

Prevention Rather Than a Cure Prevention Raises Quality and Lowers Costs in the Health System

The numbers paint a very clear picture: the cost saving potential in the health sector through specified prevention programmes is estimated to be as high as 25 percent of total costs. Yet annual spent on prevention represents only 4.5 percent of total costs. The aim of an international IHBF Expert Meeting in Muenster on the subject of Prevention was to examine the cost-benefit analyses of various prevention measures in international terms and to make some recommendations for a national prevention agenda. Furthermore, the impact on hospitals and other providers of medical services of an increased preventive orientation in the health sector was discussed. Professor von Eiff commented: General practitioners as gatekeepers are hardly in a position to organise and lead demanding prevention programmes. The experiences gained by other countries make it quite clear that only competence centers, polyclinics and special out-patient facilities can provide the appropriate infrastructure necessary to deliver effective prevention measures.

The medical profession is already on the way to promising methods of prevention, but there is a need for a national prevention programme.

▶ An ongoing international study indicates the trend that, through preventative measures and the provision of cholesterol-reducing agents, up to two-thirds of Alzheimer's disease cases could be prevented or their onset at least delayed considerably by the use of statins.

▶ In Finland, the number of cases of uterine cancer were reduced by almost one fifth since 1963 through intensive use of the PAP smear. Likewise, in Australia, it was possible to reduce the mortality rate from uterine cancer from 5 to 2.5 per 100,000 women.

Each society has to decide for itself the level of medical quality that they want and can finance. In England, the proportion of women between 25 and 64 years of age who have had uterus cancer

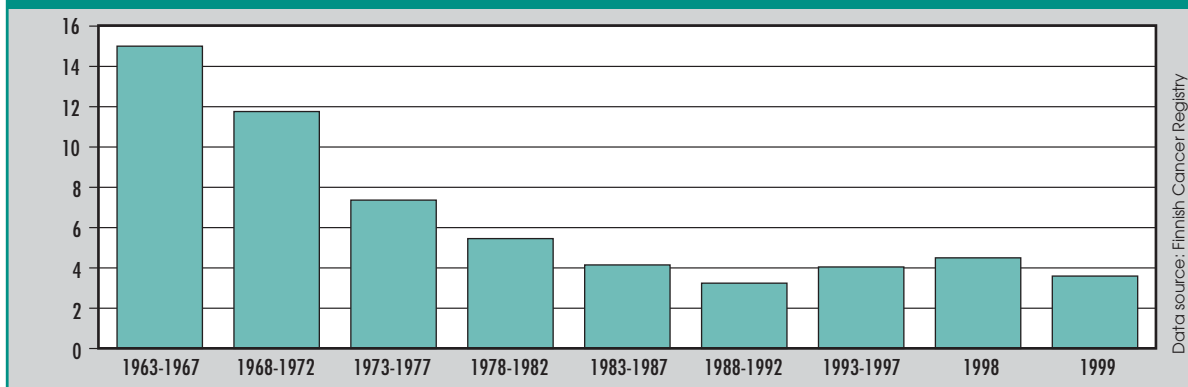


Effective prevention is based on a fair and transparent incentive system that awards a health-promoting lifestyle

tests over the last five years is approximately 84 per cent. An extension of these services so that a test would be mandatory for every woman, would cost approximately £ 300,000 in order to prevent one additional case of uterine cancer. That is the price of saving a life.

However, the success of prevention does not depend only on the quality of medical services: between 43 and 58 percent of illnesses are caused by individual behaviour and lifestyle – imbalanced diet, sedentary lifestyle and tobacco consumption. Japan is a good example and provides evidence of the benefits of a healthy lifestyle. Although Japan has no official prevention programme, according to a WHO comparison of 191 countries, the Japanese have the longest expected lifespan. This is attributable in particular to a well balanced diet (for example rich in Omega 3), far less sedentary lifestyle, a high level of health consciousness and strong homogeneity in Japanese society. Likewise, the number of cancer deaths in southern Italy is significantly lower than in the North, which is attributable to the focus on nutrition in the form of pasta, fish and olive oil. According to investigations conducted by the American Ministry of Health, every year, billions of dollars are spent treating quite curable diseases. Thus, for example, obesity costs 100 billion dollars, tobacco consumption roughly 50 billion, alcohol 160 billion and drug misuse about 10 billion.

Age-adjusting incidence of cervical cancer





Prof. Reinhard G. Bretzel, University Hospital Gießen, Germany presenting the latest findings in the field of diabetes prevention

In Germany as well, each year, large amounts of money are spent on avoidable diseases. Thus, for example, the annual costs of treating Type 2 diabetes is 1.5 times as high (relatively well controlled diabetics) to 8 times as high (relatively badly controlled diabetics) as opposed to non-diabetics. Investigations have revealed that in Southern Germany approximately 40 percent of the population between 55 and 74 years of

age suffer from glucose intolerance or diabetes. International studies have revealed that this illness can often be avoided through a healthy lifestyle.

A national prevention agenda with clear priorities is undoubtedly necessary. The basis of a prioritised agenda are illnesses which can be cured through early diagnosis and recognition and those illnesses which are caused by lifestyle. This is not achieved through appeals alone, but only through new methods of communication which can ensure that the prevention message gets through. In the same vein, a preventative programme for breast cancer in San Diego, California, was communicated effectively through local hairdressers. All previous attempts to inform women through advertisements, medical specialists or local church communities, failed.



Prof. Wilfried von Eiff and John Woche, Kameda Medical Center in Kamogawa City, Japan

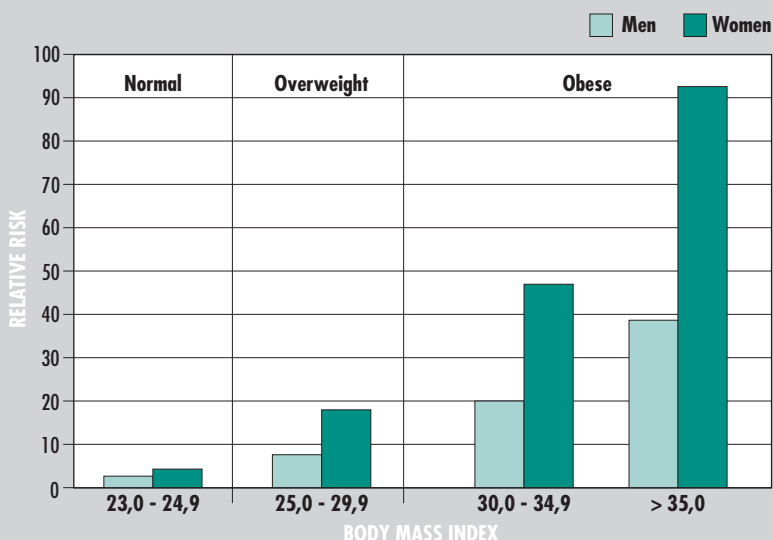
Also, the preventative services offered by hospitals must be extended continually. The KAMEDA Hospital in Japan, for example, offers a comprehensive prevention and screening programme called "Dry Dock". Payment for this is either out of pocket or made by the employer. KAMEDA Hospital leads the market in terms of low cost for this programme. Through maximum utilisation of the hospital's MRI equipment scans cost only Euro 234 compared with between Euro 800 and Euro 1,000 in the US.

The fact that state-run prevention facilities are accorded scant attention, is literally fatal. Only one percent of the English population considered as credible, the information campaign carried out by the NHS (the government). This explains the failure of anti-smoking campaigns or attempts to inform people about healthy nutrition. Likewise, printing information brochures is pointless. Over 90 percent of respondents stated that they did not take note of them, because they were written in an incomprehensible manner or had a patronising undertone. Obviously, government facilities can save themselves the money they spend on brochures which, in effect, nobody reads. However, such glossy brochures are used by government teams as a marketing measure to create the appearance of "doing something", even though, in reality, this is not the case.

Clear incentive mechanisms must be created. Only when people genuinely perceive and understand the benefits which they can reap or not reap through their participation in prevention programmes are they prepared to make a commitment. Another finding the Panel of Experts concluded was that unless people feel the effects of prevention measures either in their pockets or how it affects their own well-being there is little chance of prevention programmes achieving their desired outcomes. Hence it is necessary to encourage or even demand own initiative and active participation.

Medical aid organisations play an important role in this context. Based on catalogues of obligatory preventative measures (oriented towards a clearly-defined target group), in conjunction with an organised recall system, the insured can be required to take preventative action. The use of such preventative services can be rewarded by a reduction in premiums. Alternatively, it is possible to punish non-use by raising premiums. Furthermore, an supplementary payment in the case of illness is also possible for patients who have not taken preventative measures. It is inconceivable that automobiles have to go through regular safety checks in order to avoid the consequences of technical failure (accidents), while such measures are not applied consistently in the health sector.

Body weight and diabetes risk



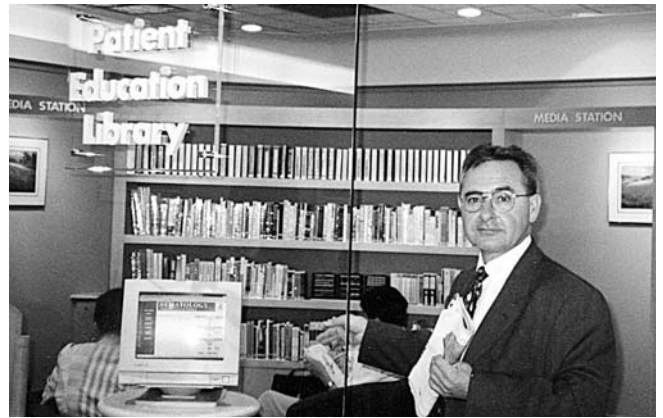
Overweight and Obesity: a crisis of growing proportions

In the United States, the latest data show that two out of three adults are overweight, and nearly one in three is obese.

In countries as diverse as the Czech Republic, Finland, Germany, Kuwait and Mexico at least half the population is overweight and one in five is obese.

Policy and law makers play a decisive role in ensuring successful prevention. Prevention provides financial relief for medical aid organisations and thus impacts positively on supplementary wage costs. Citizens who pay for preventative measures with their own money should receive tax benefits. They contribute to maintaining the viability of the labour market and thus unburden social welfare systems.

However, prevention must be needs-oriented and run on economic lines. Early warning only makes sense if the illnesses that are diagnosed are sufficiently responsive to therapy. Furthermore, screening programmes belong in the hands of experienced specialists at competence centers. Only they can provide an appropriate quality-oriented diagnosis for breast, intestinal, prostate cancer and other "targeted illnesses".



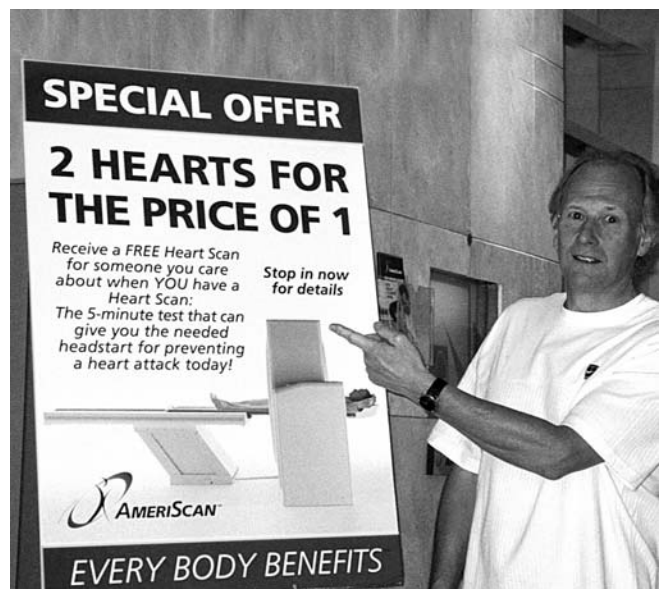
Patient Education Centers like this one in the Tan Tok Seng Hospital in Singapore play an important role in tertiary prevention

Entering New Markets and Achieving Familiarity through Offering Preventative Services

In the privately organised American health system the preventative market creates economies of scale: special offers and gift tokens for preventative diagnostic services create a sub-market of preventative diagnostics and create a familiarity which becomes important if primary diagnosis is necessary. Marketing measures such as special offers and gift certificates are instruments of the marketing mix which are not unusual in a health system oriented towards taking responsibility for one's own health and paying one's own way (at least in part).

Key points:

- ▶ Competition reduces prices.
- ▶ Preventative services are an important sub-market in achieving economies of scale and facilitate an increasing familiarity (as a preliminary phase in developing a brand status).
- ▶ Marketing is not propaganda, but helps to make people familiar with medical services including those of a preventive nature.
- ▶ Innovative ideas in terms of both communication and service offerings are central success factors in a competitive market.

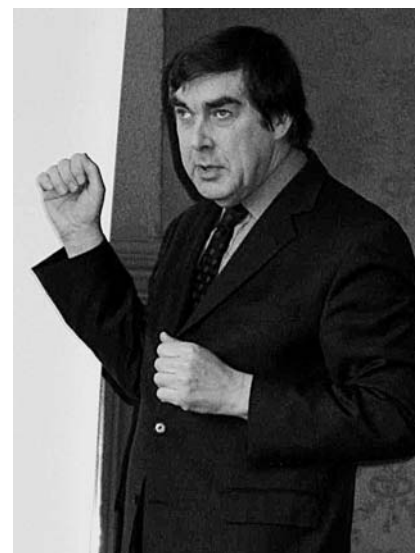


In an exclusive shopping center, "Scottsdale Mall", a radiology practice offers preventative diagnostic services subject to special conditions

The Food Industry and Health Seven Proposed Changes

Food and nutrition are very critical in the overall health and well being of the people. The changes in our eating patterns over the last 20-30 years have often not favoured our health. Many of these unhealthy nutrition habits are actively driven by the food industry by selling larger portion sizes at relatively small extra costs or adding sugar, fat or salt to manufactured food. At the IHBF Expert Meeting Prof. Malcolm Law, Wolfson Institute of Preventive Medicine, Barts and The London School of Medicine, UK presented key requirements to the food industry to improve health:

- ▶ 1 Reduce portion size
- ▶ 2 Remove financial incentives to buy large amounts
- ▶ 3 Reduce the fat content of the food supply
- ▶ 4 Reduce the content of hydrogenated vegetable oils in manufactured food
- ▶ 5 Reduce the salt content of manufactured food
- ▶ 6 Add folic acid to flour
- ▶ 7 Add plant stanols or sterols to margarine



The cancer incidence and mortality is a serious problem worldwide. Just as cancer is not one but many diseases, cancer has no single known cause or cure. The main risk factors contributing to deaths are tobacco, alcohol, diet, food additives and abnormal sexual behaviour. Other



Prof. Wilfried von Eiff and Dr. Leonardo La Pietra, Chief Medical Officer at the European Institute of Oncology in Milan, Italy

cancer risks include occupation, pollution, industrial products, medicines/medical products, geophysical factors and infections.

Diets high in fat and low in fiber contribute to the development of breast, colorectal, uterine cancers, and consumption of large amounts of alcoholic beverages contribute to cancers of the larynx, throat, esophagus, and liver. Clearly, most of the factors that have been identified as causing cancer also contribute to other diseases. Avoiding these substances will lead to better health throughout an individual's life. This means that cancer prevention measures are almost identical to those for the other chronic diseases, especially heart disease, stroke, emphysema, and liver disease.

Of the two main strategies that can fight cancer - prevention and cure - prevention aims to maintain health by reducing the exposure to lifestyle and environmental factors which increase the risk of cancer. Technically, prevention is usually divided into primary and secondary prevention.

Primary prevention depends upon the avoidance of cancer risks by individuals in their daily lives and is based on an ongoing commitment to personal health that involves education and everyday practices regarding healthy living. Prevention of malignancy before its onset can be achieved by controlling risk factors by modification or elimination, protecting from the effects of environmental carcinogens, interrupting neoplastic transformation and by chemoprevention.

Secondary prevention consists in the early identification of malignancy by the application of tests in preclinical (screening) or clinical (detection) settings leading to a high probability of cure. A "screening" is the application of tests to detect cancer in asymptomatic people while "early detection" is the physician evaluation of a person who may or may not have symptoms.

As with all public health interventions, screenings involve the employment of a large amount of financial and economic resources. This leads to the phenomenon whereby only screening programs are selected that give a positive answer to nine fundamental questions:

1. Does the disease which is detectable by a screening program represent an important public health problem?
2. Is there an effective treatment for localized disease?
3. Is there an identifiable latent or early symptomatic stage of disease?
4. Is the technique to be used for screening effective?
5. Are the tests acceptable to the population?
6. Is the natural history of the disease known?
7. Is there a strategy for determining which patients should and should not be treated?
8. Is the cost of screening acceptable?
9. Is effective treatment available and does management of cases in the early stages have a favorable impact on prognosis?

Several kinds of frequent cancers meet these criteria while rare conditions are excluded. Equally, unacceptable procedures or high costs - human and monetary - of detecting the condition in the asymptomatic period do not justify the implementation of screening. In particular, treatment in the asymptomatic phase must yield a therapeutic result superior to that obtained by delaying treatment until symptoms appear. Screening nevertheless remains an effective health care tool, when appropriate it can improve prognosis, reduce mortality or morbidity and save health care resources.

▶ **Breast cancer** is the most common type of cancer in women, with approximately one in nine women developing the disease in her lifetime. Early detection and treatment are considered the most promising approach to reduce breast cancer mortality. Breast screening is a method of detecting breast cancer at a very early stage. The first step involves an x-ray of each breast - a mammogram. The mammogram can detect small changes in breast tissue which may indicate cancers which are too small to be felt either by the woman herself or by a doctor. A well-organized breast cancer screening is estimated to reduce cancer mortality by the order of 20% in women aged over 50. To cite one example, the NHS Breast Screening Programme is an effective part of the UK's efforts to reduce the death toll from breast cancer.

In September 2000, the first research was published which demonstrated that the screening program has lowered mortality rates from breast cancer in the 55-69 age group. It is estimated that the program is on course to save 1,250 lives per year (25 percent reduction in mortality) by the year 2010.

By 2010 the effect of the screening programme, combined with improvements in treatment and other factors, could result in up to a halving of the breast cancer death rate in women aged 55 - 69 from that seen in 1990. ▶

► **Colorectal Cancer** is the fourth commonest form of cancer worldwide, with an estimated 782,900 new cases diagnosed in 1990 and 394,000 deaths worldwide annually. Five-years survival ranges from 35 - 45% to 80 - 100% depending on stage and localization.

Even though we do not know the exact cause of most colorectal cancer, it is possible to prevent many colon cancers. By following the screening guidelines of the American Cancer Society it can lower the number of cases of the disease by finding and removing polyps that could become cancerous, and one can also lower the death rate from colorectal cancer by detecting the disease early when it is highly curable.

Adults at average risk should begin colorectal cancer screening at 50 utilizing one of the following options screening: annual fecal occult blood test (FOBT), flexible sigmoidoscopy every 5 years, double contrast barium enema (DCBE) every 5 years, colonoscopy every 10 years. In addition to this more intensive surveillance is recommended for individuals at increased risk due to a history of adenomatous polyps, a personal history of curative-

intent resection of colorectal cancer or a family history of inflammatory bowel disease of significant duration or the presence of one of two hereditary syndromes.

► Despite advances in therapy, there has not been any significant improvement in survival from **lung cancer**.

In 1950 the overall cure rate was approximately 10 %. Today, the survival rate is not significantly better, unless tumors are detected in early stages. Survival from lung cancer is dependent on the stage of the cancer. The stage is determined by the size and location of the tumor, the presence of cancer in the surrounding lymph nodes, and the spread to distant sites. Lung cancer when clinically diagnosed has a poor outcome with 10-16% survival at 5 years. But when lung cancer is treated in its earliest stage the cure rate approaches 70% or greater.

Screening is the first, and sometimes key, stage in a global management program aimed at addressing the cancer question. As we now strive to maximize the effectiveness of population-based programs this aspect should be foremost in our thought process.

► "More" Does not Necessarily Mean "Better" The Case of Mammography

"Does carrying out a larger number of mammographies lead automatically to a reduction in mortality through mammary carcinoma?"

According to a sobering research finding the answer is clearly negative :

► There is a "grey market" for mammography screening: between 3 and 5 million mammographies are conducted every year in Germany.

► Approximately 200,000 mammographies are interpreted incorrectly.

► As a consequence of false positive findings, approximately 100,000 unnecessary biopsies are conducted.

► The situation with respect to the number of diagnoses in the early stages of mammary carcinoma is no worse in Germany than in other countries - but no better either: this suggests that the organisation of the process needs to be improved. Because roughly 15 percent of doctors

do not pass the so-called mammography (driving) licence, and the capabilities of doctors who have been practising for years in this area are never tested, it is necessary that such medical check-up activities be concentrated in "competence centres".

These centres must have an optimal size which means that at least 3,000 radiological mammary diagnoses must be conducted each year.

In a breast competence center, approximately 20 percent of the diagnoses will be second opinions in order to reduce the potential for error. Breast-retaining operations after a pT1 tumour in such centers have a success rate of over 50 percent.

It is also advisable not to carry out mammary diagnoses outside specialized radiology centers, but leave these to competence centers where radiologists, pathologists and surgeons will work hand in hand.

► "Slip! Slop! Slap!" - Skin Cancer Prevention in Australia

Australia has the highest incidence and mortality rates in the world for skin cancer (cutaneous tumours). The age-adjusted incidence rate is around 4,500 & 3,500 cases per 100,000 population (1998 values). All epidemiological data suggest that childhood exposure to sunlight is a risk factor for the development of skin cancer. Episodic doses of sunlight exposure high enough to cause sunburn are a risk factor for melanoma and basal cell carcinoma. Chronic, heavy and repeated exposure to sunlight is a risk factor for squamous cell carcinoma.

A number of different concurrent approaches have been adopted in Australia to reduce the incidence of skin cancer. In the early 1980s, an awareness campaign known as "Slip! Slop! Slap!" ("Slip on a shirt, slop on sun-screen and slap on a hat.") was introduced by the Anti-Cancer Council of Victoria to raise awareness of the risk posed by skin cancer and the preventive measures that can be taken to reduce that risk. The campaign was taken nationally soon after. In 1985, Skin Cancer Detection Week was instituted, which provides a variety of education strategies and screening activities across Australia, such as melanoma clinics in

hospitals and mobile screening vans at popular beaches and shopping centers. In the late 1980s, Health Promotion Foundations were established in most Australian States and funded by a tax on tobacco products. These Foundations have provided a large amount of information on health promotion, and particularly to young people, through the sponsorship of sporting events and other cultural activities. ►



Two out of every three Australians who live to the age of 75 can expect to develop some type of skin cancer, explained Clive Wellington, National Clinical Manager at Affinity Health Limited in Melbourne, Australia

During the 1990s, legislation was enacted to remove sales tax from sun-screen. At a local-level, schools have introduced compulsory sun protection policies for their students. Hats must be worn in playgrounds and at sporting fixtures wherever possible.

In addition, local governments have endeavoured to provide more shade in public open places by constructing canopies and shelters or by planting trees. Recent evidence suggests that public health programs in Australia may be having a beneficial effect on skin cancer rates and early detection.

This includes:

- ▶ The average thickness of all melanomas diagnosed has reduced substantially, such that the case fatality rate is now less than 20%;
- ▶ 90% of Australians recognise that skin cancer is dangerous, and can give details regarding skin cancer recognition;
- ▶ Cohort analysis that suggests that mortality and incidence rates may be levelling off, particularly in women in the younger cohorts born after 1950;
- ▶ Five year relative survival (1982-1986 and 1992-1997) increased 7.0 percentage points for males and 3.7 percentage points for females.

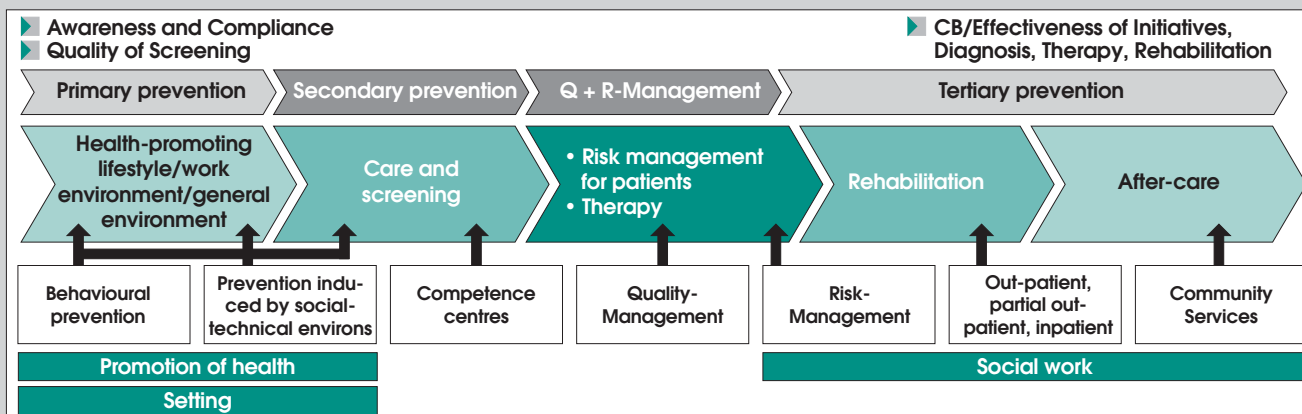
CKM's Ten Steps for Prevention Programmes

A SWOT analysis of prevention programme structure and policy

10 Steps

- ▶ 1. National priority programme oriented towards high-risk areas: concentration on what is most important
- ▶ 2. Incentive systems which conform to individual responsibility with general public appeal
- ▶ 3. Qualified and efficient infrastructure: competence centers instead of gatekeepers
- ▶ 4. Transparency about opportunities and risks as well as costs and benefits of prevention: the costs of saving a human life
- ▶ 5. Framework for promoting compliance and awareness among both the public and patients
- ▶ 6. Corporate health promotion: leverage through exploiting the benefits of corporate culture
- ▶ 7. Setting programs: a framework of conditions which promotes health and behavioural change through a targeted organisation of the socio-technical environment
- ▶ 8. Convincing communication: the use of appropriate communication channels and messages that lead to action
- ▶ 9. Transparent and calculable rules of the game with respect to the roles of industry and politics (policy makers)
- ▶ 10. Development of preventative strategies based on socio-epidemiological dissemination models

Prevention is an undefined concept that applies to all steps in the healthcare "cascade" and contributes towards improving the quality of life and reducing the costs of medical care



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