

Special Article

Cancer in The Netherlands From Scenarios to Health Policy

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Abstract—Future scenarios on cancer in The Netherlands were made with the help of existing trends, demographic changes and expected developments in cancer research, prevention, screening and treatment. Until the year 2000, cancer incidence will probably increase by 1.5% per year, by nearly 3% per year and the need for health care facilities accordingly.

Upon the request of Parliament, the Dutch government used this information to formulate a long-term cancer control policy. Faced with a restricted budget and a growing demand for care, the government plans to increase its efforts in the areas of prevention and screening and to improve the efficiency of cancer care. More attention will be paid to the quality of life of those patients who cannot be cured. Support for cancer research will be maintained at its present level.

INTRODUCTION

In 1983, the Dutch Under-Secretary of Public Health established the Steering Committee on Future Health Scenarios (in Dutch: Stuurgroep Toekomstscenario's Gezondheidszorg, STG) to explore future developments in public health and health care. The objectives of scenario analysis are enhancement of policy-makers' understanding of the future and support of the long-range health planning efforts of the Ministry.

For each of the subjects chosen, an independent group of experts was commissioned by the STG to write a report. The reports have also been published in English, in accordance with the wishes of the Regional Office for Europe of the World Health Organization. Thus far, scenario reports on the following subjects are available in English: ageing [1], cardiovascular diseases [2], medical technology [3] and scenario methodology [4].

Recently, the report *Cancer in The Netherlands* [5], describing scenarios for cancer epidemiology and cancer control in the period 1985–2000, was published.

THE SCENARIO REPORT

First, the characteristics and scope of the cancer problem in The Netherlands in the past and at present were analysed in depth. Incidence, prevalence, survival and mortality rates according to age and sex were used as parameters. A special definition and method were employed to estimate prevalence. For practical reasons, the study was limited to 12 types of cancer that included the most common ones. These 12 types account for approximately 70% of the overall cancer incidence in The Netherlands. Because national figures on incidence, prevalence and survival rates were not available, estimates were obtained by extrapolation of Dutch regional figures (of the SOOZ cancer registry in the southeastern part of the country) and comparison with international data.

Future trends were explored under various assumptions with regard to primary prevention, changes in incidence rates and enhanced survival rates due to earlier diagnosis and improved therapy. The most likely developments in incidence and prevalence are shown in Tables 1 and 2; the latter is based on a demographic prognosis provided by the Netherlands Central Bureau of Statistics. In 1985, the Dutch population numbered 14.5 million

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Table 1. Likely change in age-adjusted* incidence per 100,000 persons per year in The Netherlands between 1985 and 2000

Tumour site	Sex	1985	2000	Percentage change
Lung	M	136.7	139.9	+2%
	F	12.7	19.9	+57%
Breast	F	92.4	92.4	=
Oesophagus	M	6.4	7.7	+20%
	F	2.5	3.0	+20%
Stomach	M	25.3	18.7	-26%
	F	11.7	8.6	-26%
Colon	M	30.2	35.5	+18%
	F	27.6	28.7	+4%
Rectum	M	19.3	18.6	-4%
	F	12.5	12.0	-4%
Pancreas	M	15.2	15.2	=
	F	9.1	9.1	=
Cervix uteri	F	10.2	8.3	-19%
Corpus uteri	F	16.3	16.3	=
Ovary	F	16.6	16.6	=
Prostate	M	48.5	56.3	+16%
Testis	M	3.6	3.8	+6%

*European Standard Population. Source: Ref. [5].

Table 2. Likely change in prevalence in The Netherlands between 1985 and 2000: total number of patients

Tumour site	Sex	1985	2000	Percentage change
Lung	M	9300	13,500	+45%
	F	1200	2600	+117%
Breast	F	49,300	71,700	+45%
Oesophagus	M	380	575	+51%
	F	350	555	+59%
Stomach	M	2900	3100	+7%
	F	2300	2500	+9%
Colon	M	7600	12,800	+68%
	F	11,300	17,200	+52%
Rectum	M	5760	7900	+37%
	F	5250	7400	+41%
Pancreas	M	420	520	+24%
	F	400	500	+25%
Cervix uteri*	F	6450	7700	+19%
Corpus uteri	F	9050	13,000	+44%
Ovary	F	5800	9600	+66%
Prostate	M	11,000	18,200	+65%
Testis	M	1950	3100	+59%

Source: Ref. [5].

*Including follow-up of carcinoma *in situ*.

inhabitants; for the year 2000, an increase to 15.2 million is expected, with a higher proportion of elderly persons.

The main conclusions of the scenario report are:

1. The total number of cancer patients in The Netherlands will probably increase sharply between 1985 and 2000. The increase in the number of new cases is estimated to be 1.5% per year, due mainly to ageing of the population, while the increase in the number of prevalent

cases will be nearly 3% per year as a result of both ageing of the population and a gradually increasing duration of survival.

2. This will lead to a corresponding increase in the demand for diagnosis, treatment and care. A more detailed analysis of this aspect was carried out for some types of cancer (cancer of the breast and testis, small cell lung cancer) and some forms of treatment (terminal home care and radiotherapy). In addition to curative therapy,

more attention will be required for treatment which improves the quality of life.

3. Before the year 2000 some improvements can be expected in existing methods of diagnosis and treatment, but no real breakthroughs in cures for cancer or patient care are expected.
4. Primary prevention of cancer is possible mainly by means of a more forceful anti-smoking policy. Even if initiated now the first results of such a policy would not be observed until at least 10 years later and its main impact would not become apparent until the next century. At present other forms of primary prevention offer little chance of success (see Table 3).
5. Mass screening is considered effective for cancers of the breast and cervix only. If, and only if, the screening is comprehensive and well-organized, mortality rates for these two types of cancer may be reduced somewhat, at the cost of considerable effort.
6. There will be further improvement in the results of treatment for young and middle-aged cancer patients. This will result in cure or long-term survival for two-thirds of these patients. Methods of treatment are being improved so that treatment will become less onerous and side-effects will be reduced.
7. At least one-half of all cancer patients will have incurable disease. Adequate supportive care and effective pain relief, mainly at home, will be required for these predominantly elderly patients.
8. Intensive and continuous fundamental biological, epidemiological and clinical applied research will be needed to maintain care at a high level and to prevent a further increase in the number of patients after the year 2000.

RECOMMENDATIONS BY THE STG

On the basis of this report, the STG presented a number of policy recommendations to the Under-Secretary. The STG agrees with the conclusions of the scenario report on cancer prevention. Other important recommendations are listed below.

- a. It is necessary to develop a coherent long-term policy for cancer control with clear priorities, as part of the general health policy, in order to maintain quality care for the growing number of cancer patients within a restricted health care budget.
The effectiveness and efficiency of Dutch cancer control can be increased by better coordination of the efforts of the various participants in this field: government agencies, regional comprehensive cancer centres, non-governmental organizations, professionals in the fields of health care and medicine, etc.
- b. Diagnosis and treatment of cancer patients should be performed, insofar as possible, as out-patient procedures or at home. General practitioners and district nurses must have both the facilities and the capabilities to cope with the increasing number of cancer patients, who also require special know-how. Notwithstanding this shift towards ambulatory and home care, some expansion of specialized hospital facilities is unavoidable and has to be planned for.
- c. Non-commercial financing of cancer research in The Netherlands by the government and the independent Netherlands Cancer Foundation amounts to approximately Dfl. 100 million (43 million Ecu) a year or 11% of all non-commercial medical research. In this respect cancer research occupies a leading position but faces

Table 3. Effectiveness of various measures to avoid cancer

Prevention of cancer by avoidance of:	Percentage of deaths due to cancer thus avoided	Corresponding number of deaths due to cancer per year in The Netherlands
Tobacco smoke	30	10,000
Alcohol	3	1000
Obesity	2	700
Cervical cancer (by screening and genital hygiene)	1	350
Inessential use of hormones and radiology	1	350
Excessive exposure to sunlight	1	350
Exposure to known carcinogens in:		
the occupational context	1	350
food, drinking water, air	1	350
Approximate total	38-40	13,000

Sources: Refs. [5, 6].

growing competition from other fields such as other chronic diseases and AIDS. One could argue that the intensive cancer research of the past decades has not helped to solve the cancer problem. On the other hand research has improved our understanding of the nature of cancer tremendously, and without research a solution will never be found.

As a compromise, the STG proposes that government expenditures on cancer research be frozen at the present level. Within this budget, there should be sufficient emphasis on research into epidemiological aspects as well as the functioning of the health services and factors that govern the quality of life.

- d. The STG requests a clear definition of the level of expertise required to treat different types and different stages of cancer. More protocols must be drawn up (and followed) to establish a working relationship between the two Dutch cancer institutes, the eight university hospitals, other large hospitals, smaller hospitals, general practitioners and district nurses.
- e. For patients with incurable disease, the quality of their remaining life should receive higher priority than maximal extension of the survival period.

THE POSITION OF THE GOVERNMENT

The Standing Committee for Health of the Lower House of the Dutch Parliament had, at an earlier stage, asked the Under-Secretary to formulate the official position of the government on cancer prevention. After receiving the report *Cancer in The Netherlands* and the STG recommendations, the Committee requested an official commentary. It was decided to combine the two into a single government paper on long-term cancer control policy, presented to Parliament and non-governmental organizations in early 1989 [7]. During preparation of this policy paper, the Ministry drew on the advice and recommendations presented by various permanent advisory boards and professional and patient organizations. The policy paper is still provisional, which means that amendments can be proposed by Parliament and by others involved in cancer control.

The government's main position is that, on the basis of present-day strategies, the cancer problem will not be solved in the near future and that a shift in policy towards more effective prevention is necessary. It realizes that primary prevention in fact means a reduction in the use of tobacco, but the so-called Tobacco Law of 1987 offers only limited possibilities. However, within the framework of the Action Programme 'Europe against Cancer', the government is willing to give a new—although modest—impetus to its anti-smoking policy. The official goal is to reduce the percent-

age of smokers in the population of 15 years and older from the present 39% to 20% in the year 2000.

Secondary prevention in the form of mass screening for breast and cervical cancer will be introduced nationwide and detailed information is provided about the organizational aspects. The government is aware of the fact that even well-organized screening programmes will yield a smaller decrease in cancer mortality than a marked reduction in the use of tobacco. The official goals for the year 2000 are a 10% reduction in the age adjusted breast cancer mortality—well within the range expected in the scenario report: 6–12%, i.e. 250–500 deaths prevented annually—and a 50% reduction in the age adjusted incidence rate of invasive cervical cancer, i.e. 300–400 cases.

The government endorses the target of the World Health Organization for the reduction of total cancer mortality in Europe: in the year 2000, the age adjusted mortality rate of people under the age of 65 should have been reduced by at least 15%, as compared to 1985, when this rate was 79 per 100,000 in The Netherlands. The government also aims at a 5% decrease in the age adjusted cancer mortality rate for people over 65 years old during the same period, down from 1325 per 100,000 in 1985.

The STG recommendations on cancer research and quality of life have been adopted by the government. Pain relief is to receive considerable attention.

Cancer prevention will be difficult and will in any case have only a limited impact on incidence during the remainder of this century. The health care system has to be prepared to cope with a growing number of cancer patients. Although screening procedures will lead to a somewhat reduced cancer mortality, they will cause an increased demand for (further) diagnosis and treatment. The government will allow some facilities (e.g. radiotherapy) to expand, but generally speaking this will not apply to other facilities. All health care has to take place within politically determined financial limits. To increase the efficiency and maintain the quality of cancer care, more use has to be made of cost-effectiveness studies, protocols for diagnosis and treatment, centralization for complicated forms of treatment and home care.

For effective and efficient cancer control, the government's paper calls for better cooperation between the various partners in this field and for linkage of Dutch cancer control policy to European and the World Health Organization's goals and strategies. However, the general policy for the next 4 years is to reduce State regulation of Dutch health care and enhance the roles of 'market forces', health insurance companies, consumers' organizations and health care providers. It will not be easy to combine these two trends.

SUMMARY AND CONCLUSIONS

Recommendations based on a scenario study and those prepared by various advisory boards were used by the Dutch Under-Secretary of Public Health to formulate a long-term cancer control policy for The Netherlands. Keywords are: more prevention, adequate care for a growing number of patients, special emphasis on quality of life and continued research efforts.

There are, however, a number of constraints: anti-smoking measures are (too) modest, cancer

screening will have only limited results, and the health care budget will not be increased in direct proportion to the growing number of patients with cancer (and other chronic-degenerative diseases). Those responsible for cancer control must face the challenge of becoming more efficient while at the same time maintaining quality. It is difficult to foresee the consequences for cancer control of the general government policies of deregulation and more commercial incentives in health care.

REFERENCES

1. STG. *Growing Old in the Future*. Dordrecht, Kluwer Academic, 1987.
2. STG. *The Heart of the Future—the Future of the Heart*. Dordrecht, Kluwer Academic, 1987.
3. STG. *Anticipating and Assessing Health Care Technology* (2 volumes). Dordrecht, Kluwer Academic, 1987 (volume 1) and 1988 (volume 2).
4. STG. *Scenarios and Other Methods to Support Long Term Health Planning*. Utrecht, Jan van Arkel, 1987.
5. STG. *Cancer in The Netherlands* (2 volumes). Dordrecht, Kluwer Academic, 1988.
6. Vessey MP, Gray M, eds. *Cancer Risks and Prevention*. Oxford, Oxford University Press, 1985.
7. Ministry of Welfare, Health and Cultural Affairs. *Second Policy Document on Cancer Control*. Rijswijk, 1989 (in Dutch, English translation available).