

Country report Turkey - October 2013 (Update Nov 2014)



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Health Care | Risk factor | Prevention methods | Cardiac Rehabilitation | activities | future

Note: The following chapters have been updated in November 2014:

- I. Structure of Health Care in Turkey*
- II. Risk factor statistics*
- IV. Cardiac Rehabilitation*
- V. Main prevention activities*
- VI. The future*

I. Structure of Health Care in Turkey

General description of the country

Turkey is a democratic, secular, unitary, constitutional republic with a diverse cultural heritage. It is a transcontinental Eurasian country with an area of 783,562 km². Turkey is mainly mountainous with a continental climate but regions surrounded by seas have a temperate Mediterranean climate.

The number of inhabitants is 76,1 million with a median age of 30,4 years. The crude birth rate is 2.07%, showing a slight decrease compared to former years due to the increase of marriage age. The number of elderly people is increasing continuously.

Turkey is classified as an upper-middle income country. Total health spending accounts for 6.1% of gross domestic product (GDP), which is among the lowest of Organisation for Economic Co-operation and Development (OECD) countries. However, the economic growth experienced over the last years resulted in increases in health spending.

References:

- Health at a Glance: OECD 2013. <http://www.oecd.org/els/health-systems/Health-at-a-Glance-2013.pdf>
- Turkish Statistical Institute: <http://www.tuik.gov.tr>

Structure of health care

Turkey made several reforms in health system in line with the Health Transformation Program (HTP) between years 2003-2013. Five different governmental health insurance schemes with different coverage types were consolidated to create a unified general health insurance scheme with harmonised and expanded benefits. HTP expanded access to health-care services for all citizens, especially the poorest population groups (1). Today the majority of Turkish citizens are covered with governmental insurance. The

number of private insurance companies is increasing but most of their customers have also governmental coverage.

The majority of the citizens are followed by a family practitioner, but they are also free to attend to hospitals or specialists if they prefer to do so. Secondary prevention is performed by specialists. There are 1690 physicians and 23 cardiologists per million citizens.

Turkish health care is under the strict control of the government. Around two thirds of the hospitals belong to the government, whereas the rest are private. Private working of the physicians are strongly discouraged, therefore most of the physicians prefer to work in affiliation with a hospital. The number of hospital beds per 100 000 inhabitants averaged ~280, which is lowest in EU (EU mean is 538.2 in 2010) but has increased over the last decade.

Training in cardiology is a separate specialisation in Turkey. Cardiology trainees can directly start their training without having been educated in internal medicine. The current number of cardiologists is 2283, which corresponds to 3.0 cardiologists per 100.000 habitants (2). Their distribution is not homogenous; most of the cardiologists are working in Marmara region. The European standard of minimum 3 cardiologists per 100.000 habitants has been reached in year 2014. To reach the optimal ratio of 50 specialists per one million citizens will take another 10 years. There is a need to increase number of professionals in subspecialities like in pediatric cardiology, cardiac rehabilitation, arrhythmias and electrophysiology.

Prevention is the main target of the government and every regulatory effort is taken to promote healthy lifestyle habits. Implementation actions may also be taken by local municipalities.

Finances

The Social Security Institute is the main financer of healthcare. All costs of pharmaceutical and nonpharmaceutical management of diseases are covered by the obligatory general health insurance scheme. Visits to primary care physicians are free of charge but prescriptions are paid according to the social security status of the individuals. A small co-payment is charged for specialists visits. There are several regulations in the prescriptions of antilipidemic, antihypertensive, antidiabetic, and antithrombotic drugs. The regulations are frequently reviewed by health authorities and updated.

References:

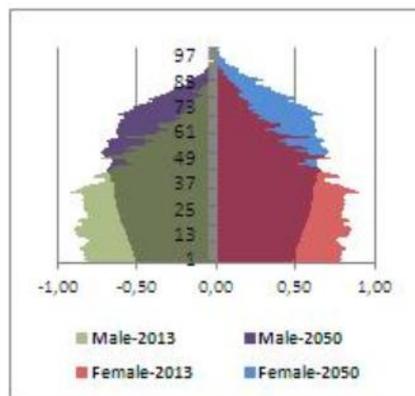
1. Atun R, Aydın S, Chakraborty S, Sümer S, Aran M, Gürol I, Nazlıoğlu S, Özgülcü S, Aydoğan U, Ayar B, Dilmen U, Akdağ R. Universal health coverage in Turkey: enhancement of equity. *Lancet*. 2013 Jul 6;382(9886):65-99.
2. <http://sbu.saglik.gov.tr/Ekutuphane/kitaplar/insangucu.pdf> (Turkish)

II. Risk factor statistics

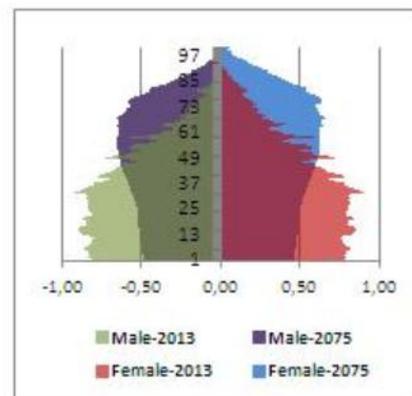
CVD Mortality

Population in Turkey is regularly followed by the 'Address Based Population Registration System'. According to 2013 statistics, total population in Turkey is 77,667,864 (male 50.1% and female 49.9%), with an annual growth rate of 12‰ (1). As shown in the population pyramid below number of people in middle age and old age is increasing rapidly. Demographical projections suggest that half of the population will be over age 34 and 10.2% will be over age 65 in 2023. Life expectancy at birth increased rapidly in the last decades and current estimations are 79.2 years for women and 74.7 years for men.

Population pyramid, 2013-2050



Population pyramid, 2013-2075



Source: www.tuik.gov.tr

Mortality rate is 5‰. Most of the deaths (46,2%) occur in the old age group (>75 years). The first six causes of death cases were diseases of the circulatory system (39.8%), neoplasms (21.3%), diseases of the respiratory system (9.8%), endocrine, nutritional and metabolic diseases (5.6%), external causes of injury and poisoning (5.5%) and diseases of the nervous system and the sense organs (4.1%) respectively. Most of the deaths from circulatory diseases were seen in women and deaths from neoplasms were occurred in men. Turkey – especially Turkish women – is among the countries with highest CV mortality in Europe.

PCI resources

According to 2012 data, there are 215 percutaneous coronary intervention (PCI) capable centres in Turkey. The crude number of PCI centres per 1 million inhabitants is 2.86 but ratio of the population living in these cities is around 85% (2). Total number of intervention can be followed by MEDULLA, a governmental electronic system. Data for PCI in 2010 is presented at table 1 (2). Number of primary PCI centres increased from 157 in year 2007 to 207 in 2012. Turkey has participated in the 'Stent for Life' project, and increased the frequency of primary PCI dramatically.

Table 1. Number of coronary interventions in 2010

Total number of diagnostic coronary angiographies	335,113
Total number of revascularizations	149,493
PCI and coronary artery by-pass grafting ratio	71% and 29%

Source: Dilek Ural and Meral Kayıkçıoğlu

Major CV risk factors

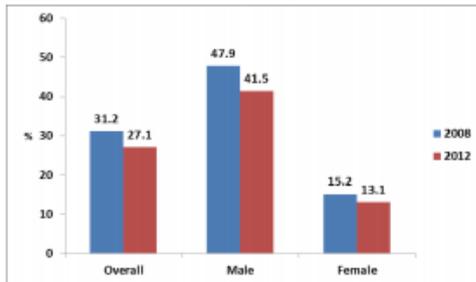
Major CV risk factors in Turkish adult population are investigated in several national surveys (4,5). Among them Turkish Adults Risk Factors Study (TARF) – the earliest and longest epidemiological study sponsored by TSC – is the most comprehensive study that evaluated CV disease and its risk factors in Turkey (6). Accumulating evidence generated in the TARF study demonstrated that standard risk factors fail to identify a large proportion of individuals at high coronary heart disease risk and that inflammatory markers and type-2 diabetes are far more pertinent in this regard, particularly in Turkish women, than in Western populations (7). In an effort to establish a unique risk estimation system from TARF database, the authors reported that age, presence of diabetes mellitus, CRP, systolic blood pressure, LDL-cholesterol, smoking status, and HDL-cholesterol were relevant in the estimation of CV risk in men, while the latter two factors were not predictive among women (8).

The risk factors profile has changed in the last decade. After national smoking ban, several campaigns and programmes, prevalence of smoking decreased significantly and rapidly in a relatively short period of time - between 2008 and 2012. Turkey has achieved such rapid results because it is the first country in the world to implement the full range of policies to address each of World Health Organisation's (WHO's) M-P-O-W-E-R (MPOWER) strategies to reduce tobacco use. According to the Global Adult Tobacco Survey (GATS) (9):

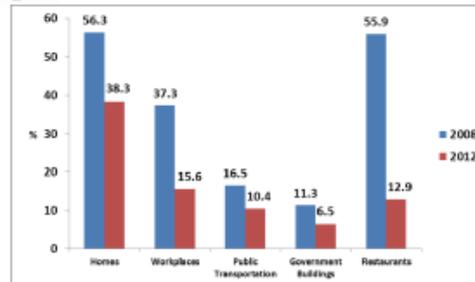
- Turkey's adult smoking rate fell from 31.2 percent (16 million smokers) in 2008 to 27.1 percent (14.8 million smokers) in 2012 – a reduction of 13.4 percent
- Exposure to secondhand smoke in restaurants fell from 55.9 percent in 2008 to just 12.9 percent in 2012 – a reduction of 77 percent
- Declines in exposure to secondhand smoke were also seen in workplaces, public transportation, government buildings and even in homes
- Health warnings on cigarette packages had been noticed by 94.3 percent of current smokers. This had encouraged more current smokers to think about quitting – 53 percent in 2012 compared to 46.3 percent in 2008
- Nearly half of all smokers (46 percent) tried to quit in the last month
- 92 percent of adults noticed anti-cigarette information on the television or radio
- 96 percent of all adults believe smoking and secondhand smoke cause serious illness and 95.5 percent of all adults are in favour of smoking bans in workplaces and public places
- Tax increases mean the real cost of a cigarette pack has increased substantially, which studies show is a highly effective way to reduce smoking.

After the success in smoking ban, obesity and diabetes, which are strongly linked to unhealthy nutrition and lack of physical exercise, became the most prominent risk factors (Table 2)(7). For example compared to TURDEP-I (2003); the rate of increase in TURDEP II (2009) was 90 % for diabetes and 40 % for obesity (10, 11).

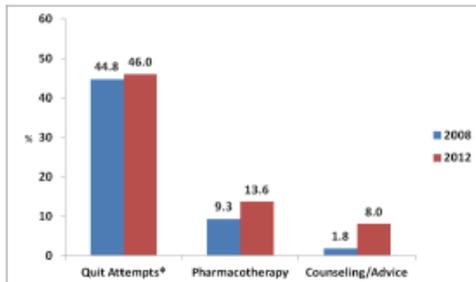
m Prevalence of current tobacco smoking by gender, GATS Turkey 2008 and 2012



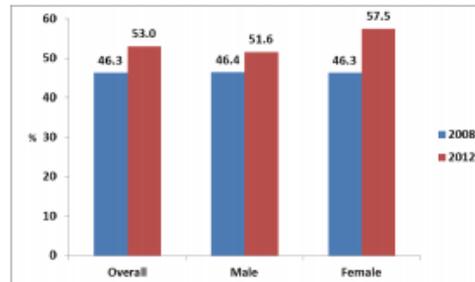
p Exposure to secondhand smoke in various places in the past 30 days, GATS Turkey 2008 and 2012



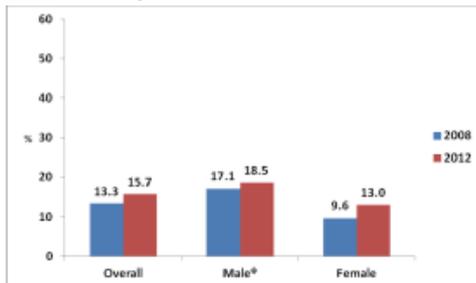
o Quit attempts among smokers in the past 12 months and cessation methods used by those who tried to quit, GATS Turkey 2008 and 2012



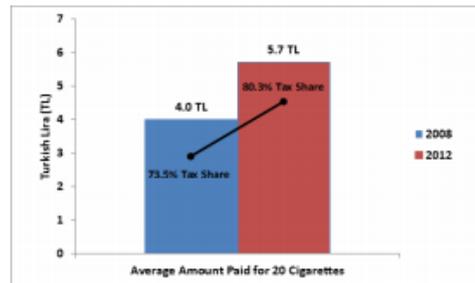
w Thinking of quitting smoking because of noticing health warning labels on cigarette packages by gender, GATS Turkey 2008 and 2012



e Noticing any cigarette advertisement, promotion, or sponsorship in the past 30 days by gender, GATS Turkey 2008 and 2012



r Average amount paid for 20 cigarettes* and total tax shown as a percentage share of retail price†, GATS Turkey 2008 and 2012



*Average amount paid in 2008 was adjusted for inflation for direct comparison to 2012
†Source: Turkey Ministry of Finance, General Directorate of Revenue Policies

NOTE: Current use refers to daily and occasional use. Adults refer to persons aged 15 years and older. Data have been weighted to be nationally representative of all non-institutionalized men and women aged 15 years and older. Percentages reflect the prevalence of each indicator in each group, not the distribution across groups. All comparisons present in the graphs are significant at $p < .05$, unless otherwise noted (*) as unchanged.
Financial support was provided by the Bloomberg Initiative to Reduce Tobacco Use, a program of the Bloomberg Philanthropies. Technical assistance was provided by the Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), the Johns Hopkins Bloomberg School of Public Health, and RTI International. Program support was provided by the CDC Foundation.

Last Updated: 8 May, 2013

Source: http://global.tobaccofreekids.org/files/pdfs/en/GATS_turkey_2008_2012.pdf

A recent survey on childhood obesity revealed that prevalence of obesity among children aged 7-8 years is 23.3% in boys and 21.6% in girls. Lack of physical activity, consuming unhealthy food, watching television and internet dependency are the main reasons for childhood obesity in Turkey (12).

Table 2. Prevalence of CV Risk factors in Turkey

Risk Factor	Studies between 1998-2003	Studies between 2008-2010
Hypertension (%)	28.9 (awareness 46%)(9)	31.4 (awareness 58.1%)(10)
Current smoking (%)	28.7(9) (Women 10.9%, men 50.9%)(9)	21.7(10) (Women 9.8%, men 31.4%)(10)
Obesity (%)	22.3 (central obesity 34.9%)(9)	36% (central obesity 53.6%)(10)
Type 2-diabetes (%)	7.2 (9)	13.7(10)

Soucre: Dilek Ural and Meral Kayıkçioğlu

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3. Balbay Y, et al. Coronary Revascularization in Turkey –from Social Security Institution database (presented at TSC Congress 2012)
4. Prevention and Control Program for Cardiovascular Diseases. Strategic Plan and Action Plan for the Risk Factors. 2009
5. List of epidemiological studies in Turkey TSC (book)
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III. Prevention methods, staff

Who delivers?

The main actors in CV prevention are general practitioners. The majority of Turkish citizens has a family physician and can reach them easily. Primary care physicians are regularly educated in the management of main risk factors and logical drug use - to choose the most cost effective evidence-based drug - is encouraged. Patients can also directly attend to internists and cardiologist.

Number of nurses specialized in CV prevention is limited. Nurse-based clinics/programmes are lacking in Turkey, therefore sustained contact for lifestyle intervention cannot be established in the majority of the patients. For now, general practitioners are the key persons to initiate and provide long-term follow-up.

The practising cardiologists mostly play a consultant role in the evaluation of patients with CV problems referred from the primary care physician. Awareness and knowledge of guidelines among practicing cardiologists is fair and especially in secondary prevention patients mostly receive all the evidence-based medicines suitable to their indications and contraindications.

Where?

Although prevention and management of non-communicable diseases is the main target of Ministry of Health, there is not any centre established solely for CV prevention or rehabilitation. Preventive management can be accomplished in primary care settings, hospitals and private institutions. There are no self-help groups or programmes for cardiac patients.

Guidance

Turkey does not have separate national guidelines. Both European and North American guidelines can be selected by individual health professionals. There are several societies of health professionals and each society may prefer a different guideline.

Turkish Society of Cardiology (TSC) uses and endorses European guidelines, usually without any adaptation to the national characteristics. Almost every guideline is translated to Turkish, published and delivered to members of TSC. Promotion and implementation of these guidelines is usually arranged by TSC.

Risk-adjusted prevention could not be applied to Turkish healthcare system. Possible reasons for reluctance of the physicians to implement risk-based strategies may be summarised as lack of time, lack of global risk based policies of the health authorities.

Turkey has not re-calibrated SCORE charts or Framingham risk score according to its mortality and morbidity rates. The main reason for this is the lack of a data on 10-years CVD morbidity and mortality according to initial risk status.

Similar conditions are valid for the usage of the guidelines in the education of medical students. European, North American or other international guidelines can be used by individual academic staff.

Quality control

In 2009, Turkish Ministry of Health published a strategic plan to control CV disease and their risk factors in Turkey (1). Main action plans and their monitoring and evaluation were defined. Disease burden can be evaluated by governmental electronic data (MEDULLA) system, which keeps every medical record of the citizens who are covered by general health insurance scheme, on a yearly basis. General practitioners use electronic medical records for their patients; however their system is not adapted to risk-based prevention.

Some societies like the TSC conduct regular epidemiological studies, like TARF study of TSC or TURDEP of Turkish Endocrinology Society. Questionnaires, surveys and researches are the main methods for monitoring the status of CV prevention in Turkey.

Reference:

1. Prevention and Control Program for Cardiovascular Diseases. Strategic Plan and Action Plan for the Risk Factors. 2009

IV. Cardiac Rehabilitation in Turkey – 2014

The concept of cardiac rehabilitation is not acknowledged enough in both public and private health sector in Turkey. Cardiologists and cardiovascular surgeons are not sufficiently demanding, and awareness of health professionals on this issue is quite low. Therefore, cardiac rehabilitation practices could not become common enough, and do not allow for routine service.

The first applications of cardiac rehabilitation in Turkey began in the 1970s with phase III programs in post-infarction patients. Phase I to phase III programs continued in the following years, but primarily due to the increase of coronary artery bypass surgery and percutaneous intracoronary interventions, rehabilitation initiatives have remained more in the background.

Physical therapy and rehabilitation physicians began to focus on the subject stronger in the last decade. Cardiopulmonary rehabilitation units are available in physical therapy and rehabilitation clinics of many universities, research and education hospitals. Independent or private owned cardiac rehabilitation centres are relatively few. However, it is not possible to give an official statistic about the number of actively working centres, number of patients referred to these centres and phases of the rehabilitation. Certainly, the number of patients referred to a rehabilitation program is very small in daily practice. One of the main reasons for this is the difficulty of employing a large team required for cardiac rehabilitation. The number of cardiopulmonary physiotherapists is quite insufficient. Another important reason is lack of an adequate cooperation between cardiology specialists and physiotherapists.

The most positive change in recent years is the acceptance of a payment for cardiac rehabilitation in line with the relevant legislation by the Ministry of Health. However, there are no clear regulations and the amount of reimbursement is relatively low and far from encouraging. Another positive development is the evaluation of cardiac rehabilitation in the secondary and tertiary prevention strategic plan (2010-2014) of the cardiovascular diseases prevention and control program prepared by the Ministry of Health in 2009. Cardiac rehabilitation is a part of the curriculum of physical therapy and rehabilitation specialist training in our country, but its importance is rather neglected in cardiology training.

The cardiac rehabilitation subcommittee, which operates under the umbrella of the Turkish Society of Cardiology, launched a survey to determine the current status of cardiac rehabilitation in Turkey and to find out the view of cardiologists to cardiac rehabilitation in order to generate new policies in this regard. However, results of this study are not yet clear.

Two courses of on Cardiac Rehabilitation were included in the scientific programme of the 30th National Congress of Turkish Society of Cardiology and participation was high.

We hope that cardiac rehabilitation services will see more and more request by the physicians and patients in parallel with the increase in the level of general health and awareness of the importance of quality of life.

V. Main prevention activities

National heart health policy established by Turkish Ministry of Health and Turkish Society of Cardiology (TSC) aims to decrease the burden of CV disease and its risk factors in Turkey. The Ministry of Health leads the main public awareness campaigns, projects, and educational activities. Also local authorities conduct various projects for CV health.

Among the non-governmental organisations, TSC is heading the preventive activities. It provides brochures, radio programs, TV spots, special web pages, and informative TV programs produced by the members of the society. These activities pioneered similar activities of the other medical societies and well appreciated by the press and public. Thus, TSC won all the "Best Social Responsibility" and "Best Communication Project Awards" in health every year since 2006.

Website:

- <http://www.tkd.org.tr/ENG//menu/248> (English)

Campaigns

Several non-governmental organisations conduct campaigns for CV prevention. TSC is the leading organisation with most long-lasting and effective campaigns, some of which are listed below:

- "10.000 steps a Day for Your Heart": Its' aim is to motivate people to walk at least 10.000 steps every day in order to preserve and develop their cardiovascular health.
- "Love Your Heart, Know Your Numbers": It was based on reminding people the critical numbers for heart health such as blood pressure, lipid levels, etc. Health and life insurance companies also support the campaign and inform their customers about its activities and components.
- "Love Your Heart, Go Red": Designed as an extension of 'Go Red for Women' by targeting both men and women, the campaign aimed to promote healthy diet and regular exercise by TV films, web site, public conferences and screenings.
- "Care your heart; your loved ones are in it": Initiated together with the Ministry of Health and 4 medical societies, the campaign was based on the concept of "Total Risk Management against CV Disease". In order to accomplish the task, 7.000 physicians were trained in 3 teleconferences; training kits were distributed to 30.000 doctors and 6.000 hospitals. Popular mass communication included 20 national TV channels and 10 major news portals. A full-day risk screening was conducted at the parliament. A special web site (www.kalbinizikoruyun.org) was prepared for both the training of doctors and the people. A toll-free phone line was established.
- '12/8' Hypertension Awareness Campaign: Launched in November 2005 as an integrated communication project including all mass and outdoor media. This project is conducted since 2006 at major hospitals and more than 350.000 patients were screened at specially designed corners.

- “Invent Something for Health”: World Hypertension Day in 2012 marked a new and long-term Project: “Hypertension Hunters Contest” aimed especially at youth in web, facebook and twitter to inform them on importance and risks of hypertension and invite them to develop creative means and methods for reminding their hypertensive family members to abide by their diets and to take their medicines.
- “Heart Age”: Designed to improve the consciousness of the people on heart health by promoting life style changes that might lower the ‘age of their heart’.
- European Heart Failure Day: The campaign includes a webinar for cardiologists and family physicians and an integrated communication program to warn the general audience against heart failure.
- World Heart Day and World Hypertension Day: Both days are among the regular annual program of the TSC to improve public awareness in cardiovascular health issues, celebrated with a week-long program carried out in several major cities with wide coverage in the mass media.

Projects

The major national campaigns promoting heart health are conducted by the Turkish Ministry of Health.

- *Obesity Prevention and Control Program of Turkey:* The program was an initiative of the Ministry of Health Turkish Society prepared together with 15 medical specialisation societies including TSC, besides several universities, municipalities and institutions of manufacturers such as Union of Food Industry Employers and Federation of Food and Beverage Industry Associations.

In line with the programme, the Ministry of Health published several books and brochures for healthy eating and physical activity, handbook on management of obesity for general practitioners.

http://www.beslenme.gov.tr/content/files/home/obesity_prevention_and_control_program_of_turkey_2010_2014.pdf (English)

The Year 2014 was announced as “2014: Year of Movement for a Healthy Life” in order to encourage people to live a more active life.

A novel part of the program was started in September 2014. The ministry will follow 100,000 obese people and will offer them specially prepared programs to help them lose weight, and will contact them four times a year to monitor their progress. The ministry will first identify people who are overweight across Turkey and offer those people special diet and exercise programs. The staff from the ministry will also call those people every three or four months to make sure they are following their diet and exercise programs. All the data will be gathered and recorded in a system at the ministry, because they want to determine how much weight they lose in a year.

The results of the program will be announced to the public at the end of a one-year period and with this we will be able to calculate how much weight Turkey has lost in a year.

- *National Tobacco Control Programme and Action Plan of Turkey:* The campaign has been prepared in collaboration with about 130 experts and authorities from all relevant ministries, universities and non-governmental organisations. The 4-years campaign is accepted among the most successful smoking ban campaigns

throughout the world. World Health Organization gave three 'World No Tobacco Day Awards' to Turkey in six years.

<http://www.saglik.gov.tr/EN/belge/2-389/tobacco-control-program-in-turkey.html>

- European Heart Health Charter and EuroHeart Health Project: Signing Ceremony of the European Heart Health Charter held in Ankara on December 26, 2007. TSC participated in all the possible modules for the greater project group EuroHeart Health including the translation, signing and dissemination of the charter, the [European Guidelines on CVD Prevention in Clinical Practice](#), [HeartScore®](#) and Red Alert on Women's Hearts.

Other ongoing projects are listed below:

- Reduction of Excessive Consumption of Salt Program: The program will be conducted between years 2011-2015 and aims to reduce salt intake for better health (EU Salt Reduction Framework)
- Healthy Cities Project conducted by municipalities, which are members of Turkish Healthy Cities Association, tries to establish a platform for cooperation that will contribute to the development, embracement and implementation of Healthy Cities movement across Turkey and create sustainable cities.
- Schools Become Life Project, a recently started program that will be conducted by municipalities and Ministry of Education, aims to provide life long learning to both students and adults including informing them about healthy life style habits and increasing their sporting activities.

Education

Lifestyle risk factors are on the rise in children and youth in Turkey. The government tries to prevent this rise by education programmes targeting students in primary school. Especially promotion of healthy life style habits is the main target of these programmes. Ministry of Education has attempts such as ban of the sale of soda and cola beverages in school canteens. Turkish paediatricians coach mothers not to add salt and sugar to baby food and formulas within the first year.

Prevention of CV disease is included in core curriculum programmes of medical students (Turkish Core Curriculum). Usually the main topics (hypertension, dyslipidemia, diabetes, and obesity) are discussed separately. Education of the concept of global risk evaluation and management is not a homogeneous topic but individual mentors describe its application in most of the medical schools.

Global risk assessment and management is a stable topic in cardiology training core curriculum. The majority of the trainees are aware of different global risk calculation methods. Selection of the method to be used is left to the clinicians.

Education of primary care physicians depends mainly on the regular education courses of Ministry of Health. TSC includes sessions for family physicians and European guidelines on various prevention topics are promoted in these sessions.

Interest of mass media in CV prevention is growing year by year. Most of the authors and consultants are senior specialists in either cardiology or internal medicine. These programmes play a very powerful role in the education of the public. Erroneous information may appear time to time, but their effect is limited.

VI. The future

Needs

Though to the enormous effort spent for CVD prevention, all the epidemiologic data shows an incremental rise in CV risk factors in terms of diabetes, hypertension, and abdominal obesity. For achieving more effective preventive measures we need:

- More reliable data to understand the scope of problem. Recalibration of SCORE system according to current national mortality data maybe an important initial effort for a more evidence-based prevention.
- Continuation of public awareness campaigns, programmes and education of population from school years.
- Increase health professionals' awareness and willingness to participate in CV prevention and especially in rehabilitation.
- Close control of the media in order to avoid the risk of false information

Possibilities

- A partnership with politicians and municipalities
- Increase number of centres and staff working in cardiac rehabilitation
- Involving other health professionals in CV prevention and rehabilitation efforts (i.e. increasing number of nurse-lead programmes)
- Participating in ongoing projects on CV risk factor education and interventions especially in women and school children.

Obstacles

- Traditions including misbeliefs such as preference of alternative medicine
- Misleading campaigns of media
- Economic, social and political challenges
- Different priorities of government and authorities controlling the healthcare system

Plans for the coming year(s)

- Projects for the implementation of the guidelines for both primary and secondary prevention and co-ordination of preventive actions.
- Increase the attractiveness of cardiac rehabilitation for cardiologists and other health professionals.
- Reach the 2025 Global NCD Mortality Target with an effective prevention and rehabilitation strategy.