2002)

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Cardiovascular diseases	23.8	Neuropsychiatric conditions	29.8
2	Malignant neoplasms	22.0	Cardiovascular diseases	24.8
3	Neuropsychiatric conditions	20.6	Malignant neoplasms	14.0
4	Unintentional injuries	8.5	Sense organ diseases	6.5
5	Sense organ diseases	4.9	Musculoskeletal diseases	6.4
6	Musculoskeletal diseases	3.5	Respiratory diseases	3.0
7	Respiratory diseases	3.1	Diabetes mellitus	2.9
8	Intentional injuries	2.3	Infectious and parasitic diseases	1.9
9	Diabetes mellitus	2.3	Digestive diseases	1.9
10	Digestive diseases	2.0	Endocrine disorders	1.4

Source: Background data from WHO (2003c).

Main risk factors

The following table shows the top 10 risk factors with their relative contributions, in descending order, to the burden of disease in the male and female populations of San Marino. According to the DALYs, tobacco use and high blood pressure place the greatest burden of disease on San Marino's male population, and high blood pressure and high body mass index (BMI) place the greatest burden of disease on females (Table. Ten leading risk factors).

Ten leading risk factors as causes of disease burden measured in DALYs in San Marino (2002)

Rank	Males		Females	
	Risk factors	Total DALYs (%)	Risk factors	Total DALYs (%)
1	Tobacco	18.3	High blood pressure	10.0
2	High blood pressure	9.6	High BMI	7.3
3	Alcohol	8.3	High cholesterol	6.0
4	High cholesterol	6.7	Physical inactivity	2.8
5	High BMI	6.4	Tobacco	2.5
6	Physical inactivity	2.9	Unsafe sex	2.0
7	Low fruit and vegetable intake	2.7	Low fruit and vegetable intake	1.6
8	Illicit drugs	0.6	Iron deficiency	0.9
9	Occupational risk factors for injuries	0.5	Childhood sexual abuse	0.7
10	Occupational carcinogens	0.5	Alcohol	0.4

Source: Background data from WHO (2003c).

Mortality

Note: Six-year averages have been used partly for age- and cause-specific mortality rates in San Marino to diminish random variations.

Infant, neonatal and child mortality

Both infant and neonatal mortality are low in San Marino. WHO and the United Nations Children's Fund (UNICEF) have estimated that the infant mortality rate is 5 deaths per 1000 live births, which is equal to the Eur-A average and is in the same range as the average national figures for the last three years with data, 1998–2000 (UNICEF, 2005).

WHO estimates that for 2003, for every 1000 live births in San Marino, there was a probability that 5 children would die before they reach 5 years of age. Three years earlier, WHO estimated the probability at 8 deaths per 1000 live births. The Eur-A average rate for 2002, based on nationally reported data, was between 5 and 6 under-5 deaths per 1000 live births.

Maternal mortality

Maternal mortality rates (MMR) and the Millennium Development Goal (MDG)

Despite the difficulties in accurately measuring MMR, nationally reported figures are accepted at face value relative to the MDG to improve maternal health – to reduce the MMR by 75% between 1990 and 2015. In some countries, the 2015 target may be equal to or lower than the average current MMR for high income countries in the European Region (the Eur-A 2001 average of five maternal deaths per 100 000 live births). Countries with 2015 targets lower than the current Eur-A average can be judged as having achieved or being likely to achieve the MDG (World Bank, 2004).

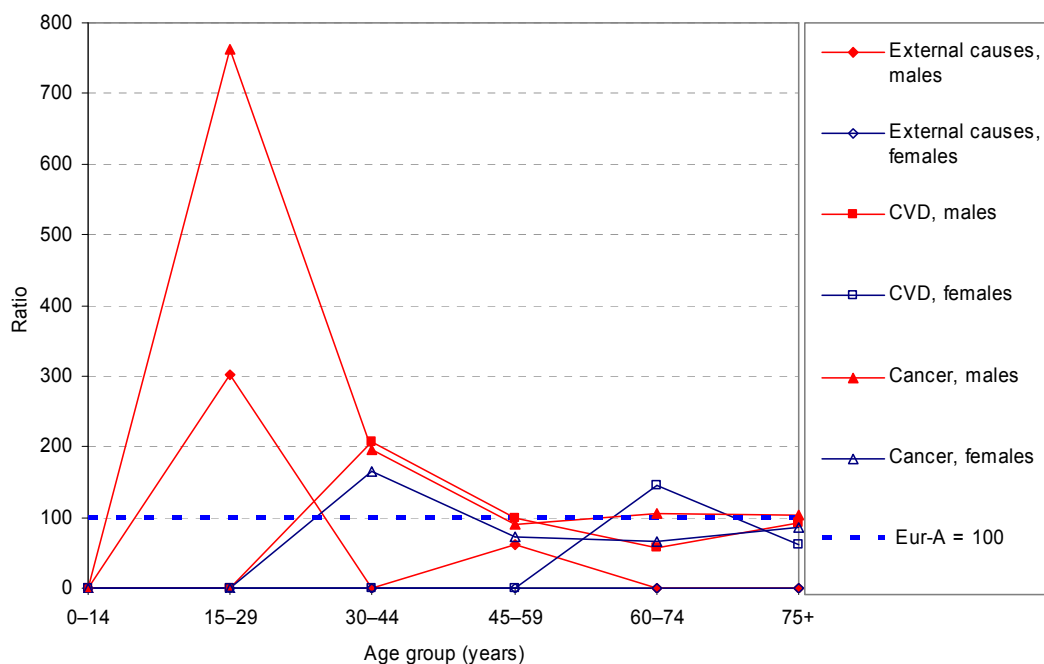
However, in some countries, MMR were higher in 2002 than they had been in 1990. Applying the 75% reduction to the 1990 baseline in these countries creates, in some cases, a 2015 MDG target that requires dramatic reductions in MMR before 2015. In these cases, more important than reaching maternal mortality targets is taking concrete action to provide women with access to adequate care during pregnancy and childbirth, initiatives that have proven to bring down MMR.

No maternal deaths were reported in San Marino during the period 1995–2000.

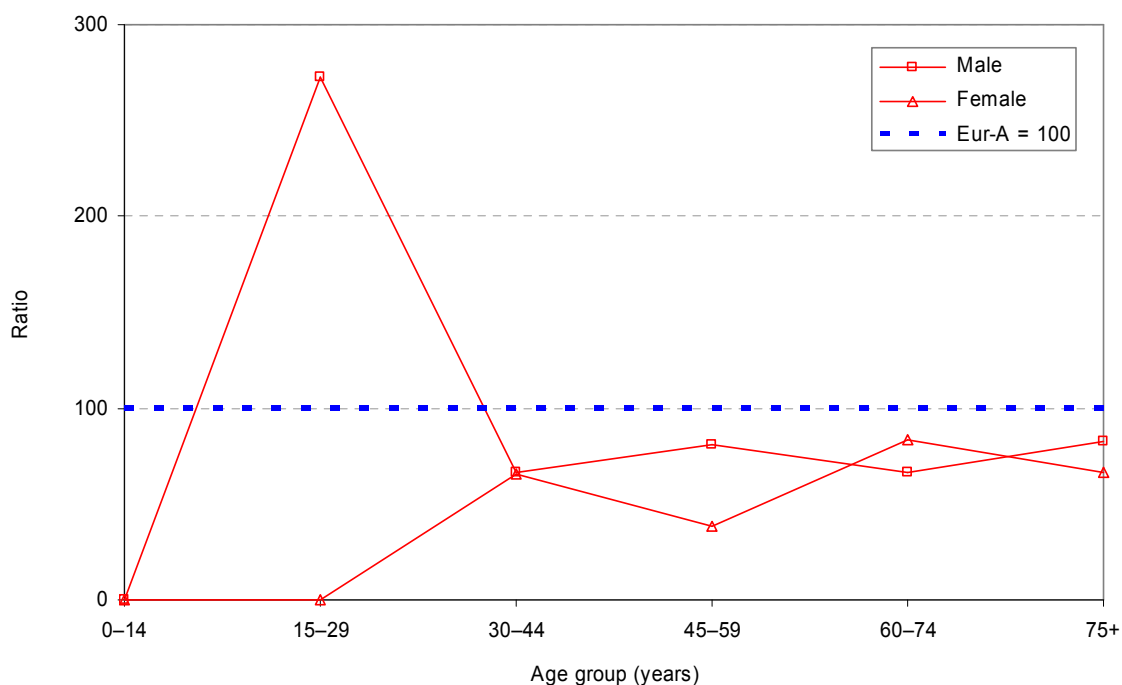
Excess mortality

Compared with the Eur-A average, the total mortality rate in San Marino is 18% lower for males and 27% lower for females, but children and adolescents up to 15 years of age (both sexes) and men aged 15-29 years have excess mortality. In all other age groups, mortality is lower than the Eur-A average, in general, especially in age groups that comprise 30–74 year olds (Figure. Main causes of mortality by sex and age group; Figure. Total mortality by sex and age group).

Main causes of mortality by sex and age group in San Marino
in comparison with Eur-A (Eur-A = 100), 2000



Total mortality by sex and age group in San Marino
in comparison with Eur-A (Eur-A = 100), 2000



Main causes of death

In the period 1995–2000, the main noncommunicable diseases accounted for about 85% of all deaths in San Marino and external causes for about 5%. No deaths from communicable diseases were reported in 1995–2000. In total, 48% of all deaths were caused by diseases of the circulatory system and 31% by cancer.

Ill-defined causes – main cause of death classified under symptoms, signs, abnormal findings and other ill-defined causes – contributed more than 10% of all deaths in San Marino in the period 1995–2000. This hampers international comparisons of cause-of-death statistics, especially for CVD (Annex. Selected mortality; Annex. Mortality according to age and sex).

CVD

The mortality rate for CVD is generally lower in San Marino than in the Eur-A on average. An exception is the premature mortality rate (including deaths before the age of 65 years) among women, which was slightly above the Eur-A average rate in the period 1995–2000, due to excess mortality among women aged 30–59 years. This, however, can be caused partly by changes due to the country's small population.

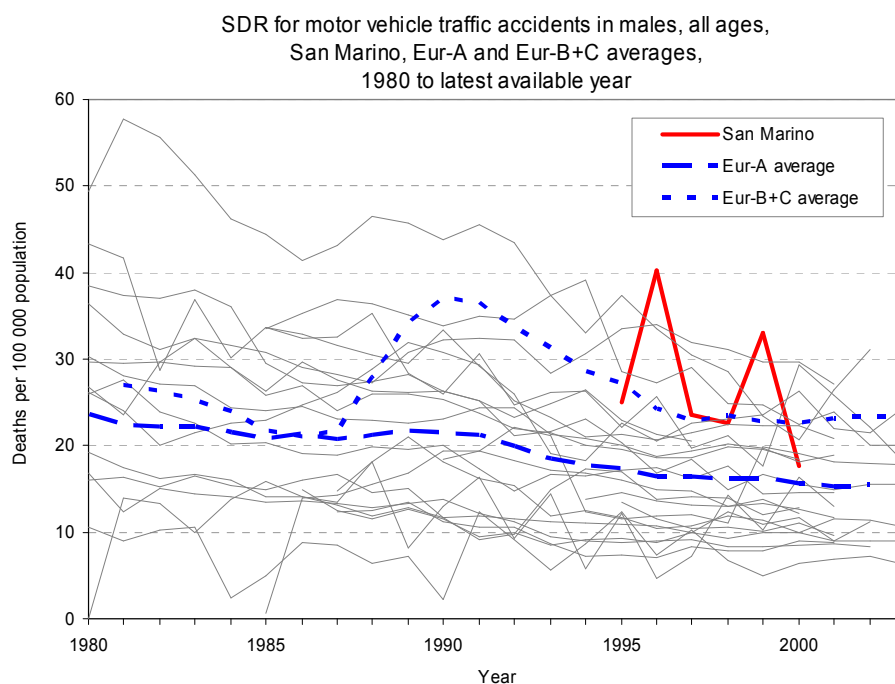
Mortality rates for CVD vary by cause in San Marino. The country has low mortality rates for ischaemic heart disease and cerebrovascular diseases, but high mortality rates for pulmonary heart disease and other heart diseases. This last group, pulmonary heart disease and other heart diseases, is the single biggest killer in San Marino, and it caused 31% of all deaths in the period 1995–2000. The tradition of classifying it as the main cause of death is most likely the explanation for its prominence.

Cancer

Cancer causes almost every third death in San Marino. In general, the mortality rates in San Marino are below the Eur-A average rates, but the mortality rate for men aged 65 years or more is higher than the Eur-A average rate for that age group. Of the most common cancers, mortality rates for stomach cancer are higher in San Marino than in Eur-A on average. However, mortality rates for the following cancers are below the corresponding Eur-A average rates: colorectal cancer; cancer of the larynx, trachea, bronchus and lung, breast cancer (females), and prostate cancer (males).

External causes

Mortality from external causes is lower in San Marino than in the Eur-A on average, and the rate in the country is decreasing faster than elsewhere. This is true for both sexes, even though the mortality rate for males is three times higher than that for females. Also, people in San Marino have a lower mortality rate for accidental falls, drowning and accidental poisonings than people in the Eur-A on average. On the other hand, the death rates for motor vehicle traffic accidents are higher in San Marino than in Eur-A countries, in general, especially for males. Moreover, the suicide rate among males is approximately the same as the Eur-A average rate, while females have a lower rate than their average counterparts in Eur-A. Finally, no homicide or assault deaths were reported in San Marino during the period 1995–2000 (Figure. SDR for motor vehicle traffic accidents in males of all ages).



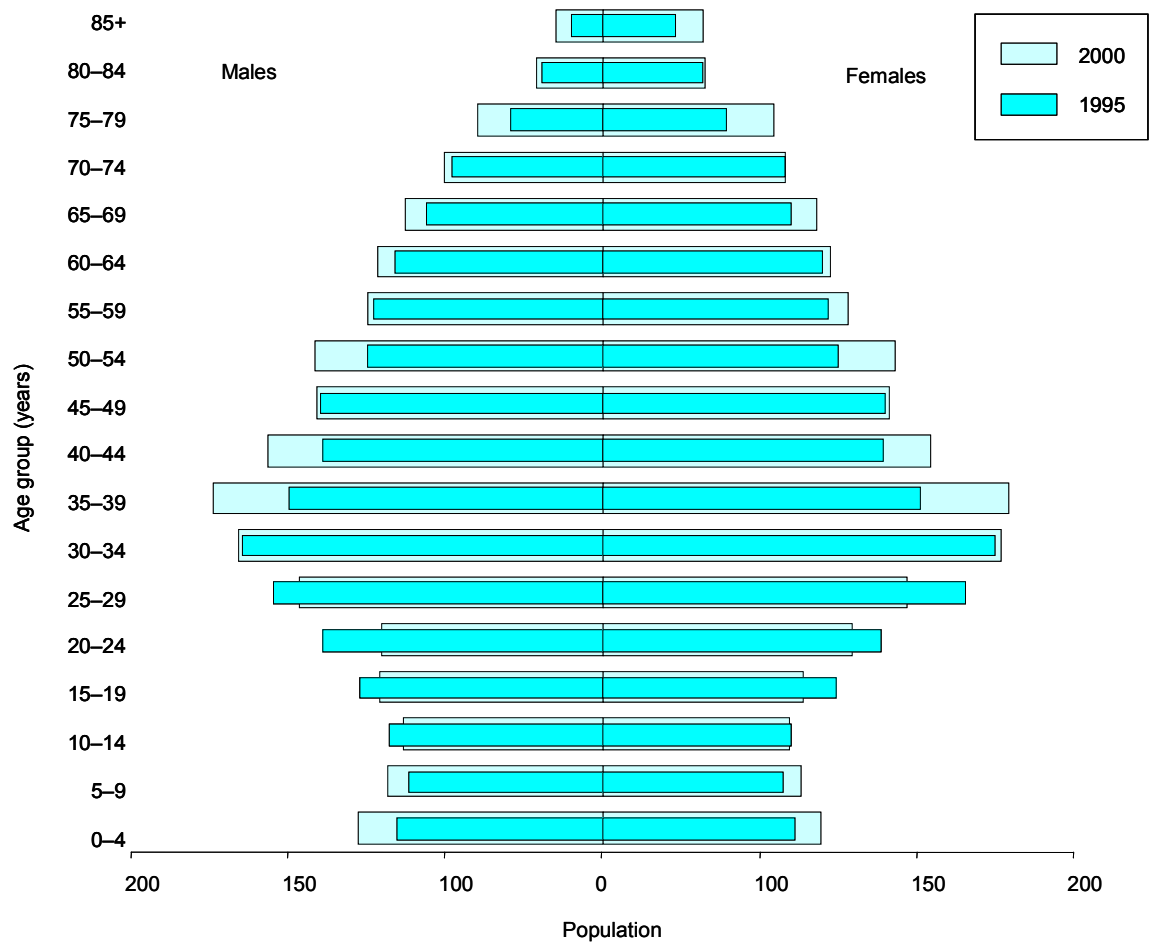
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Annexes

Annex. Age pyramid

Age pyramid for San Marino



Sources: WHO Regional Office for Europe (2005); United Nations (2005).

Annex. Selected mortality

Selected mortality in the San Marino compared with Eur-A average

Condition	SDR per 100 000		Excess mortality in San Marino (%)	Total deaths in San Marino (%)	Total deaths in Eur-A (%)
	San Marino (2000)	Eur-A average (2002)			
Selected non-communicable conditions	407.3	533.8	-23.7	85.7	82.4
<i>Cardiovascular diseases</i>	190.4	243.4	-21.8	40.1	37.6
Ischaemic heart disease	18.6	95.9	-80.6	3.9	14.8
Cerebrovascular diseases	38.4	61.1	-37.2	8.1	9.4
Diseases of pulmonary circulation and other heart disease	122.2	56.6	115.9	25.7	8.7
<i>Malignant neoplasms</i>	176.6	181.5	-2.7	37.2	28.0
Trachea/bronchus/lung cancer	34.6	37.1	-6.7	7.3	5.7
Female breast cancer	20.6	27.0	-23.7	4.3	4.2
Colon/rectal/anal cancer	11.9	20.7	-42.5	2.5	3.2
Prostate	32.8	25.1	30.7	6.9	3.9
<i>Respiratory diseases</i>	27.7	47.8	-42.1	5.8	7.4
Chronic lower respiratory diseases	0.0	20.2	-100.0	0.0	3.1
Pneumonia	19.5	16.2	20.4	4.1	2.5
<i>Digestive diseases</i>	9.2	30.8	-70.1	1.9	4.8
Chronic liver disease and cirrhosis	9.2	12.6	-27.0	1.9	1.9
<i>Neuropsychiatric disorders</i>	3.5	30.3	-88.4	0.7	4.7
Communicable conditions	0.0	8.4	-100.0	0.0	1.3
AIDS/HIV	0.0	1.1	-100.0	0.0	0.2
External causes	21.9	40.3	-45.7	4.6	6.2
<i>Unintentional</i>	18.3	28.7	-36.2	3.9	4.4
Road traffic injuries	8.5	9.9	-14.1	1.8	1.5
Falls	0.0	6.1	-100	0.0	0.9
<i>Intentional</i>	3.6	11.6	-69.0	0.8	1.8
Self-inflicted (suicide)	3.6	10.6	-66.0	0.8	1.6
Violence (homicide)	0.0	1.0	-100.0	0.0	0.2
Ill-defined conditions	43.6	20.9	108.6	9.2	3.2
All causes	475.0	647.8	-26.7	100.0	100.0

Annex. Mortality data

Table 1. Selected mortality for the group 0–14 years by sex in San Marino and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	San Marino (2000)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	0.0	-20.0	49.4	-2.4	151.7	-3.8
	M	0.0	-20.0	55.3	-2.5	170.5	-3.9
	F	0.0	-20.0	43.3	-2.4	131.9	-3.8
<i>Infectious and parasitic diseases</i>	M	0.0		1.4	-1.1	10.9	-7.0
	F	0.0		1.1	-3.0	9.5	-6.6
Intestinal infectious diseases	M	0.0		0.2	-0.7	5.1	-8.2
	F	0.0		0.1	-7.3	4.7	-7.9
<i>Malignant neoplasms</i>	M	0.0	-20.0	3.3	-1.8	5.1	-1.9
	F	0.0		2.6	-1.8	4.2	-1.9
<i>Cardiovascular diseases</i>	M	0.0		1.4	-3.1	3.3	1.1
	F	0.0		1.3	-2.5	2.6	0.1
<i>Respiratory diseases</i>	M	0.0		1.4	-4.3	35.9	-5.0
	F	0.0		1.0	-4.2	30.7	-5.0
Pneumonia	M	0.0		0.5	-6.0	20.9	-4.9
	F	0.0		0.4	-5.1	17.9	-4.7
<i>Certain conditions originating in perinatal period</i>	M	0.0	-20.0	255.3	-2.1	607.6	-2.7
	F	0.0	-20.0	202.3	-1.6	427.5	-2.7
Congenital malformations and chromosomal abnormalities	M	0.0		11.6	-2.9	24.2	-2.8
	F	0.0		10.0	-3.3	21.0	-2.6
<i>Ill-defined causes</i>	M	0.0		5.0	-3.9	5.6	-0.6
	F	0.0		3.4	-4.2	4.6	-1.0
<i>External causes of injury and poisoning</i>	M	0.0		7.0	-4.0	29.0	-3.4
	F	0.0		4.6	-3.2	18.1	-3.1
Motor vehicle traffic injuries	M	0.0		2.5	-4.5	4.7	-2.6
	F	0.0		1.7	-4.8	3.0	-1.6

Table 2. Selected mortality for the group 15–29 years by sex in San Marino and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	San Marino (2000)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	111.2	7.2	56.0	-2.3	161.0	-0.9
	M	223.5	17.4	82.0	-2.3	241.7	-1.0
	F	0.0	-20.0	29.3	-2.2	79.0	-0.6
<i>Infectious and parasitic diseases</i>	M	0.0		1.2	1.5	12.3	3.0
	F	0.0		0.8	1.9	5.1	2.5
<i>Malignant neoplasms</i>	M	47.0		6.2	-1.0	8.8	-1.9
	F	0.0		4.7	-1.4	7.7	-1.9
<i>Cardiovascular diseases</i>	M	0.0		4.1	-2.4	17.6	0.0
	F	0.0		2.3	-2.0	7.3	-0.9
<i>Respiratory diseases</i>	M	0.0		1.4	-3.6	6.9	0.2
	F	0.0		0.9	-2.7	3.8	-1.1
<i>Digestive diseases</i>	M	0.0		0.9	-3.5	8.0	3.0
	F	0.0		0.5	-3.8	3.7	3.1
<i>Ill-defined causes</i>	M	0.0		4.0	-3.1	11.6	7.1
	F	0.0		1.4	-1.3	3.3	5.8
<i>External causes</i>	M	176.5	9.5	58.3	-1.4	162.4	-1.6
	F	0.0	-20.0	14.4	-1.6	36.9	-0.2
Motor vehicle traffic injuries	M	47.4	-12.1	28.5	-1.3	27.8	-1.5
	F	0.0	-20.0	7.3	-1.4	8.0	0.3
Accidental drowning	M	47.0		1.3	-2.2	10.8	-3.9
	F	0.0		0.2	-2.1	1.9	-2.2
Accidental poisoning	M	0.0		2.8	0.0	19.1	3.3
	F	0.0		0.7	0.8	4.4	2.5
Suicide	M	34.7		12.7	-1.8	36.8	0.0
	F	0.0		3.1	-2.2	5.8	-1.3

Table 3. Selected mortality for the group 30–44 years by sex in San Marino and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	San Marino (2000)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	79.1	3.8	120.3	-2.5	453.8	-0.7
	M	108.0	2.3	161.6	-2.6	700.0	-0.8
	F	51.5	7.5	78.5	-2.1	215.6	-0.2
<i>Malignant neoplasms</i>	M	54.0	12.0	27.6	-2.3	40.2	-2.8
	F	51.5		31.3	-2.0	43.8	-1.4
Trachea/bronchus/lung cancer	M	0.0		5.0	-3.4	7.3	-4.2
	F	0.0		2.8	-0.6	2.2	-1.0
Female breast cancer	F	51.5		10.0	-2.6	10.0	-2.3
<i>Cardiovascular diseases</i>	M	54.0	16.8	26.1	-2.5	158.6	-0.4
	F	0.0		10.4	-2.1	45.3	0.0
Ischaemic heart disease	M	0.0		11.8	-3.1	73.7	-2.2
	F	0.0		2.4	-2.7	14.4	-1.3
Cerebrovascular diseases	M	27.0		4.4	-3.2	24.6	-0.4
	F	0.0		3.6	-2.5	10.6	-1.3
<i>Respiratory diseases</i>	M	0.0		3.9	-3.5	34.3	0.9
	F	0.0		2.2	-2.0	9.8	0.8
<i>Digestive diseases</i>	M	0.0	-20.0	12.6	-2.4	50.2	1.4
	F	0.0		5.4	-1.7	19.4	4.1
<i>External causes</i>	M	0.0		58.8	-1.2	299.5	-1.9
	F	0.0	-20.0	15.1	-1.8	58.9	-1.0
Motor vehicle traffic injuries	M	0.0		16.0	-0.5	31.4	-1.7
	F	0.0		3.9	-2.0	7.1	-0.5
Suicide	M	0.0		21.2	-1.5	54.9	-2.4
	F	0.0	-20.0	5.8	-2.2	7.9	-2.5

Table 4. Selected mortality for the group 45–59 years by sex in San Marino and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	San Marino (2000)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	288.1	7.2	435.6	-1.3	1294.9	-0.6
	M	467.3	22.9	580.1	-1.4	1981.7	-0.6
	F	113.1	-9.1	293.3	-1.0	698.9	-0.5
<i>Malignant neoplasms</i>	M	195.9	24.0	218.2	-1.2	323.2	-1.9
	F	113.1	-1.6	155.0	-1.0	186.1	-0.5
Trachea/bronchus/lung cancer	M	38.6		65.9	-1.5	101.4	-2.9
	F	0.0		21.8	3.4	15.4	1.0
Female breast cancer	F	0.0		44.0	-2.2	45.3	0.1
<i>Cardiovascular diseases</i>	M	154.2	58.2	156.4	-2.6	793.1	-0.1
	F	0.0	-20.0	50.9	-2.5	271.7	-0.6
Ischaemic heart disease	M	0.0		86.2	-3.3	435.3	-0.7
	F	0.0		17.8	-3.4	111.1	-0.6
Cerebrovascular diseases	M	0.0		23.7	-2.6	168.6	-0.9
	F	0.0		14.5	-2.1	88.4	-1.4
<i>Respiratory diseases</i>	M	78.8		20.3	-1.7	108.7	-1.4
	F	0.0		10.2	-1.3	24.5	-0.7
<i>Digestive diseases</i>	M	0.0	-20.0	49.6	-0.8	129.7	0.7
	F	0.0		20.3	-0.7	57.3	1.9
<i>External causes</i>	M	38.3	-3.9	62.8	-1.0	409.2	-0.9
	F	0.0		20.9	-0.9	89.1	-1.1
Motor vehicle traffic injuries	M	38.3		13.0	-1.3	28.5	-1.8
	F	0.0		4.1	-2.1	7.5	-1.4
Suicide	M	0.0	-20.0	23.1	-1.1	68.1	-2.4
	F	0.0		8.5	-1.2	10.2	-3.4

Table 5. Selected mortality for the group 60–74 years by sex in San Marino and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	San Marino (2000)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	1141.6	-2.2	1570.9	-1.9	3411.7	-0.1
	M	1427.5	-5.7	2156.9	-2.1	4996.4	0.1
	F	889.7	6.2	1069.2	-1.9	2339.0	-0.6
<i>Malignant neoplasms</i>	M	901.8	-4.6	851.3	-1.4	1002.5	-0.8
	F	294.6	-6.4	439.8	-1.1	438.9	-0.7
Trachea/bronchus/lung cancer	M	269.4	10.5	261.8	-1.9	321.7	-1.5
	F	48.6	2.4	59.0	0.2	37.1	-1.4
Female breast cancer							
<i>Cardiovascular diseases</i>	F	0.0	-20.0	79.7	-1.6	68.7	1.3
	M	419.1	-8.2	744.9	-3.6	2903.0	0.6
Ischaemic heart disease	F	489.2	48.5	335.7	-3.9	1507.8	-0.3
	M	108.0	-0.8	381.3	-4.2	1582.2	1.2
Cerebrovascular diseases	F	100.2	3.1	133.5	-4.6	731.4	0.5
	M	49.9	-4.4	143.3	-3.7	833.7	0.2
<i>Respiratory diseases</i>	F	163.4		86.7	-4.1	528.9	-0.8
	M	53.3		144.0	-3.5	303.0	-2.4
<i>Digestive diseases</i>	F	48.6		62.5	-2.4	68.6	-3.6
	M	53.3	0.2	111.6	-1.6	193.0	0.1
<i>External causes</i>	F	0.0		54.1	-1.7	94.2	0.2
	M	0.0	-20.0	79.3	-1.4	320.0	1.0
Motor vehicle traffic injuries	F	0.0	-20.0	32.1	-2.1	88.7	-0.5
	M	0.0		14.8	-3.0	24.3	-1.5
Suicide	F	0.0	-20.0	5.9	-3.4	9.5	-1.0
	M	0.0		24.5	-1.6	60.5	-0.8
	F	0.0		8.7	-2.6	12.7	-3.1

Table 6. Selected mortality for the group 75+ years by sex in San Marino and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	San Marino (2000)		Eur-A (2002)		Eur-B+C (2003)	
		Rate	Change (%)	Average	Change (%)	Average	Change (%)
All causes	Both	6011.0	-4.5	8059.6	-1.0	12338.8	0.0
	M	8159.6	-5.5	9832.0	-1.1	14838.0	0.1
	F	4739.6	-3.4	7112.5	-0.9	11421.7	0.0
<i>Malignant neoplasms</i>	M	2332.4	-8	2231.1	-0.4	1489.3	1.2
	F	983.5	-5.1	1136.2	-0.4	721.7	0.8
Trachea/bronchus/lung cancer	M	534.5	-10.5	457.1	-0.7	323.5	1.0
	F	169.1	11.2	102.7	1.5	55.6	0.5
Female breast cancer							
<i>Cardiovascular diseases</i>	F	245.3		159.6	-0.4	92.0	3.1
	M	4020.5	-6.9	4356.2	-2.1	10221.2	0.4
Ischaemic heart disease	F	2215.7	-6.5	3577.9	-1.9	8805.6	0.4
	M	171.2	-16.9	1708.0	-2.2	4925.6	1.4
Cerebrovascular diseases	F	153.8	-13.9	1150.0	-2.2	4028.6	1.2
	M	1011.0	55.6	1119.8	-2.5	3004.4	0.7
<i>Respiratory diseases</i>	F	322.9	-9.1	1026.9	-2.4	2967.6	0.5
	M	244.7		1156.5	-2.4	824.1	-2.1
<i>Digestive diseases</i>	F	384.4		591.9	-2.1	302.3	-3.2
	M	244.7		340.3	-1.1	270.4	0.3
<i>External causes</i>	F	77.2		279.8	-0.4	175.0	1.1
	M	0.0	-20.0	275.0	-0.6	604.2	0.1
Motor vehicle traffic injuries	F	0.0		187.8	-1.2	172.4	-1.2
	M	0.0		28.1	-2.2	34.6	-3.1
Suicide	F	0.0		10.0	-3.1	14.7	-1.7
	M	0.0	-20.0	49.5	-1.6	86.6	-1.1
	F	0.0		11.8	-3.2	22.4	-1.9

Technical notes

Calculation of averages

Averages for the reference group, when based on data in the European health for all database of the WHO Regional Office for Europe, are weighted by population. Some countries with insufficient data may be excluded from the calculation of averages. Otherwise, for data from other sources, simple averages have been calculated where required.

To smooth out fluctuations in annual rates caused by small numbers, three-year averages have been used, as appropriate. For example, maternal mortality, usually a small number, has three-year moving averages calculated for all countries. When extreme fluctuations are known to be due to population anomalies, data have been deleted, as appropriate.

Data sources

To make the comparisons as valid as possible, data for each indicator have, as a rule, been taken from one source to ensure that they have been harmonized in a reasonably consistent way. Unless otherwise noted, the source of data for figures and tables in this report is the January 2005 version of the European health for all database of the WHO Regional Office for Europe. The health for all database acknowledges the various primary sources of the data.

In cases where current census data for national population are unavailable, coupled with ongoing migrations of people in and out of countries, UN estimates or provisional figures supplied by the country are used to approximate national population. Such population figures create uncertainty in standardized death rates.

Disease coding

Case ascertainment, recording and classification practices (using the ninth and tenth revisions of the International Statistical Classification of Diseases and Related Health Problems: ICD-9 and ICD-10, respectively), along with culture and language, can influence data and therefore comparability across countries.

Healthy life expectancy (HALE) and disability-adjusted life-years (DALYs)

HALE and DALYs are summary measures of population health that combine information on mortality and non-fatal health outcomes to represent population health in a single number. They complement mortality indicators by estimating the relative contributions of different causes to overall loss of health in populations.

DALYs are based on cause-of-death information for each WHO region and on regional assessments of the epidemiology of major disabling conditions. The regional estimates have been disaggregated to Member State level for the highlights reports.

National estimates of HALE are based on the life tables for each Member State, population representative sample surveys assessing physical and cognitive disability and general health status, and on detailed information on the epidemiology of major disabling conditions in each country.

More explanation is provided in the statistical annex and explanatory notes of *The world health report 2003*¹.

Limitations of national-level data

National-level averages, particularly when they indicate relatively good positions or trends in health status, as is the case in most developed countries, hide pockets of problems. Unless the health status of a small population is so dramatically different from the norm that it influences a national indicator, health risks and poorer health outcomes for small groups will only become evident through subnational data.

Reference groups for comparison

¹ WHO (2003). *The world health report 2003 – Shaping the future*. Geneva, World Health Organization (<http://www.who.int/whr/2003/en>, accessed 10 June 2005).

When possible, international comparisons are used as one means of assessing a country's comparative strengths and weaknesses and to provide a summary assessment of what has been achieved so far and what could be improved in the future. Differences between countries and average values allow the formulation of hypotheses of causation or imply links or remedies that encourage further investigation.

The country groups¹ used for comparison are called reference groups and comprise:

- countries with similar health and socioeconomic trends or development; and/or
- geopolitical groups.

The 27 countries with very low child mortality and very low adult mortality are designated Eur-A by WHO. Eur-A comprises Andorra, Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland and the United Kingdom. However, data for most indicators are unavailable for two of the 27 countries: Andorra and Monaco. Therefore, unless otherwise indicated, Eur-A and averages for Eur-A refer to the 25 countries for which data are available.

The 25 countries with low child mortality and low or high adult mortality are designated Eur-B+C by WHO. Eur-B+C comprises Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Russian Federation, Serbia and Montenegro, Slovakia, Tajikistan, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan. Unless otherwise indicated, Eur-B+C and averages for Eur-B+C refer to these countries.

Comparisons should preferably refer to the same point in time, but the countries' latest available data are not all for the same year. This should be kept in mind as a country's position may change when more up-to-date data become available.

Graphs have usually been used to show time trends from 1980 onwards. These graphs present the trends for all the reference countries as appropriate. Only the country in focus and the group average are highlighted and identified in the legend. This enables the country's trends to be followed in relation to those of all the reference countries, and performance in relation to observable clusters and/or the main trend or average to be recognized more easily.

¹ WHO (2004). *The world health report 2004 – Changing history*. Geneva, World Health Organization (<http://www.who.int/whr/2004/en>, accessed 26 August 2004).

Glossary

Causes of death	ICD-10 code
Cerebrovascular diseases	I60–I69
Chronic liver disease and cirrhosis	K70, K73, K74, K76
Chronic obstructive pulmonary disease	J40–J47
Colon/rectal/anal cancer	C18–C21
Diseases of pulmonary circulation and other heart disease	I26–I51
Falls	W00–W19
Female breast cancer	C50
Ischaemic heart disease	I20–I25
Pneumonia	J12–J18
Prostate cancer	C61
Neuropsychiatric disorders	F00–99, G00–99, H00–95
Road traffic injuries	V02–V04, V09, V12–V14, V19–V79, V82–V87, V89
Self-inflicted (suicide)	X60–X84
Trachea/bronchus/lung cancer	C33–C34
Violence	X85–Y09

Technical terminology

Disability-adjusted life-year (DALY)	The DALY combines in one measure the time lived with disability and the time lost due to premature mortality. One DALY can be thought of as one lost year of healthy life.
GINI index	Measures inequality over the entire distribution of income or consumption. A value of 0 represents perfect equality; a value of 100, perfect inequality. Low levels in the WHO European Region range from 23 to 25; high levels range from 35 to 36. ¹
Healthy life expectancy (HALE)	HALE summarizes total life expectancy into equivalent years of full health by taking account of years lived in less than full health due to diseases and injuries.
Income poverty line (50% of median income)	The percentage of the population living below a specified poverty line: in this case, with less than 50% of median income.
Life expectancy at birth	The average number of years a newborn infant would live if prevailing patterns of mortality at the time of birth were to continue throughout the child's life.
Natural population growth	The birth rate less the death rate
Neuropsychiatric conditions	Mental, neurological and substance use disorders
Population growth	(The birth rate less the death rate) + (immigration less emigration)
Standardized death rate (SDR)	The age-standardized death rate calculated using the direct method: that is, it represents what the crude rate would have been if the population had the same age distribution as the standard European population.

¹WHO Regional Office for Europe (2002). *The European health report 2002*. Copenhagen, WHO Regional Office for Europe:156 (<http://www.euro.who.int/europeanhealthreport>, accessed 28 May 2004).