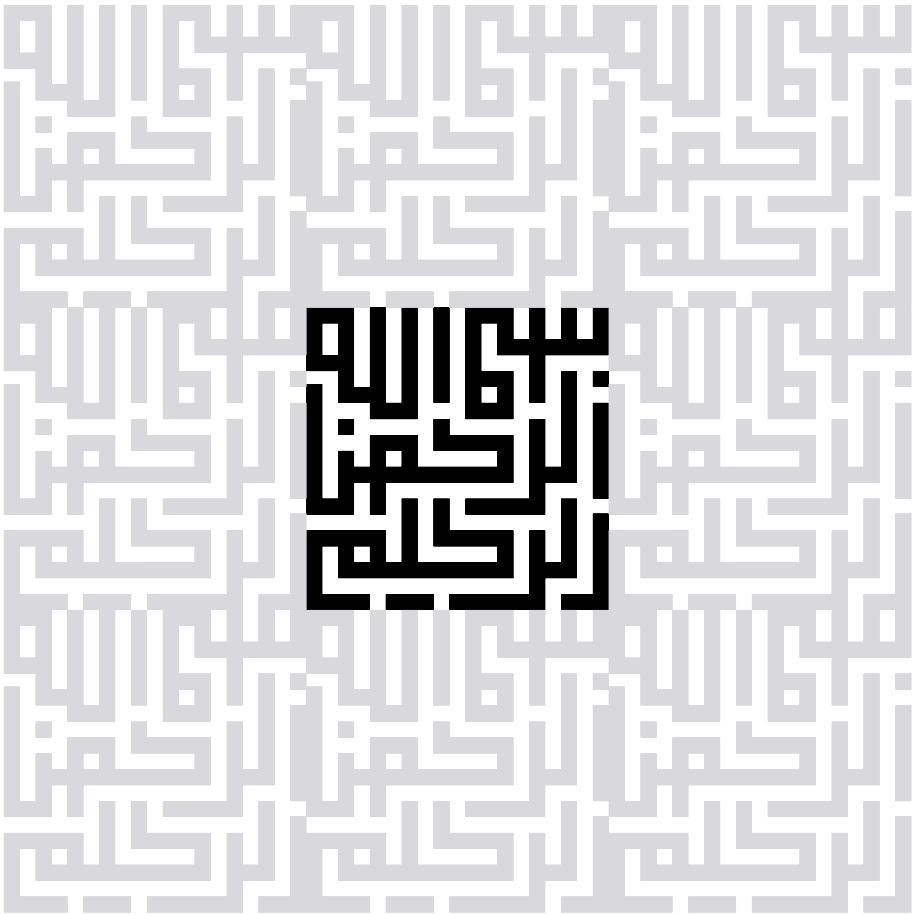
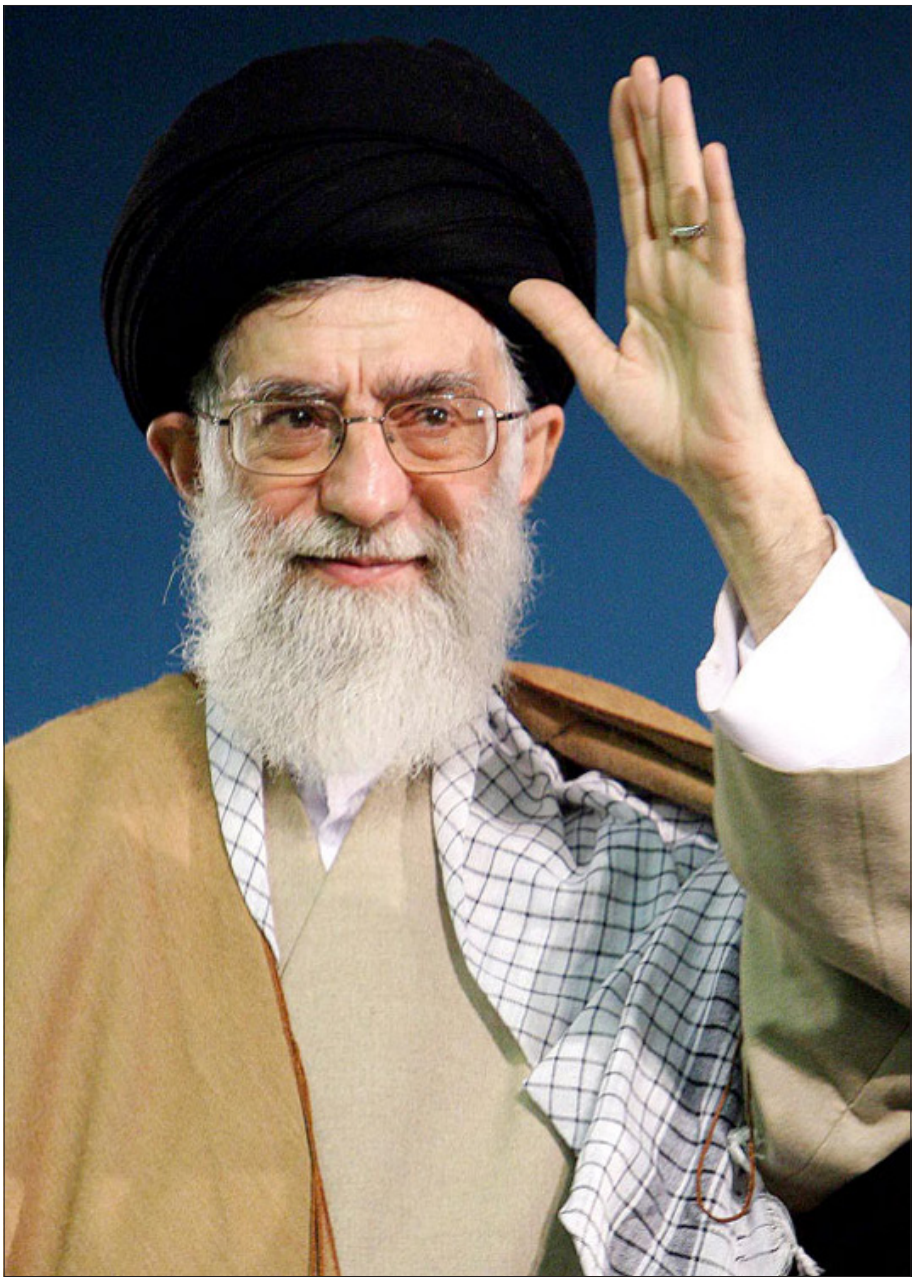


National Document for Prevention and Control of Non-Communicable Diseases and the Related Risk Factors in the Islamic Republic of Iran, 2015-2025

Iranian National Committee for NCDs Prevention and Control
June, 2015

The government has considered healthcare as one of its important priorities



Healthcare has priority over many other issues around the country

Statement of the Chair of the National Committee of Prevention and Control of Non-Communicable Diseases

Dr Seyyed Hasan Ghazizadeh Hashemi
The statement of the chair of the Iranian national committee for NCDs prevention and control

Chronic and non-communicable diseases are among the main reasons of mortality and disability nowadays. Non-communicable diseases refer to a series of diseases, which are not basically created with an acute infection; these diseases have long-term impacts on health, generally need long-term treatment and care. The main types of these diseases include various cancers, cardiovascular diseases, diabetes and chronic respiratory diseases. Many of the non-communicable diseases can be controlled and prevented by risk factors such as smoking consumption, alcohol consumption, insufficient physical activities and inappropriate diets. Chronic and non-communicable diseases are not limited to the above-mentioned causes and could include other causes such as accidents, catastrophes and mentally disorders. Given the broad range of the non-communicable diseases and the spread of these conditions, the importance of paying attention to these diseases would be doubled.

In recent decades, the remarkable emergence and prevalence of non-communicable diseases have caused concern in health systems of different countries as well as various health agencies. United Nations Organization and World Health Organization are among organizations which have implemented programs for prevention and controlling non-communicable diseases worldwide and are involved in promoting health in this area. Their activities are reflected in holding meetings and setting guidelines and workbooks which address non-communicable disease. In sum, one can conclude that the issue of non-communicable diseases is not limited to one country or region. All countries in the world are dealing with the problem of non-communicable diseases.

There is an estimate that non-communicable diseases annually cause 35 million deaths in the world. This number is about 60 percent of the total deaths of the world. Out of the above-mentioned statistics, 80 percent of them occur in developing countries. Therefore, the problem of non-communicable diseases in developing countries, especially in our country, requires more attention. World Health Organization has a strategy to prioritize only four non-communicable diseases. These four diseases include cardiovascular diseases, different cancers, diabetes and chronic respiratory diseases. However, it should be noted that this prioritization should not divert the attention of health policy-makers from other chronic and non-communicable diseases such as mental disorders, musculoskeletal disorders, oral and dental disorders as well as accidents and catastrophes.

Over time, people have been facing different social and environmental factors which eventually lead them to an unhealthy and unsafe life style. Although control of risk factors such as smoking, insufficient physical activities, improper diets and etc can have an important role in preventing and controlling of non-communicable diseases, we should not neglect the role of interventions including activities related to the promotion of people's knowledge and the change of their attitudes towards risk factors. Since a major burden of disease in our country concerns non-communicable diseases, it should be noted that prevention and control of non-communicable diseases could be one of the most effective solutions in reducing the burden of disease imposed to the country's health sector.

National Committee of Prevention and Control of Non-Communicable Diseases, consisting of a group of health sector experts of the country in the area of non-communicable diseases, is established to reduce the burden of non-communicable diseases in the country. We hope that, with reliance on God, and with the endeavors of health sector experts in the area of non-communicable diseases, we will observe the swift achievement of the health sector of the country will to its eventual goal i.e. the reduction of prevalence, outbreak and mortalities caused by non-communicable diseases in our dear country. At the end I would like to thank the chair and members od the Non-Communicable Diseases Research Center (NCDRC), Endocrinology and Metabolism Research Institute of Tehran University of Medical Sciences for preparing the present document.

The Statement of the Deputy Chair of Iraninan National Committee for NCDs Prevention and Control

Dr. Bagher Larijani
The statement of the deputy chair of the Iranian national committee for NCDs prevention and control

Up to a few decades ago, infectious diseases such as AIDS, various types of viral Hepatitis, tuberculosis and other different infections were the biggest health-related problems in the world to the extent that countries spent most of their health capacities to prevent and control prevalence of those diseases. In recent years, due to achievements in promotion of health sector, and new technologies, a huge progress is made with respect to the control of infectious diseases such that non-communicable diseases now take a higher priority than infectious diseases in prioritization of health- related problems. As a result of an increase in mortality rate caused by non-communicable diseases especially in developing countries, World Health Organization has declared that non-communicable diseases are among health priorities in developing countries since two decades ago.

Currently non-communicable diseases are the main reasons of mortality and disability in the world to the extent that non-communicable diseases are accounted for a significant portion of global burden of disease. A main reason for this issue is the provision of a suitable background condition created by a growth in the risk factors of these diseases over past years. A change in lifestyle has increased some important risk factors such as smoking consumption, lack of physical activities, inappropriate diet, accidents as well as the number of people with high blood pressure and sugar in society. The growth of these risk factors is an alarm for the rise of mortalities and disabilities caused by non-communicable diseases in developing countries.

As mentioned before, the main reason for this situation could be changes which have been happening over last years in people's lifestyle. Perhaps, one of the reasons of these changes, besides necessities of current life, is rooted in people's awareness and their conducts. Currently, cardiovascular diseases and cancers are the leading causes of mortality and accountable for large portion of deaths in developed countries. In many countries prevalence and incidence of non-communicable and chronic diseases have had an ascending trend. Also it is expected that this trend would continue. One of the reasons for this growth could be the increase of life expectancy in many countries which leads to a higher number of the elderly who are more likely to have chronic and non-communicable diseases. Another reason is that people's lifestyle is changing quickly. This change would make individuals prone to non-communicable diseases.

Identifying risk factors and activities designed to promote individual's health status with the aim of prevention such as erasing or reducing risk factors as well as changing lifestyles are among the most important and effective means in preventing and controlling non-communicable diseases. Evidence shows that activities such as detection through screening, health examination, accurate diagnostic, treatment and rehabilitation methods, fight against pollution of air, water and food, activities related to risk reduction, influence on behavior patterns and lifestyle through intensive training, raise in the standard of medical care institutions, and establishment and implementation of more effective medical care such as primary health services make the prevention and control of non-communicable diseases possible.

Currently, the importance of paying attention to non-communicable diseases in the world, especially in developing countries, is more evident than before. Our country is not an exception in this respect. The importance of paying multilateral attention to non-communicable diseases made health authorities to establish a national committee, called "National Committee of the Islamic Republic of Iran on Prevention and Control of Non-communicable Diseases", which focuses on non-communicable diseases to prevent and control these diseases, and organizes all the activities in this area. We hope that, with reliance on God, and with the endeavors of committee's members, we will observe remarkable changes in prevention and control of non-communicable diseases in the country.

"I will focus on achieving the results that we, collectively, know are essential, especially in tackling the health challenges impacting the region during the current economic and political climate."

Preparation and revision of the present document was not possible without valuable comments and fruitful supports of Dr. Ala Alwan and his colleagues in WHO regional office for the Eastern Mediterranean.

Oponions of Dr. Margaret Chan, director general of WHO towards development of Iranian national action plan for NCDs prevention and control

Oponions of Hassan Rouhani, president of I.R.Iran towards development of Iranian national action plan for NCDs prevention and control

Oponions of Ali Larijani, chairman of the parliament I.R.Iran towards development of Iranian national action plan for NCDs prevention and control

Members of the National committee for NCDs Prevention and Control

Seyyed Hassan Ghazizadeh Hashemi, Minister of Health and Medical Education of I.R.Iran and the chair of the Secretariat and the National Committee for Prevention and Control of Non-communicable Diseases in Islamic Republic of Iran

Bagher Larijani, Deputy Minister of Education, Ministry of Health and Medical Education, and the deputy chair of the National Committee for Prevention and Control of Non-communicable Diseases in Islamic Republic of Iran

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Farshad Farzadfar, the honorable director of Non-communicable Disease Research Center, Tehran University of Medical Sciences, and the member of the Secretariat and the National Committee for Prevention and Control of Non-communicable Diseases in Islamic Republic of Iran

Hamid Reza Jamshidi, the member of the Committee and the National Committee for Prevention and Control of Non-communicable Diseases in Islamic Republic of Iran

Ali Reza Delavari, the member of the National Committee for Prevention and Control of Non-communicable Diseases of Islamic Republic of Iran

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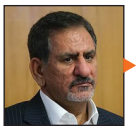
Ramin Heshmat, the member of the National Committee for Prevention and Control of Non-communicable Diseases of Islamic Republic of Iran

Niloufar Peykari, the member of the National Committee for Prevention and Control of Non-communicable Diseases of Islamic Republic of Iran

Members of the Iranian Supreme Council of Health

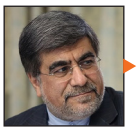


Eshagh Jahangiri
First Vice President

Mohammad Bagher Nobakht
Vice President

Masoumeh Ebtekar
Head of environmental protection organization

Mahmoud Goudarzi
Minister of Youth Affaires and Sports



Ali Jannati
Minister of Culture and Islamic Guidance

Hamid Chitchian
Minister of Energy

Mahmoud Hojjati
Minister of Agriculture

Ali Rabiei
Minister of Labour and Social Affaires

Abdolreza Rahmani Fazli
Minister of Interior

Mahmoud Sarafraz
Head of the Broadcasting Organization

Ali Tayyebnia
Minister of Economic Affaires and Finance

Ali Asghar Fani
Minister of Education

Mahmoud Goudarzi
Minister of Youth Affaires and Sports

Mohammad Reza Nematzadeh
Minister of Industry and mine

The Islamic Republic of Iran

A memorandum of intersectoral cooperation (The corresponding) Ministry and Ministry of Health and Medical Education For prevention and control of non-communicable diseases and relevant risk factors

Article 1. Introduction and the necessity of the present memorandum

Nowadays, the developmental process and especially the aging population have caused fast and significant social changes. As a result, non-communicable diseases (e.g. cardiovascular disease and cancers) are playing an increasingly significant role in death rate and are imposing a greater health-related financial load. Most of these non-communicable diseases can be prevented if their risk factors are dealt with on time and in an effective way. Some of these risk factors involve insufficient physical activity, smoking, environmental pollutants, unhealthy nutrition, and high blood pressure. On the other hand, treating these diseases in the primary stages of their development and preventing their debilitating complications have a significant effect on maintaining people's health. According to world statistics, at the present time, non-communicable diseases are responsible for 53% of all illnesses. This figure is estimated to rise to 60% by 2020, when death rate related to non-communicable diseases is predicted to be 73%. Eighty percent of non-communicable diseases occur in developing countries. It is predicted that the same pattern is followed in our country, with over 76% of all infections caused by these diseases. Dealing with the spread of non-communicable diseases and their risk factors naturally requires the wide scale, effective, and active intervention of all concerned organizations and ministries inside and outside the health sector.

Because of the importance of this issue, the necessity of coordination among various decision-making organizations, as well as execution, supervision, and evaluation of all activities, Ministry of Health and Medical Education has established a "national committee for prevention and control of non-communicable diseases and relevant risk factors." In line with legal obligations of Islamic Republic of Iran at national and international levels, this committee is responsible for planning, prioritizing, monitoring, and evaluating all actions related to the control of non-communicable diseases and their risk factors within the framework of a comprehensive and national document. Furthermore, according to the adopted intersectoral horizon and outcomes of the fourth and fifth developmental plans, "the supreme council of food's health and security," which aims at providing health for citizens as the pivotal factor for healthy development, is responsible for ratifying executive intersectoral health-related policies. By so doing, it tries to provide, maintain, and enhance health in a fair way, provide access to healthy and good food basket for all people, and improve the quality of life style. This council will cooperate with the national committee for prevention and control of non-communicable diseases and relevant risk factors in order to pursue some crucial aims within intersectoral plans to fight non-communicable diseases. These aims, which are among international obligations of Islamic Republic of Iran within "the national document for prevention and control of non-communicable diseases and relevant risk factors," include:

- Decreasing the risk of early deaths due to non-communicable diseases by 25%
- Reducing the degree of sedentary lifestyle by 20%
- Diminishing the amount of using alcohol by 10%
- Declining the amount of using Sodium salt by 30%
- Decreasing the degree of smoking by 30%

- Reducing the degree of high blood pressure by 25%
- Preventing further spread of obesity and diabetes among people
- Providing 100% access to suitable drugs and fundamental and necessary technologies for treating non-communicable diseases
- Providing at least 70% access to necessary drugs and counseling for preventing cardiovascular diseases and cerebrovascular attacks
- Getting rid of Trans fatty acids in edible oils and food products

In order to achieve the above mentioned aims, the present memorandum is signed by the highest officials of Ministry of Health and Medical Education (henceforth, Ministry of Health) and Ministry of Education in order to take health-based actions which aim at preventing non-communicable diseases and promoting controlling interventions in this regard.

Article 2. The aim of the memorandum

This memorandum is an attempt to facilitate and accelerate the access to upgrade indices for preventing and controlling non-communicable diseases. To this end, different health measures, on which both organizations have agreed (and may be different depending on the corresponding ministries), will be taken.

Article 3. The two sides' obligations

A. Ministry of Health

1. Determining expectations from and actions that must be taken by the other side of the memorandum and raising them in meetings of joint committees
2. Introducing and promoting health measures of the corresponding organization and encouraging influential individuals in the society in annual reports
3. Directing and facilitating the process of formulating policies and health-based interventions related to non-communicable diseases in the organizational context of the other side of the memorandum
4. Providing necessary and relevant technical training for the employees introduced by the other side of the memorandum with the aim of formulating and executing interventions
5. Monitoring agreed upon operations in cooperation with the other side of the memorandum and reporting the results to "the supreme council of food's health and security" and "national committee for prevention and control of non-communicable diseases and relevant risk factors"

B. The corresponding ministry

The obligations in this part may differ depending on the corresponding ministry.

Article 4. Conditions for implementing this memorandum

1. At most, a month after signing this memorandum, the two sides should form a joint committee consisting of competent and qualified experts. In order to operationalize the obligations and determine tangible health measures, this committee must hold at most monthly meetings to formulate necessary operational plans. The agenda will be immediately sent to "the supreme council of food's health and security" and "national committee for prevention and control of non-communicable diseases and relevant risk factors."
2. Joint meetings will be held among administrators and relevant experts from both sides, as well as the legate of Management and Planning Organization in order to execute operational plans.
3. Health measures in each operational plan will be financed by the corresponding organization's budget row as well as the resources of Management and Planning Organization specially allocated for health-based plans. Therefore, the budget representative of the corresponding organization must be present in meetings.
4. The highest official of each organization is responsible for the enforcement of this memorandum.

Eshagh Jahangiri
First Vice President .....

Masoumeh Ebtekar
Head of environmental protection organization .....

Ali Jannati
Minister of Culture and Islamic Guidance .....

Mahmoud Hojjati
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Dr. Seyyed Hassan Ghazizadeh Hashemi
Minister of Health and Medical Education .....

National document for the prevention and control of non-communicable diseases and the related risk factors in the Islamic Republic of Iran, 2015-2025

Concessionaire:
Iranian National Committee for NCDs Prevention and Control

Contact at:
Farahzadi Blv, Eyvanak St, Shahrak e Qods, Ministry of Health and Medical Education,Tehran, Iran
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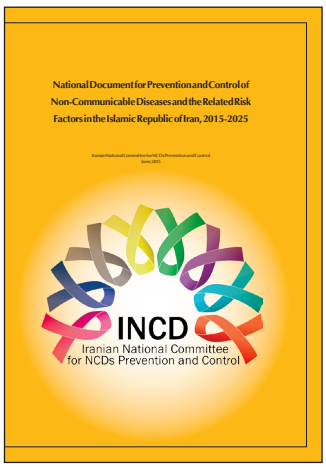
Prepared by:
The Iranian national committee for prevention and control of the non-communicable diseases, with collaboration of the Non-communicable diseases research center (NCDRC) of Tehran University of Medical Sciences.



Chapter 1 — 8-17

Chapter 2 — 18-33

Chapter 3 — 34-51

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Exclusive Summary

General information on NCDs in the world

Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression. The 4 main types of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. NCDs already disproportionately affect low- and middle-income countries where nearly three quarters of NCD deaths (28 million) occur. Evidence shows that 16 million of all deaths attributed to non-communicable diseases (NCDs) occur before the age of 70. Of these "premature" deaths, 82% occurred in low- and middle-income countries. Children, adults and the elderly are all vulnerable to the risk factors that contribute to non-communicable diseases.

Status of NCDs in Iran

Ischemic heart disease, back pain, road accidents, major depressive disorder, and stroke have had the highest burden in Iran in 2010; this pattern is more similar to the pattern of diseases in developed rather than developing countries. As it is evident, some cases such as the group of diarrhea diseases have moved to lower ranks. Among all non-communicable diseases, cardiovascular diseases, cancers, diabetes, and chronic lung diseases are regarded as more serious threats to the health of people all over the world, and, as such, they call for the allocation of substantial financial resources from private and state sectors, not only in Iran but also around the globe.

Risk factors of NCDs in Iran

Among the risk factors, the highest DALY rate is related to nutritional factors; Iran, when compared with the world, reportedly has the highest rate with respect to factors related to nutrition and insufficient physical activity. As for the risk factor of smoking and tobacco use, Iran has a lower rate in comparison to the world. Similar to that of DALY, the highest mortality rate, among the five risk factors, is also related to nutritional factors; in all the years under study, Iran, compared with the world, has always witnessed a higher rate in terms of factors related to nutrition and insufficient physical activity.

National and Sub-national Burden of Diseases (NASBOD) study

The National and Sub-national Burden of Diseases, Injuries, and Risk Factors (NASBOD) is a systematic effort for estimating the magnitude of health loss due to diseases, injuries of Diseases 2010. Health policy makers at national and subnational levels, national levels, health sector leaders, researchers and citizens could directly use the produced estimates in NASBOD 2013. The NASBOD 2013 provides a "bird's eye view" of health status of populations across the country to compare the burden of different diseases and their distributions at once.

Analysis on the world health organization's targets on NCDs

The world health organization has developed 9 targets for prevention and control of non-communicable diseases around the world, in terms of the four main components including "governance, risk reduction, healthcare, and surveillance". Based on the assumption of the current document, it seems that some of these targets should be modified based on the existing socio-cultural and demographic parameters of Iran.

Formation and interventions of INCD

"National action plan for prevention and control of non-communicable diseases and related risk factors in the Islamic Republic of Iran" is a strategic plan that determines the strategies of the Ministry of Health and Medical Education for the prevention and control of non-communicable diseases and related risk factors for 10 years (until 2025). To carry out the plan, a committee called "the National Committee for Prevention and Control of Non-communicable Diseases and Risk Factors" was formed in order to fulfill the legal obligations of the Ministry of Health and Medical Education, with the aim of integration of policy-making, planning, and monitoring of all activities in the area of non-communicable diseases and related risk factors in the Islamic Republic of Iran.

Challenges and opportunities

Existing structure of the healthcare system in Iran can facilitate reaching the INCD goals per se. In this regard some components such as primary healthcare (Behvarz system), and integration of health and medical educations are among the opportunities which could be helpful for policy-makers and INCD staff to prevent and control the non-communicable diseases in Iran.

Chapter 1

Overview of non-communicable diseases and the related risk factors

Key Points

- Non-communicable diseases (NCDs) kill 38 million people each year.
- Almost three quarters of NCD deaths - 28 million - occur in low- and middle-income countries.
- Sixteen million NCD deaths occur before the age of 70; 82% of these "premature" deaths occurred in low- and middle-income countries.
- Cardiovascular diseases account for most NCD deaths, or 17.5 million people annually, followed by cancers (8.2 million), respiratory diseases (4 million), and diabetes (1.5 million).
- These 4 groups of diseases account for 82% of all NCD deaths.
- Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all increase the risk of dying from an NCD.


Insulin aspart Injection
(rDNA origin)
10 mL 100 units/mL
Important: see insert
Keep in a cold place
Avoid freezing.
Rx only
CURITY
Alcohol Prep

1.1 Overview

Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression. The 4 main types of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. NCDs already disproportionately affect low- and middle-income countries where nearly three quarters of NCD deaths – 28 million – occur.

Figure 1.1 shows the mortality rate due to diabetes per 100,000 people, in different countries of the world, in 2010. In this figure, the countries shown with a range of green color have the lowest rates of mortality caused by diabetes in the world. Countries with the yellow color have a moderate rate of mortality and the countries in red have the maximum range of mortality caused by this disease in the world. It is worth mentioning that the figures and statistical data mentioned here are the results of the study of global burden of diseases that was published in 2013 and as a source of credit has been cited in the report. Based on the figure presented below, it seems that the death rate from diabetes in the world follow a pattern which is associated with the countries' level of income.

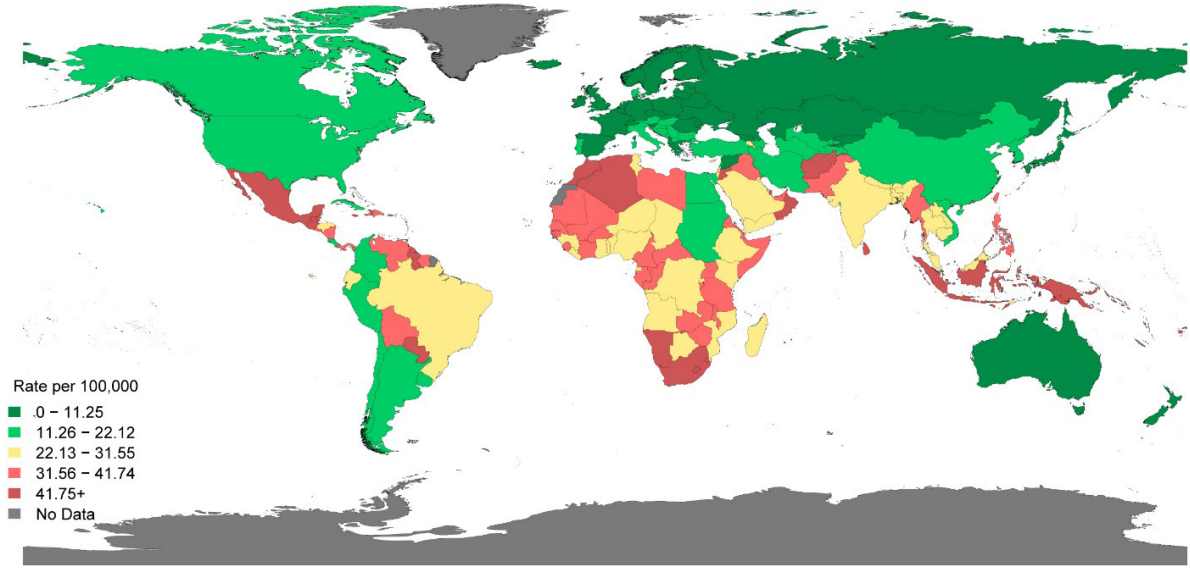


Figure 1.1: The rates of mortality due to diabetes per 100,000 people in the world in 2010

Figure 1.2 presents the rate of mortality due to ischemic heart diseases per 100,000 people in the world in 2010. Similar to Figure 1.1, in this figure the range of green color indicates the lower mortality rates while the range of red color shows the higher rates of mortality due to this group of diseases in the world. Based on the existing evidences, it may be possible to present a regional model for mortality due to ischemic heart diseases in the world, so that Africa has the lowest rate of mortality, America has an average rate, and European countries have the highest rate of mortality caused by this group of diseases in the world.

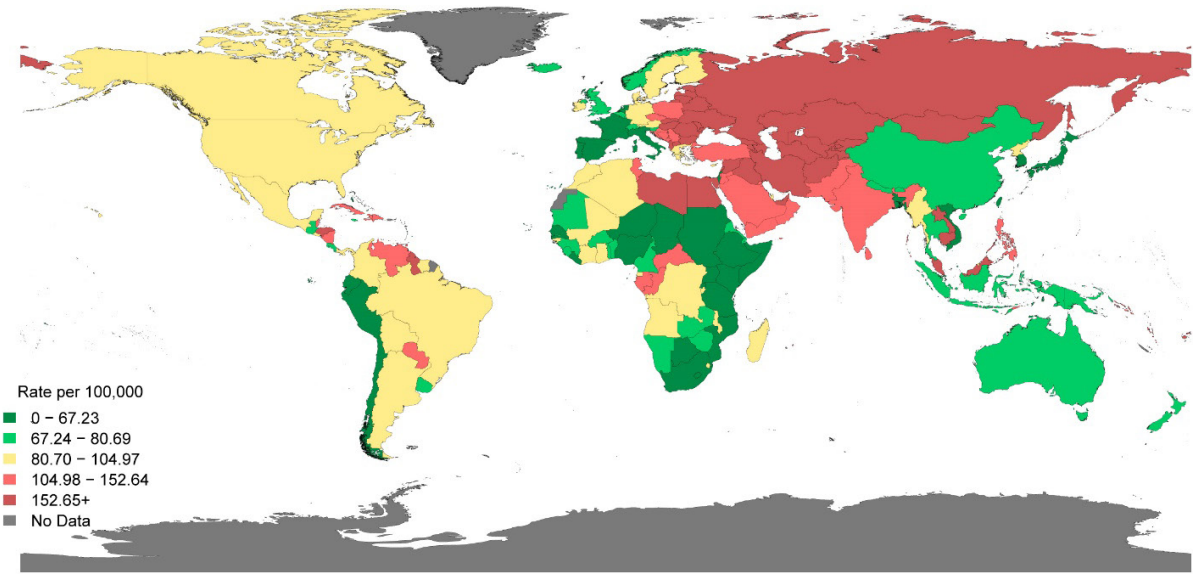


Figure 1.2: The rates of mortality due to ischemic heart disease per 100,000 people in the world in 2010

Figure 1.3 shows the rate of mortality due to strokes per 100,000 people in countries around the world in 2010. Like the figures presented above, the range of green color indicates the lowest rate of mortality and the red color is a sign of the highest rate of mortality due to stroke in the world. In view of that, the rates of mortality from stroke in North America, Western Europe, and Australia are lower than the rates in other countries. On the other hand, the Central and Eastern European countries have the highest rate of mortality caused by stroke.

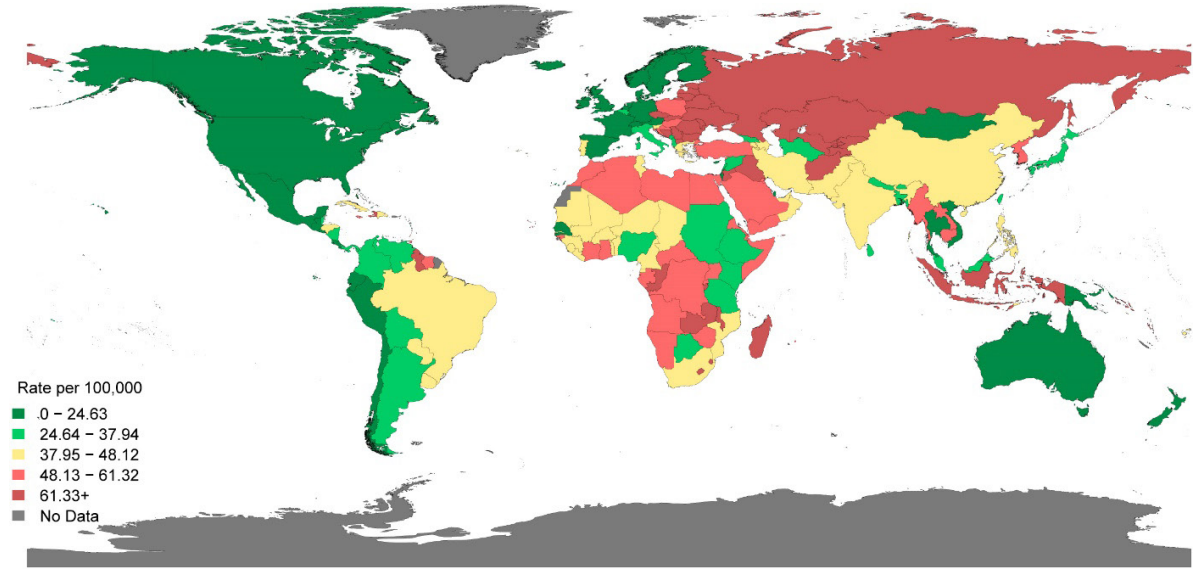


Figure 1.3: The rates of mortality due to stroke per 100,000 people in the world in 2010

Figure 1.4 shows the rate of mortality due to road accidents per 100,000 people in different countries of the world in 2010. Based on the data presented in the figure, the highest rate of mortality due to this factor is observed in Africa and South America, followed by Russia and countries in East Asia. On the other hand, the West Europe countries, Canada, and Australia have the lowest rates of mortality due to road accidents.

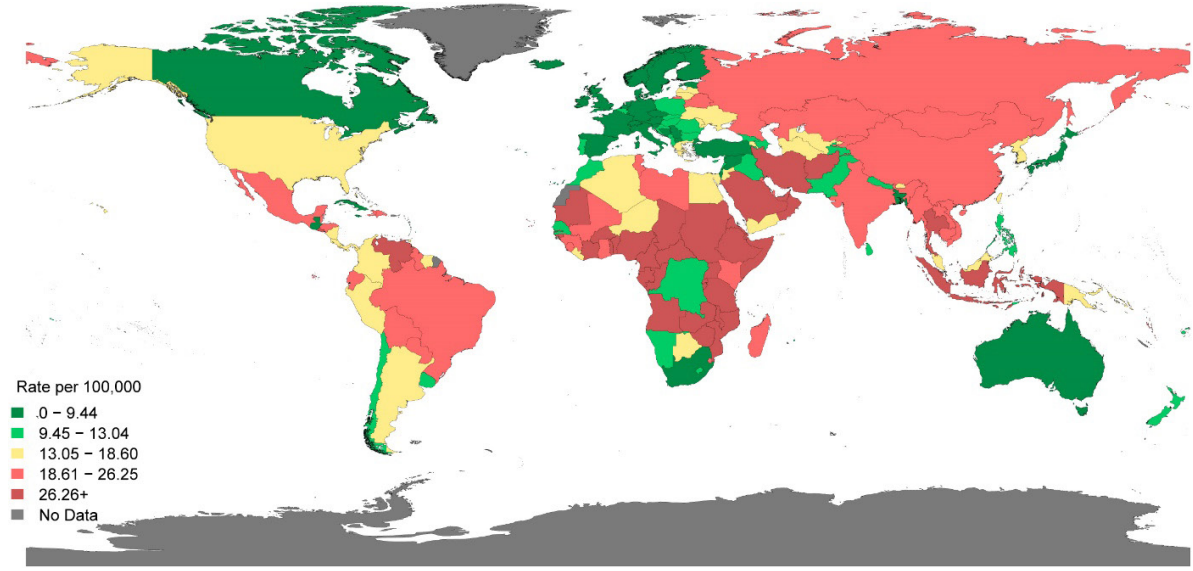


Figure 1.4: The rate of mortality due to road accidents per 100,000 people in the world in 2010

Figure 1.5 shows the mortality rate from cancer per 100,000 people in the world in 2010. Concerning cancer, it seems that the mortality from cancers also follow a regional pattern. This means that the highest rates of mortality are observed in Europe and East Asia, followed by North America and Australia. In addition, compared with the other regions of the world, the countries located in Africa and the Middle East region have the lowest rates of mortality from cancers.

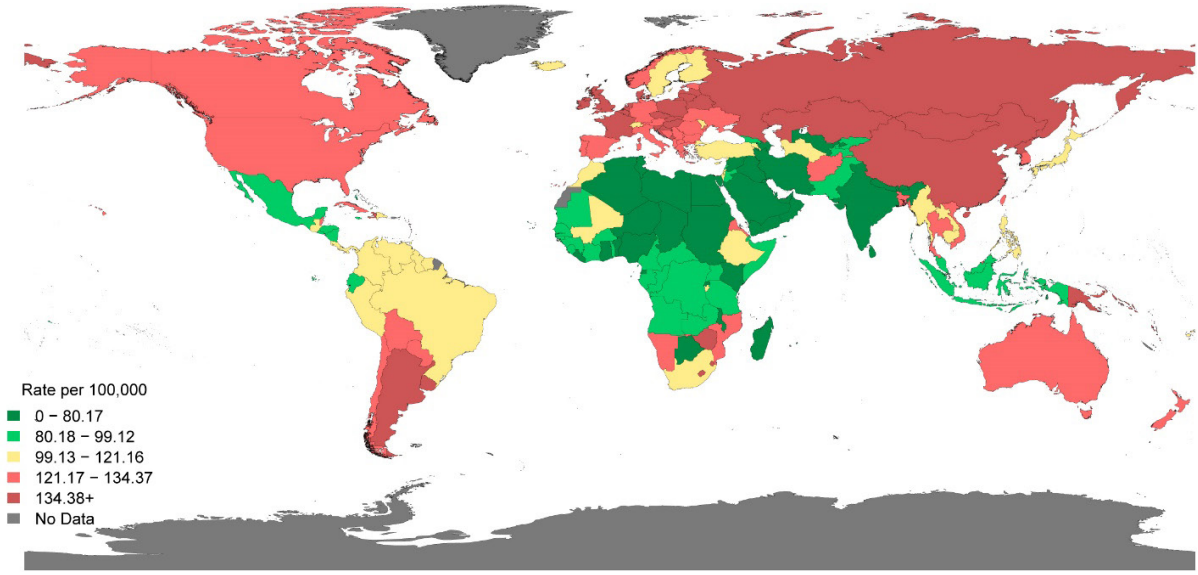


Figure 1.5: The rates of mortality due to cancers per 100,000 people in the world in 2010

1.2. Risk factors

1.2.1. Modifiable behavioral risk factors

- Tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol increase the risk of NCDs.
- Tobacco accounts for around 6 million deaths every year (including from the effects of exposure to second-hand smoke), and is projected to increase to 8 million by 2030.
- About 3.2 million deaths annually can be attributed to insufficient physical activity.
- More than half of the 3.3 million annual deaths from harmful drinking are from NCDs 1.
- In 2010, 1.7 million annual deaths from cardiovascular causes have been attributed to excess salt/sodium intake.

1.2.2. Metabolic/physiological risk factors

These behaviors lead to four key metabolic/physiological changes that increase the risk of NCDs: raised blood pressure, overweight/obesity, hyperglycemia (high blood glucose levels) and hyperlipidemia (high levels of fat in the blood).

In terms of attributable deaths, the leading metabolic risk factor globally is elevated blood pressure (to which 18% of global deaths are attributed) followed by overweight and obesity and raised blood glucose. Low- and middle-income countries are witnessing the fastest rise in overweight young children.

Figure 1.6 shows the mortality rate from tobacco smoking per 100,000 people in the world in 2010. The mortality from this risk factor also follow a regional pattern. This means that the highest rates of mortality are observed in Europe and East Asia, followed by the US. In addition, compared with the other regions of the world, the countries located in Africa and have the lowest rates of mortality from tobacco smoking.

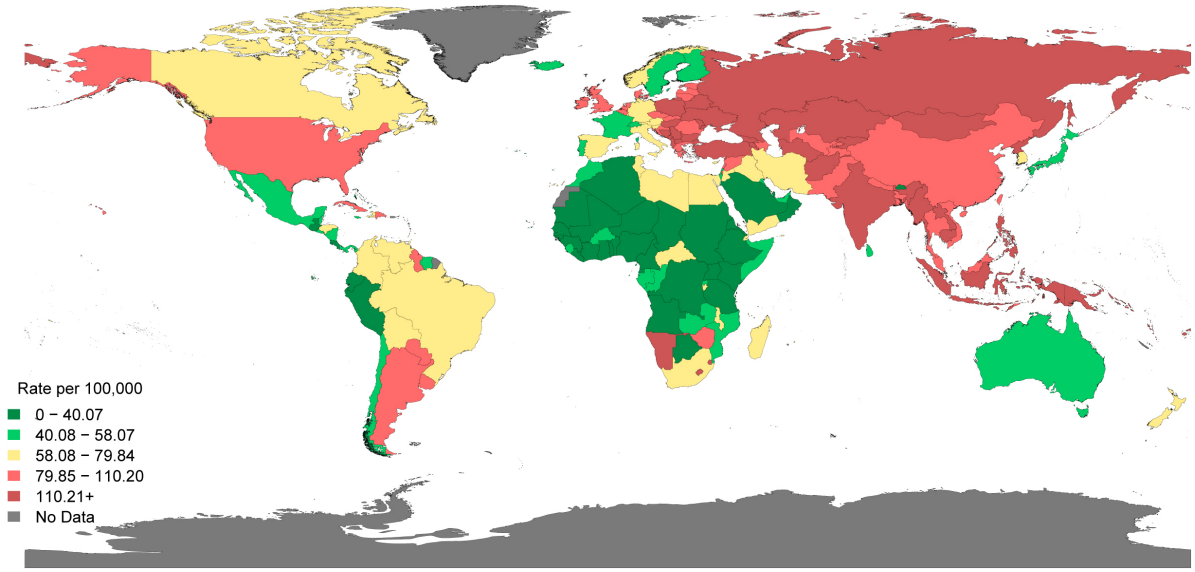


Figure 1.6: The rates of mortality due to tobacco smoking per 100,000 people in the world in 2010

As figure 1.7 demonstrates, mortality per 100,000 due to physical low or inactivity had the highest rate in the Russia, Middle East and west Europe in 2010. The lowest mortality rates due to this risk factor relate to some African countries and Australia followed by Canada, China and the US. In this regard South American countries are located in the middle of the range.

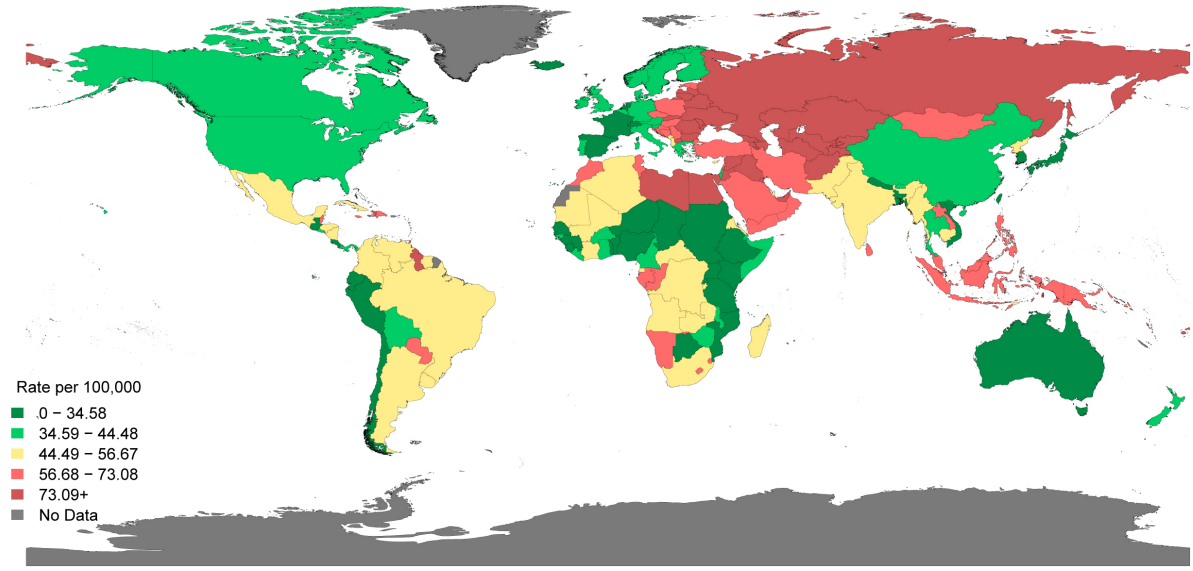


Figure 1.6: The rates of mortality due to physical low or inactivity per 100,000 people in the world in 2010

Mortality rates per 100,000 people due to the dietary risk factors in 2010 are demonstrated in the figure 1.7. Similar to the figures bellow, highest rates of mortality were seen in the eastern European countries and the Middle East. The lowest rates of mortality due to dietary risk factors belong to the North American countries and Australia. In this regard there are also a diversity of ranges from the lowest to the highest in Africa.

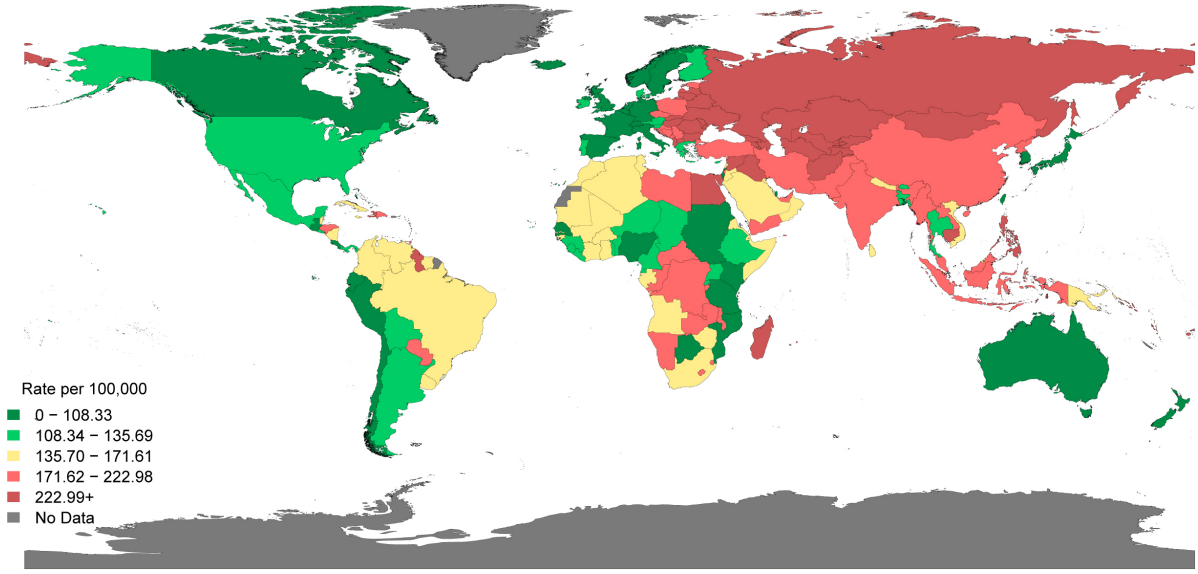


Figure 1.7: The rates of mortality due to dietary risk factors per 100,000 people in the world in 2010

As the Figure 1.8 demonstrates, compared to the other countries, Eastern European countries as well as the countries located in South Africa had the highest amount of mortality due to alcohol use in 2010. Drawing on the figure, North Africa and Middle East as well as Australia showed the lowest mortality rates due to alcohol use in 2010 in the world. North American countries had a mortality rate between 12.77 and 23.64 per 100,000.

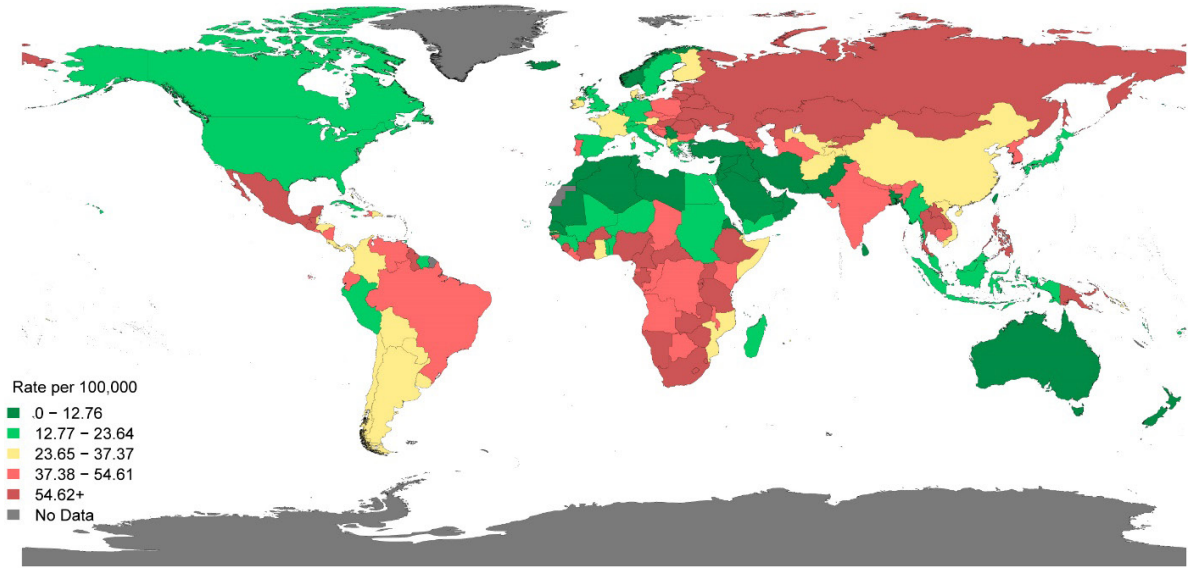


Figure 1.8: The rates of mortality due to alcohol use per 100,000 people in the world in 2010

1.3. What are the socioeconomic impacts of NCDs?

NCDs threaten progress towards the UN Millennium Development Goals and post-2015 development agenda. Poverty is closely linked with NCDs. The rapid rise in NCDs is predicted to impede poverty reduction initiatives in low-income countries, particularly by increasing household costs associated with health care. Vulnerable and socially disadvantaged people get sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services.

In low-resource settings, health-care costs for cardiovascular diseases, cancers, diabetes or chronic lung diseases can quickly drain household resources, driving families into poverty. The exorbitant costs of NCDs, including often lengthy and expensive treatment and loss of breadwinners, are forcing millions of people into poverty annually, stifling development.

In many countries, harmful drinking and unhealthy diet and lifestyles occur both in higher and lower income groups. However, high-income groups can access services and products that protect them from the greatest risks while lower-income groups can often not afford such products and services.

1.4. Prevention and control of NCDs

To lessen the impact of NCDs on individuals and society, a comprehensive approach is needed that requires all sectors, including health, finance, foreign affairs, education, agriculture, planning and others, to work together to reduce the risks associated with NCDs, as well as promote the interventions to prevent and control them.

An important way to reduce NCDs is to focus on lessening the risk factors associated with these diseases. Low-cost solutions exist to reduce the common modifiable risk factors (mainly tobacco use, unhealthy diet and physical inactivity, and the harmful use of alcohol) and map the epidemic of NCDs and their risk factors.

Other ways to reduce NCDs are high impact essential NCD interventions that can be delivered through a primary health-care approach to strengthen early detection and timely treatment. Evidence shows that such interventions are excellent economic investments because, if applied to patients early, can reduce the need for more expensive treatment. These measures can be implemented in various resource levels. The greatest impact can be achieved by creating healthy public policies that promote NCD prevention and control and reorienting health systems to address the needs of people with such diseases.

Lower-income countries generally have lower capacity for the prevention and control of non-communicable diseases.

High-income countries are nearly 4 times more likely to have NCD services covered by health insurance than low-income countries. Countries with inadequate health insurance coverage are unlikely to provide universal access to essential NCD interventions.

What is done by the World Health Organization

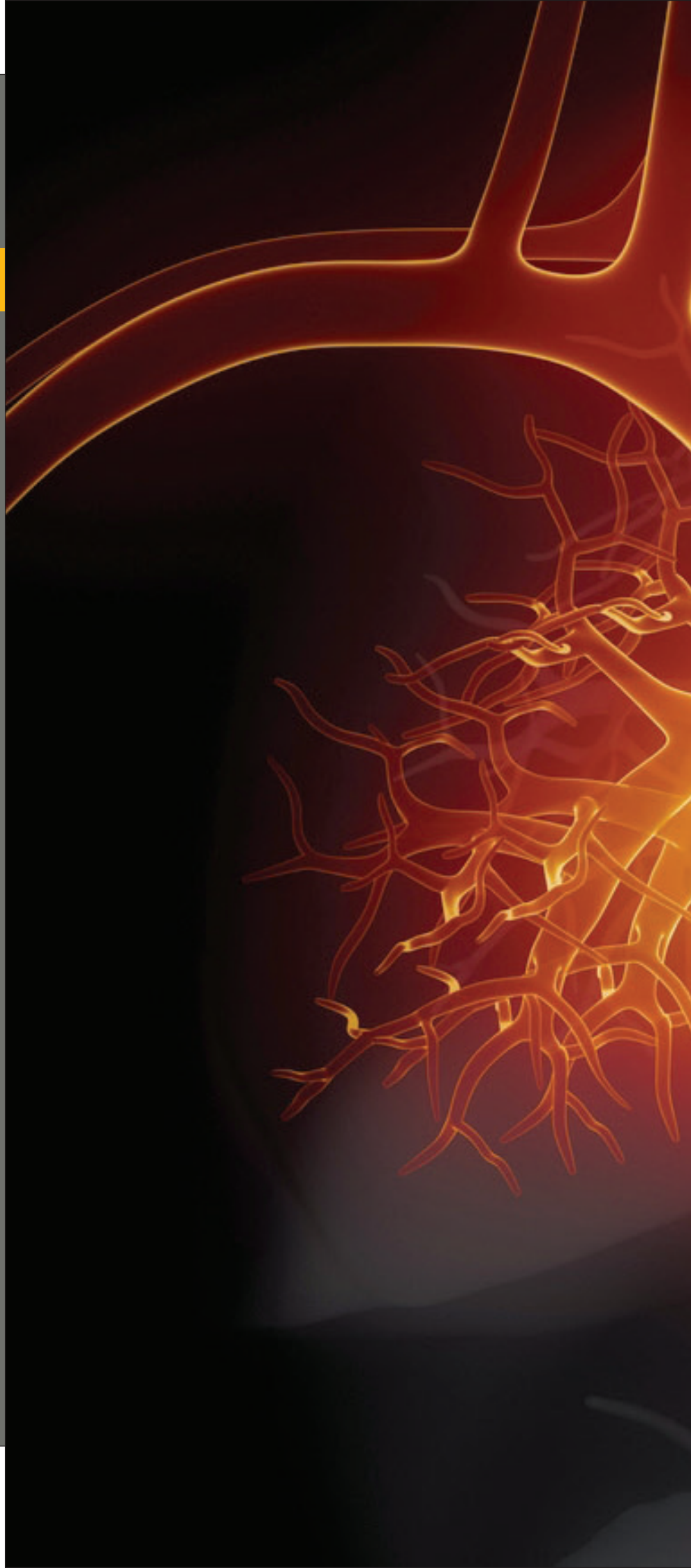
Under the leadership of the WHO more than 190 countries agreed in 2011 on global mechanisms to reduce the avoidable NCD burden including a Global action plan for the prevention and control of NCDs 2013-2020. This plan aims to reduce the number of premature deaths from NCDs by 25% by 2025 through nine voluntary global targets. The nine targets focus in part by addressing factors such as to-

bacco use, harmful use of alcohol, unhealthy diet and physical inactivity that increase people's risk of developing these diseases.

The plan offers a menu of "best buy" or cost-effective, high-impact interventions for meeting the nine voluntary global targets such as banning all forms of tobacco and alcohol advertising, replacing trans fats with polyunsaturated fats, promoting and protecting breastfeeding, and preventing cervical cancer through screening.

In 2015, countries will begin to set national targets and measure progress on the 2010 baselines reported in the Global status report on non-communicable diseases 2014. The UN General Assembly will convene a third high-level meeting on NCDs in 2018 to take stock of national progress in attaining the voluntary global targets by 2025.

Chapter 2



Status of Non-communicable Diseases in Iran

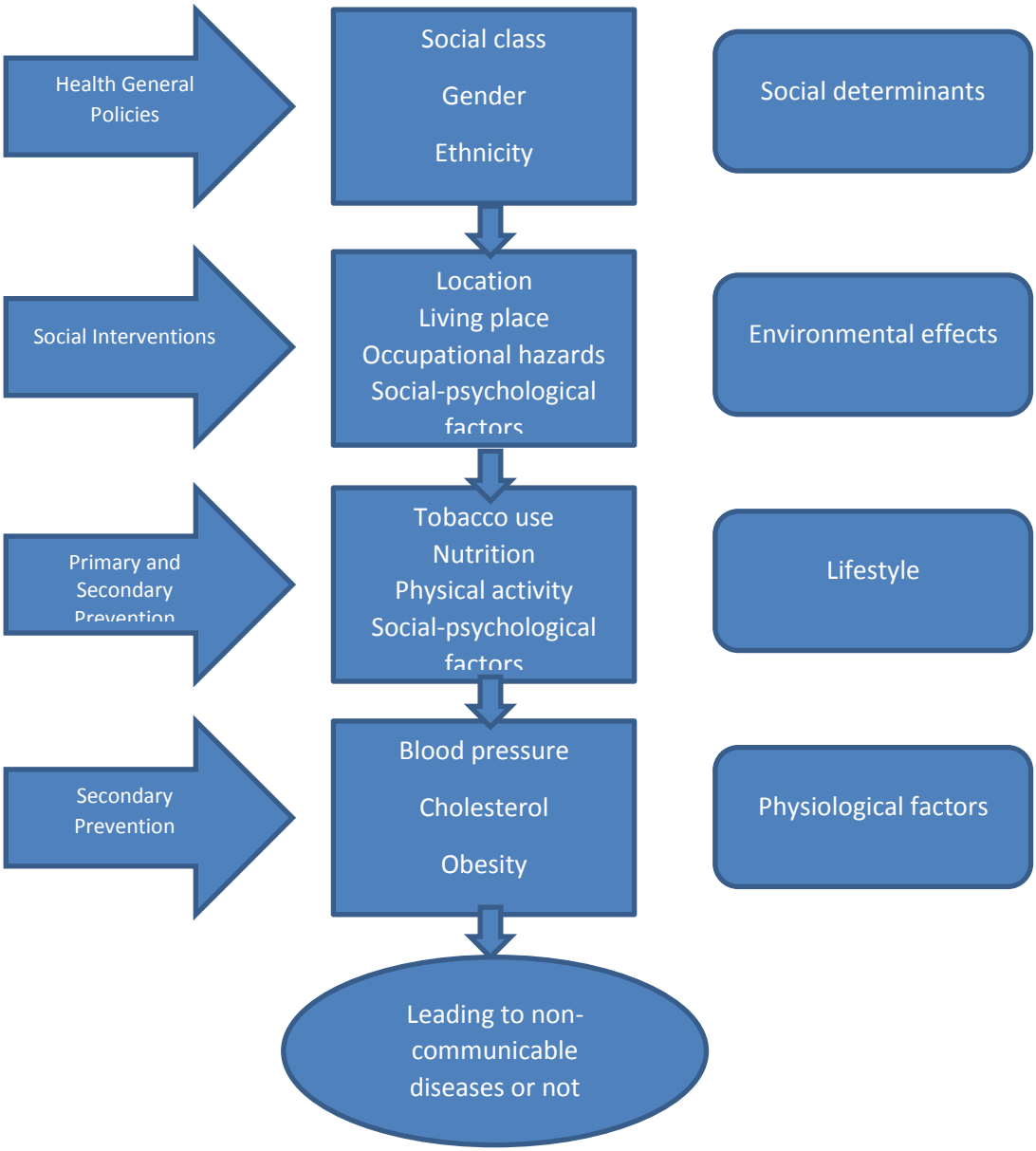
Key Points

- The basic prevention of non-communicable diseases includes early detection of their main risk factors.
- Ischemic heart disease, back pain, road accidents, major depressive disorder, and stroke have had the highest burden in Iran in 2010.
- Diseases such as the group of diarrhea have moved to lower ranks during the past 20 years in Iran.
- Some other health issues such as chronic kidney diseases, violence, and mental disorders are known as the other important health problems in Iran.

2.1. Background

Currently, non-communicable diseases account for more than 53% of burden of diseases worldwide, and it is expected that, by 2020, these diseases will be responsible for 60% of the total burden of diseases and 73% of all deaths, 80% of which will occur in developing countries. Moreover, more than 76% of the total burden of diseases are associated with non-communicable diseases. The basic prevention of non-communicable diseases includes early detection of their main risk factors and the prevention and control of these factors with the aim of avoiding the epidemic of the diseases in the location of their occurrence as much as possible. Determinants of non-communicable diseases have been shown schematically in Figure 2.1.

Figure 2.1: Determinants of non-communicable diseases



As outlined in Figure 2.2 (categorized by year), according to the data obtained from the study of "global burden of diseases," there were twenty diseases with the highest DALY rates in the world from 1990 to 2010.

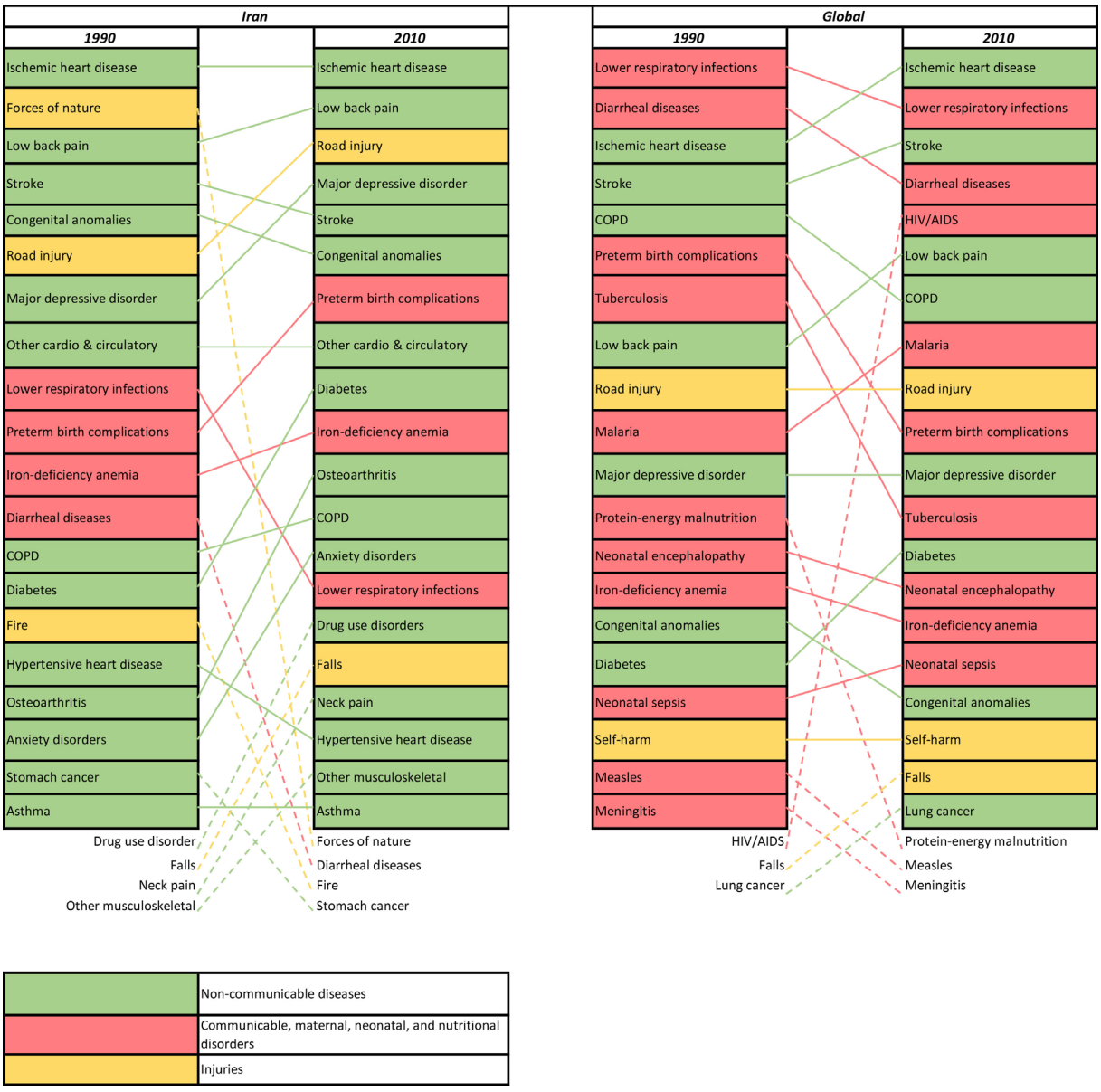


Figure 2.2: DALY rates (standardized based on gender and age) of twenty diseases in the world from 1990 to 2010

Figure 2.2 suggests that:

1. Currently, ischemic heart disease, back pain, road accidents, major depressive disorder, and stroke have had the highest burden in Iran in 2010; this pattern is more similar to the pattern of diseases in developed rather than developing countries.
2. As it is evident, some cases such as the group of diarrhea diseases have moved to lower ranks. As mentioned before, among all non-communicable diseases, cardiovascular diseases, cancers, diabetes, and chronic lung diseases are regarded as more serious threats to the health of people all over the world, and, as such, they call for the allocation of substantial financial resources from private and state sectors worldwide. Therefore, these four diseases have long been among the operational programs of the World Health Organization. Other non-communicable diseases, which are assigned a secondary level of importance, include:

A) Mental disorders
B) Accidents
C) Violence
D) Disabilities including blindness and deafness
E) Kidney diseases; endocrine, neurological, hematologic, gastroenterological, liver, musculoskeletal, skin, and oral diseases; and genetic anomalies

The main behavioral risk factors of non-communicable diseases include tobacco use, unhealthy diet, insufficient physical activity, and alcohol consumption. The metabolic/physiological risk factors of these diseases include high blood pressure, elevated blood sugar, elevated cholesterol, and obesity/overweight.

Considering the above, this chapter relates to the major non-communicable diseases in Iran and in the world, and the next chapter will discuss the main and modifiable risk factors.

2.2 Main Non-communicable diseases in Iran

2.2.1. Cardiovascular diseases

Cardiovascular diseases are the result of problems in the heart and blood vessels and include coronary heart diseases (heart attacks), cerebrovascular diseases (stroke), hypertension (high blood pressure), peripheral vascular diseases, rheumatic diseases, heart diseases, congenital heart diseases, and heart failures.

Cardiovascular diseases are the first cause of death worldwide, and, annually, many people die due to such diseases. In 2012, about 17.5 million people died of the disease in the world, comprising 31% of all deaths worldwide. Of this mortality rate, 7.4 million people died due to coronary heart diseases, and 6.7 million died of stroke. Three fourths of deaths due to coronary heart diseases occur in low- to middle-income countries.

Sixteen million deaths of people under 70 years have been due to non-communicable diseases, 82% of which have occurred in low- and middle-income countries, and 37% were associated with cardiovascular diseases. Most cardiovascular diseases can be prevented by a change in lifestyle and by adopting healthy habits and behaviors such as avoiding tobacco use and alcohol consumption, keeping a healthy diet, controlling obesity, and performing physical activity. This is feasible by adopting population-wide strategies. People with cardiovascular diseases or those at a high risk of the disease (due to one or more risk factors such as high blood pressure, diabetes, and hyperlipidemia) require immediate diagnosis and control of the disease through counseling and pharmaceutical treatment.

In 2014, the global prevalence of diabetes in adults older than 18 years was estimated to be 9%, and, in 2012, 1.5 million deaths were directly caused by diabetes. More than 80% of all deaths occur in low- and middle-income countries, and, according to the World Health Organization's projects, diabetes will be the seventh cause of death in 2030. Keeping a healthy diet, performing regular physical activity, maintaining a normal body weight, and avoiding tobacco use can prevent diabetes or delay its onset.

DALY and mortality rates of cardiovascular diseases per 100,000 people in Iran, the world, and five other countries from 1990 to 2010 are shown in Figure 2.3. Based on this information, the mortality rates in countries such as Pakistan and the United States of America are reportedly lower than those in other countries and even below the global average. In contrast, Iran's mortality rate due to cardiovascular diseases is above the global average, although the rate has been gradually declining over the course of the years under study. However, DALY rates associated with cardiovascular diseases in Turkey and Egypt is way above the global average and even higher than that for Iran. It seems that, this rate, similar to the mortality rate, is below the global average in Pakistan and America. Iran's DALY rate is lower than those for Turkey and Egypt, but the rate is still above the global average. Similar to its mortality rate, Iran's DALY rate has significantly declined over time.

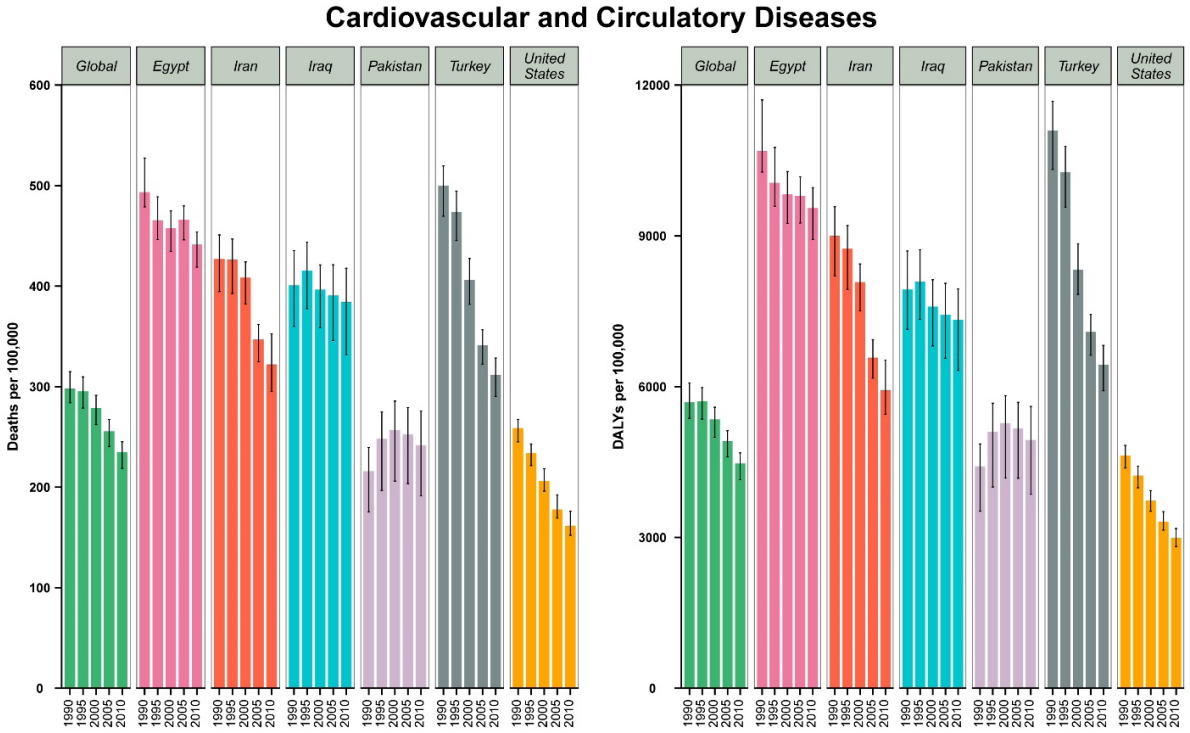


Figure 2.3: Mortality rate per 100,000 people due to cardiovascular diseases in the world, Iran, and five other countries from 1990 to 2010

2.2.2. Cancers

Cancers are among the main causes of diseases and deaths in the world. In 2012, about 14 million new cases and 8.2 million deaths due to cancer have been reported. It is expected that the number of new cancer cases increases by about 70% over the next two decades. In 2012, five of the most common cancers among men included lung, prostate, colorectal, stomach, and liver cancers, and five of the most common ones among women were breast, colorectal, lung, cervical, and stomach cancers. About a third of deaths due to cancer occur as a result of five behavioral problems: a high body mass index, low consumption of fruit and vegetables, physical inactivity, smoking, and alcohol consumption. Smoking is the most important risk factor of cancer and accounts for about 20% of deaths due to cancer worldwide. About 70% of deaths due to lung cancer are also related to smoking. Viral infections that cause cancer, such as HBV, HCV and HPV, account for about 20% of deaths due to cancer in low- and middle-income countries. Over 60% of new cases of cancer each year occur in Africa, Asia, and Central and South America. These regions experience 70% of all deaths due to cancer. It is expected that the annual cancer cases increase from 14 million in 2012 to 22 million over the next two decades.

As a generic term, cancer refers to a broad group of diseases that can affect any part of the body. In 2012, the most common fatal cancers were as follows:

- Lung (1.59 million deaths)
- Liver (745000 deaths)
- Stomach (723000 deaths)
- Colorectal (694000 deaths)
- Breast (521000 deaths)
- Esophagus (40000 deaths)

Factors that can cause cancer are divided into three categories:
- Physical carcinogens such as ultraviolet and ionizing radiation
- Chemical carcinogens such as asbestosis, substances in tobacco smoke, aflatoxin, and arsenic
- Biological carcinogens such as infections caused by viruses, bacteria and certain microbes

Ageing is another fundamental factor as the cause of cancer. Cancer prevalence dramatically increases with age.
Global risk factors of cancer include smoking, alcohol consumption, unhealthy diet, and physical inactivity. Some viruses such as hepatitis B (HBV), hepatitis C (HCV), and some types of the human papilloma virus (HPV) increase the risk of such cancers as cervical cancer.
Cancer can be prevented through raising awareness of its causes and implementing interventions to prevent and manage diseases. Cancer can also be reduced and controlled through implementing evidence-based strategies for cancer prevention and early detection and management of cancer patients. With early detection and proper treatment, most cancers are likely to be cured.
More than 30% of deaths due to cancer can be prevented with applying changes in lifestyle and avoiding the main risk factors. These risk factors include:
- Smoking
- Overweight, obesity
- Unhealthy diet and low consumption of fruit and vegetables
- Physical inactivity
- Alcohol consumption
- HPV sexually transmitted infection
- HBV infection
- Exposure to ionizing and non-ionizing radiation
- Air pollution
- Indoor fumes resulting from incomplete combustion of solid fuels

Smoking is the most important risk factor of cancer that accounts for about 20% of all deaths due to cancer and 70% of deaths due to lung cancer as a result of HBV and HPV infections. With prevention and early treatment, cancer rate can be reduced.
Cancer prevention strategies include:
- avoiding the above-mentioned risk factors as much as possible
- vaccinating against human papilloma virus (HPV) and hepatitis B (HBV)
- controlling occupational hazards
- reducing the exposure to sunlight non-ionizing radiation (UV)
- reducing the exposure to ionizing radiation (occupational or medical diagnosis scanning)

Among the regions under study, the highest mortality and DALY rates due to cancer are related to America, and the lowest rates belong, respectively, to Egypt and Iraq. Overall, DALY and mortality rates in the world have been declining, a trend which is also evident in Iran and America. However, both DALY and mortality rates in Egypt and Iraq follow an ascending trend. In addition, Pakistan initially had an upward trend, and afterward, it experienced a decreasing trend. In contrast, Turkey started with a declining trend followed by an increasing one (Figure 2.4).

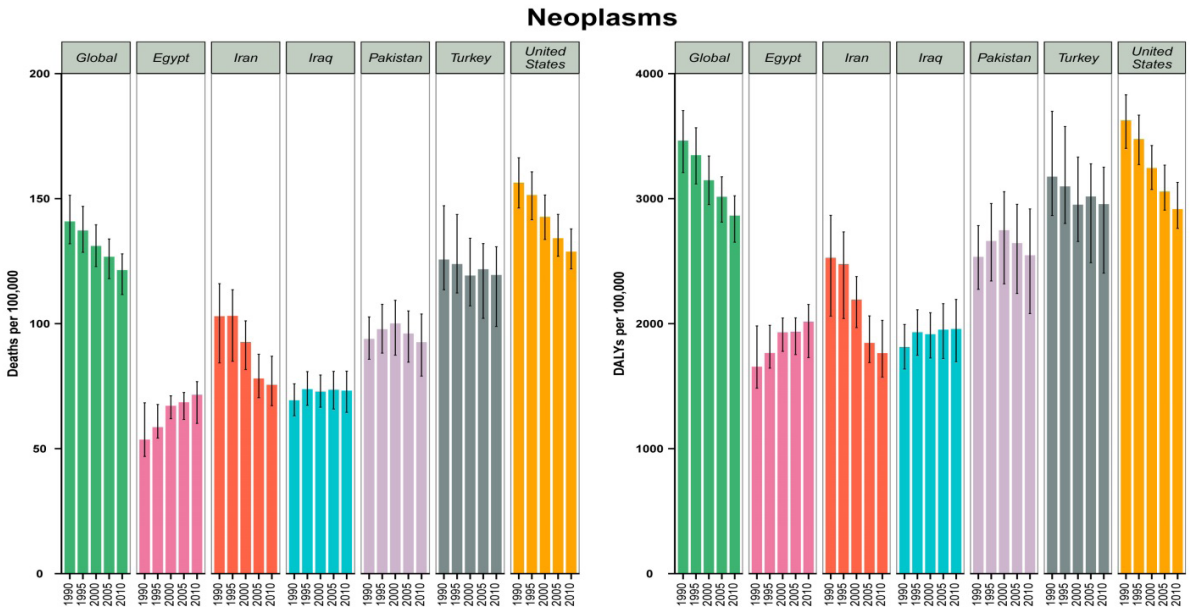


Figure 2.4: DALY and mortality rates per 100000 people due to cancer in the world, Iran, and five other countries from 1990 to 2010

2.2.3. Chronic Respiratory Diseases

Chronic Respiratory diseases are a set of diseases that impose limitations on air exchange in the lung. A major portion of such diseases include chronic obstructive pulmonary diseases or COPD. The familiar words "chronic bronchitis" and "emphysema" are not used anymore, and, now, the term COPD is used in the diagnosis.

The main risk factors of chronic Respiratory diseases are:

- Smoking
- Indoor air pollution (such as the use of biological fuels used for cooking and heating)
- Air pollution
- Occupational dust and chemicals (vapors, irritants, fumes)

According to the latest estimates by the World Health Organization, 64 million people are currently diagnosed with COPD, and in 2005, three million people died of COPD, which, overall, accounts for 5% of all deaths in that year. The World Health Organization predicts that COPD will be the third leading cause of death in 2030. Nevertheless, even in developed countries, collecting accurate epidemiological data on COPD is difficult and expensive.

About 90% of deaths due to COPD occur in low- to middle-income countries. In the past, COPD was more common among men, but the disease currently affects men and women equally because of the increase in smoking rate for women in high-income countries as well as the higher risk of their exposure to air pollution inside the house (such as biological fuels used for cooking and heating) in low-income countries. In 2002, COPD was the fifth leading cause of death; it is estimated that, over the next 10 years, the number of deaths due to COPD will increase by more than 30% unless urgent measures to reduce risk factors of the disease, especially alcohol consumption, are taken. The estimates suggest that COPD will be the third cause of death in the world in 2030. The objectives of COPD management are:

- Prevention of disease progression
- Relieving symptoms
- Improving exercise tolerance
- Improving health status
- Prevention and treatment of complications
- Prevention of disease severity

Among the regions under study, the highest DALY and mortality rates due to obstructive lung diseases belong to Pakistan, and the lowest ones are for Iran. Overall, DALY and mortality rates in the world have been decreasing; a trend which is also evident in Egypt and Pakistan. There is a slightly downward trend in Iran and Iraq as well. However, the trend for both DALY and mortality rates in America and Turkey were initially ascending, and then, it has followed a downward pattern (Figure 2.5).

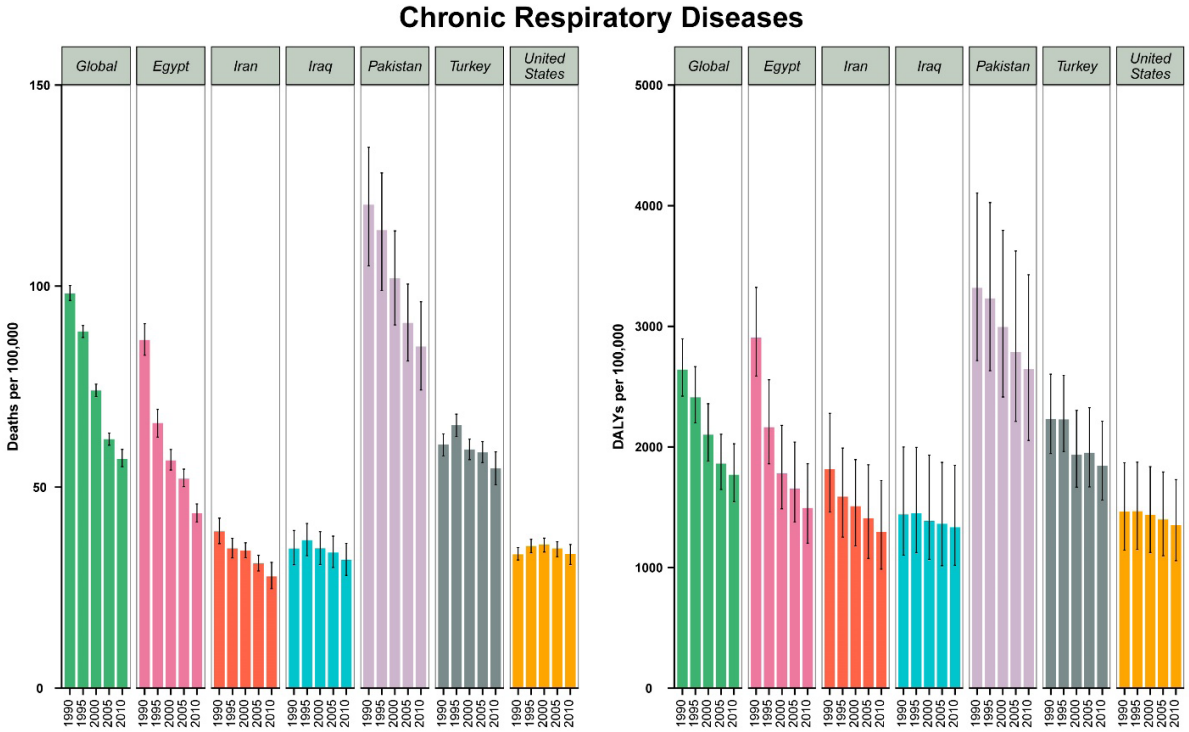


Figure 2.5: DALY and mortality rates per 100,000 people on Chronic Respiratory Diseases in the world, Iran, and five other countries from 1990 to 2010

2.2.4. Diabetes

Type II diabetes, which is generally the result of body weight and physical inactivity, affect 90% of people with diabetes in the world. Diabetes increases the risk of heart diseases and stroke. A study conducted in some countries indicated that 50% of people with diabetes die of cardiovascular diseases. The aim of the World Health Organization is to support effective measures for the surveillance, prevention, and control of diabetes and its complications in low- and middle-income countries.

Among the regions under study, the highest DALY and mortality rates due to diabetes belong to Iraq. Overall, DALY and mortality rates have followed an upward trend in the world; a trend which is also evident in Iraq, Pakistan, and America. Nevertheless, the trend is downward in Egypt for both DALY and mortality rates. In addition, Iran and Turkey initially had a descending trend for both rates, and afterward, the trend has been downward (Figure 2.6).

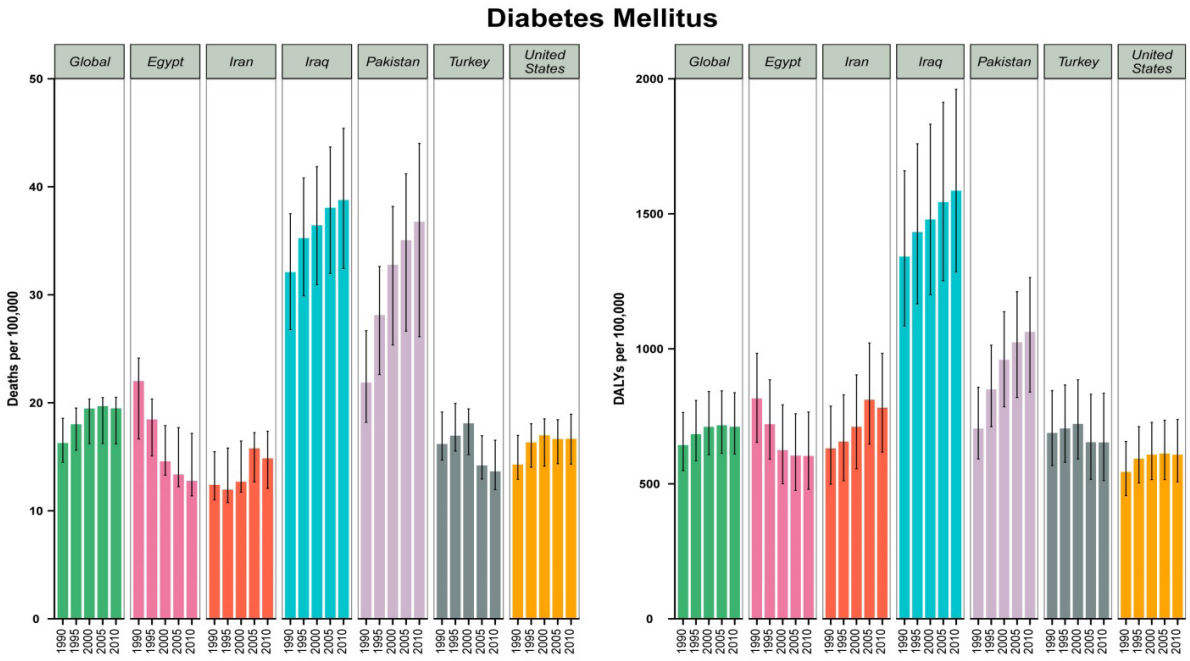


Figure 2.6: DALY and mortality rates per 100,000 people due to diabetes in the world, Iran, and five other countries from 1990 to 2010

2.3. Other Important Non-communicable Diseases

2.3.1. Kidney Disease

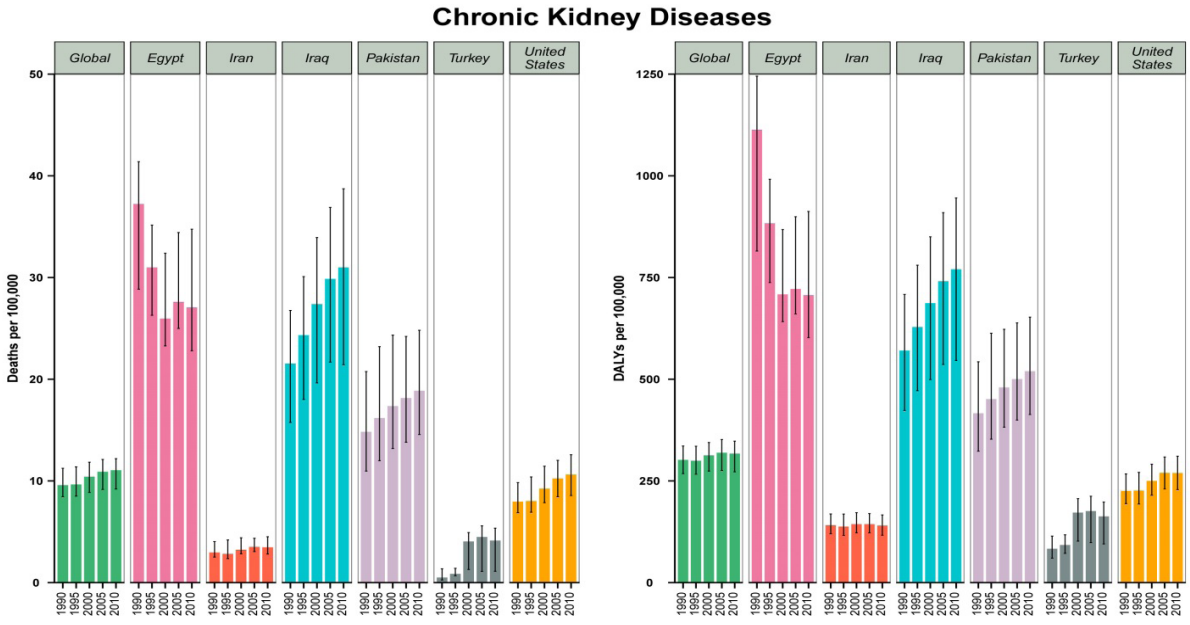


Figure 2.7: DALY and mortality rates per 100,000 people due to chronic kidney diseases in the world, Iran, and five other countries from 1990 to 2010

2.3.2. Mental diseases

Among the regions under study, the highest DALY rate due to diseases associated with anxiety belongs to Turkey, and the second highest is for Iran. Overall, DALY rates in the world have had a steady trend, which is also evident in Egypt, Iran, Iraq, and Pakistan. In addition, Turkey and America had a slight upward trend until 2005, while this rate declined in 2010 (Figure 2.8).

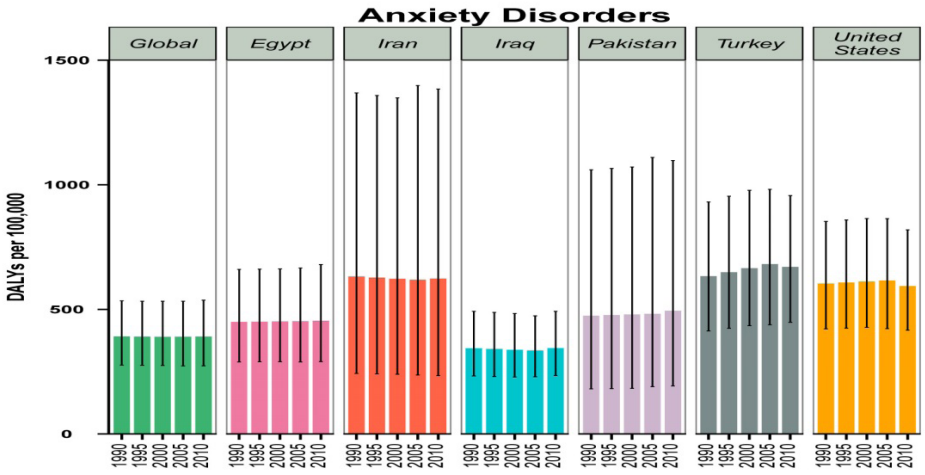


Figure 2.8: DALY rate per 100,000 people due to anxiety in the world, Iran, and five other countries from 1990 to 2010

Among the regions under study, the highest and the lowest DALY rates due to major depressive disor-

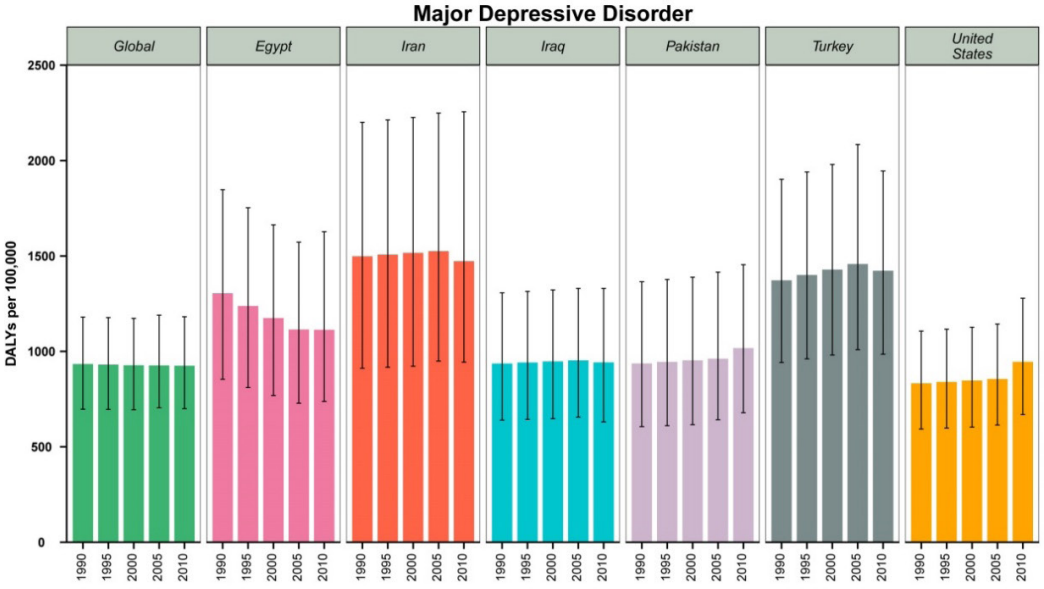


Figure 2.9: DALY rate per 100,000 people due to major depressive disorder in the world, Iran, and five other countries from 1990 to 2010

2.3.3. Injuries

Among the regions under study, the highest DALY and mortality rates due to road injuries belong to Iran. These rates initially followed an upward trend during the early years of the study, and afterward, they decreased. Overall, DALY and mortality rates in the world in the early years of the study showed a slight upward trend, which is also evident in Iran. In addition, Iraq, Pakistan, and America have an upward trend. For both DALY and mortality rates, Turkey has witnessed an upward followed by a downward trend (Figure 2.10).

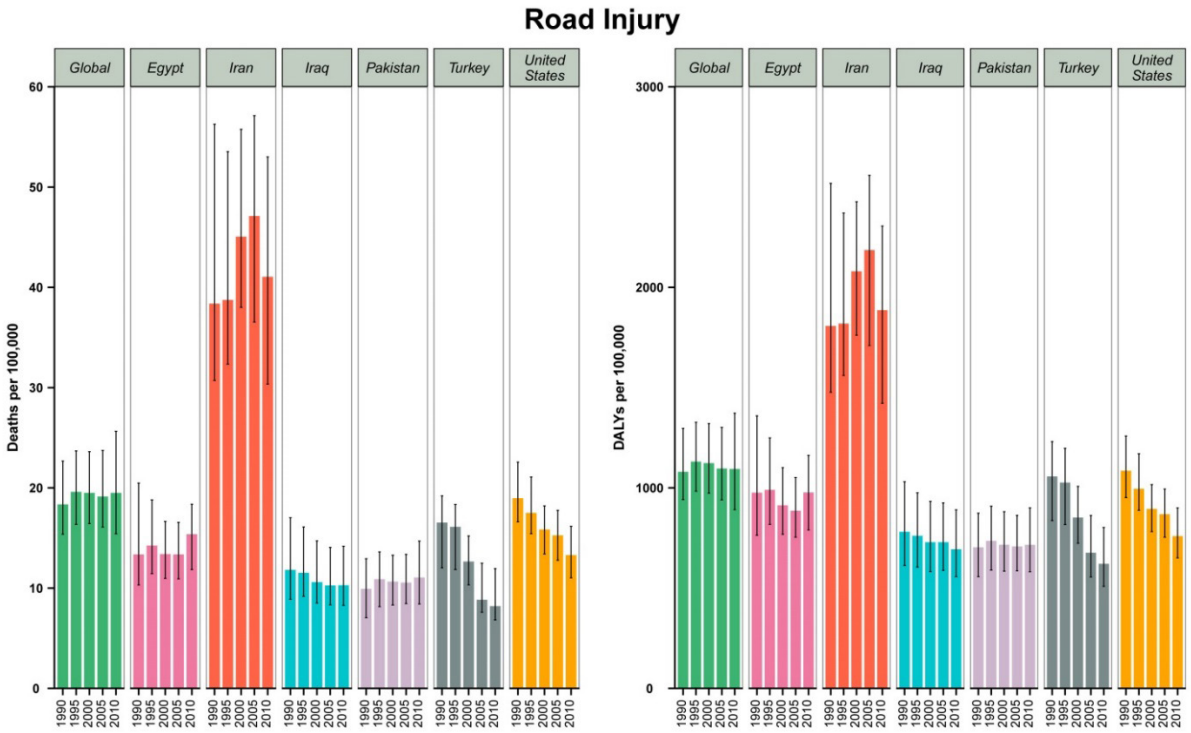


Figure 2.10: DALY and mortality rates per 100000 people due to road injuries in the world, Iran, and five other countries from 1990 to 2010

The highest mortality rates due to road accidents in 2005 have been observed for both men and women. The biggest share in the mortality rates due to road accidents is related to motor vehicles with three or more wheels (Figure 2.11).

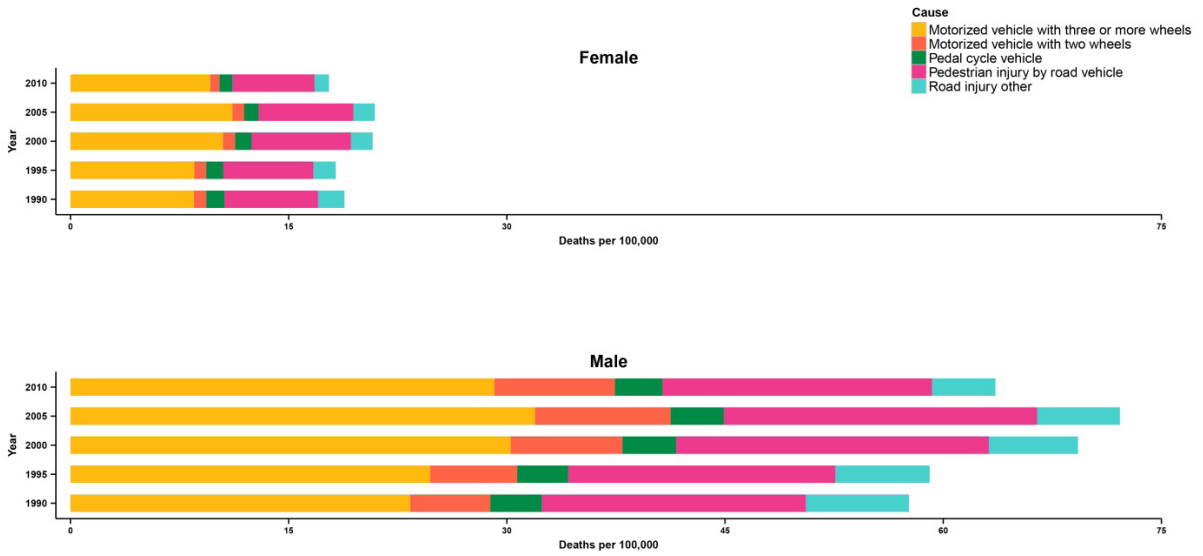


Figure 2.11: Mortality rate per 100,000 people due to road accidents in Iran from 1990 to 2010 (in terms of gender)

Similar to the mortality rate, the highest DALY rate due to road accidents in 2005 is for both males and females, and the major share in DALY rates due to road accidents is related to motor vehicles with three or more wheels (Figure 2.12).

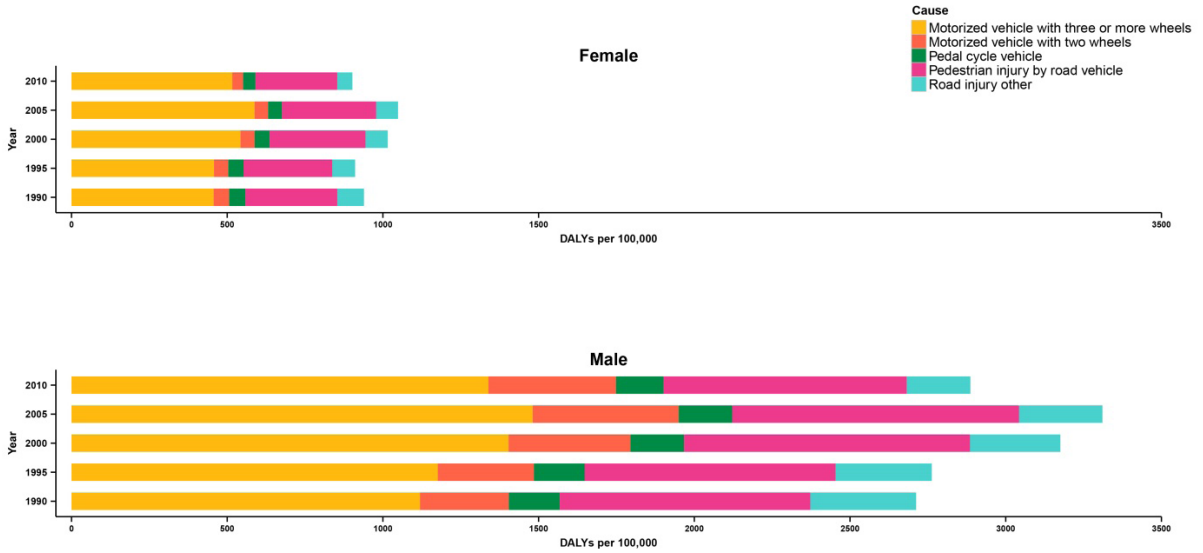


Figure 2.12: DALY rate per 100,000 people due to road accidents in Iran from 1990 to 2010 (in terms of gender)

2.3.4. Violence

In general, DALY and mortality rates due to self-harm and individual violence are very high in the world. Among the regions under study, the highest rates belong to America, which experiences a decreasing trend. Unlike in America, DALY and mortality rates follow an upward trend in Iraq (Figure 2.13).

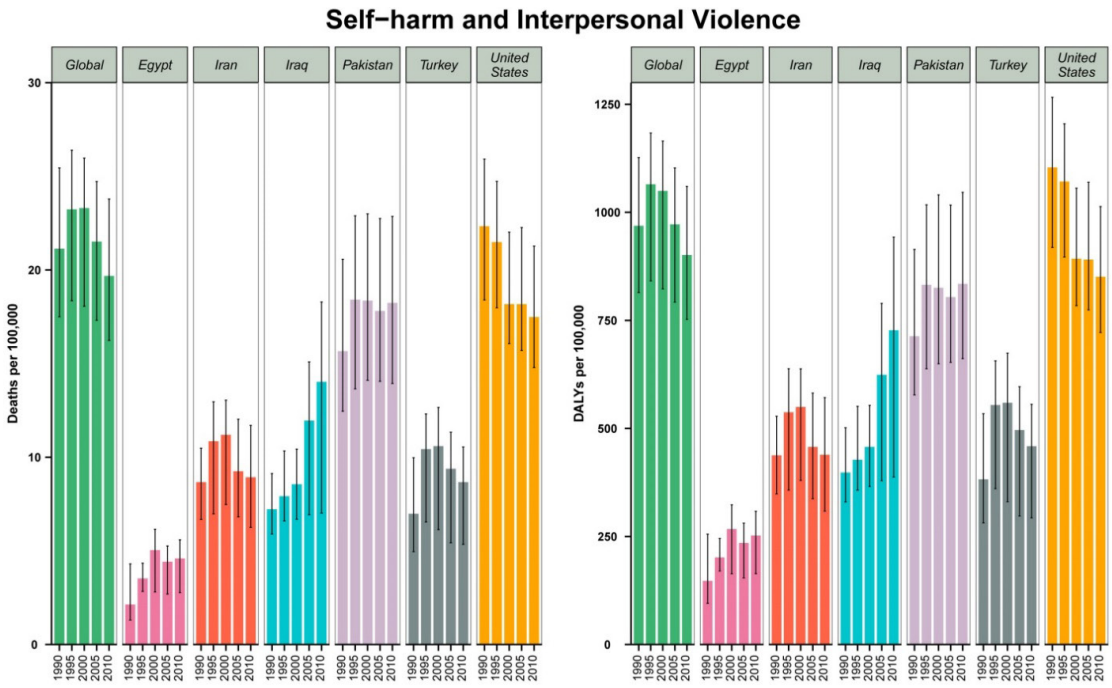


Figure 2.13: DALY and mortality rates per 100,000 people due to self-harm and individual violence in the world, Iran, and five other countries from 1990 to 2010

2.3.5. Sense organ diseases

Among the regions under study, the highest and the lowest DALY rates due to sense organ diseases belong to Egypt and America, respectively. In general, DALY rates in the world have seen a decreasing trend; a trend that also exists in Egypt, Iran, Pakistan, Turkey, and America. Among the countries under study, Iraq is the only one following an ascending trend (Figure 2.14).

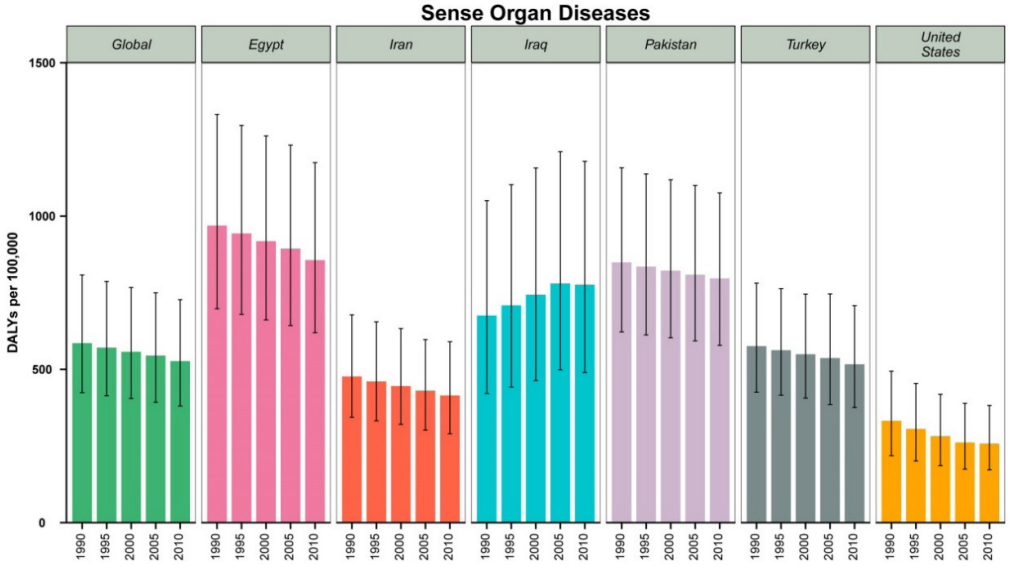


Figure 2.14 DALY rate per 100,000 people due to sense organ diseases in the world, Iran, and five other countries from 1990 to 2010

2.3.6. Low Back pain

Among the regions under study, the highest DALY rate due to low back pain is for Iran. Overall, DALY rates in the world follow a slightly downward trend; a trend which is most evident in Egypt, Iran, Turkey, and America and has been constant in Iraq and Pakistan. However, in 2010, Iraq's DALY rate experienced a relative decline (Figure 2.15).

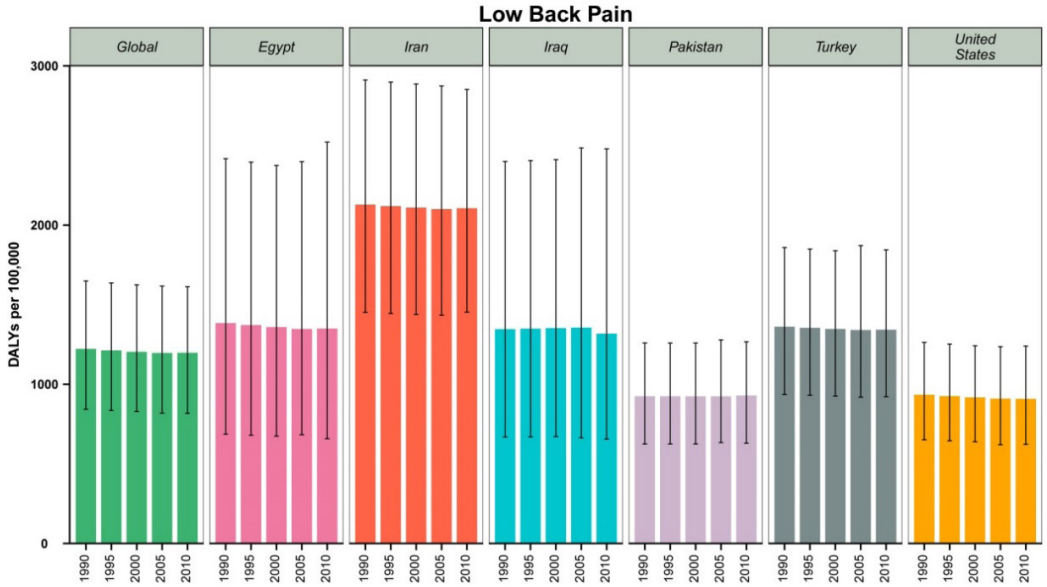


Figure 2.15: DALY rate per 100,000 people due to low back pain in the world, Iran, and five other countries from 1990 to 2010

2.3.7. Alcohol use disorders

Generally, DALY and mortality rates due to disorders caused by alcohol use are very high in the world. Among the regions under study, the highest rates belong to America. DALY and mortality rates in the world had an upward trend until 1995, but they began to decline afterward (Figure 2.16).

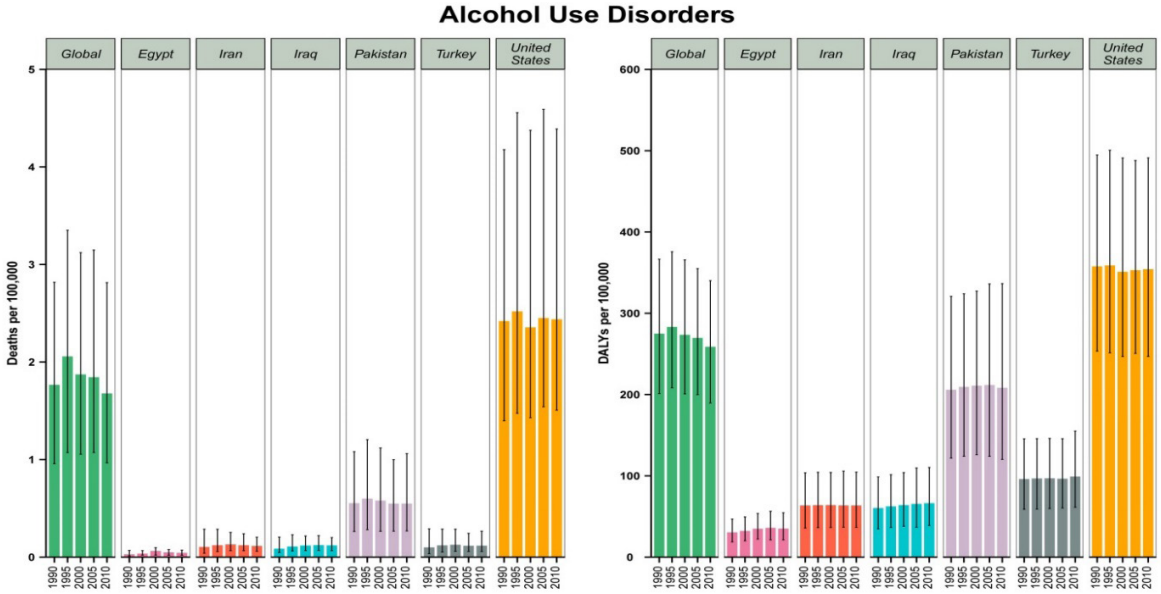


Figure 2.16: DALY and mortality rates per 100,000 people due to Alcohol use disorders in the world, Iran, and five other countries from 1990 to 2010 (in terms of age groups)

2.3.8. Drug use disorders

Among the regions under study, the highest DALY and mortality rates due to disorders caused by drug use belong to America. Similar to the rates for all the countries under study, DALY and mortality rates in the world follow an ascending trend (Figure 2.17).

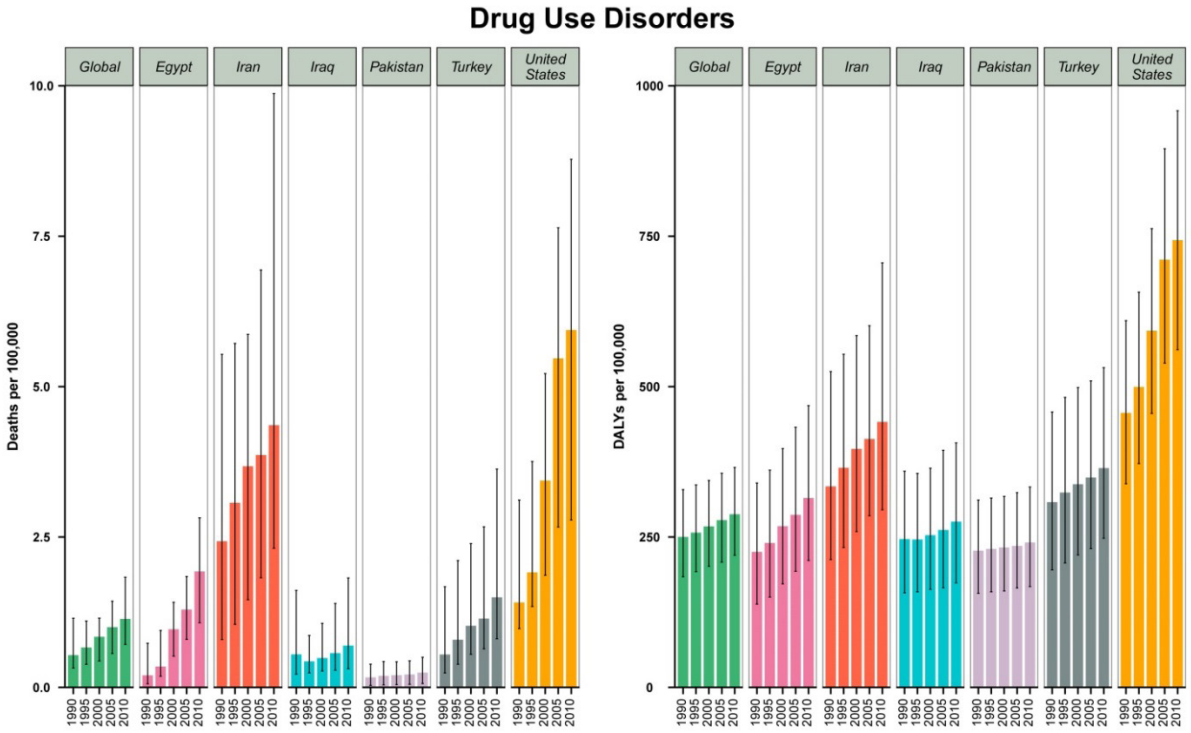


Figure 2.17: DALY and mortality rates per 100,000 people due to drug use disorders in the world, Iran, and five other countries from 1990 to 2010 (in terms of age groups)

Chapter 3

Risk Factors of Non-communicable Diseases in Iran

Key Points

- Iran, when compared with the world, reportedly has the highest rate with respect to factors related to nutrition and insufficient physical activity.
- As for the risk factor of smoking and tobacco use, Iran has a lower rate in comparison to the world.
- The risk factors of insufficient physical activity, smoking, and tobacco use show a downward trend in Iran and in the world.
- The highest mortality rate, among the five risk factors, is also related to nutritional factors.

Figure 3.1 shows twenty main risk factors of non-communicable diseases based on DALY rates from 1990 to 2010 in Iran and in the world.

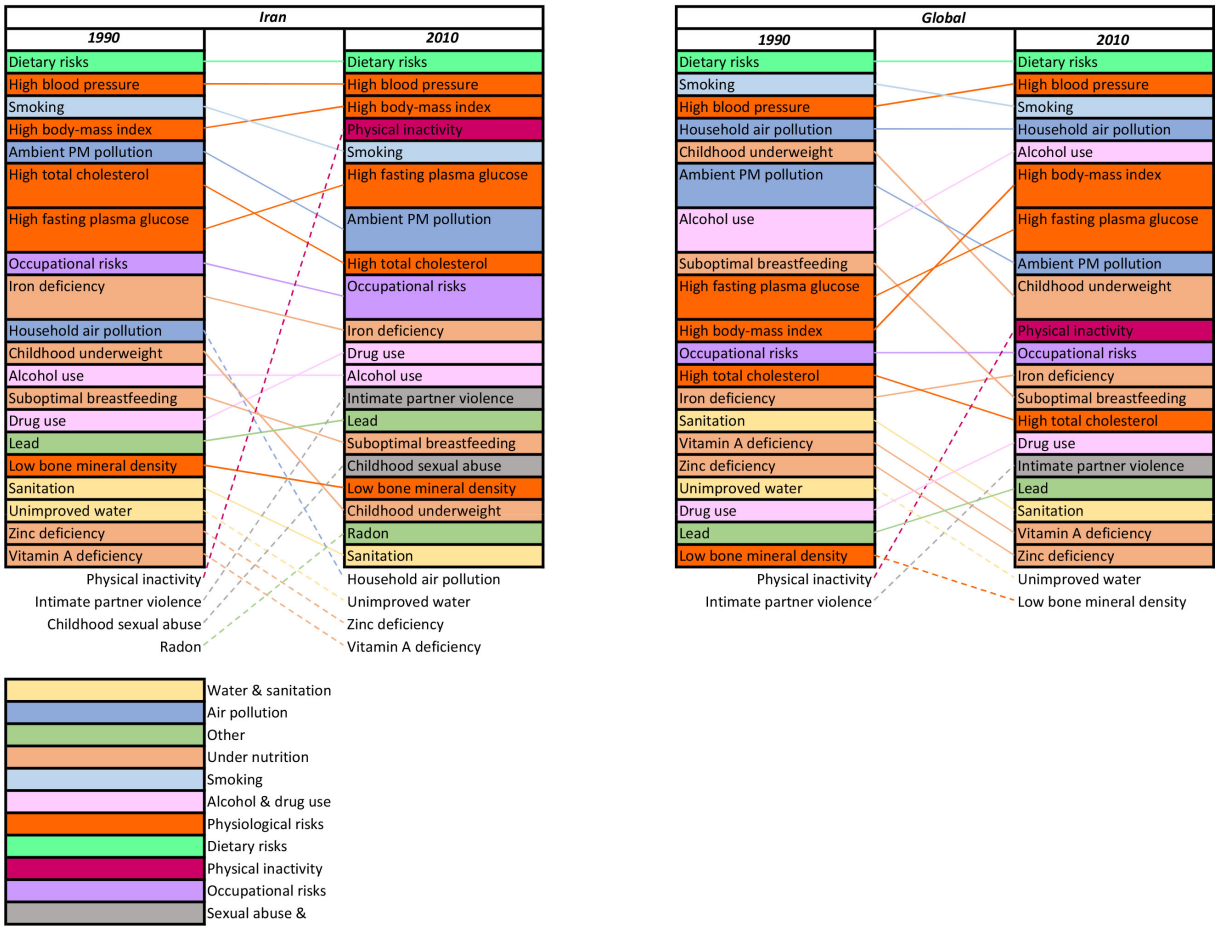


Figure 3.1: changes in twenty main risk factors of NCDs in Iran and in the world from 1990 to 2010

Among five risk factors, the highest DALY rate is related to nutritional factors; Iran, when compared with the world, reportedly has the highest rate with respect to factors related to nutrition and insufficient physical activity. As for the risk factor of smoking and tobacco use, Iran has a lower rate in comparison to the world. Nutritional factors in Iran and in the world show a rising trend until 1995, and afterward, the trend has been decreasing. The risk factors of insufficient physical activity, smoking, and tobacco use show a downward trend in Iran and in the world. However, alcohol consumption shows a steady trend in Iran and in the world (Figure 3.2).

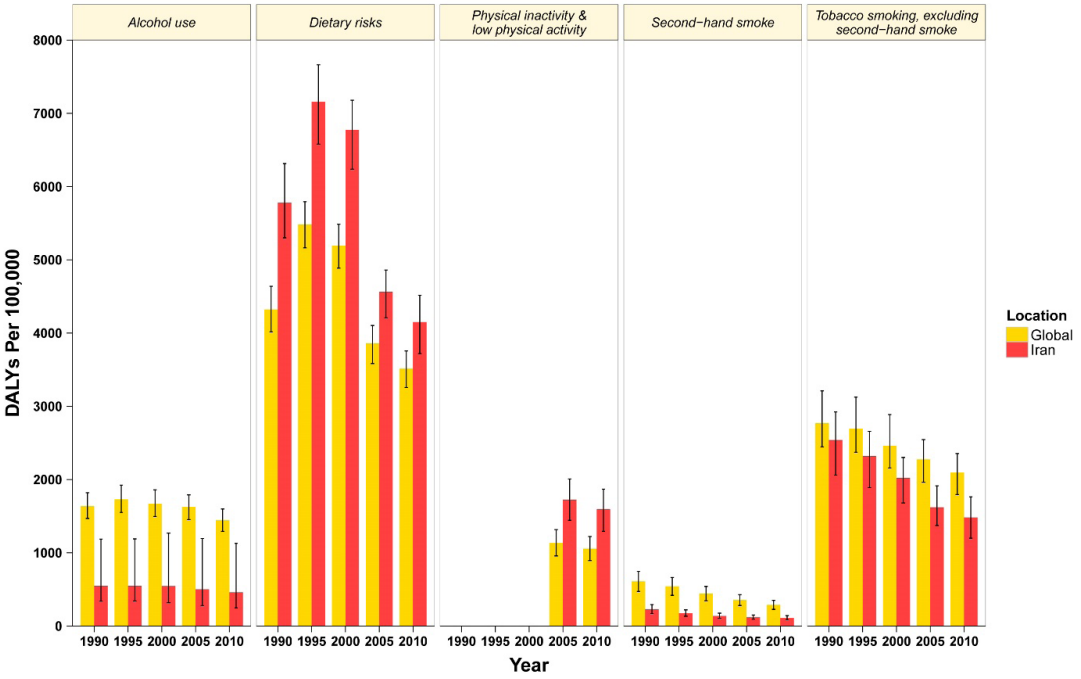


Figure 3.2: DALY rates per 100,000 people due to five main risk factors from 1990 to 2010 in Iran and in the world

Similar to that of DALY, the highest mortality rate, among the five risk factors, is also related to nutritional factors; in all the years under study, Iran, compared with the world, has always witnessed a higher rate in terms of factors related to nutrition and insufficient physical activity. In contrast, Iran has a lower rate with respect to the factors of smoking and tobacco use. Nutritional factors in Iran and in the world showed a rising trend until 1995, and afterward, the trend has been downward. Risk factors of insufficient physical activity, smoking, and tobacco use in Iran and in the world have a downward trend. Like that of DALY, the mortality rate related to alcohol consumption shows a relatively consistent trend in Iran and in the world; nonetheless, this rate is lower in Iran in comparison to the global average (Figure 3.3).

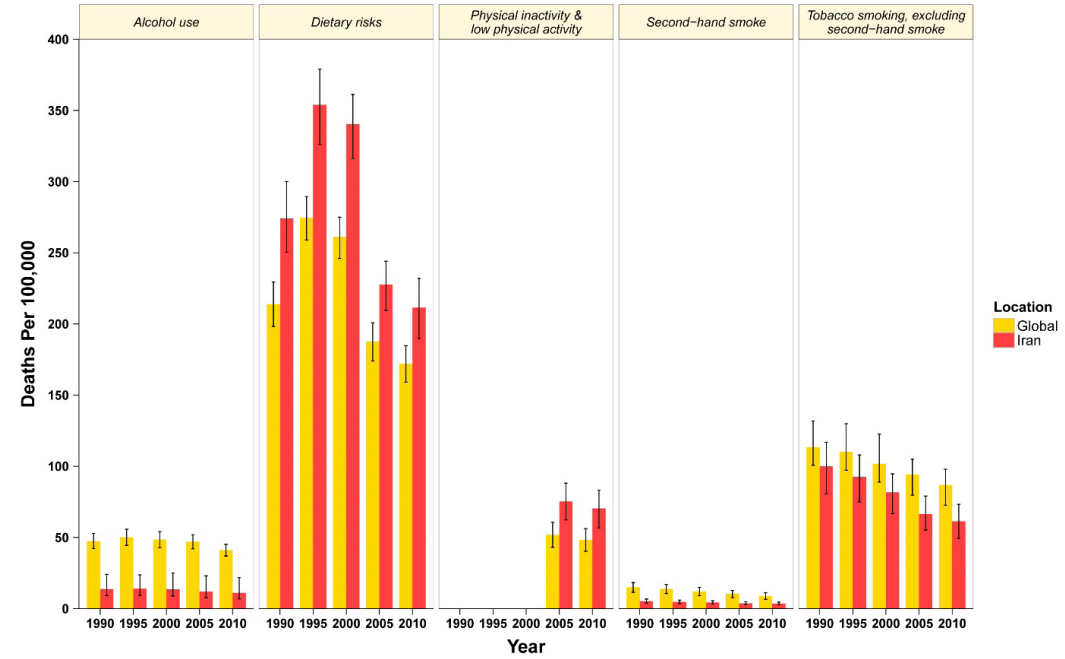


Figure 3.3: Mortality rates per 100,000 people due to five main risk factors from 1990 to 2010 in Iran and in the world

3.1. Main (Behavioral) Risk Factors of Non-communicable Diseases

3.1.1. Unhealthy Diet

About 80% of the world's population do not consume the five recommended units fruit and vegetables on a daily basis. Fourteen of the globally recommended dietary habits for controlling non-communicable diseases include: seafood (Omega-3 fatty acids), no consumption of trans fats, consumption of whole grains (carbohydrates quality) and fruit and vegetables, no consumption of saturation fats, use of nuts and grains, low salt consumption (high blood pressure), smaller meals, and low consumption of beverages.

Among three age groups, the highest DALY rate due to nutritional factors belongs to the age group of 70 years and older; in all the years under study, Iran has shown a higher rate compared with the world. Moreover, in Iran and in the world, for all age groups, there is an upward trend until 1995 and a downward one afterward (Figure 3.4).

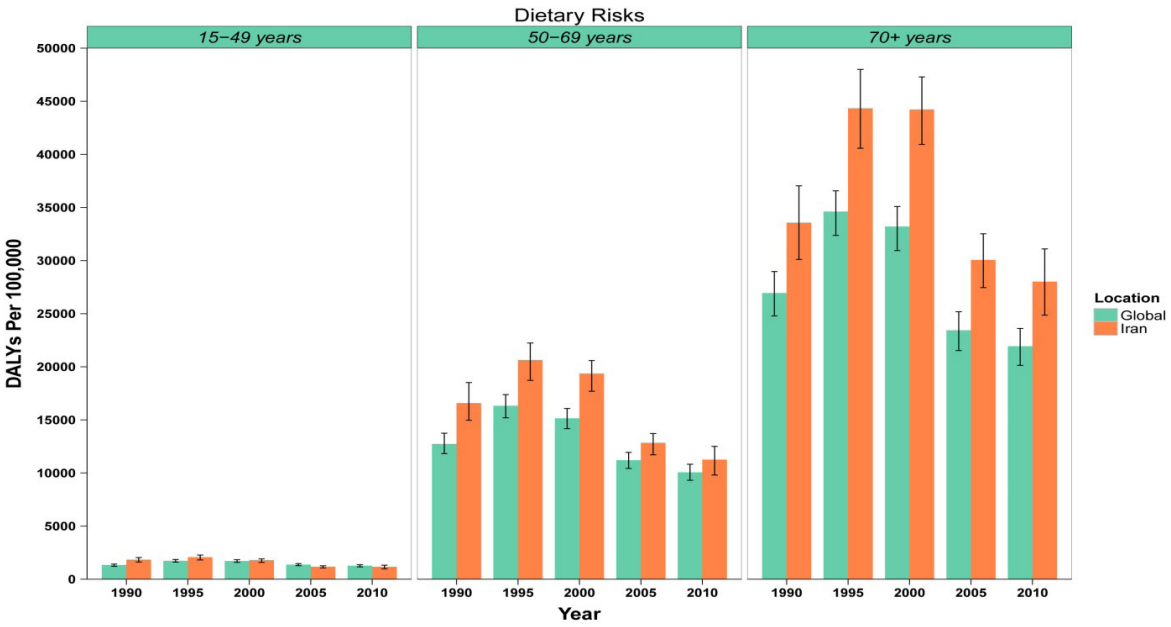


Figure 3.4: DALY rate per 100,000 people due to nutritional risk factors from 1990 to 2010 in terms of age groups in Iran and in the world

Among three age groups, like DALY rate, the highest mortality rate due to nutritional factors belongs to the age group of 70 years and older; in all the years under study; for this age group, Iran has a higher rate than the world. Moreover, for all age group, the world has experienced a rising trend until 1995 and a falling one following that year. In Iran, there has been an upward trend until 1995 for age groups of 15 to 49 and 50 to 69 years and until 2000 for the age group of 70 years and older; after 2000, the rates have been declining (Figure 3.5).

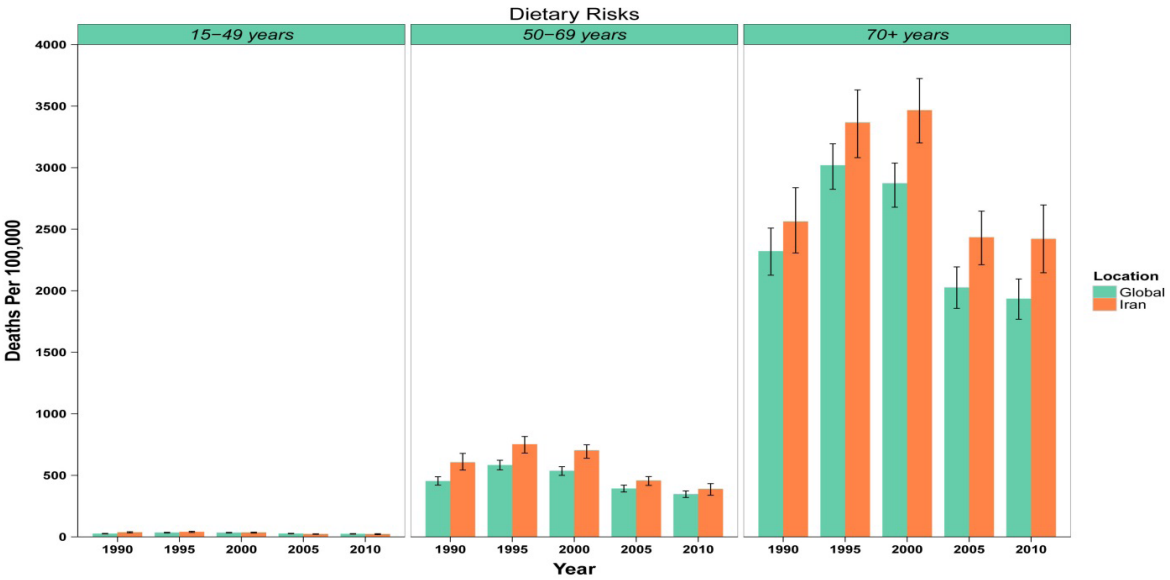


Figure 3.5: Mortality rate per 100,000 people due to nutritional risk factors from 1990 and 2010 in terms of age groups in Iran and in the world

Among the countries under investigation, Iran has the highest mortality rate due to high sodium consumption in the world. However, the mortality rates in Egypt, Iraq, and Turkey along with that of Iran are above the global average. Based on the reported results, the mortality rate due to high levels of sodium consumption in the United States of America is lower than other countries under study and even lower than the global average rate. As for DALY rates, the countries under study including Iran exhibit a pattern similar to the mortality rate pattern. It is worth mentioning that DALY and mortality rates due to high sodium consumption in Iran has shown a significant decline from 2000 onward (Figure 3.6).

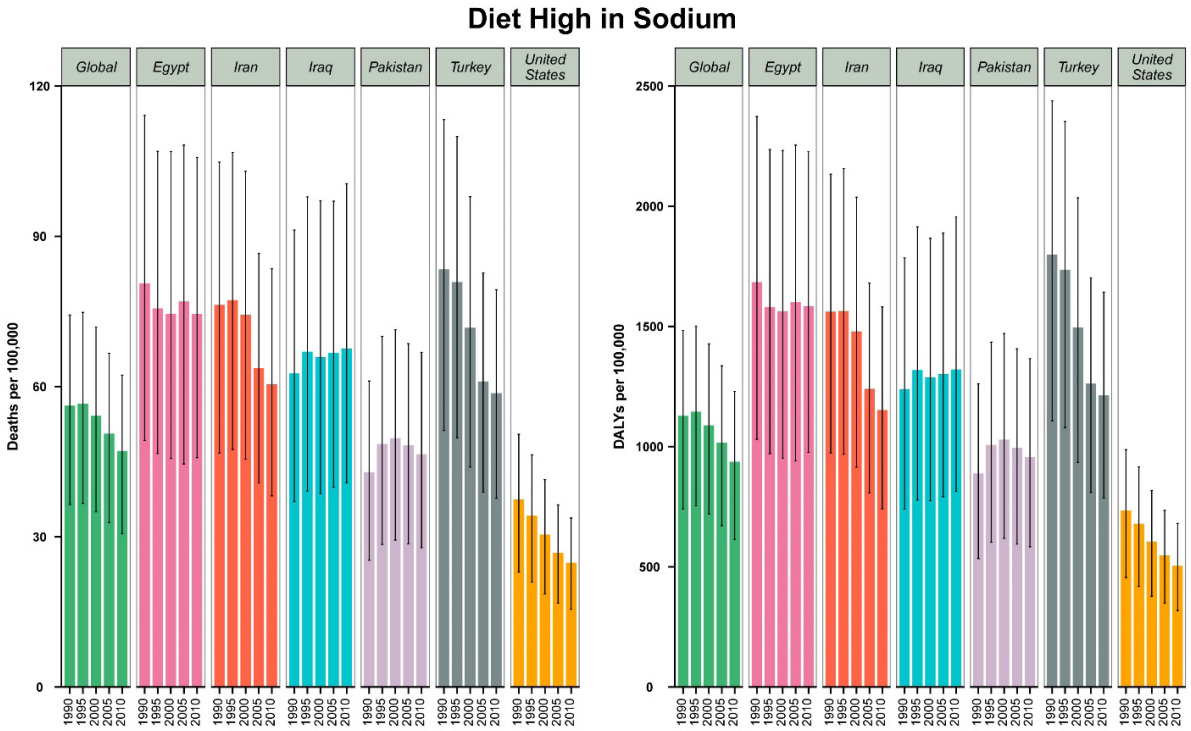


Figure 3.6: DALY and mortality rates per 100,000 people due to high sodium consumption from 1990 to 2010 in Iran and in the world

Turkey's mortality rate due to low fruit consumption in 1990 was higher than those for the other countries under study and more than the global average rate; nevertheless, it has significantly declined in the years following 1990. Iran's mortality rate due to low fruit consumption has shown a similar pattern to that of the world so that there was an increase until 1995 and then a decline in the mortality rate. As for DALY rate, during the course of time under study, the pattern of changes was similar to that of the mortality rate. Fortunately, mortality and DALY rates related to this issue in Iran were below the global average in 2010 (Figure 3.7).

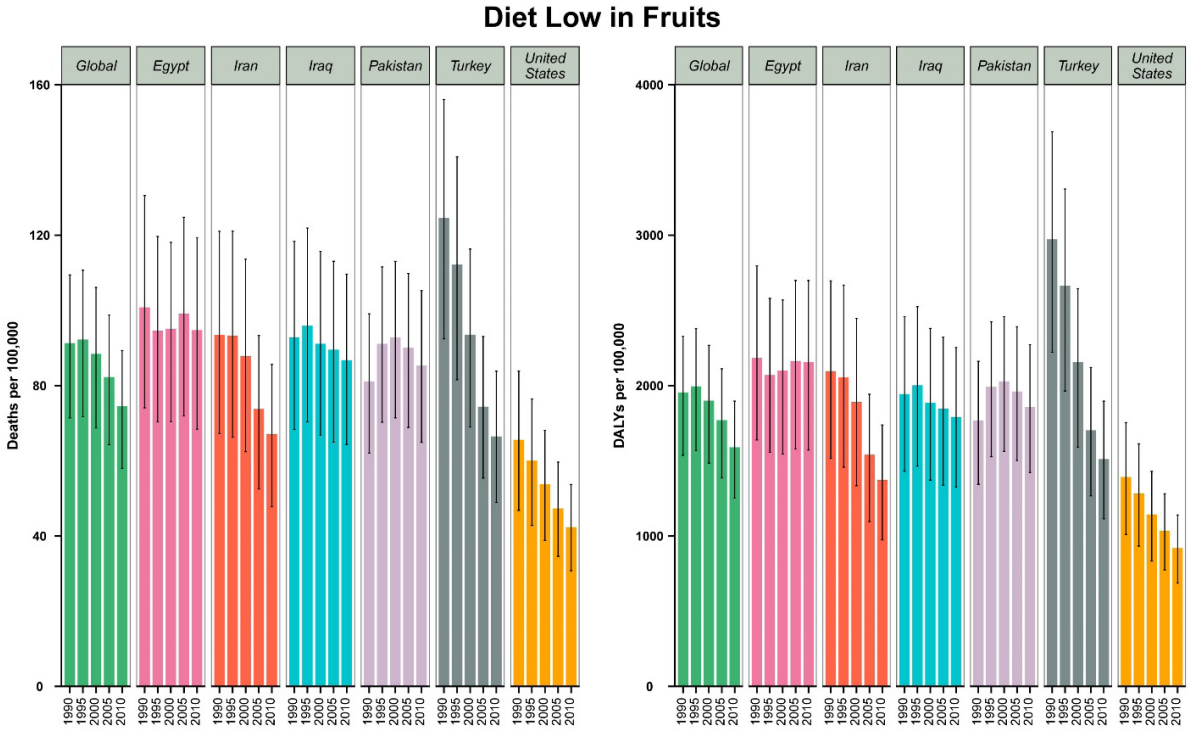


Figure 3.7: DALY and mortality rates per 100,000 people due to low fruit consumption from 1990 to 2010 in Iran and in the world

In 1990, Iran's mortality rate due to low consumption of vegetables has been higher than that of other countries under study and the global average rate. Among the countries under study, Pakistan has had the highest mortality rate due to the above factor during the years of the study. However, over time, a significant reduction in Iran's mortality rate has been observed, but the rate was still above the global average in 2010. As for DALY rate, the evidence suggests a pattern similar to that of the mortality rate due to the aforementioned factor (Figure 3.8).

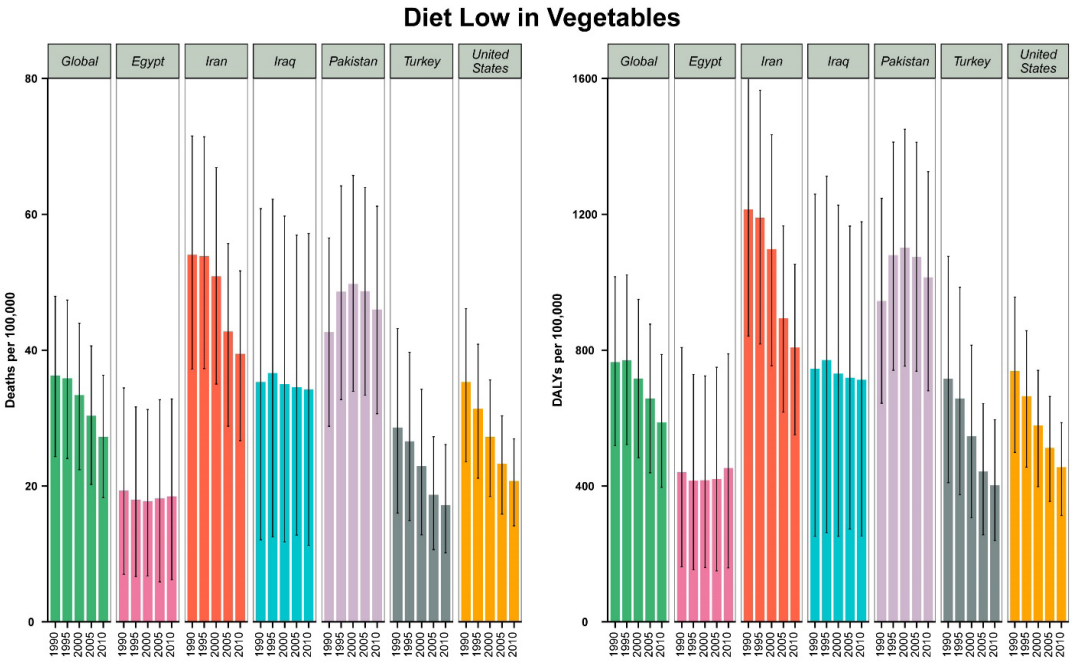


Figure 3. 8: DALY and mortality rates per 100,000 people due to low consumption of vegetables from 1990 to 2010 in Iran and in the world

Among the countries under study, Egypt and Iraq show ascending mortality rates due to low consumption of whole grains from 1990 to 2010. However, Egypt and Turkey have the highest mortality rates when compared with the other countries under study as well as the global average rate. As for Iran, there has been an increase until 2000 and, afterward, a significant decrease in the mortality rate due to the above-mentioned factor. Nonetheless, Iran's mortality rate is still above the global average. DALY rate due to low consumption of whole grains, like all other factors during the years of study, has followed a similar pattern as that of the mortality rate (Figure 3.9).

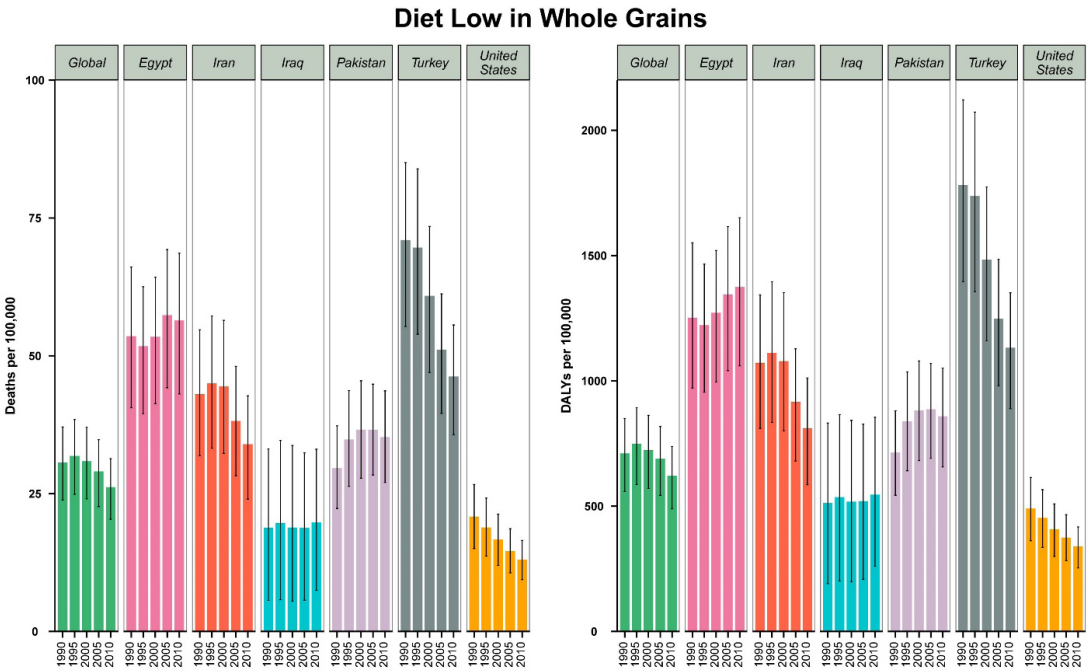


Figure 3.9: DALY and mortality rates per 100,000 people due to low consumption of whole grains from 1990 to 2010 in Iran and in the world

Egypt, Iran, and Iraq have the highest mortality rates due to low consumption of polyunsaturated fatty acids. Pakistan's mortality rate has shown to be even below the global average, which is considerable and noteworthy. Like for the other factors, the pattern of changes in DALY rates for the consumption of unsaturated fatty acids was similar to that of the mortality rate (Figure 3.10).

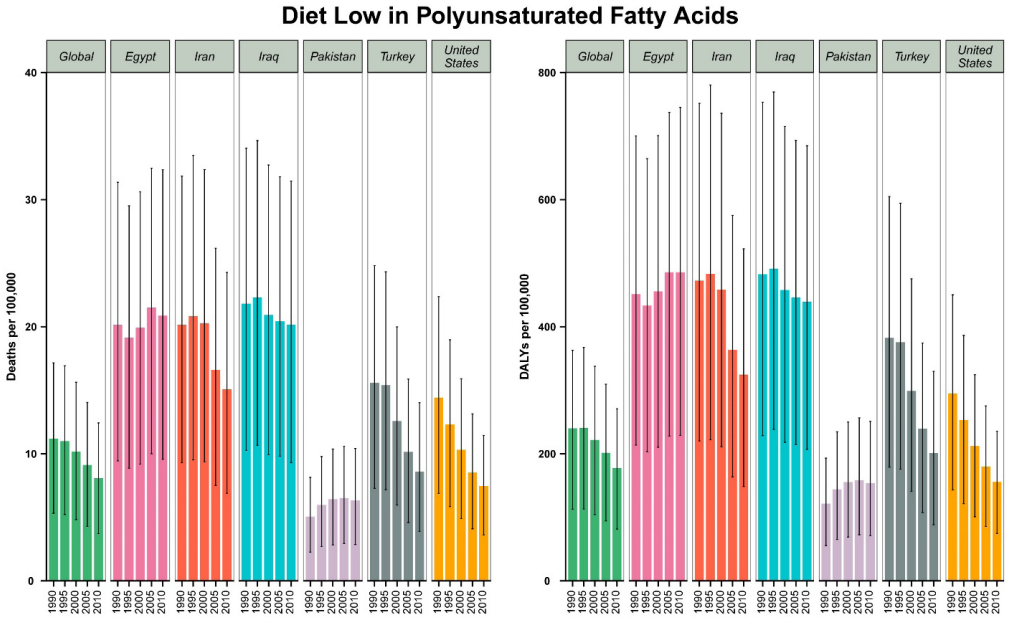


Figure 3.10: DALY and mortality rates per 100,000 people due to low consumption of polyunsaturated fatty acids from 1990 to 2010 in terms of age groups in the world, Iran, and five other countries

Among the countries under study, the mortality rates due to the consumption of trans fatty acids in Egypt and Pakistan are the highest from 1990 to 2010. After Egypt and Pakistan, the highest mortality rate due to this factor belongs to Iran, which has experienced an upward trend from 1990 to 2000 and, afterward, a downward trend. Except for Turkey, all other countries under study have had mortality rates above the global average. The pattern of changes in DALY rates from 1990 to 2010 is similar to the patterns of mortality rates in the world and the countries under study (Figure 3.11).

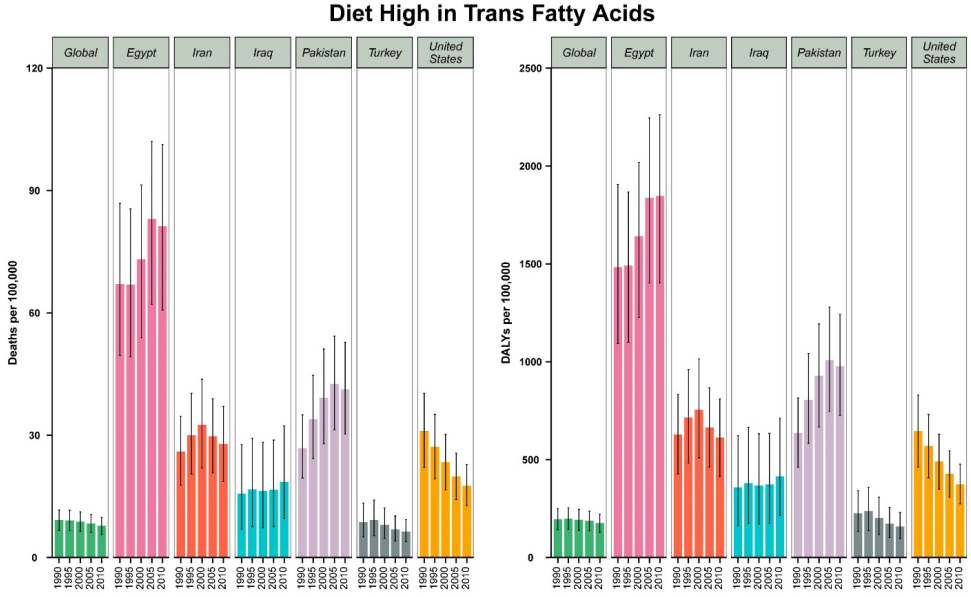


Figure 3. 11: DALY and mortality rates per 100,000 people due to high consumption of trans fatty acids from 1990 to 2010 in terms of age groups in the world, Iran, and five other countries

3.1.2. Physical low and inactivity

Among the regions under study, the highest and lowest mortality and DALY rates related to the risk factor of insufficient physical activity belong, respectively, to Iraq and America. Overall, mortality and DALY rates in the world, like all the countries under study, exhibit a downward trend (Figure 3.12).

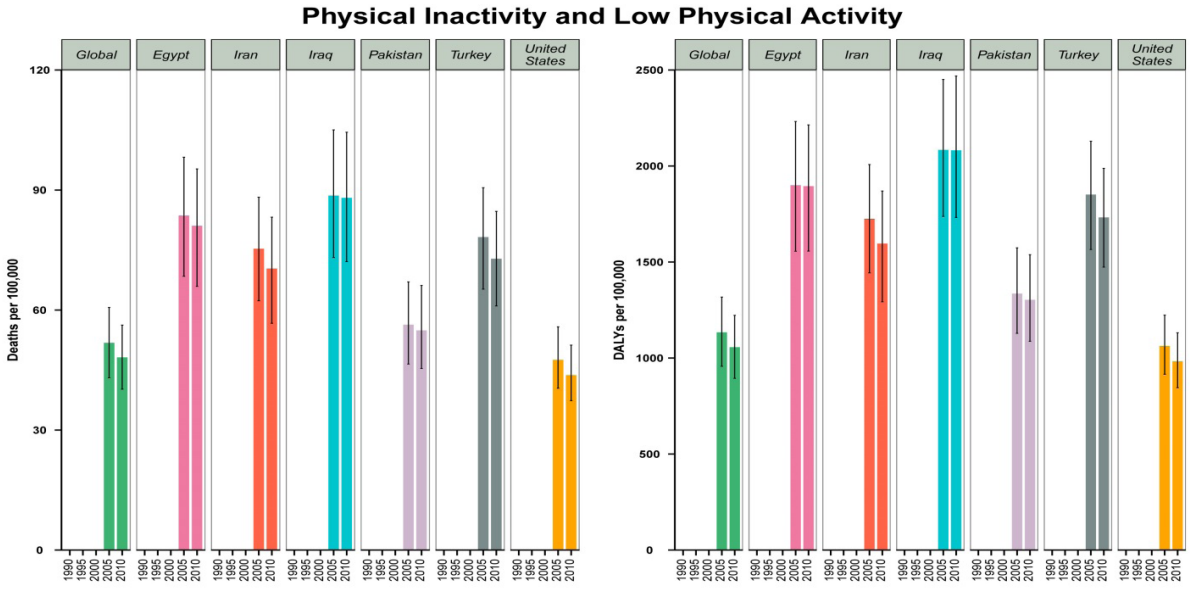


Figure 3.12: DALY and mortality rates per 100,000 people due to insufficient physical activity from 1990 to 2010 in terms of age groups in the world, Iran, and five other countries

Among three age groups, the highest DALY rate due to the risk factor of insufficient physical activity belongs to the age group of 70 years and older; in all the years under study, for this age group, Iran has had the highest rate in comparison to that of the world. Iran's DALY rates for all age groups are also higher when compared with those of the world. DALY rate for the age group of 50 years and older in 2010 is lower compared with that in 2005; in contrast, the rate for the age group of 15 to 49 years in 2010 is higher than the rate in 2005 (Figure 3.13).

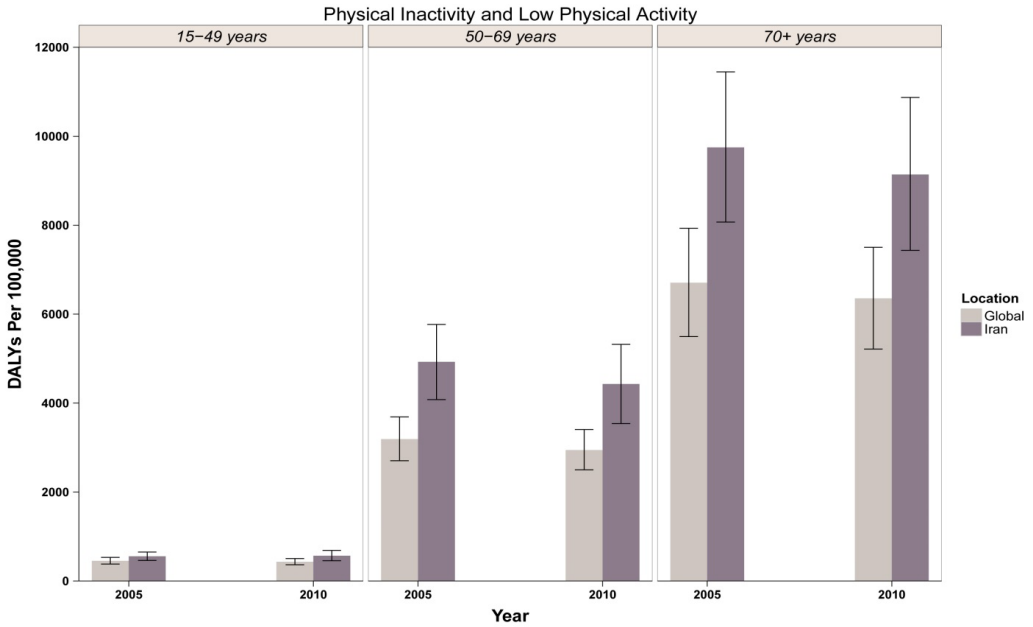


Figure 3.13: DALY rate per 100,000 people due to the risk factor of insufficient physical activity in 2005 and 2010 in terms of age groups in Iran and in the world

Among three age groups, the highest mortality rate due to the risk factor of insufficient physical activity is related to the age group of 70 years and older; in all of the years under study, for this age group, Iran has had the highest rate in comparison to that of the world. Iran's mortality rates for all age groups are also higher when compared with those of the world. The mortality rate for the age group of 50 years and older in 2010 is lower compared with that in 2005 (Figure 3.14).

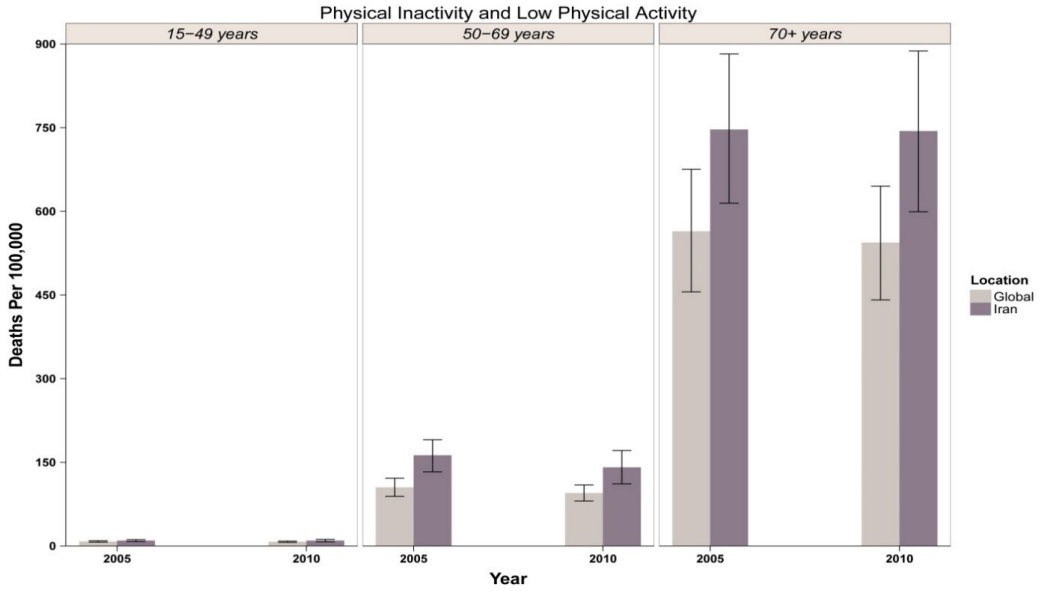


Figure 3.14: Mortality rate per 100,000 people due to the risk factor of insufficient physical activity from 2005 to 2010 in terms of age groups in Iran and in the world

3.1.3. Tobacco use

Each year, tobacco use leads to at least one million deaths in the world. All over the world, there are about 250 million smokers as well as the same number of people chewing tobacco, most of them also use other carcinogenic substances.

Among the regions under study, the highest and lowest mortality and DALY rates due to the risk factor of tobacco use (excluding non-smokers exposed to second-hand smoke) are related, respectively, to Turkey and Iraq. Overall, the mortality and DALY rates in Iran, Turkey, and America show a trend similar to the general downward trend in the world (Figure 3.15).

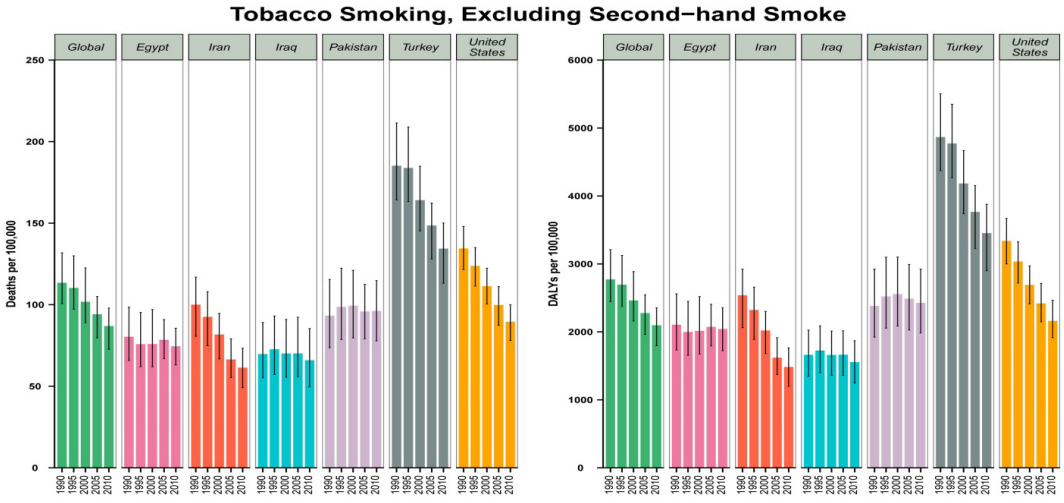


Figure 3:15: DALY and mortality rates per 100,000 people due to tobacco use (excluding non-smokers exposed to second-hand smoke) from 1990 to 2010 in the world, Iran, and five other countries

Among the regions under study, the highest DALY and mortality rates related to non-smokers exposed to second-hand smoke belong to Egypt. Overall, DALY and mortality rates in Egypt, Iran, Pakistan, Turkey, and America follow the same general downward trend as the one for the world (Figure 3.16).

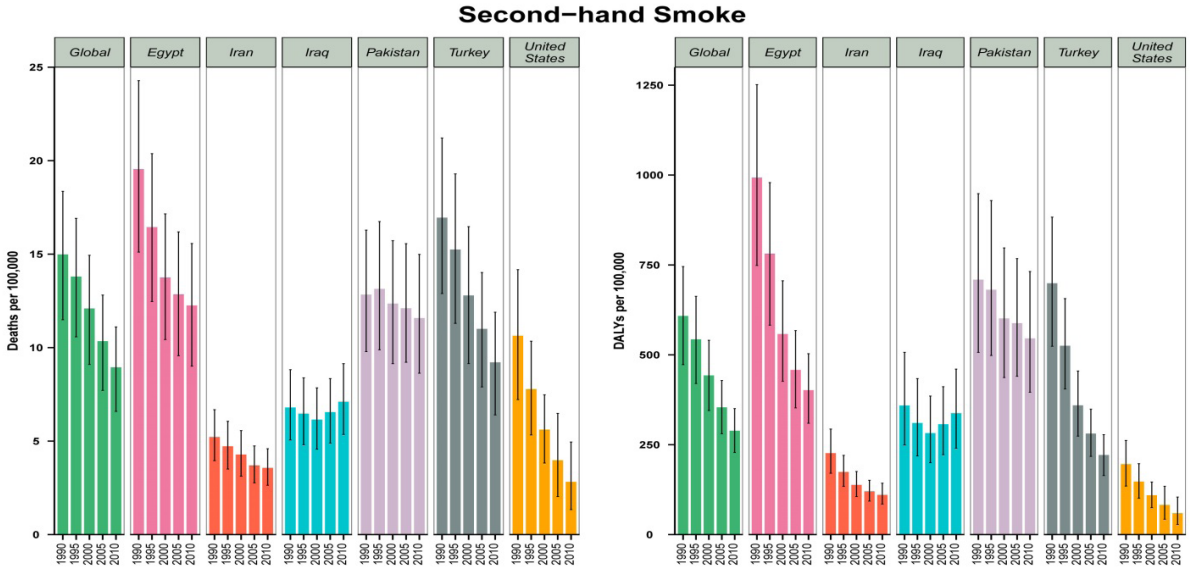


Figure 3.16: DALY and mortality rates per 100,000 people related to non-smokers exposed to second-hand smoke from 1990 to 2010 in the world, Iran, and five other countries

Among the three age groups under study, the highest DALY rate due to the risk factor of tobacco use (excluding non-smokers exposed to second-hand smoke) belongs to the age group of 70 years and older; in all the years under study, for this age group, Iran has a lower rate when compared with the world. For all age groups, DALY rates show a declining trend in Iran and in the world (Figure 3.17).

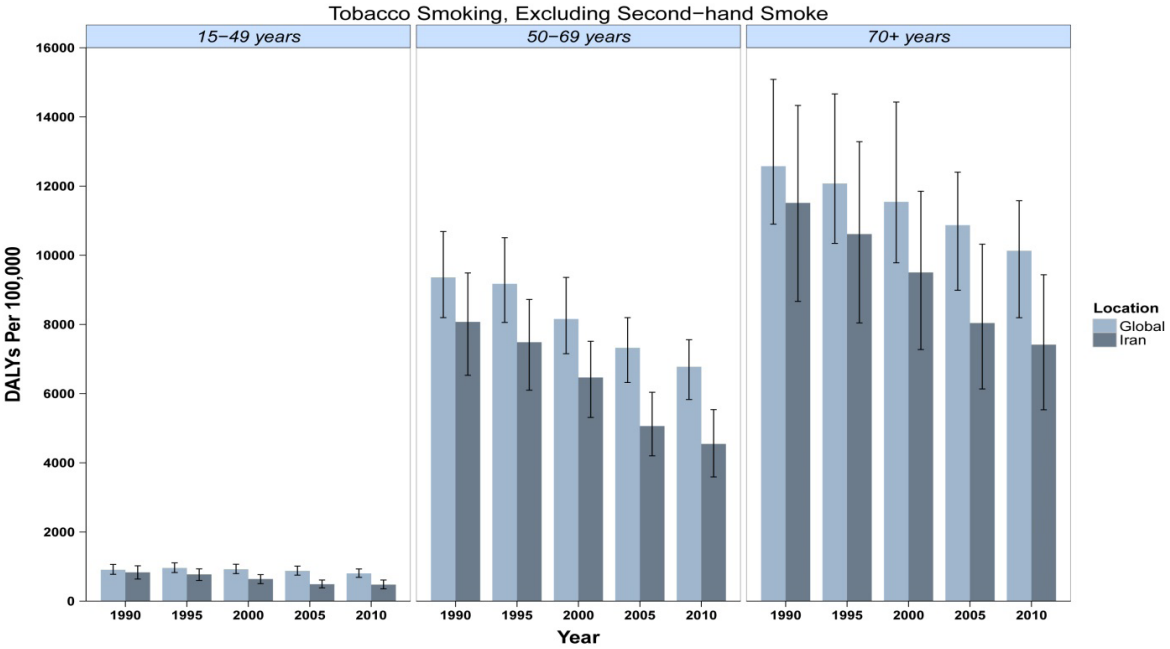


Figure 3.17: DALY rate per 100,000 people due to the risk factor of tobacco use (excluding non-smokers exposed to second-hand smoke) in terms of age groups between 1990 and 2010 in Iran and in the world

Among the three age groups under study, the highest mortality rate due to the risk factor of tobacco use (excluding non-smokers exposed to second-hand smoke) belongs to the age group of 70 years and older; in all the years under study, for this age group, Iran has a lower rate when compared with the world. For all age groups, DALY rates show a declining trend in Iran and in the world (Figure 3.18).

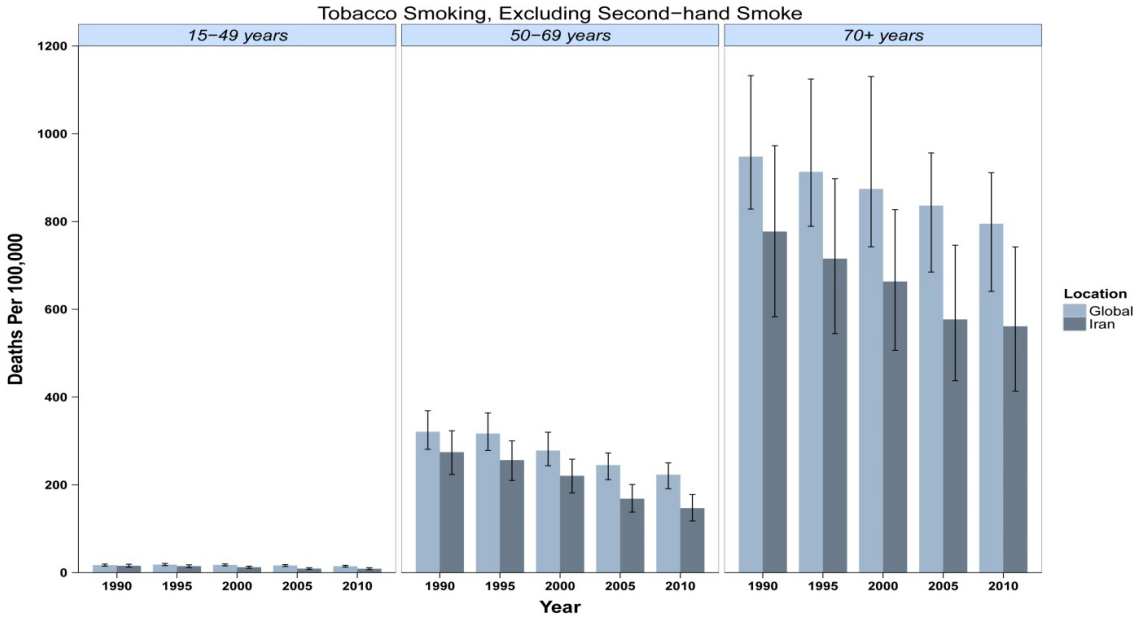


Figure 3.18: Mortality rate per 100,000 people due to the risk factor of tobacco use (excluding non-smokers exposed to second-hand smoke) in terms of age groups between 1990 and 2010 in Iran and in the world

Among four age groups, the highest DALY rate due to the risk factor of non-smokers exposed to second-hand tobacco use belongs to the age group of 5 years and younger; in all the years under study, for this age group, Iran has a lower rate when compared with the world. For all age groups, DALY rates show a downward trend in Iran and in the world (Figure 3.19).

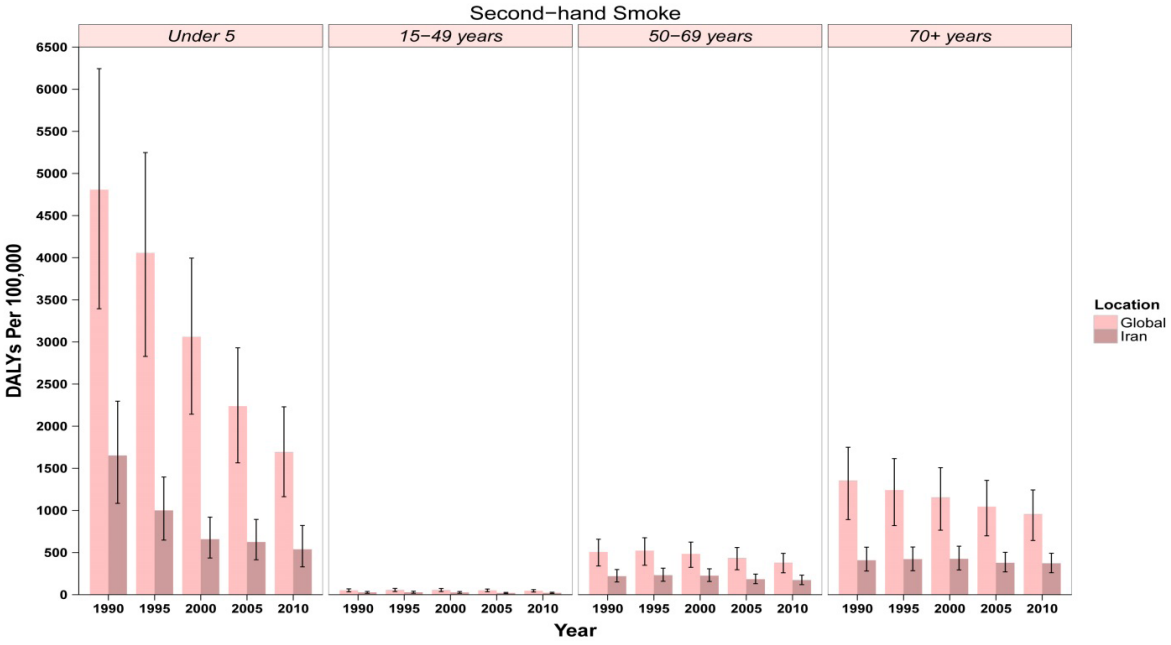


Figure 3.19: DALY rate per 100,000 people due to the risk factor of second-hand tobacco use in terms of age groups from 1990 to 2010 in Iran and in the world

Among four age groups, the highest mortality rate due to the risk factor of tobacco use is related to the age group of 70 years and older; in all the years under study, for this age group, Iran has a lower rate when compared with the world. For all age groups, DALY rates have a downward trend in Iran and in the world (Figure 3.20).

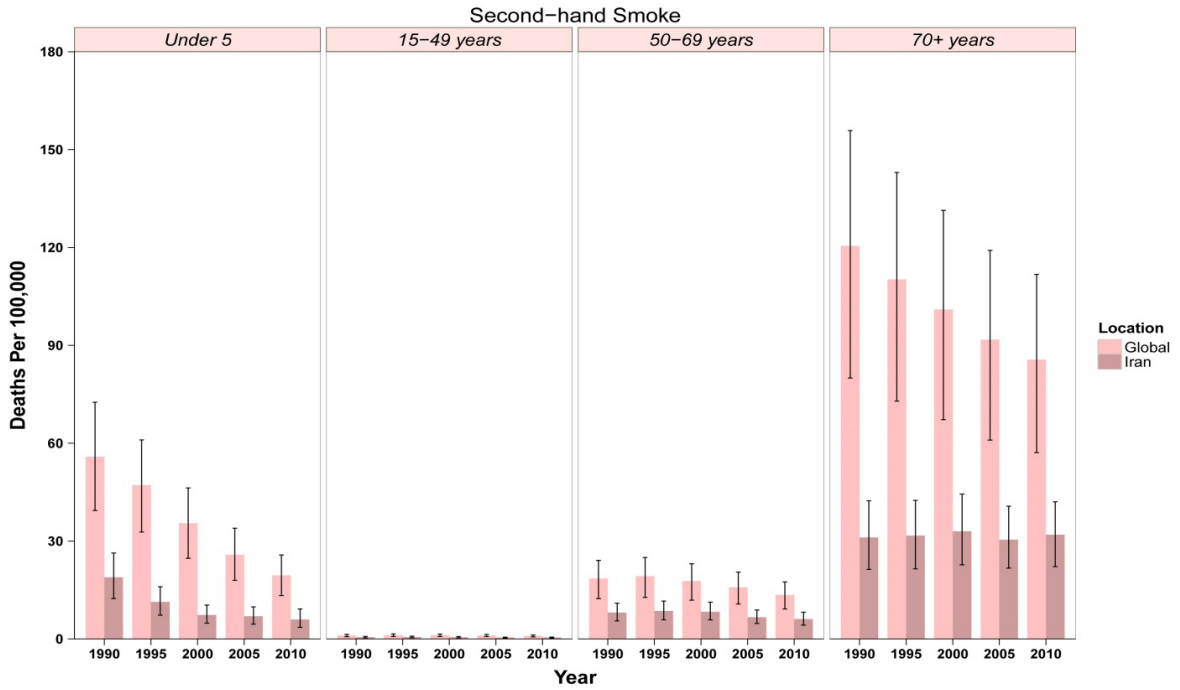


Figure 3.20: Mortality rate per 100,000 people related to non-smokers exposed to second-hand smoke in terms of age groups from 1990 to 2010 in Iran and in the world

3.1.4. Alcohol Use

Alcohol consumption imposes harmful effects greater than health, social, physiological, and economic problems as well as issues related to accidents and violence. Among the regions under study, America has the highest mortality rate due to the risk factor of alcohol consumption. Overall, the world's DALY and mortality rates showed an ascending trend until 1995, and since then, they followed a downward trend (Figure 3.21).

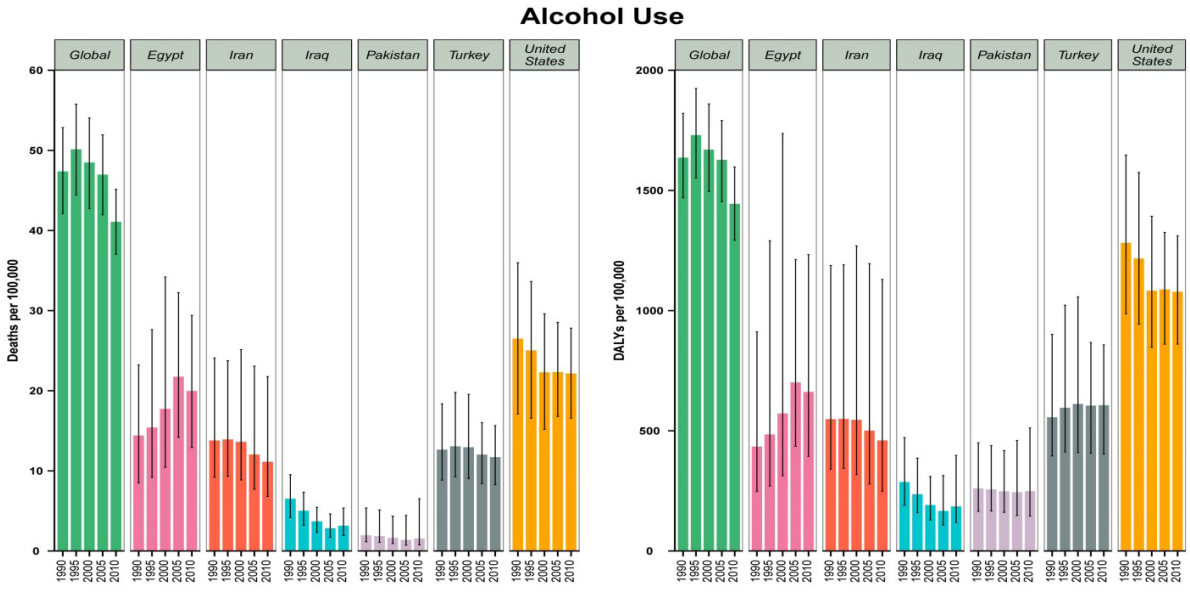


Figure 3.21: DALY rate due to alcohol use in 2010 in Iran and in the world

As it is evident in Figure 3.21, DALY rates for all age groups in the world are higher than those for Iran. However, it should be noted that for both Iran and the world, DALY rates due to alcohol consumption are the lowest for the first two age groups and the highest for the other three age groups. These rates seem to result from indirect effects and direct effects of alcohol consumption for, respectively, the first two age groups and the other three groups (Figure 3.22).

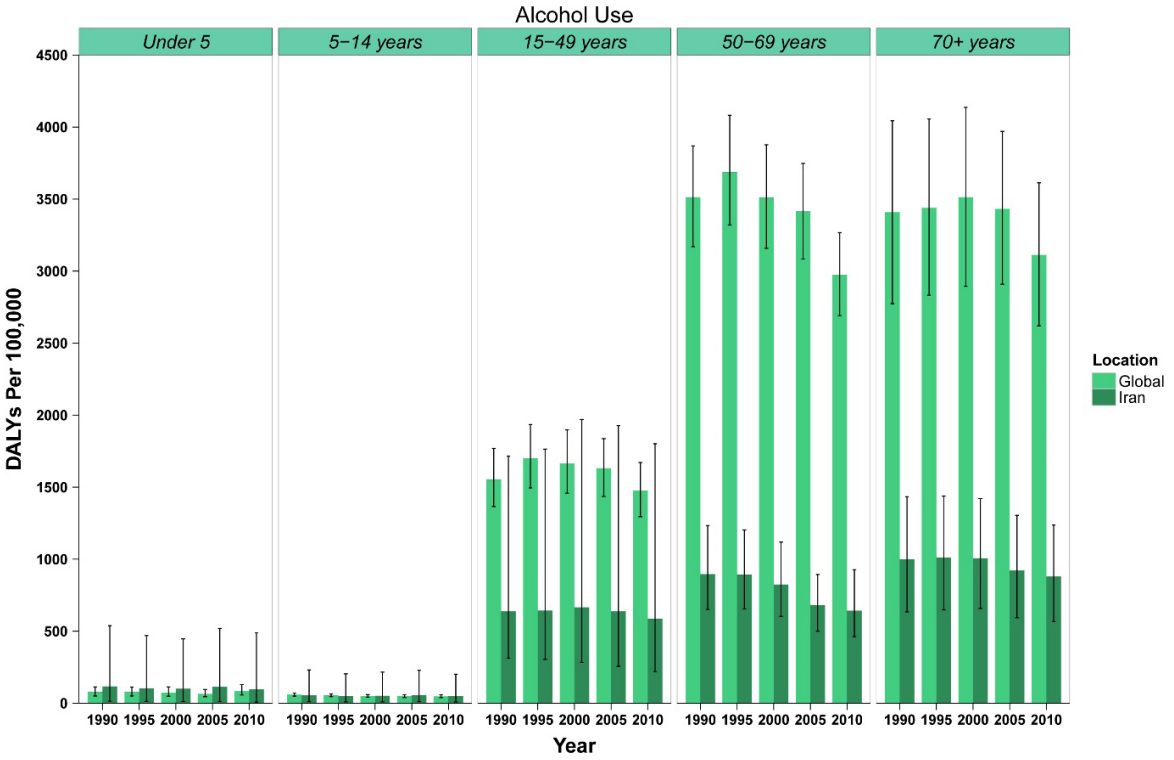


Figure 3.22: DALY rates per 100,000 people due to the risk factor of alcohol use in terms of age groups from 1990 to 2010 in the world, Iran, and five other countries

Figure 3.22 presents the mortality rate due to alcohol consumption in 2010 in Iran and in the world. It seems evident that, for the age group of over 70 years, the mortality rates caused by alcohol consumption are higher than for other age groups in both Iran and in the world. Following this age group, the age group of 50 to 69 years has the highest mortality rate. Given the available evidence, the issue of paying special attention to older groups of society with respect to the consequences of alcohol consumption becomes increasingly important (Figure 3. 23).

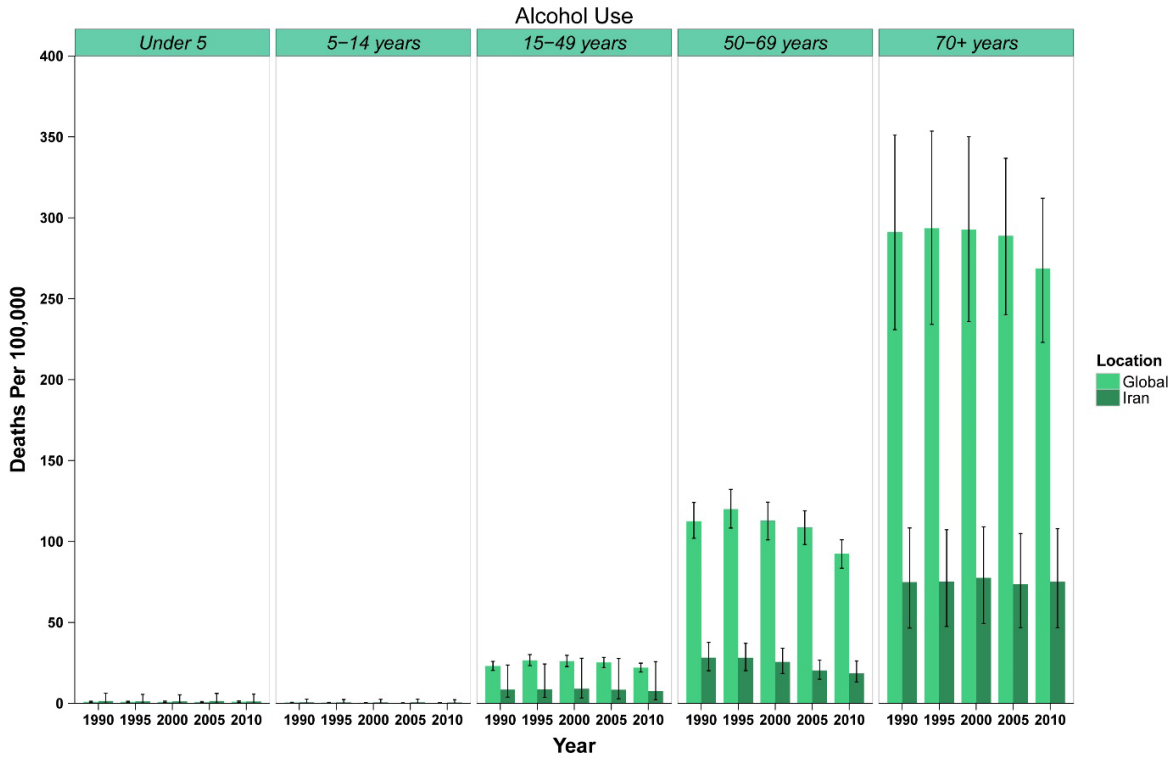


Figure 3.23: Mortality rates per 100,000 people due to the risk factor of alcohol use in terms of age groups from 1990 to 2010 in the world, Iran, and five other countries

3.1.5. Drug use

Among the regions under study, the highest DALY and mortality rates due to the risk factor of drug use relate to America. Overall, like the world's rates, DALY and mortality rates also show an upward trend for all the countries under study (Figure 3.24).

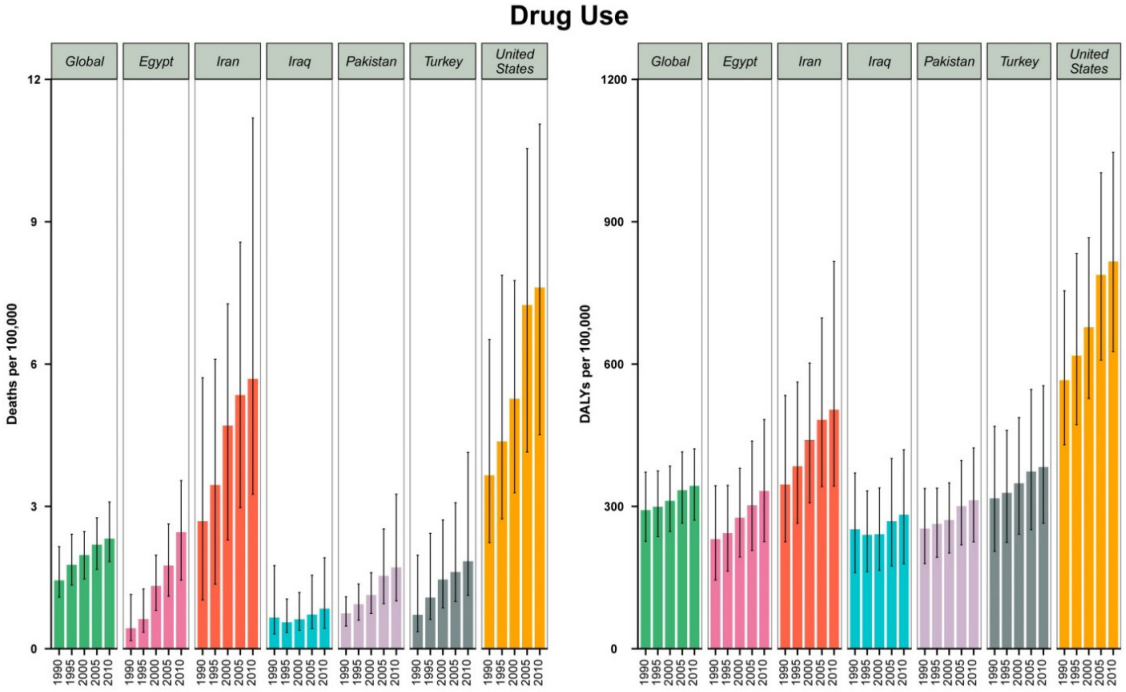


Figure 3.24: DALY and mortality rates per 100,000 people due to the risk factor of drug use from 1990 to 2010 in the world, Iran, and five other countries

3.2. Other Risk Factors of Non-communicable Diseases

3.2.1. Air Pollution

Among the regions under study, the highest DALY and mortality rates due to particulate matter pollutants are related to Egypt. Overall, similar to the global pattern, DALY and mortality rates in Iran, Turkey, and America follow a downward trend (Figure 3.25).

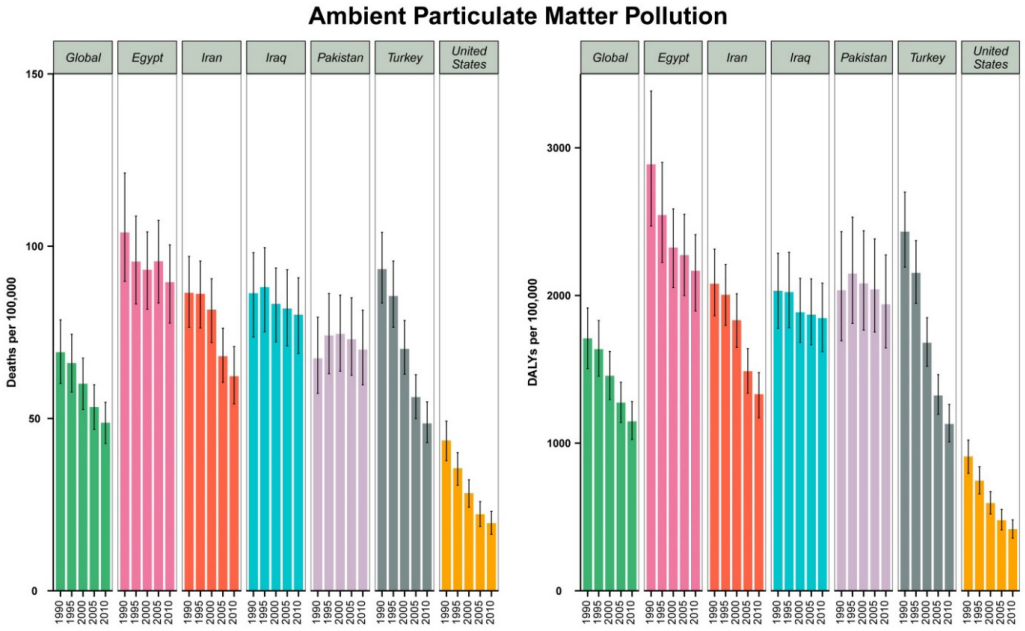


Figure 3.25: DALY and mortality rates per 100,000 people due to the risk factor of particulate matter pollutants from 1990 to 2010 in the world, Iran, and five other countries

Among the regions under study, the highest and lowest DALY and mortality rates due to the risk factor of ambient ozone pollution are related to Pakistan and Iran. Overall, DALY and mortality rates for all the countries under study follow a similar, downward trend as the global pattern (Figure 3.26).

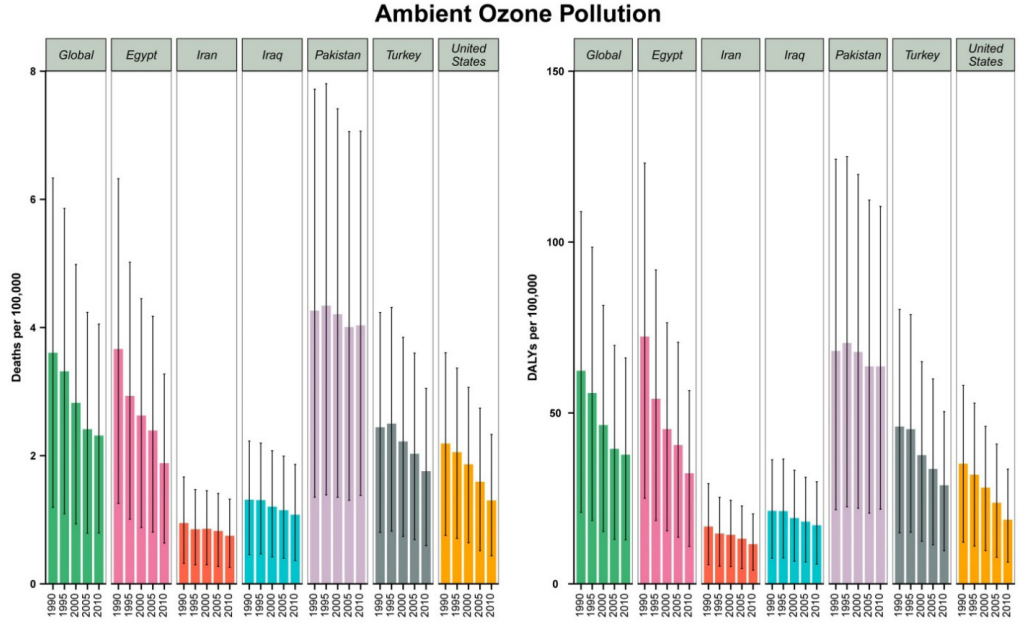


Figure 3.26: DALY and mortality rates per 100,000 people due to the risk factor of ambient ozone pollution in terms of age groups from 1990 to 2010 in the world, Iran, and five other countries

3.2.2. Lead

Among the regions under study, the highest and lowest DALY and mortality rates due to the risk factor of lead exposure belong to Egypt and America. Overall, similar to the global pattern, DALY and mortality rates for all the countries under study show downward trend (Figure 3.27).

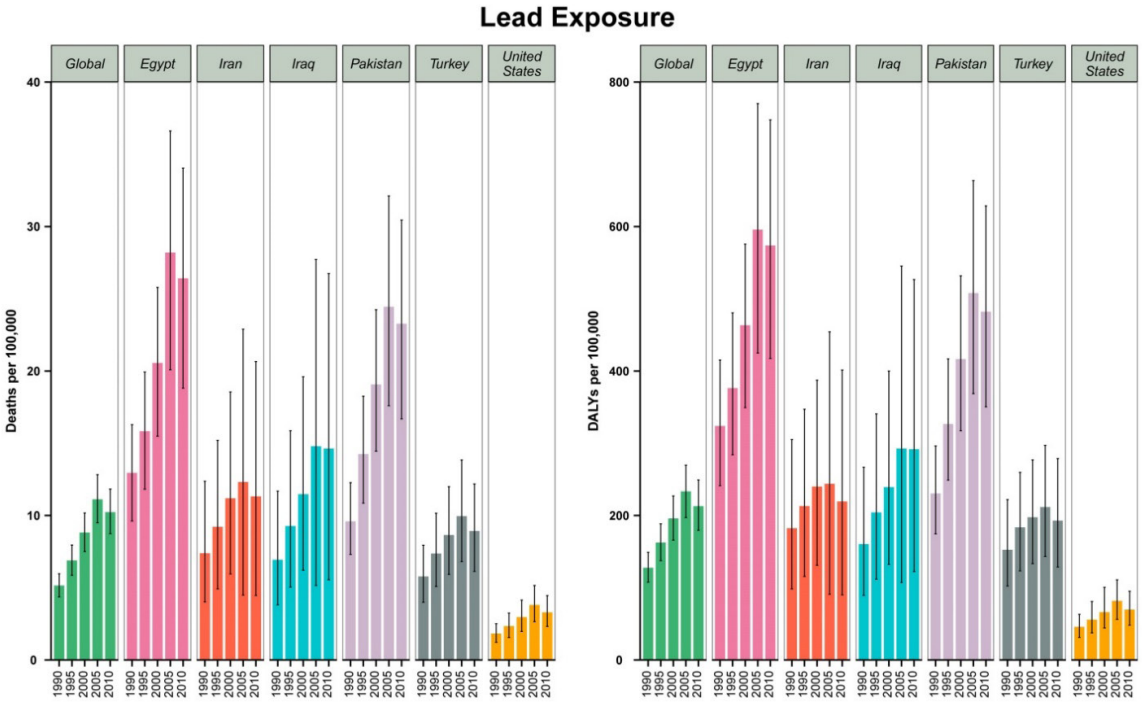


Figure 3.26: DALY and mortality rates per 100,000 people due to the risk factor of lead exposure from 1990 to 2010 in the world, Iran, and five other countries

3.2.3. Infections and Environmental Factors

Infections and environmental factors also increase the risk of non-communicable diseases. Infections are responsible for a fifth of cancers in developing countries. For example, human papilloma virus causes cervical cancer in women and also increases the rate of oral cancers in men and women. Hepatitis B and Hepatitis C viruses cause hepatocellular carcinoma, and helicobacter pylori results in gastric cancer. Indoor air pollution caused by the incomplete combustion of solid fuels is regarded as an important risk factor of chronic respiratory diseases. Main environmental and occupational risk factors of non-communicable diseases include exposure to asbestos, the emission of gas from vehicles, and ionizing and ultraviolet radiation.

Chapter 4

NASBOD: A Unique Approach to Obtain Accurate Health Statistics in Iran

Key Points

- ?????


Welcome to Resturant

4.1. Introduction

The National and Sub-national Burden of Diseases, Injuries, and Risk Factors (NASBOD) is a systematic effort for estimating the magnitude of health loss due to diseases, injuries of Diseases 2010. Health policy makers at national and subnational levels, national levels, health sector leaders, researchers and citizens could directly use the produced estimates in NASBOD 2013. The NASBOD 2013 provides a "bird's eye view "of health status of populations across the country to compare the burden of different diseases and their distributions at once. This chapter aims to explain metrics, and the challenges due to limitation in data availability.

4.2. Background

The World Bank commissioned the first round of GBD study in 1992 for providing a comparative and comprehensive assessment of the disease burden in 1990. The study was done for the world and for 8 regions.

The methods, measures and findings of the 1990 GBD study were accepted globally. The investigators believed that all sources of health data contain useful information on epidemiology of diseases and for those with some source of selection or information bias, using a few mathematical and statistical methods they could be used to provide unbiased representative estimates includes incidence, prevalence, duration, and mortality for almost 500 squeals of diseases, injuries and risk factors.

Many diseases, for example, psychiatric diseases and sense organ disorders may cause significant contribution in the non-fatal outcomes of health but no or few fatal outcome. Therefore measures of survival or mortality are not providing a broad picture of health status of the population. Burden of diseases study needed a measure, which combines fatal and non-fatal outcomes. To measure the burden of disease, the 1990 GBD study used a metric that measures both premature mortality (years of life lost because of premature mortality or YLL) and disability (years of healthy life lost due to disability or YLD, disability weight was based on expert opinions). The sum of the two components is called DALYs.

The main criticism of the GBD study focused on the structure of DALYs particularly the social choices pertaining to age weights and severity scores for disabilities.

The criticism of the 1990 GBD, especially of the assessing the disability weights, changed to use of population-based valuation rather than expert opinion as used in the 1990 study. In addition, improved population datasets such as national surveys, censuses, surveillances, and electronic medical records have led better estimations and less dependency to the models. The other advancement in 2001 GBD compare to 1990 GBD was major methodological progress for quantification of the attributed burden to major risk factors. The final development in 2001 GBD was the quantification of the uncertainty in the estimates.

In 2010 GBD estimates provided from 1990 to 2010 for 291 diseases 67 risk factors, 1,167 sequelae in 187 countries from 21 regions around the world by sex and 20 age groups. Institute for Health Metrics and Evaluation conducted 2010 GBD, in collaboration with, Harvard University, Imperial College London, John Hopkins University, University of Queensland, University of Tokyo, and World Health Organization. In this new iteration of GBD there were many modification in methods and advancement in results. In methods, the new DISMOD were used, which a few changes in the measures. For example in the new DALY, age weight and discount weight are not employed and disability weights are estimated using a new approach. In the results, the estimations were for a broader range of diseases and risk factors, age groups, countries, and time period.

Iran burden of diseases study for the first time has been conducted in 2003, by estimating burden of diseases for 213 diseases and no success to estimate the attributed burden to risk factors. The study was a cross sectional study for 2003 at national level and for six provinces. The estimates were reported without uncertainty interval and no success to estimate the burden attributable to risk factors. A decade after the first burden of disease study in Iran needs for assessing the burden of diseases and their distribution was enough to motivate Ministry of Health to conduct a new round of the burden of diseases study

called NASBOD 2013. This round aims to provide estimates from 1990 to 2013 at national and provincial levels.

4.3. Why NASBOD study is needed?

The NASBOD study aims to estimate the burden of 290 diseases and injuries and 67 risk factors from 1990 to 2012 at national and provincial levels. The NASBOD study provides information that can be used to evaluate the progression in health status over time within a province or relative performance across provinces. In this case, NASBOD should be considered as other developmental indicators in economics such as national income and product accounts, which had a great contribution to economic knowledge in United Kingdom.

The NASBOD is the main resource that could be used for identifying the national and sub-national priorities. Many national interventions are implemented in Iran health system that could be cost-effective and addresses the health problem for some geographic area but not all sub-national geographic areas. Providing the distribution of diseases and risk factors at sub-national level would be a guide for selecting the interventions that address main health problems among sub-national populations.

Medical and public health schools in Iran are dedicating a number of credits for their students to work on specific research topics. Due to sub-optimal data availability, especially from national surveys, and due to lack of a navigating system for research on health, most all those potential of knowledge generation resources are not well utilized. The NASBOD study will addresses both sub-optimal data availability and lack of navigating system for the health research in Iran.

4.4. NASBOD organization

The NASBOD 2013 study is ordered and supported by Ministry of Health, deputy minister for public health and is conducted by a steering committee includes principle investigator, top policy makers from Ministry of Health, those managers in Ministry of Health with more focus on diseases, and those scientist with more focus on population health. An external evaluation committee includes international experts and representative of international organizations such as World Bank and World Health Organization EMRO with interests of the burden of diseases.

The executive part of NASBOD organization includes a core team, which is responsible for providing the definitions on measures, standardizing processes and protocols such as systematic review protocol, training all researchers involved in NASBOD, data hunting and gathering, data cleaning, modeling, interpreting results and providing reports, and 34 technical teams which are responsible for providing the practical definition of diseases and risk factors, and contributing in accessing surveys datasets, interpreting of results and preparing the reports.

4.5. Definitions

The NASBOD will use DALY (Disability Adjusted Life Years), YLD (Years Lost due to Disability), YLL (Years Life Lost) and death as measure in rate and cause fraction to depict the fatal and non-fatal health outcomes of diseases, risk factors, and injuries. DALY, YLD and YLL will be estimated without considering age weight and discount rate to make the estimates compatible with GBD 2010. The age limit will be 86 years for both male and female and YLD will be estimated based on the prevalence of diseases rather than their incidence. All measures will be provided for both sexes and 20 age groups at national and provincial levels.

4.6 Examples of NASBOD results

Some of the results of the NASBOD study are presented as following:

In general the mortality rates among under-5 children is decreasing. For instance, Khorasan e Razavi, Azarbaijan e Gharbi and Sharghi have the lowest rates compared to the other provinces (Figure 4.1).

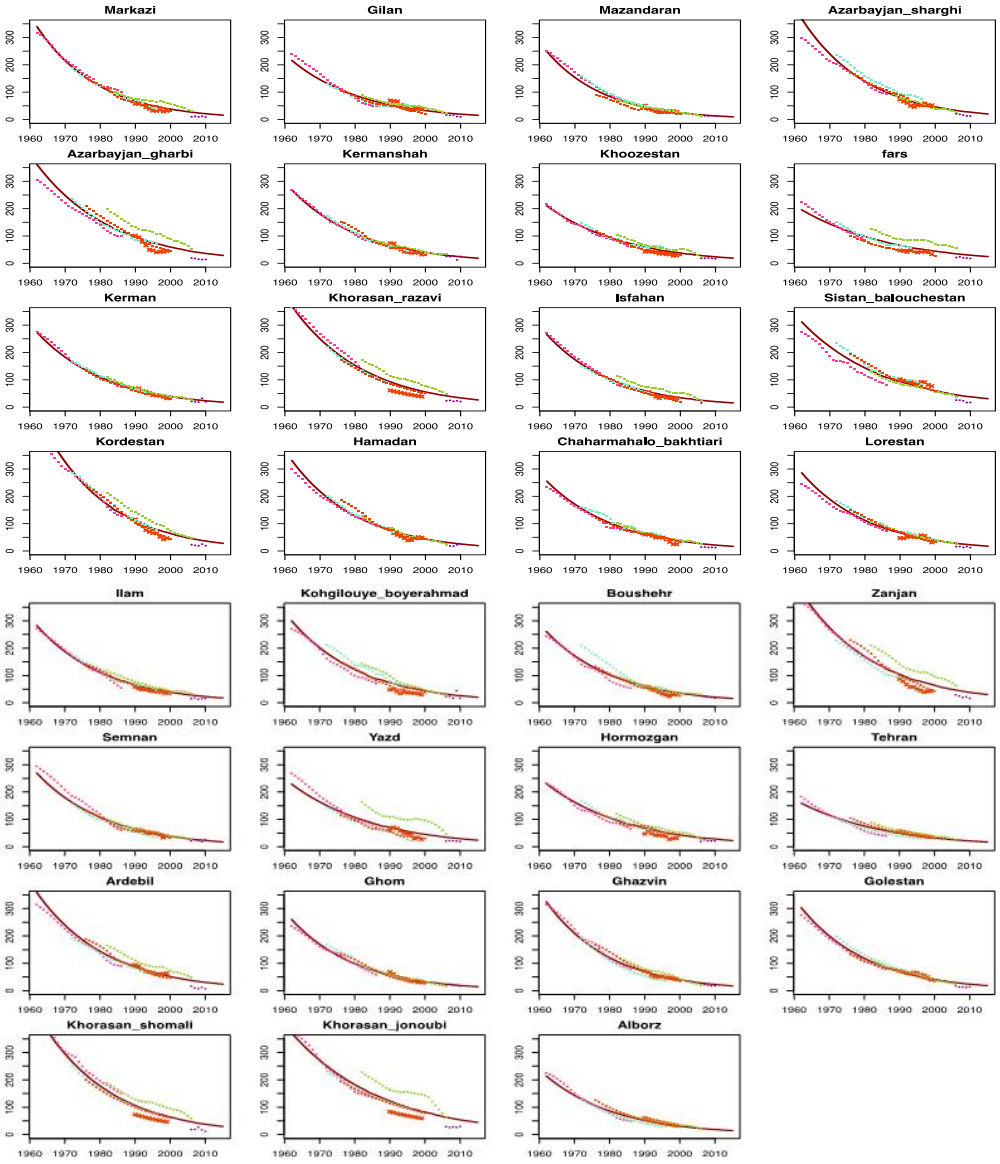


Figure 4.1: Figure 4.1 illustrates the trend of under-5 mortality from 19960 to 2013 at provincial; level

Figure 4.2 illustrates the trend of under-5 mortality from 1960 to 2013 at national level.

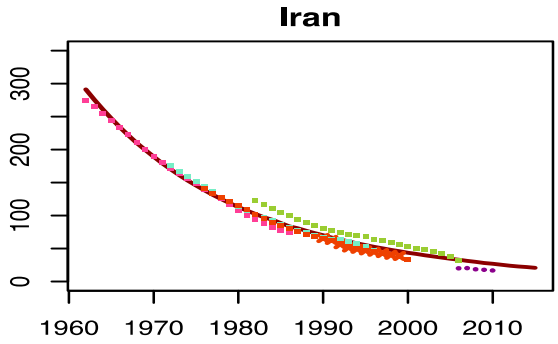


Figure 4.2: Trend of under-5 mortality from 1960 to 2013 at national level

Results of NASBOD demonstrate that as the time goes by obesity among women is increasing, as in 2013 women in 45-54 year age group had the highest prevalence, and women between 75 and 79 showed the lowest prevalence of obesity (figure 4.3).

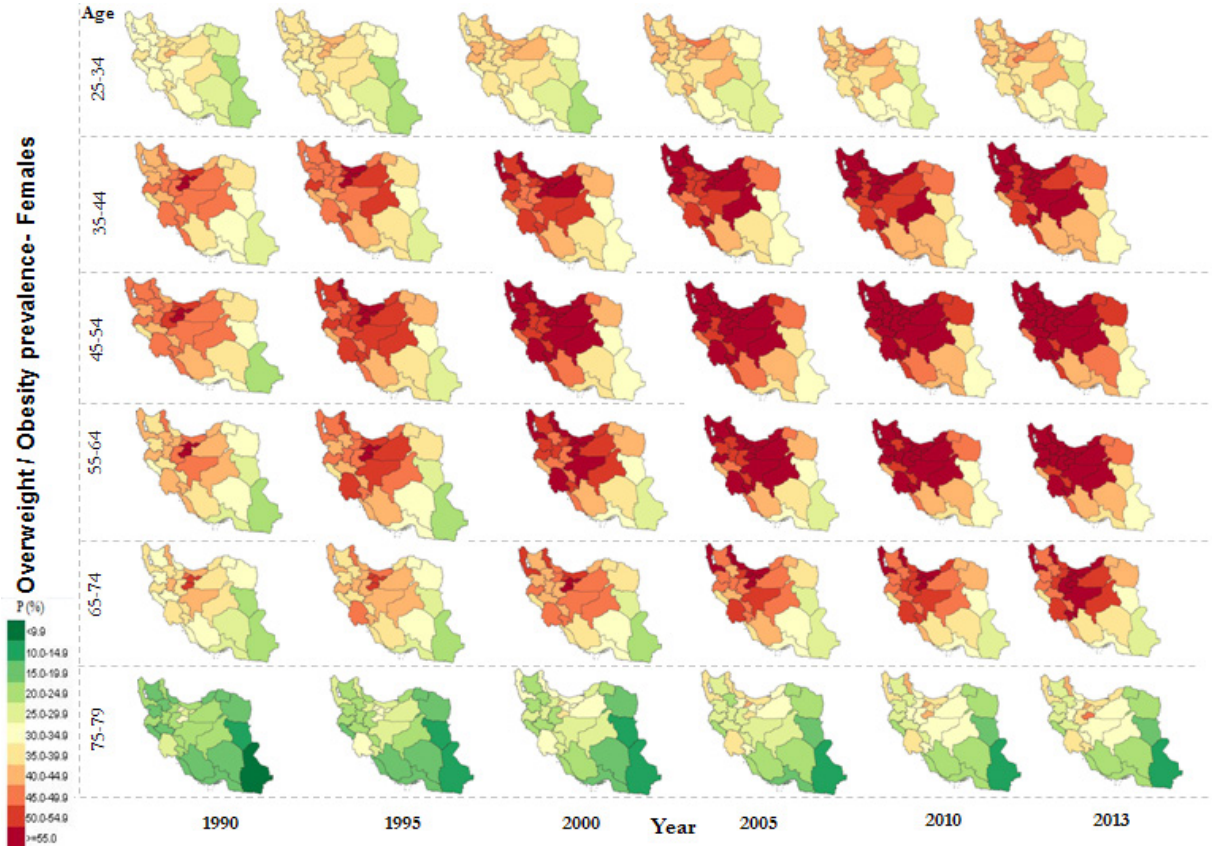


Figure 4.3: prevalence of obesity among Iranian women in 1990, 1995, 2000, 2005, 2010, and 2013

As the time goes by obesity among men is decreasing, as in 2013 men in 45-54 year age group had the highest prevalence, and women between 75 and 79 showed the lowest prevalence of obesity (figure 4.4).

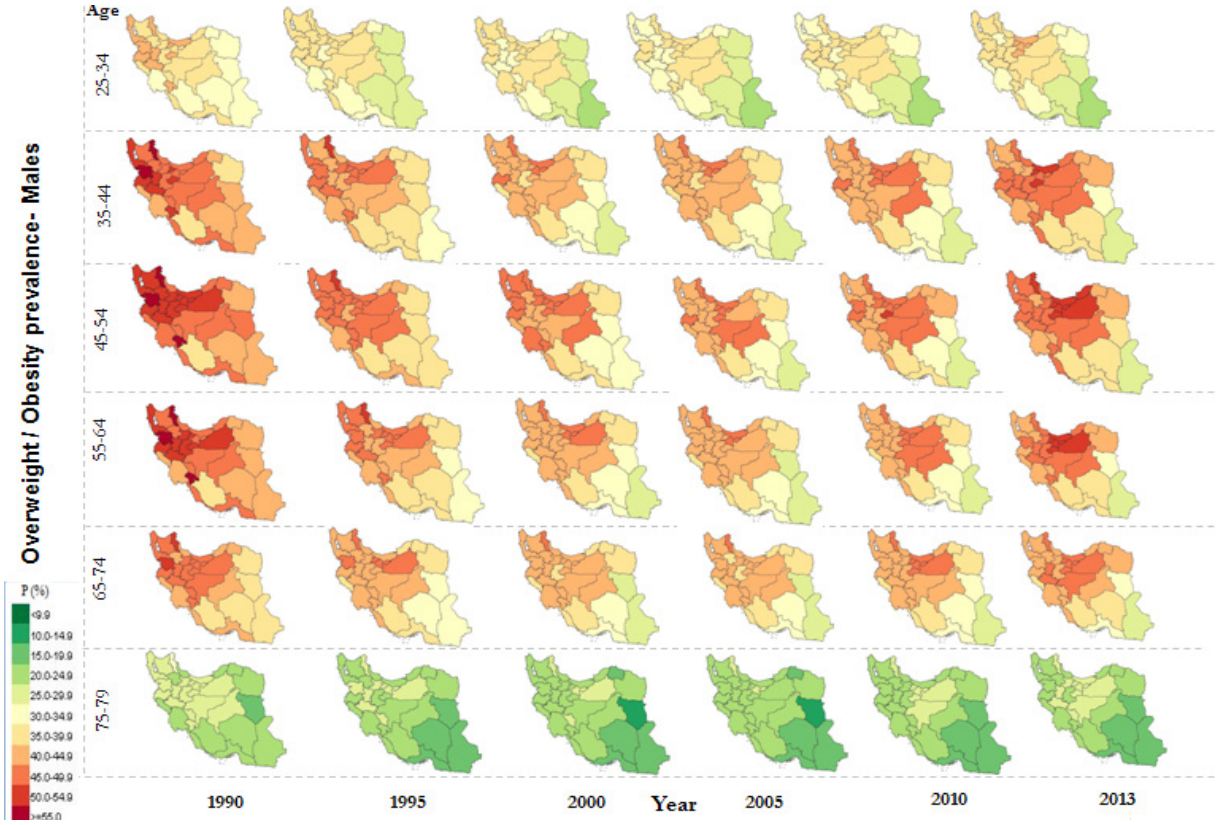


Figure 4.4: prevalence of obesity among Iranian men in 1990, 1995, 2000, 2005, 2010, and 2013

Prevalence of Diabetes Mellitus among women is increasing, as in 2013 men between 55 and 64 had the highest prevalence, and those between 25 and 34 had the lowest rates (figure 4.5).

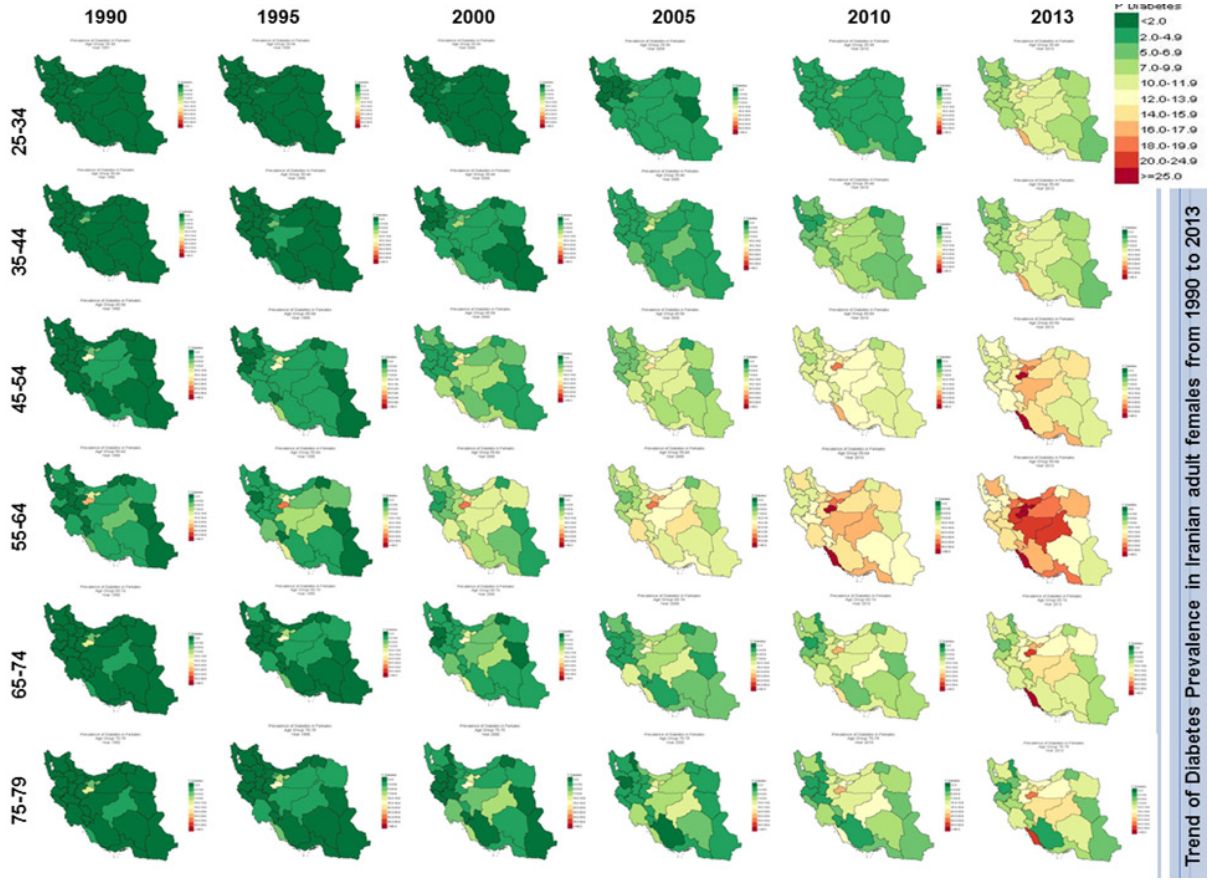


Figure 4.5: Prevalence of Diabetes Mellitus among women in 1990, 1995, 2000, 2005, 2010, and 2013

Prevalence of Diabetes Mellitus among men is also increasing, as in 2013 men between 55 and 64 had the highest prevalence, and those between 25 and 34 had the lowest rates, similar to women (figure 4.6).

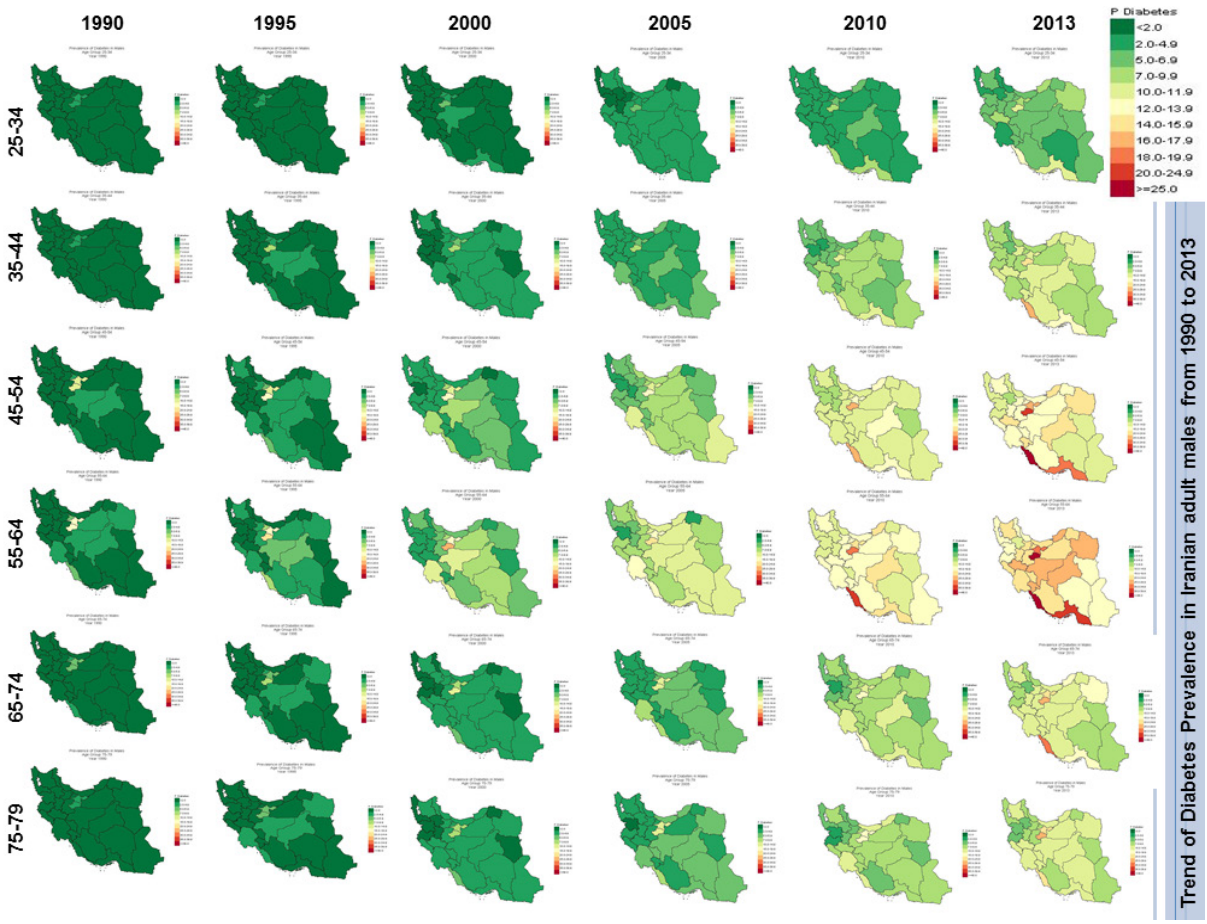


Figure 4.6: Prevalence of Diabetes Mellitus among men in 1990, 1995, 2000, 2005, 2010, and 2013

4.7. Functions

Following functions are the main processes of the NASBOD:

4.7.1. Standards and regulations

The core team provides standards for the processes of choosing diseases, risk factors and injuries that their burden will be estimated, systematic searches, and intellectual properties. Based on standards provided by the core team, all systematic searches have to be done for PubMed, ISI Web of Sciences, and Scopus among all international search engines and IranMedex, SID, and Iran.doc among all domestic search engines. The reason for choosing these search engines was their effective coverage of almost most papers published about Iran's diseases, risk factors, and injuries's distribution among general population. Standards for search terms provides also by the core team. The details of systematic searches and search terms are explained for each group of diseases, risk factors and injuries in other papers published in this issue.29–38 Visual Impairment Burden in Iran; VIBI study protocol. The other standards that have to be determined by the core team are those that will explain how the technical teams have to choose diseases using GBD list and expert opinion in the way that diseases be chosen that have the highest burden for Iranian population. The last list of standards will be involved with the intellectual properties since the NASBOD study is formed through teamwork with collaborations of more than 300 researchers. The standards will determine the rights of researchers on the produced reports and publications.

4.7.2. Training

The NASBOD study needs expertise and knowledge from different disciplines. Since most of researchers in the NASBOD study are not familiar with all needed skills, designing and conducting workshops and courses related to the needed skills and expertise regarding the NASBOD study is crucial. Workshops on the systematic review with focus on burden of diseases, comparative risk assessment, demographic methods on child and adult mortality estimations, burden of diseases and DISMOD II, modeling, multilevel analysis models, spatio-temporal models, dealing with incompleteness and misclassification of death and cancer registry systems, Gaussian Process Regression models, and other needed packages in R and Stata are designed and gradually will be held for those who need to participate in these workshops.

4.7.3. Data gathering

The NASBOD study will use all possible data sources that help estimating prevalence and incidence of diseases, or premature deaths by cause. The existing data sources in Iran includes all published data, death and cancer registry systems, national and sub-national surveys within health sector, mostly focused on behavioral, lifestyle, and metabolic risks among general populations such as NCDSS 2005 – 2009 and 2011, NHS 1991 and 2000, DHS 2000, House Hold Expenditure, IHHP 2001 and 2007,46 TLGS 2001 up to now, MONICA 2003, national and sub-national surveys among non-health sectors, mostly focused on the demographic, human capital, expenses, and other needed covariates (such as household expenditure survey.48–50 Censuses are another source for NASBOD study, which provides needed demographic data and includes some useful health data.

The health information system in Iran does not support hospital and outpatient data in the way that makes them useful in the NASBOD study. The core team designs and conducts a national survey on inpatient data to obtain a representative valid data from all 863 hospitals (all existing hospitals) admissions from 1996 to 2011. The details of the Hospital Data Survey are explained in other paper in this issue. For outpatient data the NASBOD study will use a representative sample of all prescription (23 million samples) for last 5 years, which are obtainable in the Drug and Food Organization. Drug and Food Organization could provide all data on medicine purchasing from pharmacies at district level too. The other data source in Drug and Food Organization is on special diseases since the patients with special diseases are eligible for the cash transfer program as subsidy for their medicine.

4.8. Materials and Methods

YLL and YLD estimates are prerequisites for estimating DALY. Figure 1, 2 and 3 depict all data sets, processes and computations in NASBOD study for YLL, YLD, and attributable DALYs to risk factors, respectively. For estimating the YLL, we mostly rely on death registration system, which is administered by Ministry of Health and provides deaths counts by age, sex, and causes. Since death registration system in almost all developing countries are suffering from a degree of incompleteness and misclassification, the core team decided to address the incompleteness and misclassification problems of death registration system. For more explanations of the methods, details are provided somewhere else. Since death registration system is available since 2004, we need to address the missing data for years from 2003 back to 1990. We will explain the models for imputation briefly later in this paper. For YLD and so prevalence of diseases, risk factors and injuries, the core team focuses on the published data, cancer registry, national and sub-national surveys, Hospital Data Survey, and outpatient data sources. However, due to data scarcity at national and sub-national levels, the core team needs to address the suboptimal data availability for prevalence of diseases, risk factors and injuries. After using models for imputing missing data, YLD will be estimated for diseases in the list of NASBOD. Summation of YLLs and YLDs will provide DALYs caused by each disease. Comparative risk assessment will be used for estimating population attributable fraction for each diseases risk factor pair and the attributed DALY to each pair will be calculated and finally all those attributed DALYs to each risk factor will be summed to estimate the burden attributed to each risk factor.

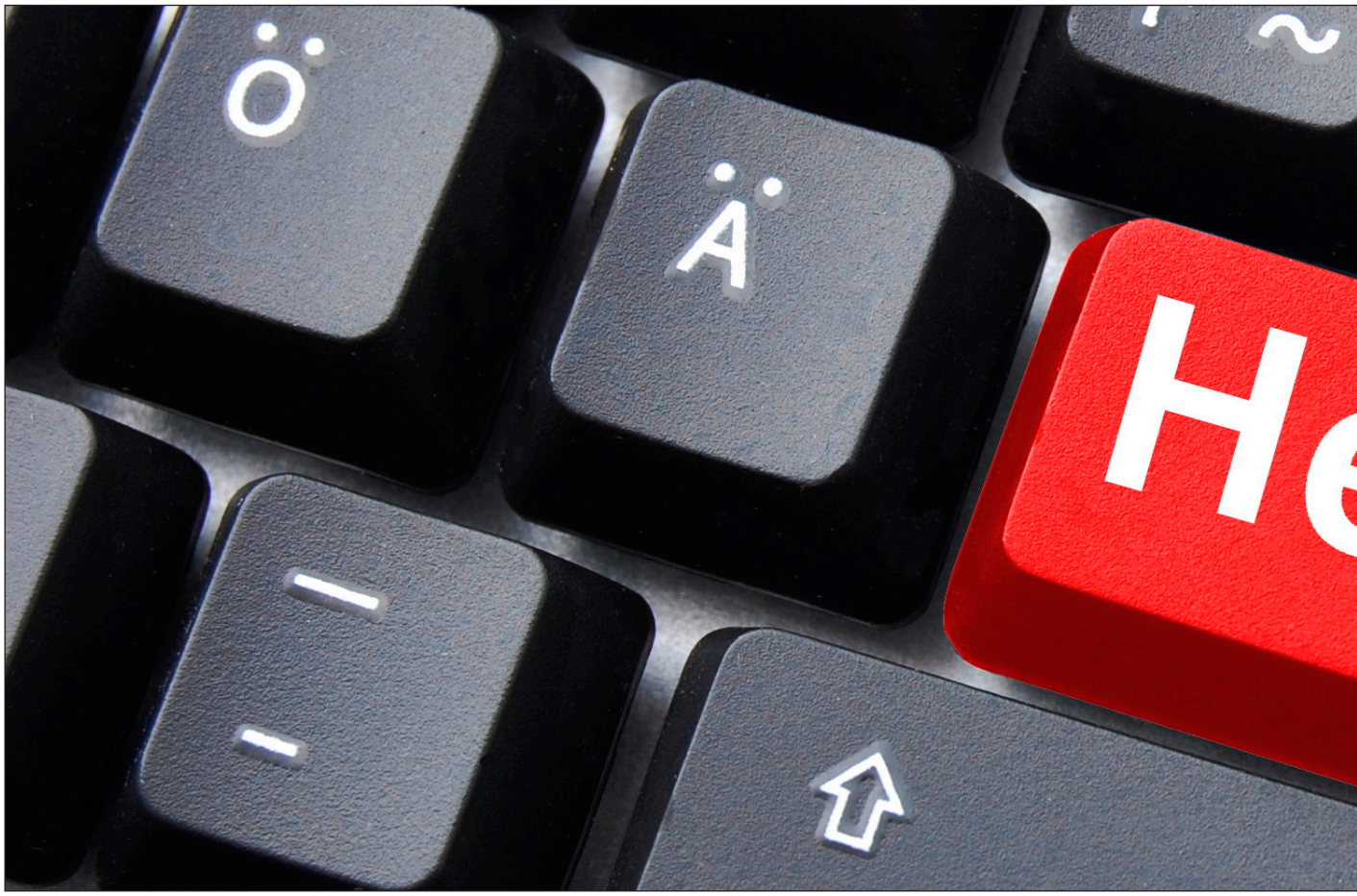
Statistical methods for data imputation are discussed in more details somewhere else.55–56 These methods are sophisticated regression models, which are using existing data, models for age, models for hierarchical pattern of data, spatial and temporal pattern of data, and covariates to impute and estimate for the missing data. There are technical challenges for each method in the NASBOD context that might be interests of those with quantitative concentration. Covariates needed for these models will be gathered during data gathering phase and it's estimated that about 84 covariates will be created to be used in the imputation methods. In the imputation models, we will use two dependent variables includes rate and cause fraction. We will fit models for these two dependent variables and those two methods (multilevel autoregressive and spatio-temporal) using a few covariates, which ends up with hundreds of models. The NASBOD study has no intention to throw out some of those models with performance worse off than others. Instead, the core team will rank all those models based on their performance and using the rank will produce a weight for each model. The weights will be used to sum up all results from all models as imputed values.

4.9. Interpretation of the results

The final results will be discussed in technical teams and after modification the models if it's necessary, they will be shared with experts, epidemiologists, clinicians and policy makers in a conference on the NASBOD study.

4.10. Policy implications

The NASBOD study addresses health gaps among Iranian population and their differences between provinces. Burden of diseases study will provides vast data on diseases, injuries and risk factors levels and distributions, which navigates policy makers for resource allocations. The next step in the research



domain might be to estimate the cost of each disease, injury, and risk factor for the health system and comparing distribution the burden with the distribution of the costs. These two pieces of information along with health system performance assessment will provide all needed evidence for policy making in health system. The other application of the NASBOD study will refer to its implications in the health insurance industry. Knowing the distribution of diseases and average cost of treatment will provide the opportunity for premium estimation at sub-national levels.

4.11. Conclusion

The NASBOD study is a systematic effort to quantify the distribution of diseases, injuries, and risk factors. The NASBOD study is one of the pioneers of burden of disease studies, which aims to estimate the burden of diseases, injuries and risk factors at sub-national levels. This study collects almost all data sources regarding deaths, prevalence, incidence, and burden of diseases in Iran and will compile them in a standard format. All estimates produced in the NASBOD study will be provided with their uncertainty intervals. Based on our preliminary search on the data sources, the study faces sub-optimal data availability and needs to use statistical methods to address the scarcity of data. We strongly recommend Ministry of Health to take a systematic approach for establishing a comprehensive data gathering process in the near future to make sure that all needed data regarding policy making is produced and available. The other concern of the core team of the NASBOD is the quality of produced data. Considerable missing data among variables in the datasets, inconsistencies in questions among repeated surveys, inappropriate sampling and weighting, low reliability on the results due to sub-optimal standards and supervision, lack of identifier for district and province of the observations, and no consistency in the sampling method among population are major concerns of the quality of national surveys and registry systems, which has to be addressed by Ministry of Health.

Chapter 5

Analysis of the nine-fold targets of the World Health Organization and the accessibility of the targets in the population living in the Islamic Republic of Iran

Key Points

- Number of deaths due to diseases listed in the first target in both sexes among 30 to 70 years old people was 75150 deaths in 2010.
- Based on the growth rate in the time period from 1986 to 2006, and 1996 to 2006, number of deaths due to diseases listed in the first target in both sexes among 30 to 70 years old individuals was estimated to be 103239 and 107602 deaths in 2025, respectively.
- A 50% coverage of diabetes and blood pressure would lead to decrease 1152 deaths.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To assess the first target of the World Health Organization, i.e. reduction in preventable death from cardiovascular disease, cancers, diabetes, and chronic respiratory diseases by 25% by 2025 (in 5-year age groups, e.g. 30-34… 65-69, for those between 30 and 70), it is necessary to estimate the population and the rate of mortality due to diseases listed above, classified by age in 2025.
For that reason, the population data obtained from the National Population and Housing Census in 1986, 1996, and 2006 were used to calculate the growth rate using Equation 5.1.

$$Growth = \left(\frac{Pop_{present}}{Pop_{past}}\right)^{1/n} - 1$$

Equation 5.1: The process of calculating the growth rate

Where $Pop_{present}$ and Pop_{past}, respectively, indicate the population in the last and the first year of the specified period of time, and indicates the number of years in the period. Thus, we will have two different growth rates through the calculation of the growth rate in 2006 compared with 1996, and in 2006 compared with 1986.
Then the two calculated growth rates are used in Equation 4.2, to estimate the population in the year 2025.

$$Pop_{future} = Pop_{present} \times (1 + Growth)^{n}$$

Equation 5.2: The process of estimating the population in the year 2025

As shown in Figure 5.1, there is no significant difference between the populations estimated for the year 2025 based on the two calculated growth rates.

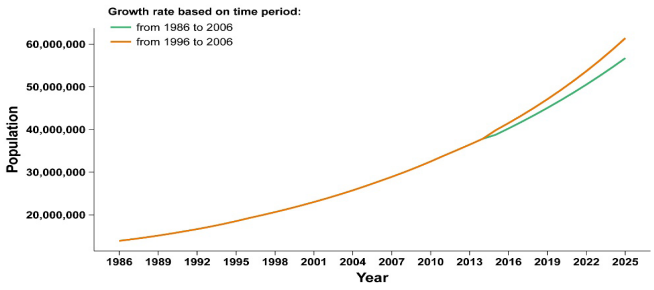


Figure 5.1: The estimated population of the age group over 30 years

To calculate mortality rates it is required to estimate the proportion of diseases listed in the first goal to the entire diseases. So, using the regression coefficients in the equation 5.3, the desired proportion was estimated for the year 2025.

$$\frac{Number\ of\ Deaths}{Total\ Number\ of\ Deaths} = \beta_0 + \beta_1 Year$$

Equation 5.3: The process of estimating the desirable population in the year 2025

In this equation, $Number\ of\ Deaths$ and $Total\ Number\ of\ Deaths$, respectively, indicate the deaths due to cardiovascular diseases, cancers, diabetes, and chronic respiratory diseases and deaths due to all types of diseases.
Assuming that the number of deaths classified by sex and age group in the year 2025 is similar to that in the year 2010, the rate of mortality due to the diseases listed in the first goal was calculated using equation 5.4.

$$y = \frac{Number\ of\ Deaths}{Total\ Number\ of\ Deaths} \times Pop \times m$$

Equation 5.4:Estimating mortality rates based on the diseases of the first goal

where m represents the rate of mortality in each sex and age group.

Table 4.1: Number of mortality in the years 2010 and 2025

Year	Value	Growth rate	Number of death
2010	Total	-	75150
	75%	-	56362
2025	Total	from 1996 to 2006	107602
		from 1986 to 2006	103239

Accoring to Table 5.1, the number of deaths due to diseases listed in the first target in both sexes and in the age group 30 to 70 years old was 75150 deaths. However, if the 25% reduction in the mortality occurs, that number of deaths will reduce to 56362 deaths. According to the estimates made for the year 2025 and the growth rate based on time period from 1996 to 2006, a total of 107602 deaths for this age group are estimated. So, a reduction of 51240 death is needed. In addition, according to the growth rate based on time period from 1986 to 2006, a reduction of 46877 death is needed.

5.1. Evaluation of the WHO targets

Now the main question is: with the implementation of the targets 2 to 9 of the World Health Organization, which are listed below, is this number of reduction reachable?

- 10% reduction in alcohol consumption,
- 10% reduction in physical inactivity,
- 30% reduction in sodium consumption,
- 30% reduction in tobacco use,
- 25% reduction in high blood pressure,
- No increase in obesity and diabetes,
- Reaching 50% coverage in medication and counseling,
- Achieving 80% coverage in technologies and essential medicines for non-communicable diseases

If we suppose that 10% reduction in alcohol use results in 10% reduction of mortality due to this risk factor, and this situation is the same for the other risk factors, the entire reduced deaths due to alcohol use, low physical activity, sodium consumption, high blood pressure, tobacco smoking, and diabetes would be 19323 in the age group of 30-70 years (Table 5.2). This should be mentioned that in calculation of the reduced deaths from targets 2 to 9, the entire deaths due to each risk factor (Communicable diseases, Non-communicable diseases, and Injuries) have been considered in the process, and consequently deaths of these goals would be less than the reported deaths. About the risk factors it is necessary to note that the percentage of reduction in them will not lead to that specific percentage of reduction in deaths due to them. Nevertheless, in this report we analyzed regardless of this assumption. Also, we

count the number of death due to smoking risk factor without considering the cumulative effect of it. So, in this report we assumed that all individuals after quitting smoking, have same chance to don't face death associated to this risk factor regardless of the time duration of smoking.

The 8th goal of the World Health Organization is to reach an at least 50% drug coverage and consultation. Drawing on the Farzadfar et al, the coverage of diabetes mellitus and blood pressure in Iranian community found to be 39.2% and 35.7%, respectively. A 50% coverage of diabetes and blood pressure would lead to decrease 1152 deaths (Table 5.3). The 9th goal of the World Health Organization is to reach 80% coverage in technologies and necessary drugs for treating the main NCDs at governmental and non-governmental scales. At the moment this coverage exists in both rural and urban areas of Iran.

Based on the first goal of the World Health Organization and considering the growth rate from time period 1996 to 2006, a reduction of 51240 death is needed; however, if reaching all of the goals, total number of death would decrease by 20475. Therefore, even if reaching 100% of the goals, based on the growth rate from time period 1996 to 2006 and 1986 to 2006, there are still 30765 and 26402 deaths left, respectively (Figure 5.2). In general, it seems that the goals of WHO won't lead to 25% decrease in the entire deaths by 2025. Despite the above-mentioned circumstance, it should be noted that reaching 100% of the goals might be somehow optimistic. Since most of the NCDs are preventable, attention to the lifestyle change might be most effective to control these types of diseases in Iran. So, it seems necessary to modify the targets, for instance decrease the 25% reduction in the first target or increase the percentage of reduction in targets 2 to 7 and increase the percentage in coverage of drug therapy and counseling and availability of the affordable basic technologies and essential medicines and adjust them with consideration to the Iranian population.

Target	Risk Factor	Value	Female	Male	Both Sexes
2	Alcohol consumption	Total	927	2,020	2,947
		10% Reduction	93	202	295
3	Physical inactivity	Total	5,827	10,446	16,273
		10% Reduction	583	1,045	1,628
4	Sodium consumption	Total	4,063	8,316	12,379
		30% Reduction	1,219	2,495	3,714
5	Tobacco use	Total	1,899	14,351	16,250
		30% Reduction	570	4,305	4,875
6	High blood pressure	Total	12,337	22,910	35,247
		25% Reduction	3,084	5,727	8,811
7	Obesity	Total	9,977	12,891	22,868
		Without Reduction	-	-	-
	Diabetes	Total	4,657	6,712	11,369
		Without Reduction	-	-	-

Table 5.2: number of death by the risk factors

Target	Sex	Coverage	
		Hypertension	Diabetes
8	Female	365	29
	Male	704	54
	Both Sexes	1,069	83

Table 4.3: Reduction in deaths by reaching 50% coverage

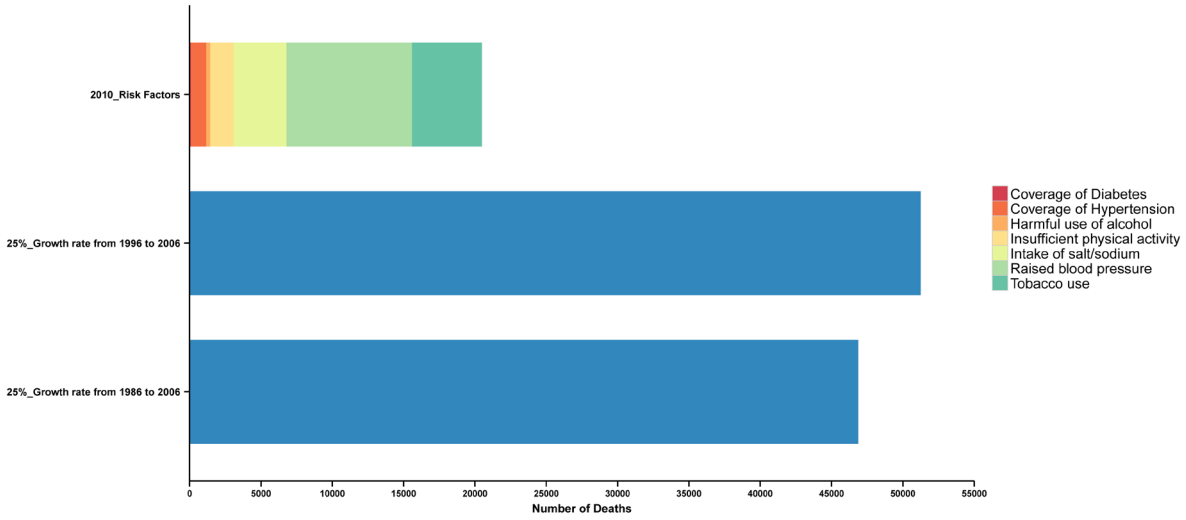


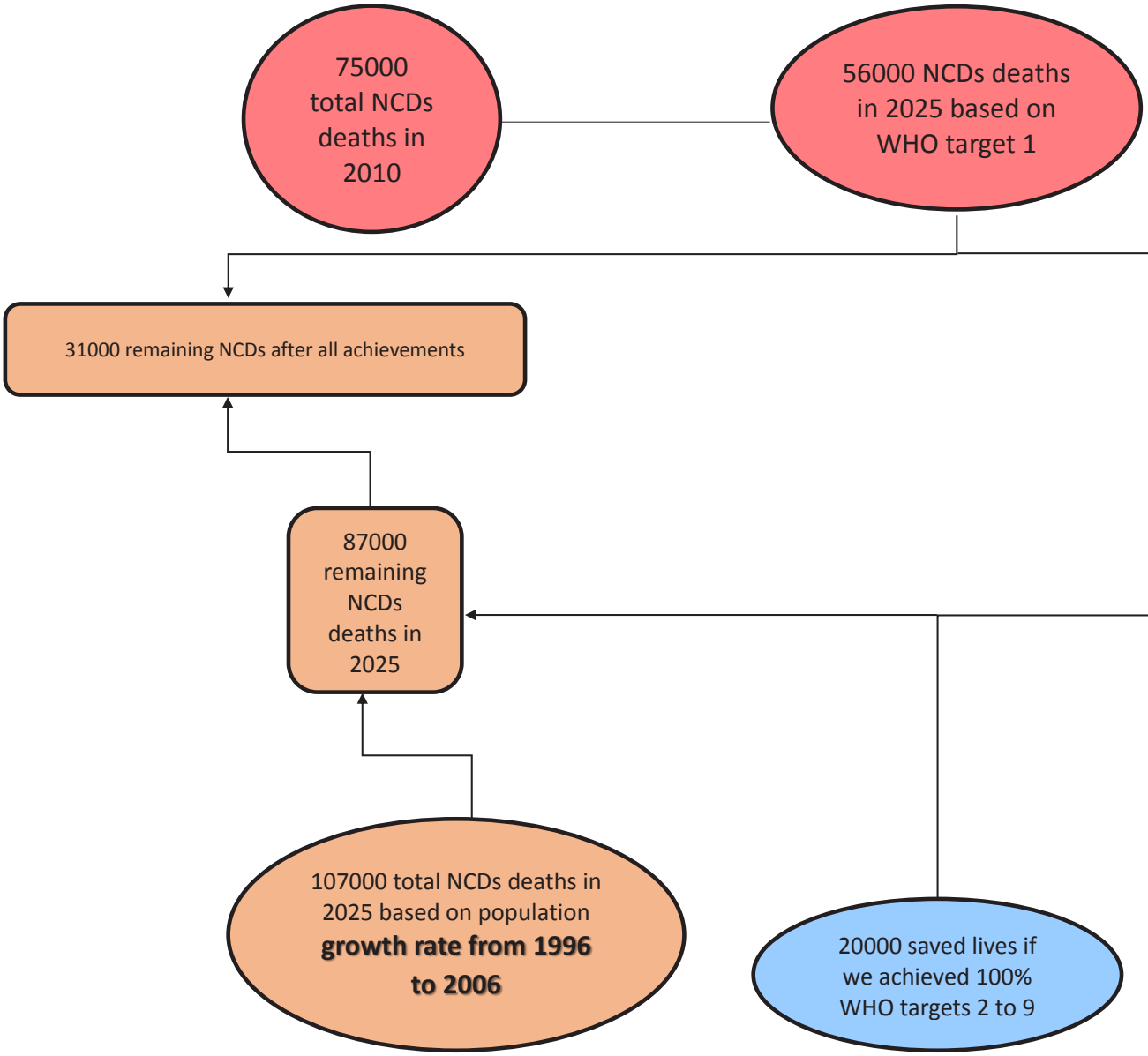
Figure 5.2: Number of reduction in deaths based on two growth rates and risk factors

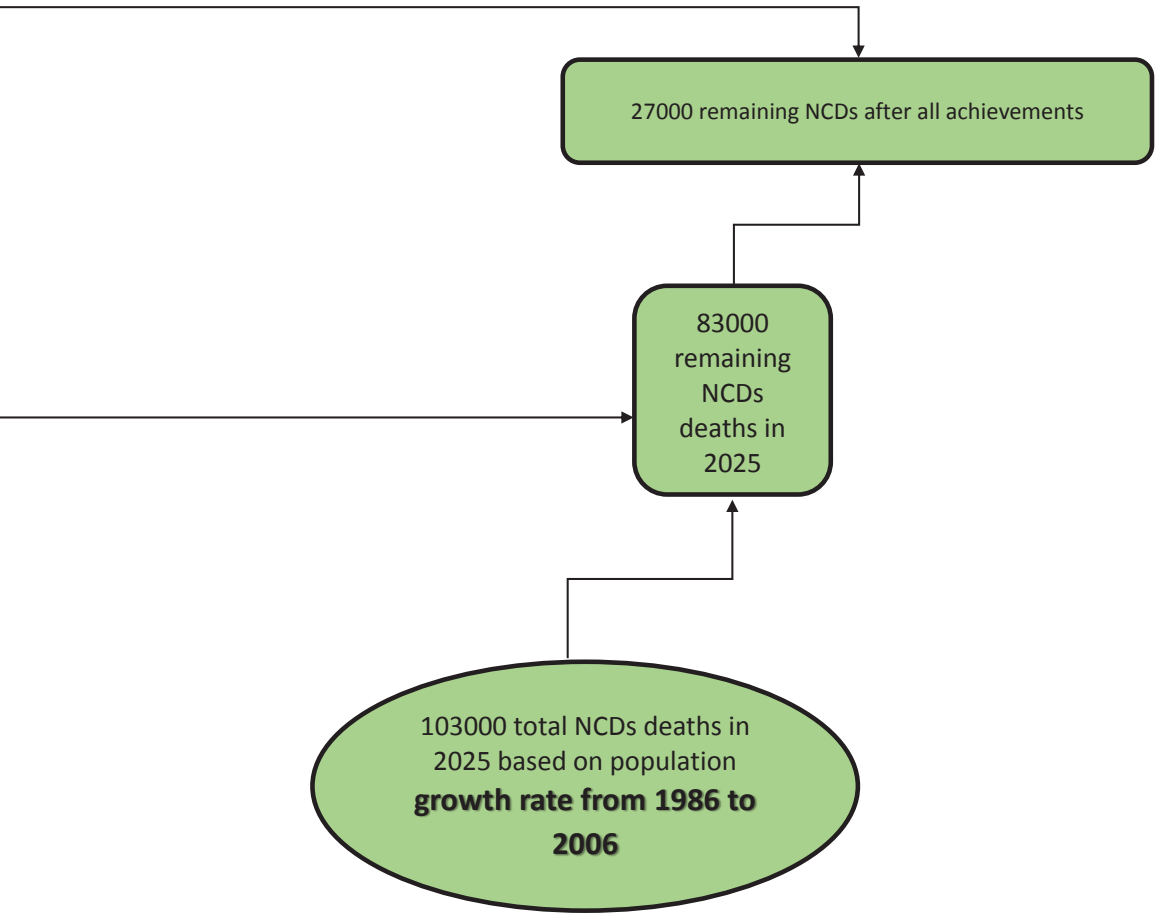
Table 5.4 displays the reported values in 2010 as a baseline and the expected values for years 2018 and 2025 for Iranian population. It should be noted that the baseline values for targets 2,3, 6, and 7 were extracted from the Global Status Report on non-communicable diseases 2014. Also, meta-analysis was done in order to achieve the mean population intake of salt/sodium. Indeed, the prevalence of smoking was obtained from the IRAN STEPS Survey 2009. Finally, availability of the affordable basic technologies and essential medicines was derived from Service Availability and Readiness Assessment survey.

Target	Year		
	2010 (Baseline)	2018	2025
1- A 25% relative reduction in risk of premature mortality from CVDs, cancer, diabetes, chronic respiratory diseases	18.1%	15.7%	13.6%
2- At least 10% relative reduction in the harmful use of alcohol	0.3%	0.3%	0.27%
3- A 10% relative reduction in prevalence of insufficient physical activity	33.5%	31.7%	30.2%
4- A 30% relative reduction in mean population intake of salt/sodium	10 g/day	8.4 g/day	7 g/day
5- A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years	10.8%	9.1%	7.6%
6- A 25% relative reduction in the prevalence of raised blood pressure	25.6%	22.2%	19.2%
7- Halt the rise in diabetes	11.5%	11.5%	11.5%
7- Halt the rise in obesity	23.9%	23.9%	23.9%
8- At least 50% of eligible people receive drug therapy and counselling	37.5%	44.2%	50%
9- An 80% availability of the affordable basic technologies and essential medicines	70%	75.3%	80%

Table 5.4: Status of Iran in 2010, 2018, and 2025

Flowchart 1.5: Overview of the nine targets of the World Health Organization




27000 remaining NCDs after all achievements
83000 remaining NCDs deaths in 2025
103000 total NCDs deaths in 2025 based on population growth rate from 1986 to 2006

Chapter 6

Formation of the Iranian National Committee for NCDs Prevention and Control in the Islamic Republic of Iran

Key Points

- "National Plan for the prevention and control of non-communicable diseases and related risk factors in the Islamic Republic of Iran" is a strategic plan that determines the strategies of the Ministry of Health and Medical Education for the prevention and control of non-communicable diseases and related risk factors for 10 years.
- It is crystal clear that the national objectives would be determined based on the country's conditions, and the progress rate would be specified according to the national requirements and resources.

5.1. Introduction

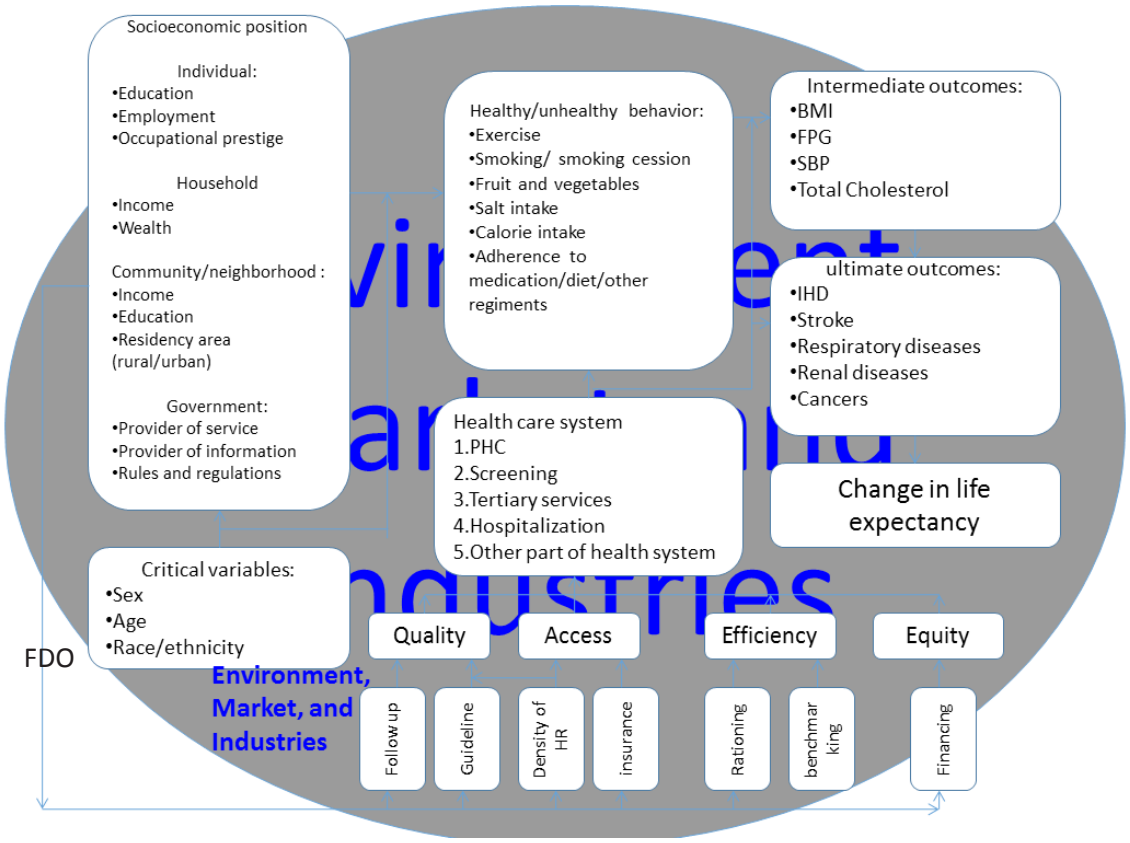
"National Plan for the prevention and control of non-communicable diseases and related risk factors in the Islamic Republic of Iran" is a strategic plan that determines the strategies of the Ministry of Health and Medical Education for the prevention and control of non-communicable diseases and related risk factors for 10 years (until 2025). To carry out the plan, a committee called "the National Committee for Prevention and Control of Non-communicable Diseases and Risk Factors" was formed in order to fulfill the legal obligations of the Ministry of Health and Medical Education, with the aim of integration of policy-making, planning, and monitoring of all activities in the area of non-communicable diseases and related risk factors in the Islamic Republic of Iran. The national committee is a policy-making, regulatory, scientific, and planning committee that has subcommittees to perform its duties in all areas related to the control of non-communicable diseases and risk factors; the committee is regarded as a decision-making body of the Ministry of Health and Medical Education with respect to non-communicable diseases.

Because of the importance of non-communicable diseases and given the international commitment of the Islamic Republic of Iran with respect to this group of diseases and related risk factors in the country, the committee was headed by the Minister of Health and Medical Education.

With the help of valuable international experience and given the real needs of the country in the area of non-communicable diseases and related risk factors, the committee prepared the national document on non-communicable diseases, which mainly oversees the macro policies and main strategies related to the control of these diseases and, at the same time, oversees the effective implementation of programs, strategies, and intra-sectoral and extra-sectoral policies.

5.2. Conceptual Framework of the Committee

The conceptual framework of the National Committee for Prevention and Control of Non-communicable Diseases and Risk Factors is as follows:



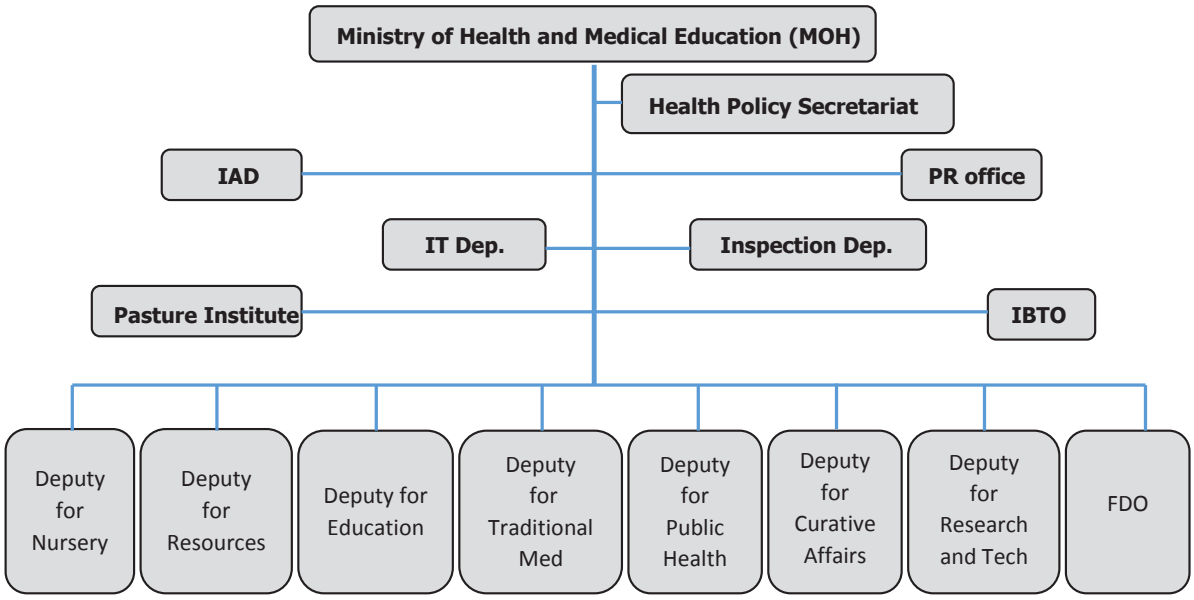
5.3. Committee Partners

The committee partners are divided into two main categories: the deputies, organizations, and offices that are the subdivisions of the Ministry of Health and Medical Education, and other ministries, organizations, and institutions.

1. Deputies, organizations, and offices that were the subdivisions of the Ministry of Health and Medical Education

Deputy health, deputy treatment, deputy food and drugs, deputy education deputy research and technology, deputy development and management of resources, general relations, policy-making council, the national institute of health research, and the board of trustees at universities.

5.4. Ministry of Health and Medical Education of Iran



2. Other ministries, organizations, and institutions

Ministry of Education and Training, Ministry of Industries and Mines, Ministry of Cooperatives, Labor, and Social Welfare, Islamic Republic of Iran Broadcasting, Ministry of Youth Affairs and Sports, Ministry of Roads and Urban Development, Ministry of Agriculture, the Police, the Parliament, the Joint Command of the Armed Forces, the Judiciary, Expediency Discernment Council, Organization of Management and Planning, Ministry of Energy, Ministry of Oil, and municipalities.

5.5. Committee Objectives

The committee was set up with the overall goal of reducing the mortality rate due to non-communicable diseases by 25% up to 2025, a reduction rate that has been recommended by the World Health Organization for all countries. However, it is crystal clear that the national objectives would be determined based on the country's conditions, and the progress rate would be specified according to the national requirements and resources. These objectives include:

1. Reducing the rate of early death due to non-communicable diseases
2. Reducing the rate of physical inactivity
3. Reducing sodium consumption
4. Reducing tobacco use
5. Reducing alcohol consumption

6. Reducing the cases of high blood pressure
7. Preventing the rates of obesity and diabetes from increasing
8. Increasing the coverage of pharmacotherapy and consultation
9. Increasing the coverage of technologies and essential drugs required for patients of non-communicable diseases

5.6. Committee Action Plan

The intended action plan of the "National Committee for Prevention and Control of Non-Communicable Diseases and related Risk Factors in the Islamic Republic of Iran" for the prevention and control of these diseases and related risk factors include the following six activities:

1. Giving priority to non-communicable diseases at national level and merging the prevention and control of these diseases in the policies of all government sections (placing a high priority on non-communicable diseases)
2. Establishing and strengthening the national policies and plans for the prevention and control of non-communicable diseases (strengthening national plans)
3. Encouraging research for the prevention and control of non-communicable diseases (prioritizing research)
4. Promoting interventions for reducing the main, common, and modifiable risk factors of non-communicable diseases such as tobacco use, unhealthy diet, physical inactivity, and harmful consumption of alcohol (reducing risk factors)
5. Increasing cooperation for the prevention and control of non-communicable diseases (enhancing cooperation)
6. Monitoring non-communicable diseases and their determinants and assessing the progress rate at the national level (monitoring the trend of non-communicable diseases)
7. Along with the implementation of the above six activities, the following outcomes are expected to be achieved:

1. Developing the map of epidemic incidence for non-communicable diseases and analyzing their social, economic, behavioral, and political determinants as the basis of providing guidance for political, legislative, financial, and planning measures required for protecting and monitoring the prevention and control of non-communicable diseases
2. Reducing the individuals' and groups' exposure to common and modifiable risk factors of non-communicable diseases (such as tobacco use, unhealthy diets, physical inactivity, and harmful consumption of alcohol) and their determinants and also reinforcing the individuals' and groups' capacities for adopting healthier options and following the patterns of lifestyle that lead to the health promotion in the community.
3. Strengthening the health and care associated with individuals suffering from non-communicable diseases through setting evidence-based norms, standards, and instructions related to expenses, the efficacy of interventions, and the reorientation of the health care system toward accountability to the available need for the effective management of chronic diseases.

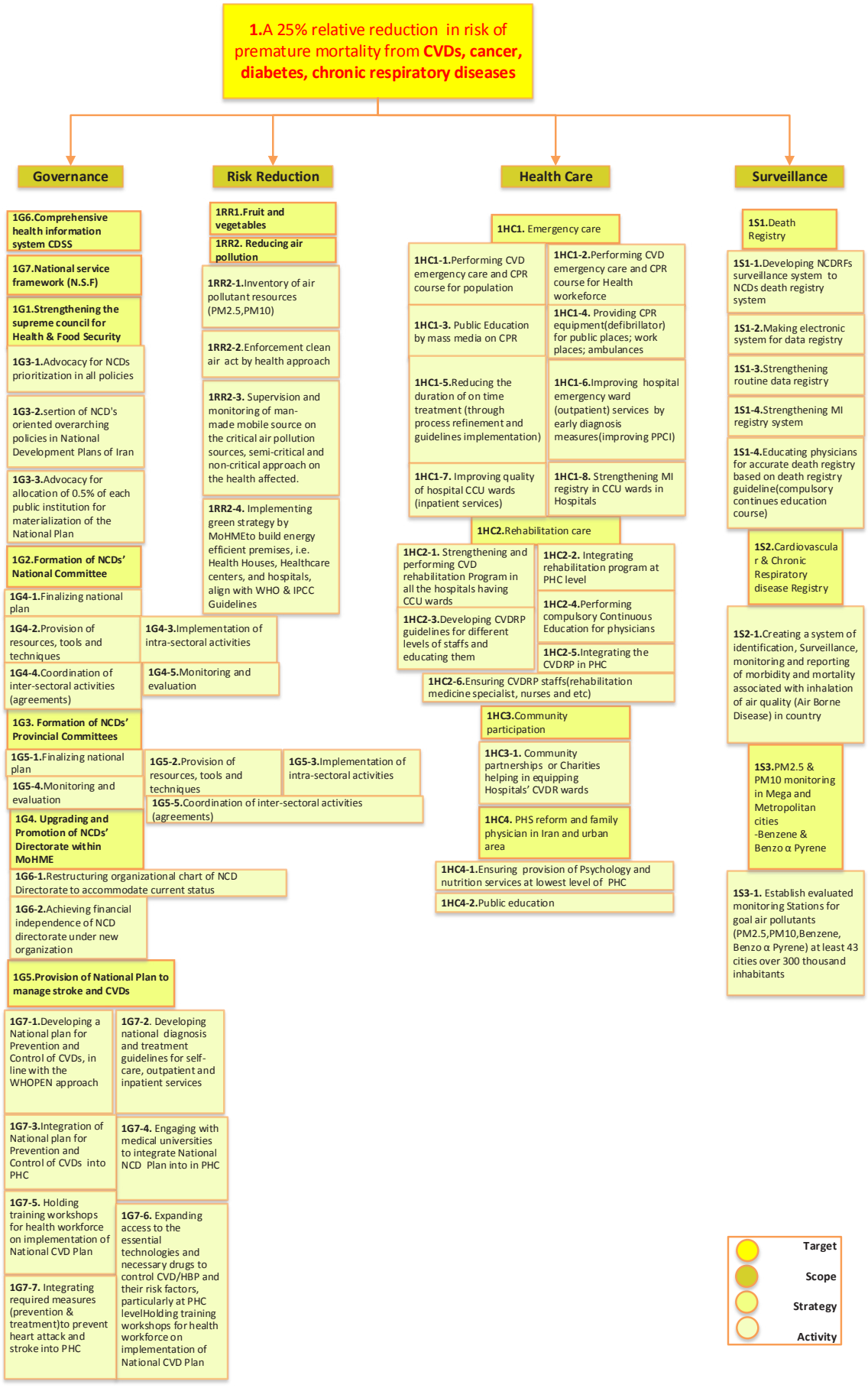
Chapter 7

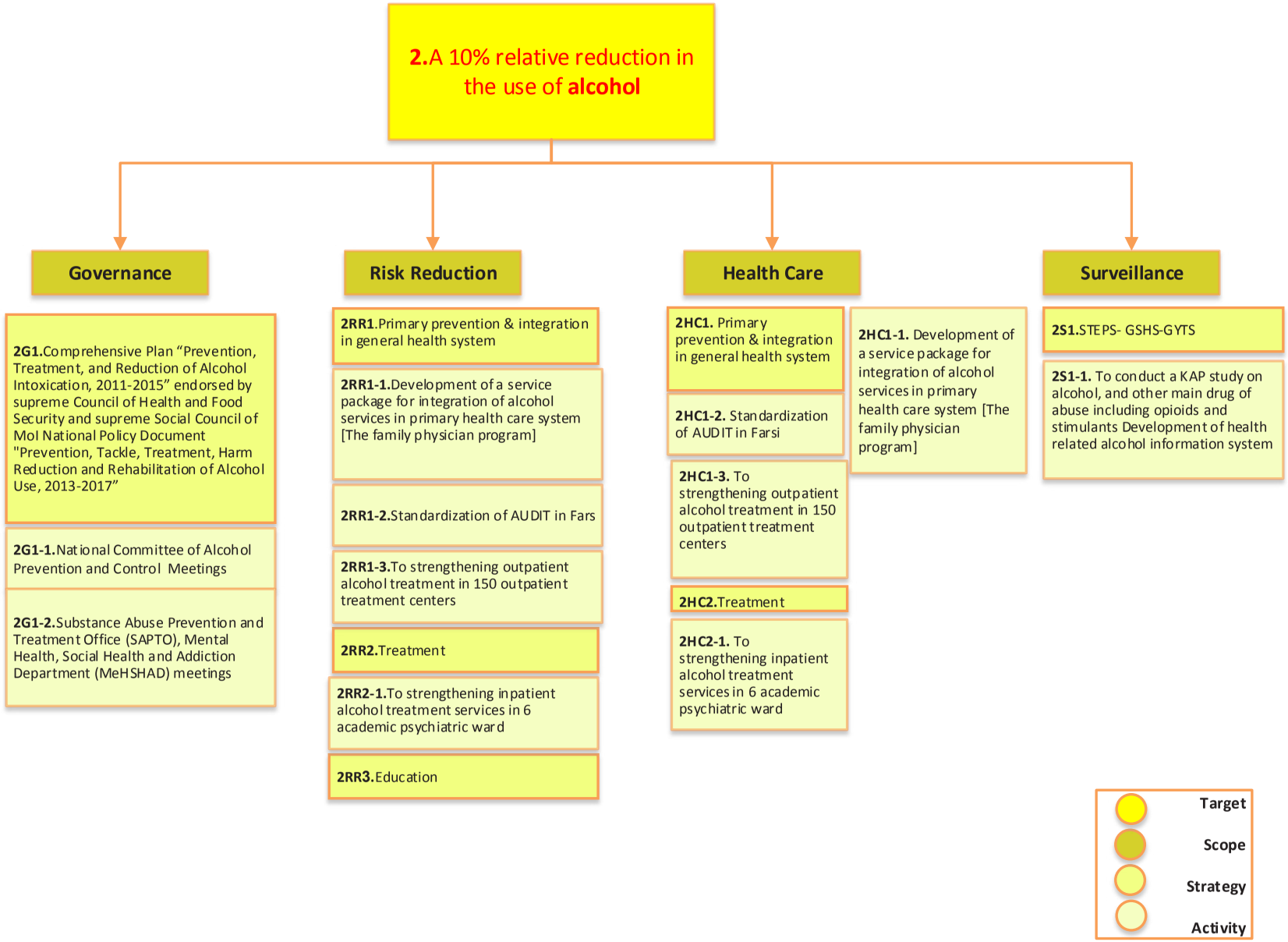
Intra- and Inter-sectoral Interventions of the Iranian national committee for NCDs Prevention and Control

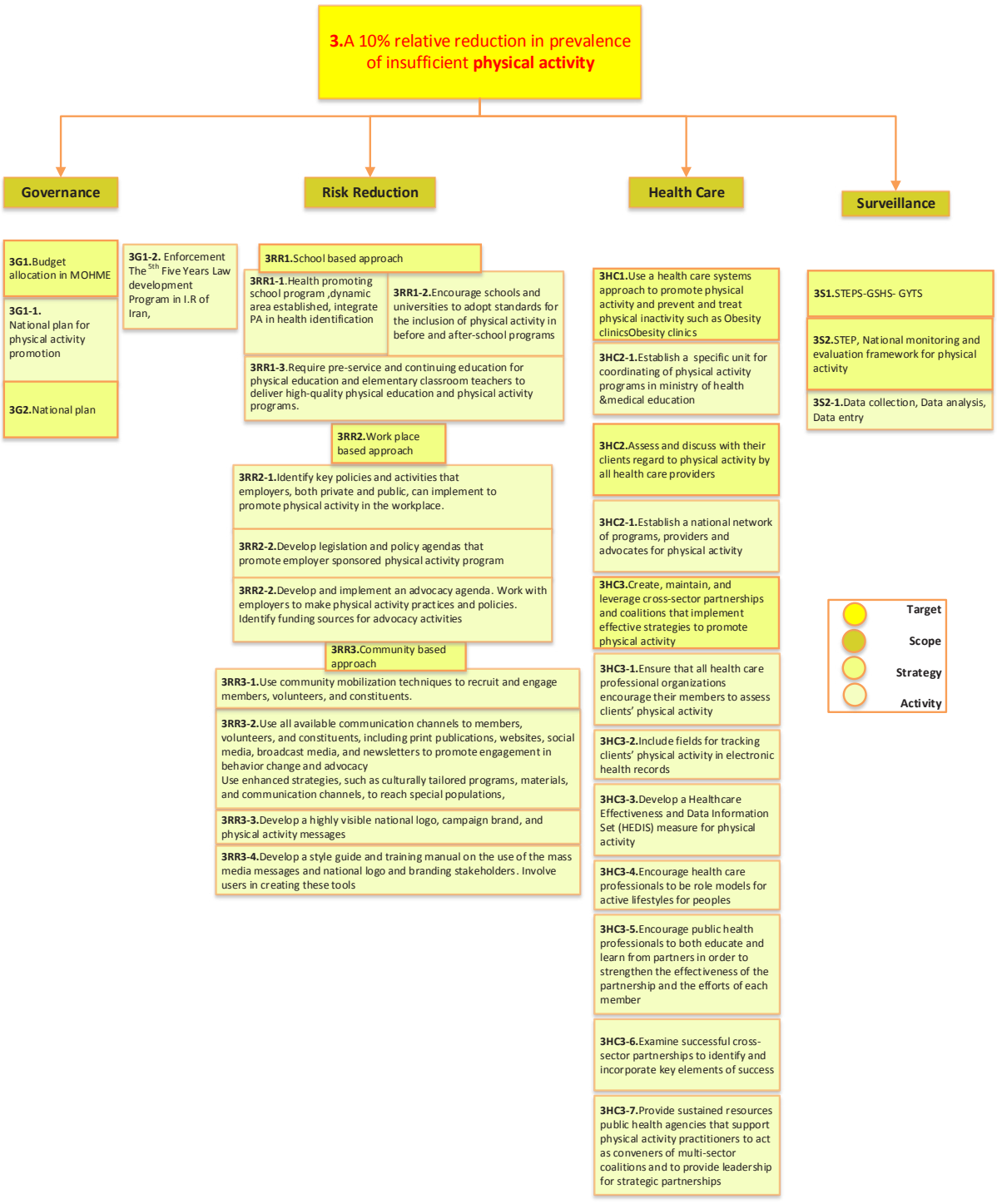

10. Zero trans fatty acid in food & oily products
Governance
Risk Reduction
Health Care
Surveillance
1. A 25% relative reduction in risk of premature mortality from CVDs, cancer, diabetes, chronic respiratory diseases
Governance
Risk Reduction
Health Care
Surveillance
8. A 50% of eligible people receive drug therapy and coun to prevent heart attacks and strokes
Governance
Risk Reduction
Health Care
A 25% relative reduction in NCDs by 2025
WHO Principles:
Focus on equity
Multisectoral actions and multistakeholder involvement
Life-course approach
Balance between population-based and individual approaches
Empowerment of people and communities
Health systems strengthening
Universal health coverage
Evidence-based strategies
Management of real, perceived or potential conflicts of interest
Cardiovascular Diseases
Diabetes
Cancer
Chronic Respirato Disease
Physical Inactivity
Unhealthy Diets
Tobacco
Harmful us Alcohol
Iran National NCD Targets
2. A 10% relative reduction in the use of alcohol
Governance
Risk Reduction
Health Care
Surveillance
3. A 10% relative reduction in prevalence of insufficient physical activity
Governance
Risk Reduction
Health Care
Surveillance
Target
Scope
Strategy
Activity

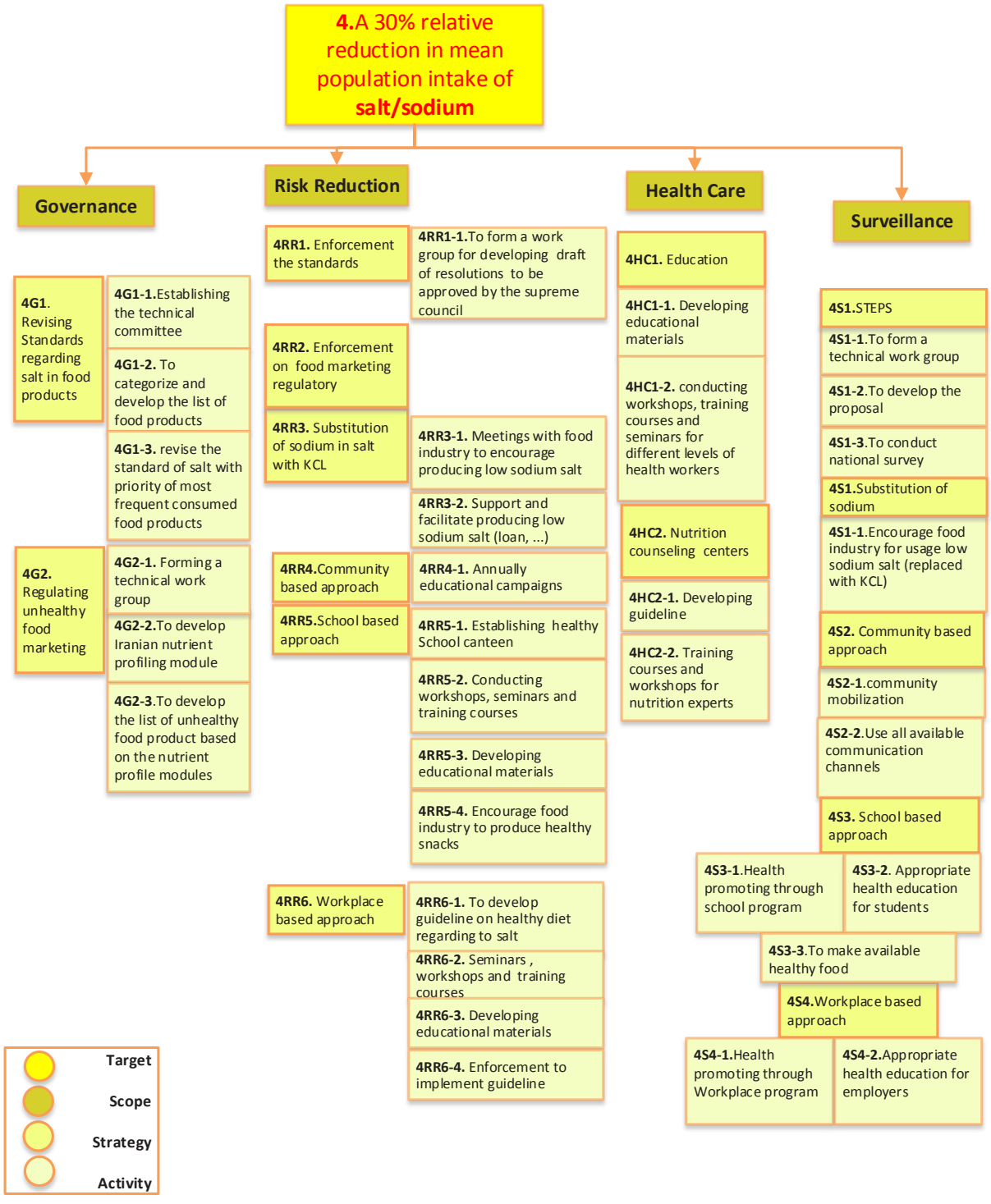

Surveillance
9. An 100% availability of the affordable basic technologies and essential medicines, including generics
Governance
Risk Reduction
Health Care
Surveillance
7. A Halt the rise in diabetes and obesity
Governance
Risk Reduction
Health Care
Surveillance
5. A 30% relative reduction in prevalence of current tobacco use in persons aged over 15 years
Governance
Risk Reduction
Health Care
Surveillance
4. A 30% relative reduction in mean population intake of salt/sodium
Governance
Risk Reduction
Health Care
Surveillance
6. A 25% relative reduction in prevalence of raised blood pressure
Governance
Risk Reduction
Health Care
Surveillance

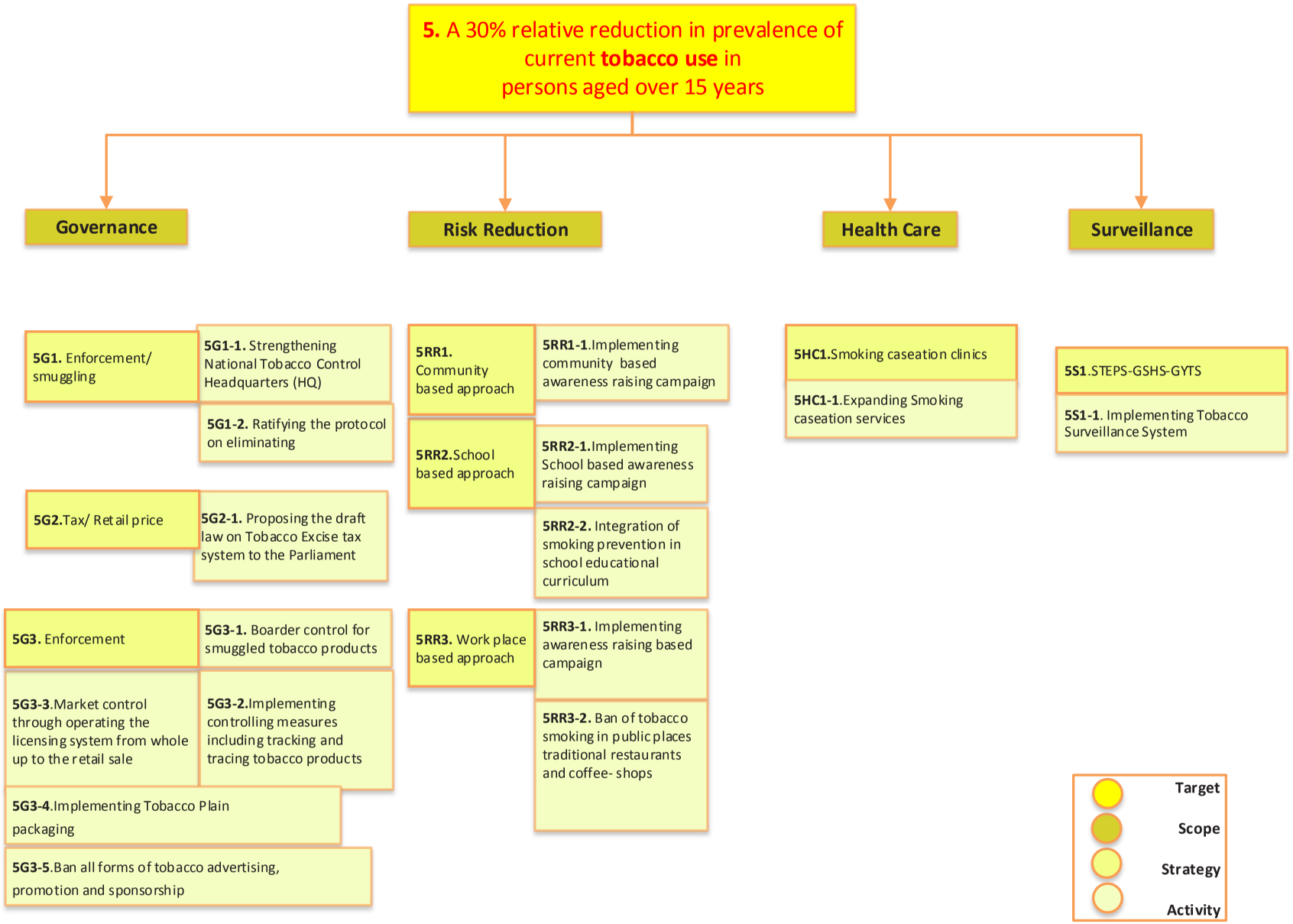

A 25% relative reduction in NCDs by 2025
WHO Principles:
Focus on equity
Multisectoral actions and multistakeholder involvement
Life-course approach
Balance between population-based and individual approaches
Empowerment of people and communities
Health systems strengthening
Universal health coverage
Evidence-based strategies
Management of real, perceived or potential conflicts of interest
Cardiovascular Diseases
Diabetes
Cancer
Chronic Respiratory Diseases
Physical Inactivity
Unhealthy Diets
Tobacco
Harmful use of Alcohol
Iran National NCD Targets

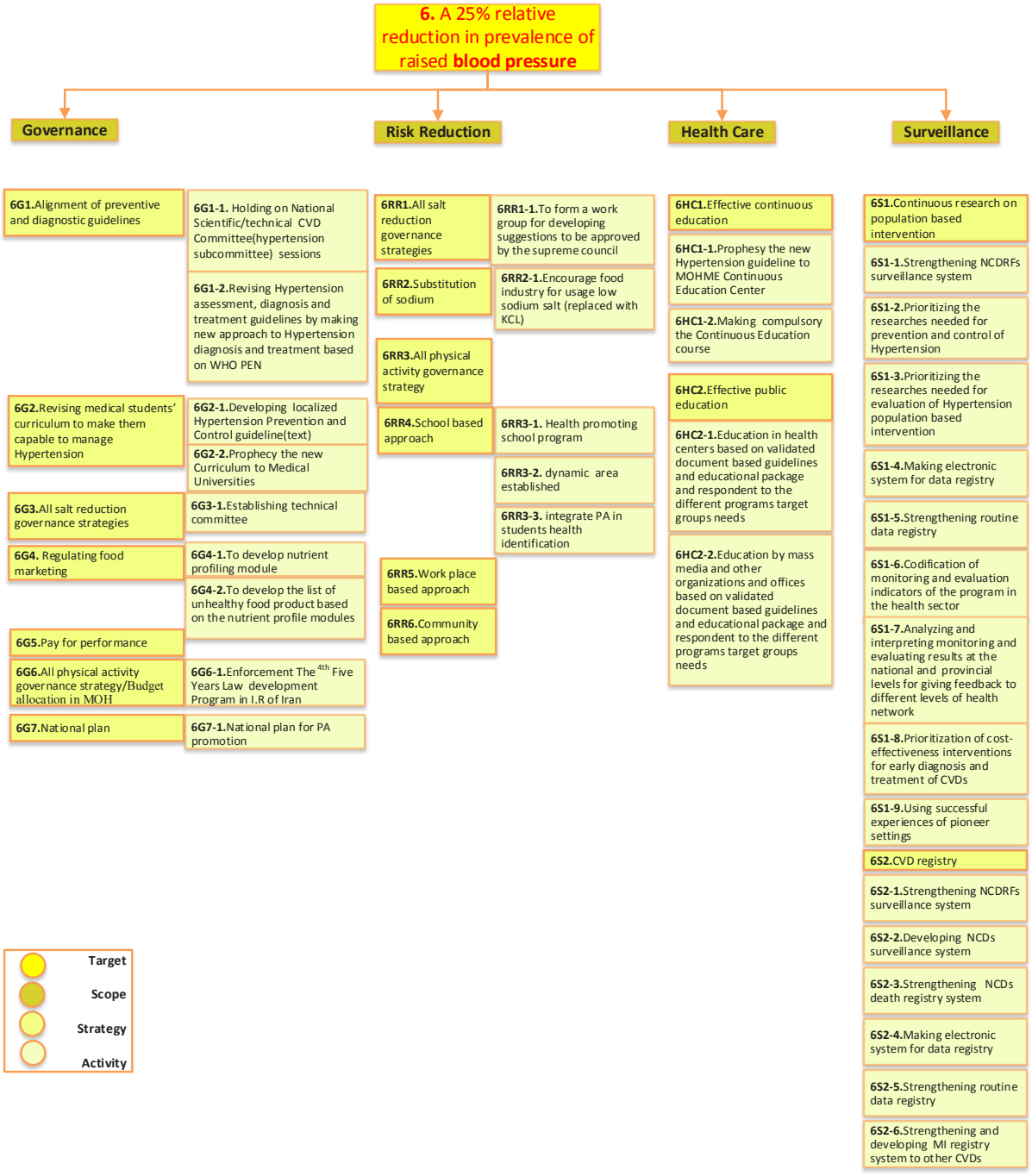

1.A 25% relative reduction in risk of premature mortality from CVDs, cancer, diabetes, chronic respiratory diseases
Governance
Risk Reduction
Health Care
Surveillance
1G6.Comprehensive health information system CDSS
1G7.National service framework (N.S.F)
1G1.Strengthening the supreme council for Health & Food Security
1G3-1.Advocacy for NCDs prioritization in all policies
1G3-2.sertion of NCD's oriented overarching policies in National Development Plans of Iran
1G3-3.Advocacy for allocation of 0.5% of each public institution for materialization of the National Plan
1G2.Formation of NCDs' National Committee
1G4-1.Finalizing national plan
1G4-2.Provision of resources, tools and techniques
1G4-3.Implementation of intra-sectoral activities
1G4-4.Coordination of inter-sectoral activities (agreements)
1G4-5.Monitoring and evaluation
1G3. Formation of NCDs' Provincial Committees
1G5-1.Finalizing national plan
1G5-2.Provision of resources, tools and techniques
1G5-3.Implementation of intra-sectoral activities
1G5-4.Monitoring and evaluation
1G5-5.Coordination of inter-sectoral activities (agreements)
1G4. Upgrading and Promotion of NCDs' Directorate within MoHME
1G6-1.Restructuring organizational chart of NCD Directorate to accommodate current status
1G6-2.Achieving financial independence of NCD directorate under new organization
1G5.Provision of National Plan to manage stroke and CVDs
1G7-1.Developing a National plan for Prevention and Control of CVDs, in line with the WHOPEN approach
1G7-2. Developing national diagnosis and treatment guidelines for self-care, outpatient and inpatient services
1G7-3.Integration of National plan for Prevention and Control of CVDs into PHC
1G7-4. Engaging with medical universities to integrate National NCD Plan into in PHC
1G7-5. Holding training workshops for health workforce on implementation of National CVD Plan
1G7-6. Expanding access to the essential technologies and necessary drugs to control CVD/HBP and their risk factors, particularly at PHC levelHolding training workshops for health workforce on implementation of National CVD Plan
1G7-7. Integrating required measures (prevention & treatment)to prevent heart attack and stroke into PHC
1RR1.Fruit and vegetables
1RR2. Reducing air pollution
1RR2-1.Inventory of air pollutant resources (PM2.5,PM10)
1RR2-2.Enforcement clean air act by health approach
1RR2-3. Supervision and monitoring of man-made mobile source on the critical air pollution sources, semi-critical and non-critical approach on the health affected.
1RR2-4. Implementing green strategy by MoHMEto build energy efficient premises, i.e. Health Houses, Healthcare centers, and hospitals, align with WHO & IPCC Guidelines
1HC1. Emergency care
1HC1-1.Performing CVD emergency care and CPR course for population
1HC1-2.Performing CVD emergency care and CPR course for Health workeforce
1HC1-3. Public Education by mass media on CPR
1HC1-4. Providing CPR equipment(defibrillator) for public places; work places; ambulances
1HC1-5.Reducing the duration of on time treatment (through process refinement and guidelines implementation)
1HC1-6.Improving hospital emergency ward (outpatient) services by early diagnosis measures(improving PPCI)
1HC1-7. Improving quality of hospital CCU wards (inpatient services)
1HC1-8. Strengthening MI registry in CCU wards in Hospitals
1HC2.Rehabilitation care
1HC2-1. Strengthening and performing CVD rehabilitation Program in all the hospitals having CCU wards
1HC2-2. Integrating rehabilitation program at PHC level
1HC2-3.Developing CVDRP guidelines for different levels of staffs and educating them
1HC2-4.Performing compulsory Continuous Education for physicians
1HC2-5.Integrating the CVDRP in PHC
1HC2-6.Ensuring CVDRP staffs(rehabilitation medicine specialist, nurses and etc)
1HC3.Community participation
1HC3-1. Community partnerships or Charities helping in equipping Hospitals' CVDR wards
1HC4. PHS reform and family physician in Iran and urban area
1HC4-1.Ensuring provision of Psychology and nutrition services at lowest level of PHC
1HC4-2.Public education
1S1.Death Registry
1S1-1.Developing NCDRFs surveillance system to NCDs death registry system
1S1-2.Making electronic system for data registry
1S1-3.Strengthening routine data registry
1S1-4.Strengthening MI registry system
1S1-4.Educating physicians for accurate death registry based on death registry guideline(compulsory continues education course)
1S2.Cardiovascular & Chronic Respiratory disease Registry
1S2-1.Creating a system of identification, Surveillance, monitoring and reporting of morbidity and mortality associated with inhalation of air quality (Air Borne Disease) in country
1S3.PM2.5 & PM10 monitoring in Mega and Metropolitan cities -Benzene & Benzo α Pyrene
1S3-1. Establish evaluated monitoring Stations for goal air pollutants (PM2.5,PM10,Benzene, Benzo α Pyrene) at least 43 cities over 300 thousand inhabitants
Target
Scope
Strategy
Activity

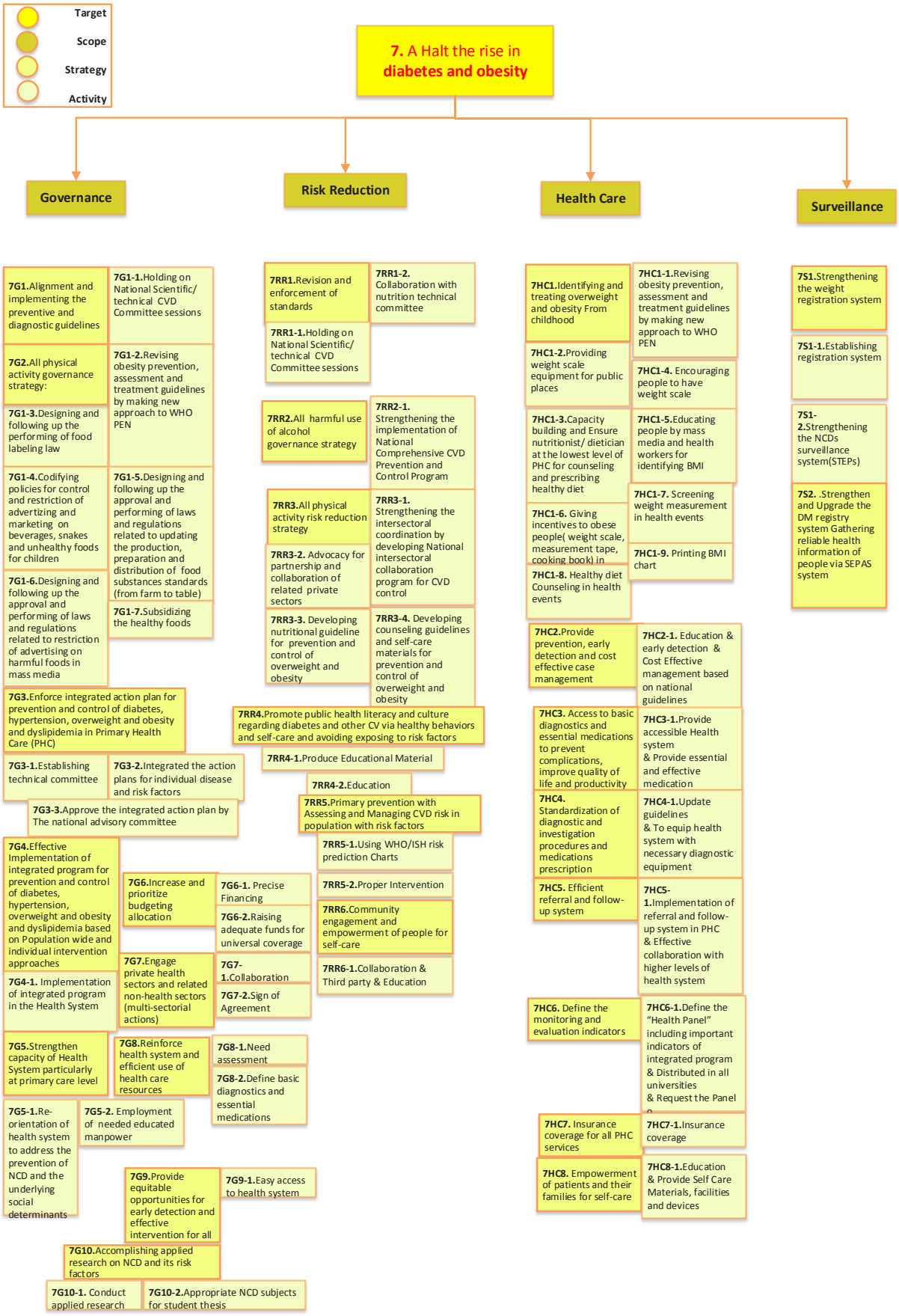

2.A 10% relative reduction in the use of alcohol
Governance
Risk Reduction
Health Care
Surveillance
2G1.Comprehensive Plan "Prevention, Treatment, and Reduction of Alcohol Intoxication, 2011-2015" endorsed by supreme Council of Health and Food Security and supreme Social Council of MoI National Policy Document "Prevention, Tackle, Treatment, Harm Reduction and Rehabilitation of Alcohol Use, 2013-2017"
2G1-1.National Committee of Alcohol Prevention and Control Meetings
2G1-2.Substance Abuse Prevention and Treatment Office (SAPTO), Mental Health, Social Health and Addiction Department (MeHSHAD) meetings
2RR1.Primary prevention & integration in general health system
2RR1-1.Development of a service package for integration of alcohol services in primary health care system [The family physician program]
2RR1-2.Standardization of AUDIT in Fars
2RR1-3.To strengthening outpatient alcohol treatment in 150 outpatient treatment centers
2RR2.Treatment
2RR2-1.To strengthening inpatient alcohol treatment services in 6 academic psychiatric ward
2RR3.Education
2HC1. Primary prevention & integration in general health system
2HC1-1. Development of a service package for integration of alcohol services in primary health care system [The family physician program]
2HC1-2. Standardization of AUDIT in Farsi
2HC1-3. To strengthening outpatient alcohol treatment in 150 outpatient treatment centers
2HC2.Treatment
2HC2-1. To strengthening inpatient alcohol treatment services in 6 academic psychiatric ward
2S1.STEPS- GSHS-GYTS
2S1-1. To conduct a KAP study on alcohol, and other main drug of abuse including opioids and stimulants Development of health related alcohol information system
Target
Scope
Strategy
Activity

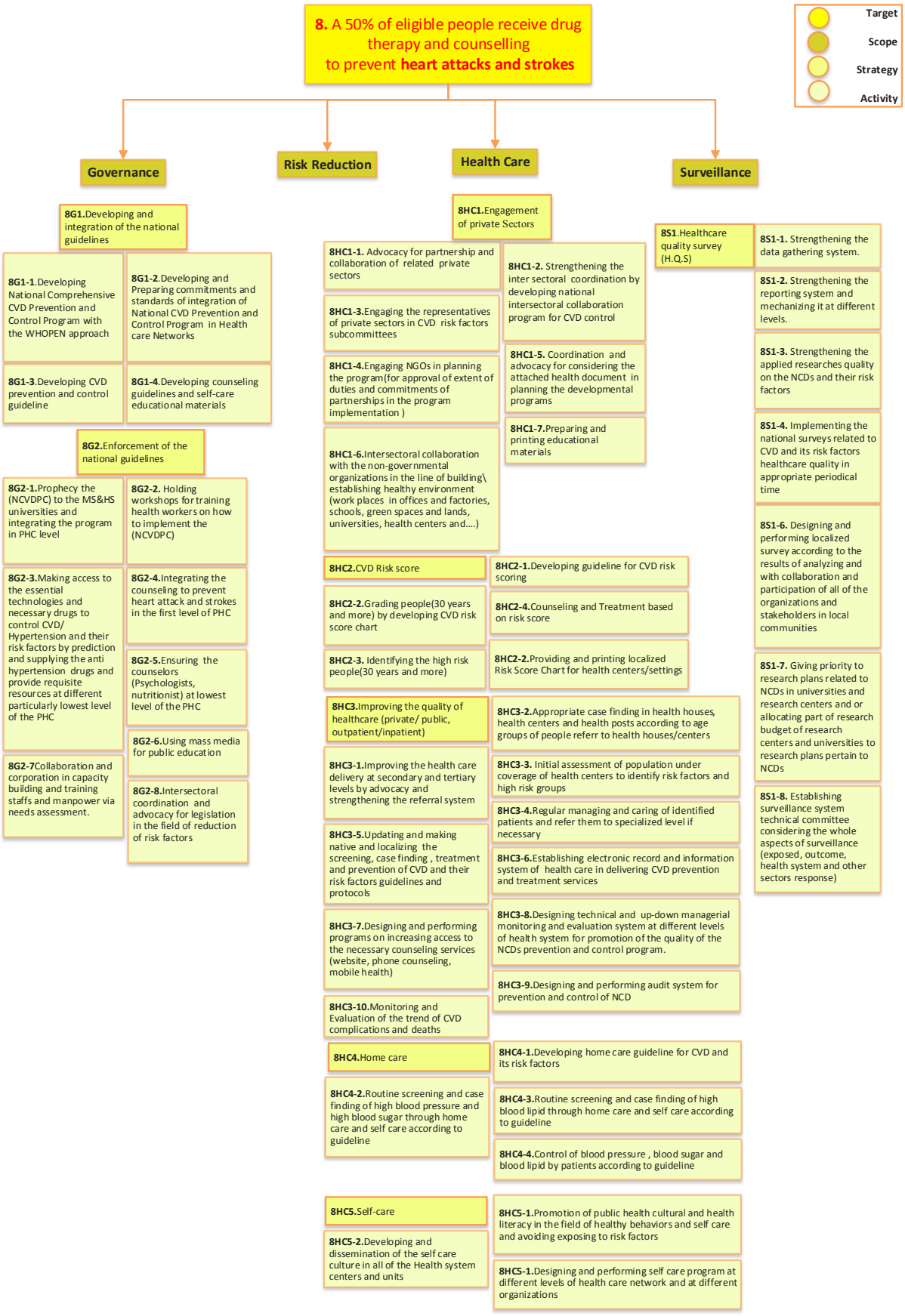

3.A 10% relative reduction in prevalence of insufficient physical activity
Governance
Risk Reduction
Health Care
Surveillance
3G1.Budget allocation in MOHME
3G1-1. National plan for physical activity promotion
3G2.National plan
3G1-2. Enforcement The 5th Five Years Law development Program in I.R of Iran,
3RR1.School based approach
3RR1-1.Health promoting school program ,dynamic area established, integrate PA in health identification
3RR1-2.Encourage schools and universities to adopt standards for the inclusion of physical activity in before and after-school programs
3RR1-3.Require pre-service and continuing education for physical education and elementary classroom teachers to deliver high-quality physical education and physical activity programs.
3RR2.Work place based approach
3RR2-1.Identify key policies and activities that employers, both private and public, can implement to promote physical activity in the workplace.
3RR2-2.Develop legislation and policy agendas that promote employer sponsored physical activity program
3RR2-2.Develop and implement an advocacy agenda. Work with employers to make physical activity practices and policies. Identify funding sources for advocacy activities
3RR3.Community based approach
3RR3-1.Use community mobilization techniques to recruit and engage members, volunteers, and constituents.
3RR3-2.Use all available communication channels to members, volunteers, and constituents, including print publications, websites, social media, broadcast media, and newsletters to promote engagement in behavior change and advocacy
Use enhanced strategies, such as culturally tailored programs, materials, and communication channels, to reach special populations,
3RR3-3.Develop a highly visible national logo, campaign brand, and physical activity messages
3RR3-4.Develop a style guide and training manual on the use of the mass media messages and national logo and branding stakeholders. Involve users in creating these tools
3HC1.Use a health care systems approach to promote physical activity and prevent and treat physical inactivity such as Obesity clinicsObesity clinics
3HC2-1.Establish a specific unit for coordinating of physical activity programs in ministry of health &medical education
3HC2.Assess and discuss with their clients regard to physical activity by all health care providers
3HC2-1.Establish a national network of programs, providers and advocates for physical activity
3HC3.Create, maintain, and leverage cross-sector partnerships and coalitions that implement effective strategies to promote physical activity
3HC3-1.Ensure that all health care professional organizations encourage their members to assess clients' physical activity
3HC3-2.Include fields for tracking clients' physical activity in electronic health records
3HC3-3.Develop a Healthcare Effectiveness and Data Information Set (HEDIS) measure for physical activity
3HC3-4.Encourage health care professionals to be role models for active lifestyles for peoples
3HC3-5.Encourage public health professionals to both educate and learn from partners in order to strengthen the effectiveness of the partnership and the efforts of each member
3HC3-6.Examine successful cross-sector partnerships to identify and incorporate key elements of success
3HC3-7.Provide sustained resources public health agencies that support physical activity practitioners to act as conveners of multi-sector coalitions and to provide leadership for strategic partnerships
3S1.STEPS-GSHS- GYTS
3S2.STEP, National monitoring and evaluation framework for physical activity
3S2-1.Data collection, Data analysis, Data entry
Target
Scope
Strategy
Activity

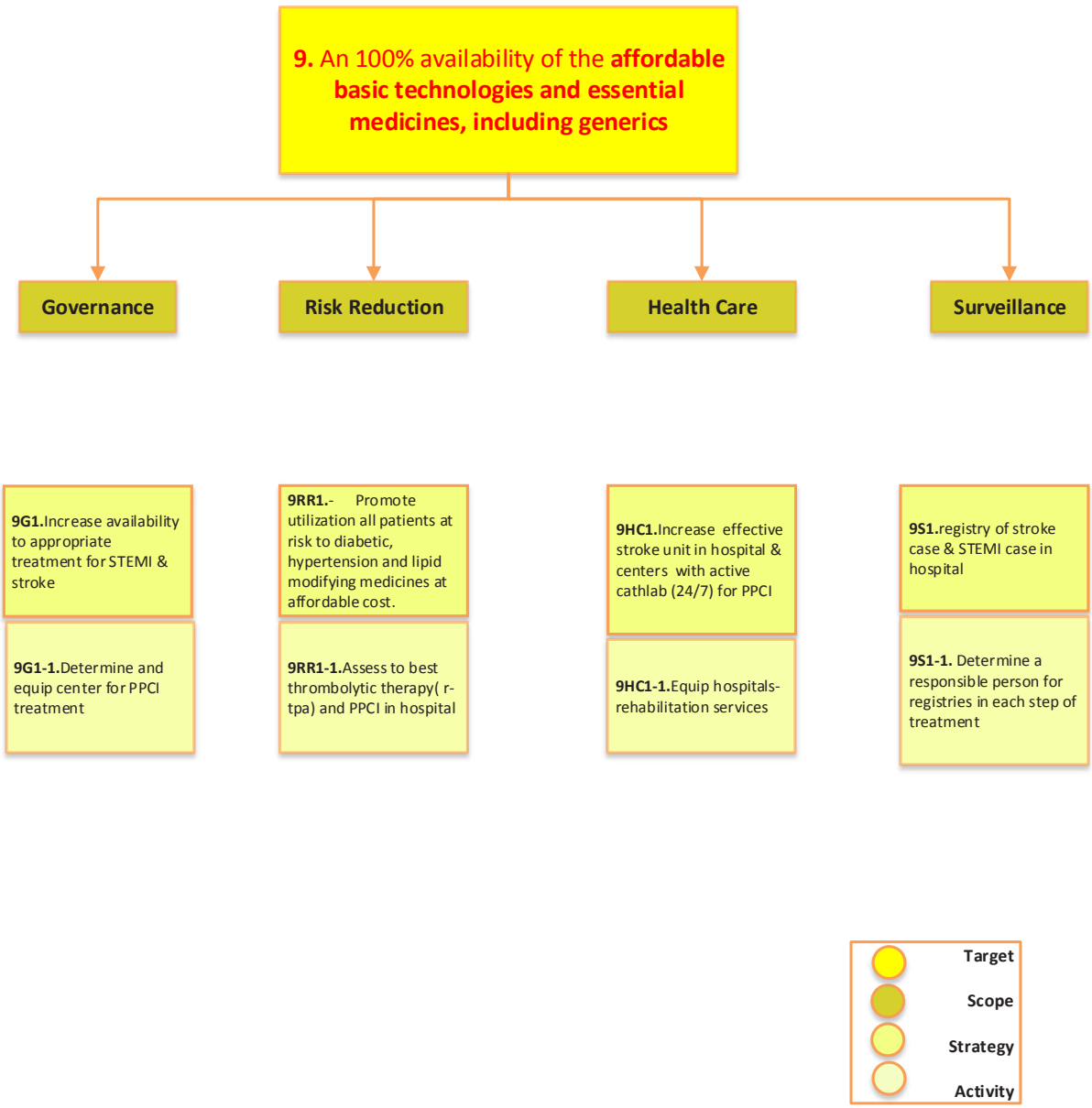

4.A 30% relative reduction in mean population intake of salt/sodium
Governance
Risk Reduction
Health Care
Surveillance
4G1. Revising Standards regarding salt in food products
4G1-1.Establishing the technical committee
4G1-2. To categorize and develop the list of food products
4G1-3. revise the standard of salt with priority of most frequent consumed food products
4G2. Regulating unhealthy food marketing
4G2-1. Forming a technical work group
4G2-2.To develop Iranian nutrient profiling module
4G2-3.To develop the list of unhealthy food product based on the nutrient profile modules
4RR1. Enforcement the standards
4RR1-1.To form a work group for developing draft of resolutions to be approved by the supreme council
4RR2. Enforcement on food marketing regulatory
4RR3. Substitution of sodium in salt with KCL
4RR3-1. Meetings with food industry to encourage producing low sodium salt
4RR3-2. Support and facilitate producing low sodium salt (loan, ...)
4RR4.Community based approach
4RR4-1. Annually educational campaigns
4RR5.School based approach
4RR5-1. Establishing healthy School canteen
4RR5-2. Conducting workshops, seminars and training courses
4RR5-3. Developing educational materials
4RR5-4. Encourage food industry to produce healthy snacks
4RR6. Workplace based approach
4RR6-1. To develop guideline on healthy diet regarding to salt
4RR6-2. Seminars , workshops and training courses
4RR6-3. Developing educational materials
4RR6-4. Enforcement to implement guideline
4HC1. Education
4HC1-1. Developing educational materials
4HC1-2. conducting workshops, training courses and seminars for different levels of health workers
4HC2. Nutrition counseling centers
4HC2-1. Developing guideline
4HC2-2. Training courses and workshops for nutrition experts
4S1.STEPS
4S1-1.To form a technical work group
4S1-2.To develop the proposal
4S1-3.To conduct national survey
4S1.Substitution of sodium
4S1-1.Encourage food industry for usage low sodium salt (replaced with KCL)
4S2. Community based approach
4S2-1.community mobilization
4S2-2.Use all available communication channels
4S3. School based approach
4S3-1.Health promoting through school program
4S3-2. Appropriate health education for students
4S3-3.To make available healthy food
4S4.Workplace based approach
4S4-1.Health promoting through Workplace program
4S4-2.Appropriate health education for employers
Target
Scope
Strategy
Activity

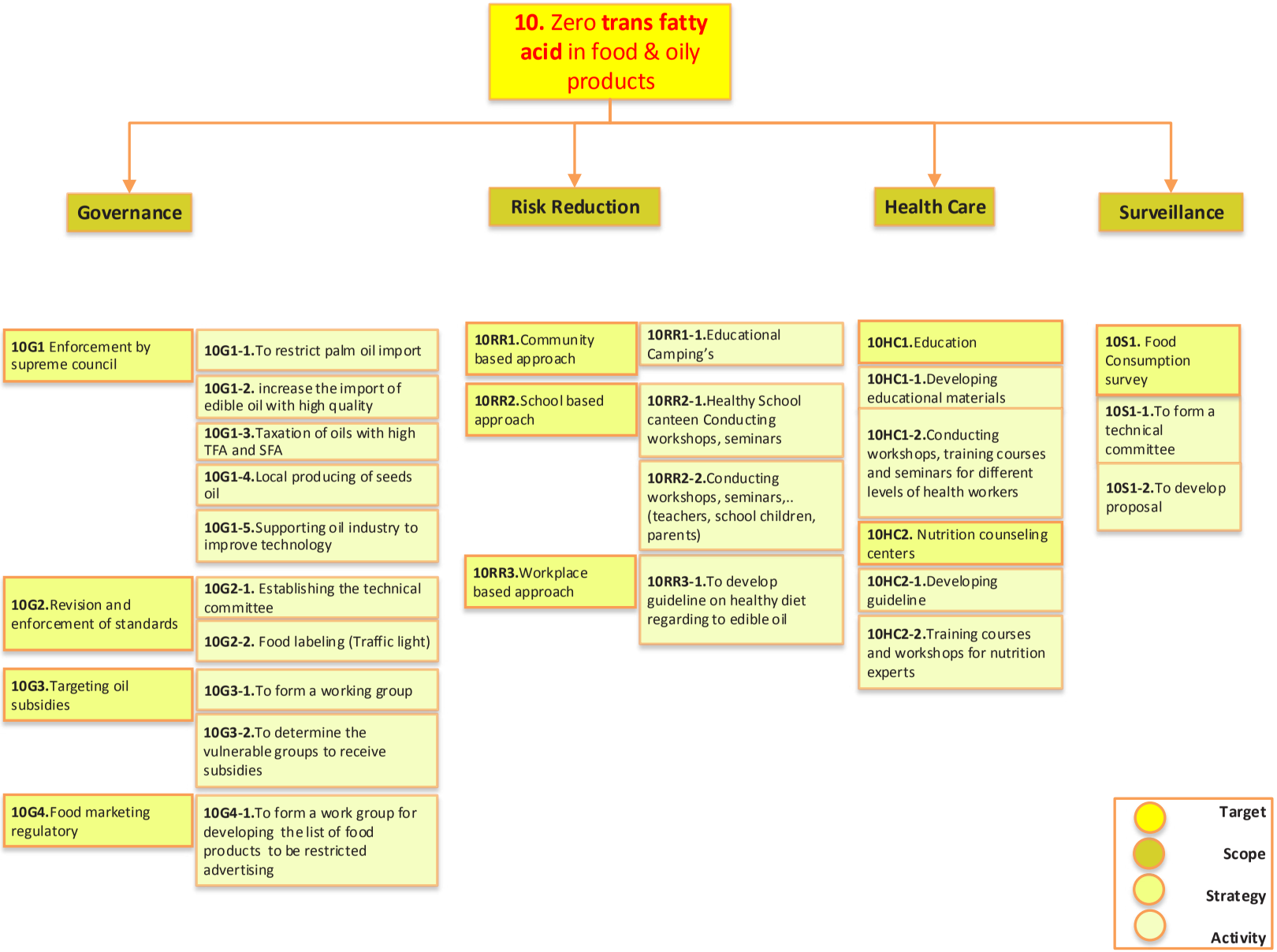

5. A 30% relative reduction in prevalence of current tobacco use in persons aged over 15 years
Governance
Risk Reduction
Health Care
Surveillance
5G1. Enforcement/ smuggling
5G1-1. Strengthening National Tobacco Control Headquarters (HQ)
5G1-2. Ratifying the protocol on eliminating
5G2.Tax/ Retail price
5G2-1. Proposing the draft law on Tobacco Excise tax system to the Parliament
5G3. Enforcement
5G3-1. Boarder control for smuggled tobacco products
5G3-3.Market control through operating the licensing system from whole up to the retail sale
5G3-2.Implementing controlling measures including tracking and tracing tobacco products
5G3-4.Implementing Tobacco Plain packaging
5G3-5.Ban all forms of tobacco advertising, promotion and sponsorship
5RR1. Community based approach
5RR1-1.Implementing community based awareness raising campaign
5RR2.School based approach
5RR2-1.Implementing School based awareness raising campaign
5RR2-2. Integration of smoking prevention in school educational curriculum
5RR3. Work place based approach
5RR3-1. Implementing awareness raising based campaign
5RR3-2. Ban of tobacco smoking in public places traditional restaurants and coffee- shops
5HC1.Smoking caseation clinics
5HC1-1.Expanding Smoking caseation services
5S1.STEPS-GSHS-GYTS
5S1-1. Implementing Tobacco Surveillance System
Target
Scope
Strategy
Activity


6. A 25% relative reduction in prevalence of raised blood pressure
Governance
Risk Reduction
Health Care
Surveillance
6G1.Alignment of preventive and diagnostic guidelines
6G1-1. Holding on National Scientific/technical CVD Committee(hypertension subcommittee) sessions
6G1-2.Revising Hypertension assessment, diagnosis and treatment guidelines by making new approach to Hypertension diagnosis and treatment based on WHO PEN
6G2.Revising medical students' curriculum to make them capable to manage Hypertension
6G2-1.Developing localized Hypertension Prevention and Control guideline(text)
6G2-2.Prophecy the new Curriculum to Medical Universities
6G3.All salt reduction governance strategies
6G3-1.Establishing technical committee
6G4. Regulating food marketing
6G4-1.To develop nutrient profiling module
6G4-2.To develop the list of unhealthy food product based on the nutrient profile modules
6G5.Pay for performance
6G6.All physical activity governance strategy/Budget allocation in MOH
6G6-1.Enforcement The 4th Five Years Law development Program in I.R of Iran
6G7.National plan
6G7-1.National plan for PA promotion
6RR1.All salt reduction governance strategies
6RR1-1.To form a work group for developing suggestions to be approved by the supreme council
6RR2.Substitution of sodium
6RR2-1.Encourage food industry for usage low sodium salt (replaced with KCL)
6RR3.All physical activity governance strategy
6RR4.School based approach
6RR3-1. Health promoting school program
6RR3-2. dynamic area established
6RR3-3. integrate PA in students health identification
6RR5.Work place based approach
6RR6.Community based approach
6HC1.Effective continuous education
6HC1-1.Prophesy the new Hypertension guideline to MOHME Continuous Education Center
6HC1-2.Making compulsory the Continuous Education course
6HC2.Effective public education
6HC2-1.Education in health centers based on validated document based guidelines and educational package and respondent to the different programs target groups needs
6HC2-2.Education by mass media and other organizations and offices based on validated document based guidelines and educational package and respondent to the different programs target groups needs
6S1.Continuous research on population based intervention
6S1-1.Strengthening NCDRFs surveillance system
6S1-2.Prioritizing the researches needed for prevention and control of Hypertension
6S1-3.Prioritizing the researches needed for evaluation of Hypertension population based intervention
6S1-4.Making electronic system for data registry
6S1-5.Strengthening routine data registry
6S1-6.Codification of monitoring and evaluation indicators of the program in the health sector
6S1-7.Analyzing and interpreting monitoring and evaluating results at the national and provincial levels for giving feedback to different levels of health network
6S1-8.Prioritization of cost-effectiveness interventions for early diagnosis and treatment of CVDs
6S1-9.Using successful experiences of pioneer settings
6S2.CVD registry
6S2-1.Strengthening NCDRFs surveillance system
6S2-2.Developing NCDs surveillance system
6S2-3.Strengthening NCDs death registry system
6S2-4.Making electronic system for data registry
6S2-5.Strengthening routine data registry
6S2-6.Strengthening and developing MI registry system to other CVDs
Target
Scope
Strategy
Activity


Target
Scope
Strategy
Activity
7. A Halt the rise in diabetes and obesity
Governance
Risk Reduction
Health Care
Surveillance
7G1.Alignment and implementing the preventive and diagnostic guidelines
7G1-1.Holding on National Scientific/ technical CVD Committee sessions
7G2.All physical activity governance strategy:
7G1-2.Revising obesity prevention, assessment and treatment guidelines by making new approach to WHO PEN
7G1-3.Designing and following up the performing of food labeling law
7G1-4.Codifying policies for control and restriction of advertizing and marketing on beverages, snakes and unhealthy foods for children
7G1-5.Designing and following up the approval and performing of laws and regulations related to updating the production, preparation and distribution of food substances standards (from farm to table)
7G1-6.Designing and following up the approval and performing of laws and regulations related to restriction of advertising on harmful foods in mass media
7G1-7.Subsidizing the healthy foods
7G3.Enforce integrated action plan for prevention and control of diabetes, hypertension, overweight and obesity and dyslipidemia in Primary Health Care (PHC)
7G3-1.Establishing technical committee
7G3-2.Integrated the action plans for individual disease and risk factors
7G3-3.Approve the integrated action plan by The national advisory committee
7G4.Effective Implementation of integrated program for prevention and control of diabetes, hypertension, overweight and obesity and dyslipidemia based on Population wide and individual intervention approaches
7G4-1. Implementation of integrated program in the Health System
7G5.Strengthen capacity of Health System particularly at primary care level
7G5-1.Re-orientation of health system to address the prevention of NCD and the underlying social determinants
7G5-2. Employment of needed educated manpower
7G6.Increase and prioritize budgeting allocation
7G6-1. Precise Financing
7G6-2.Raising adequate funds for universal coverage
7G7.Engage private health sectors and related non-health sectors (multi-sectorial actions)
7G7-1.Collaboration
7G7-2.Sign of Agreement
7G8.Reinforce health system and efficient use of health care resources
7G8-1.Need assessment
7G8-2.Define basic diagnostics and essential medications
7G9.Provide equitable opportunities for early detection and effective intervention for all
7G9-1.Easy access to health system
7G10.Accomplishing applied research on NCD and its risk factors
7G10-1. Conduct applied research
7G10-2.Appropriate NCD subjects for student thesis
7RR1.Revision and enforcement of standards
7RR1-2. Collaboration with nutrition technical committee
7RR1-1.Holding on National Scientific/ technical CVD Committee sessions
7RR2.All harmful use of alcohol governance strategy
7RR2-1. Strengthening the implementation of National Comprehensive CVD Prevention and Control Program
7RR3.All physical activity risk reduction strategy
7RR3-1. Strengthening the intersectoral coordination by developing National intersectoral collaboration program for CVD control
7RR3-2. Advocacy for partnership and collaboration of related private sectors
7RR3-3. Developing nutritional guideline for prevention and control of overweight and obesity
7RR3-4. Developing counseling guidelines and self-care materials for prevention and control of overweight and obesity
7RR4.Promote public health literacy and culture regarding diabetes and other CV via healthy behaviors and self-care and avoiding exposing to risk factors
7RR4-1.Produce Educational Material
7RR4-2.Education
7RR5.Primary prevention with Assessing and Managing CVD risk in population with risk factors
7RR5-1.Using WHO/ISH risk prediction Charts
7RR5-2.Proper Intervention
7RR6.Community engagement and empowerment of people for self-care
7RR6-1.Collaboration & Third party & Education
7HC1.Identifying and treating overweight and obesity From childhood
7HC1-1.Revising obesity prevention, assessment and treatment guidelines by making new approach to WHO PEN
7HC1-2.Providing weight scale equipment for public places
7HC1-4. Encouraging people to have weight scale
7HC1-3.Capacity building and Ensure nutritionist/ dietician at the lowest level of PHC for counseling and prescribing healthy diet
7HC1-5.Educating people by mass media and health workers for identifying BMI
7HC1-7. Screening weight measurement in health events
7HC1-6. Giving incentives to obese people(weight scale, measurement tape, cooking book) in
7HC1-9. Printing BMI chart
7HC1-8. Healthy diet Counseling in health events
7HC2.Provide prevention, early detection and cost effective case management
7HC2-1. Education & early detection & Cost Effective management based on national guidelines
7HC3. Access to basic diagnostics and essential medications to prevent complications, improve quality of life and productivity
7HC3-1.Provide accessible Health system & Provide essential and effective medication
7HC4. Standardization of diagnostic and investigation procedures and medications prescription
7HC4-1.Update guidelines & To equip health system with necessary diagnostic equipment
7HC5. Efficient referral and follow-up system
7HC5-1.Implementation of referral and follow-up system in PHC & Effective collaboration with higher levels of health system
7HC6. Define the monitoring and evaluation indicators
7HC6-1.Define the "Health Panel" including important indicators of integrated program & Distributed in all universities & Request the Panel
7HC7. Insurance coverage for all PHC services
7HC7-1.Insurance coverage
7HC8. Empowerment of patients and their families for self-care
7HC8-1.Education & Provide Self Care Materials, facilities and devices
7S1.Strengthening the weight registration system
7S1-1.Establishing registration system
7S1-2.Strengthening the NCDs surveillance system(STEPs)
7S2. .Strengthen and Upgrade the DM registry system Gathering reliable health information of people via SEPAS system


8. A 50% of eligible people receive drug therapy and counselling to prevent heart attacks and strokes
Target
Scope
Strategy
Activity
Governance
Risk Reduction
Health Care
Surveillance
8G1.Developing and integration of the national guidelines
8G1-1.Developing National Comprehensive CVD Prevention and Control Program with the WHOPEN approach
8G1-2.Developing and Preparing commitments and standards of integration of National CVD Prevention and Control Program in Health care Networks
8G1-3.Developing CVD prevention and control guideline
8G1-4.Developing counseling guidelines and self-care educational materials
8G2.Enforcement of the national guidelines
8G2-1.Prophecy the (NCVDPC) to the MS&HS universities and integrating the program in PHC level
8G2-2. Holding workshops for training health workers on how to implement the (NCVDPC)
8G2-3.Making access to the essential technologies and necessary drugs to control CVD/ Hypertension and their risk factors by prediction and supplying the anti hypertension drugs and provide requisite resources at different particularly lowest level of the PHC
8G2-4.Integrating the counseling to prevent heart attack and strokes in the first level of PHC
8G2-5.Ensuring the counselors (Psychologists, nutritionist) at lowest level of the PHC
8G2-6.Using mass media for public education
8G2-7Collaboration and corporation in capacity building and training staffs and manpower via needs assessment.
8G2-8.Intersectoral coordination and advocacy for legislation in the field of reduction of risk factors
8HC1.Engagement of private Sectors
8HC1-1. Advocacy for partnership and collaboration of related private sectors
8HC1-2. Strengthening the inter sectoral coordination by developing national intersectoral collaboration program for CVD control
8HC1-3.Engaging the representatives of private sectors in CVD risk factors subcommittees
8HC1-5. Coordination and advocacy for considering the attached health document in planning the developmental programs
8HC1-4.Engaging NGOs in planning the program(for approval of extent of duties and commitments of partnerships in the program implementation)
8HC1-7.Preparing and printing educational materials
8HC1-6.Intersectoral collaboration with the non-governmental organizations in the line of building\ establishing healthy environment (work places in offices and factories, schools, green spaces and lands, universities, health centers and....)
8HC2.CVD Risk score
8HC2-1.Developing guideline for CVD risk scoring
8HC2-2.Grading people(30 years and more) by developing CVD risk score chart
8HC2-4.Counseling and Treatment based on risk score
8HC2-3. Identifying the high risk people(30 years and more)
8HC2-2.Providing and printing localized Risk Score Chart for health centers/settings
8HC3.Improving the quality of healthcare (private/ public, outpatient/inpatient)
8HC3-2.Appropriate case finding in health houses, health centers and health posts according to age groups of people referr to health houses/centers
8HC3-1.Improving the health care delivery at secondary and tertiary levels by advocacy and strengthening the referral system
8HC3-3. Initial assessment of population under coverage of health centers to identify risk factors and high risk groups
8HC3-4.Regular managing and caring of identified patients and refer them to specialized level if necessary
8HC3-5.Updating and making native and localizing the screening, case finding , treatment and prevention of CVD and their risk factors guidelines and protocols
8HC3-6.Establishing electronic record and information system of health care in delivering CVD prevention and treatment services
8HC3-7.Designing and performing programs on increasing access to the necessary counseling services (website, phone counseling, mobile health)
8HC3-8.Designing technical and up-down managerial monitoring and evaluation system at different levels of health system for promotion of the quality of the NCDs prevention and control program.
8HC3-9.Designing and performing audit system for prevention and control of NCD
8HC3-10.Monitoring and Evaluation of the trend of CVD complications and deaths
8HC4.Home care
8HC4-1.Developing home care guideline for CVD and its risk factors
8HC4-2.Routine screening and case finding of high blood pressure and high blood sugar through home care and self care according to guideline
8HC4-3.Routine screening and case finding of high blood lipid through home care and self care according to guideline
8HC4-4.Control of blood pressure , blood sugar and blood lipid by patients according to guideline
8HC5.Self-care
8HC5-1.Promotion of public health cultural and health literacy in the field of healthy behaviors and self care and avoiding exposing to risk factors
8HC5-2.Developing and dissemination of the self care culture in all of the Health system centers and units
8HC5-1.Designing and performing self care program at different levels of health care network and at different organizations
8S1.Healthcare quality survey (H.Q.S)
8S1-1. Strengthening the data gathering system.
8S1-2. Strengthening the reporting system and mechanizing it at different levels.
8S1-3. Strengthening the applied researches quality on the NCDs and their risk factors
8S1-4. Implementing the national surveys related to CVD and its risk factors healthcare quality in appropriate periodical time
8S1-6. Designing and performing localized survey according to the results of analyzing and with collaboration and participation of all of the organizations and stakeholders in local communities
8S1-7. Giving priority to research plans related to NCDs in universities and research centers and or allocating part of research budget of research centers and universities to research plans pertain to NCDs
8S1-8. Establishing surveillance system technical committee considering the whole aspects of surveillance (exposed, outcome, health system and other sectors response)


9. An 100% availability of the affordable basic technologies and essential medicines, including generics
Governance
Risk Reduction
Health Care
Surveillance
9G1.Increase availability to appropriate treatment for STEMI & stroke
9G1-1.Determine and equip center for PPCI treatment
9RR1.- Promote utilization all patients at risk to diabetic, hypertension and lipid modifying medicines at affordable cost.
9RR1-1.Assess to best thrombolytic therapy(r-tpa) and PPCI in hospital
9HC1.Increase effective stroke unit in hospital & centers with active cathlab (24/7) for PPCI
9HC1-1.Equip hospitals-rehabilitation services
9S1.registry of stroke case & STEMI case in hospital
9S1-1. Determine a responsible person for registries in each step of treatment
Target
Scope
Strategy
Activity


10. Zero trans fatty acid in food & oily products
Governance
Risk Reduction
Health Care
Surveillance
10G1 Enforcement by supreme council
10G1-1.To restrict palm oil import
10G1-2. increase the import of edible oil with high quality
10G1-3.Taxation of oils with high TFA and SFA
10G1-4.Local producing of seeds oil
10G1-5.Supporting oil industry to improve technology
10G2.Revision and enforcement of standards
10G2-1. Establishing the technical committee
10G2-2. Food labeling (Traffic light)
10G3.Targeting oil subsidies
10G3-1.To form a working group
10G3-2.To determine the vulnerable groups to receive subsidies
10G4.Food marketing regulatory
10G4-1.To form a work group for developing the list of food products to be restricted advertising
10RR1.Community based approach
10RR1-1.Educational Camping's
10RR2.School based approach
10RR2-1.Healthy School canteen Conducting workshops, seminars
10RR2-2.Conducting workshops, seminars,.. (teachers, school children, parents)
10RR3.Workplace based approach
10RR3-1.To develop guideline on healthy diet regarding to edible oil
10HC1.Education
10HC1-1.Developing educational materials
10HC1-2.Conducting workshops, training courses and seminars for different levels of health workers
10HC2. Nutrition counseling centers
10HC2-1.Developing guideline
10HC2-2.Training courses and workshops for nutrition experts
10S1. Food Consumption survey
10S1-1.To form a technical committee
10S1-2.To develop proposal
Target
Scope
Strategy
Activity

		Formation of NCDs' Provincial Committees	Finalizing provincial plan Provision of resources, tools and techniques Implementation of intra-sectoral activities Coordination of inter-sectoral activities (agreements) Monitoring and evaluation		Approval of the National Plan 100% engagement with intra/inter sectoral stakeholders (Based on the list included in the National Plan) Quarterly report of the implementation of the National Plan Summative evaluation of the National Plan in 2018, 2021 & 2025 Annual report of financial, HR and other resources status for the National Plan Benchmarking provincial activities to promote best practice in the implementation of the National Plan; and reporting the results on the yearly basis	Appointment of independent internal auditor Appointment of independent external auditor	Budget for : Resource, tools and techniques provision Resource for implementation of the intra-sectoral activities Resource for coordination of the inter-sectoral activities Resource for internal and external auditing	
		Upgrading and Promotion of NCDs' Directorate within MoHME	- Restructuring organizational chart of NCD Directorate to accommodate current status - Achieving financial independence of NCD directorate under new organization -	-	- A NCDs national office that is internally capable to address the requirements of the National NCD Plan	- Improvement of HR, available finance resources, and the position of the Directorate in MoHME's hierarchy	Budget for: - HR - Financing required interventions	
		Provision of National Plan to manage stroke and CVDs	- Developing a National plan for Prevention and Control of CVDs, in line with the WHOPEN approach -Integration of National plan for Prevention and Control of CVDs into PHC -Developing national diagnosis and treatment guidelines for selfcare, outpatient and inpatient services - Engaging with medical universities to integrate National NCD Plan into in PHC -Holding training workshops for health workforce on implementation of National CVD Plan	- MOHME-Deputy for Curative affairs - MOHME-Deputy for Public Health (NCD Management Center (Suggested to be promoted), PHC development Center, Family and population Health Center, Health Education	-Wide adoption of national guidelines into PHC (by 2017) -National Plan for Prevention and Control of CVDs, aligned with the WHOPEN approach, to be ready by 2017 - Standards of integrating National Plan for Prevention and Control of CVDs to be integrated into PHC (by 2017) -Integrated counseling required services into PHC to prevent heart attack and stroke(by 2017))	-Integration of National CVD Program into PHC - No of required staff for implementing National Plan Psychologists, nutritionist, ..) -Proportion of trained staff -Increased volume of supplied drugs -No. of workshops to be hold -CVD mortality rate	-Budget allocation	By the end of 2025

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
1- A 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	**Governance**	Strengthening the supreme council for Health & Food Security	- Advocacy for NCDs prioritization in all policies - Insertion of NCD's oriented overarching policies in National Development Plans of Iran - Advocacy for allocation of 0.5% of each public institution for materialization of the National Plan		– At least quarterly convention of the Council – 60% of all rectified decisions addresses NCDs	– Reporting achievements of desired outcomes in NCDs' National Committee – Formative evaluation of stakeholders' commitment to desired targets of the National Plan	Budget for : – Establishment of Secretariat – M & E – Advocacy – Staff – Equipment	Ongoing
		Formation of NCDs' National Committee	Finalizing national plan - Provision of resources, tools and techniques - Implementation of intra-sectoral activities - Coordination of inter-sectoral activities (agreements) - Monitoring and evaluation		- Approval of the National Plan - 100% engagement with intra/inter sectoral stakeholders (Based on the list included in the National Plan) - Quarterly report of the implementation of the National Plan - Summative evaluation of the National Plan in 2018, 2021 & 2025 - Annual report of financial, HR and other resources status for the National Plan - Benchmarking provincial activities to promote best	- Appointment of independent internal auditor - Appointment of independent external auditor -	Budget for : - Resource, tools and techniques provision - Resource for implementation of the intra-sectoral activities - Resource for coordination of the inter-sectoral activities - Resource for internal and external auditing	
					practice in the implementation of the National Plan; and reporting the results on the yearly basis			

			- Supervision and monitoring of man-made mobile sources (motorcycles, private cars, motorized fleet of public transport within and suburban trains, aircraft) on the critical air pollution sources, semi-critical and non critical approach on the health affected.	-Security forces (Traffic police) , -Ministry of Interior (Home Office), -Ministry of Industry, Mining and Trade (Department of Industry and Mines), Ministry of Transfer and Urban Development (the country's transportation terminals Civil Aviation Organization, The Islamic Republic of Iran Railway Company) Iran' Institute of	To determine shareof air pollutant related to mobile resources	Identifying subcategories of mobile resources to emission air pollutants (PM2.5,PM10,Benzene , Benzo α Pyrene)		3 years
				Standards and Industrial Research				
			-Enforcement of clean air act through health approach	Cabinet , Health Policy Secretariat		30% of each air pollutants decrease after 5 years		5 years
			-Implementing green strategy by MoHMEto build energy efficient premises, i.e. Health Houses, Healthcare centers, and hospitals, align with WHO & IPCC Guidelines	Ministry of Health and medical Education	Low emission of air pollutant by MOHME	50% energy efficiency in MOHME and emission reduction of air pollution		10 years

				development Center, Family and population Health Center, Health Education and Promotion office) - MOHME- Deputy for Development and HRH- MOHME- Deputy for Education -Food and Drug Organization				
		Comprehensive health information system (HIS), in particular: EHR &CDSS						
		National service framework (N.S.F)						
	Risk Reduction	Reducing air pollution	-Inventory of air pollutant resources(PM2.5,PM10)	-Department of Environment - Ministry of Interior -Ministry of Petroleum, Ministry of	To achieve National profile of air pollution , by each resources of particulate emission	National profile		2 years
				Agriculture Ministry of Transferand Urban Development Ministry of Industry mine and trade.				

		Rehabilitation care	**CVD** -Strengthening and performing CVD rehabilitation Program in all the hospitals having CCU wards -Integrating rehabilitation program at PHC level -Developing CVDRP guidelines for different levels of staffs and educating them (Physicians, nurses, health workers (Behvarses, health care providers),,health volunteers,..) -Performing compulsory Continuous	- MOHME Deputy for Curative affairs -Health Insurance Organization - MOHME Deputy for Health(NCD management Center) -CVD Rehabilitation	-Integrating rehabilitation program at PHC level(by 2017) -Integrating rehabilitation program in hospitals with CVD ward: -Equipped hospitals for strengthening or establishing rehabilitation ward(20% every year) -Hospitals with ensured staffs (at least 80%, 20% increase every year)	-Mortality rate resulting from CVD (IHD,CAD,MI,Stroke,..) -Percent of equipped rehabilitation wards in Hospitals -Percent of trained staffs -Percent of Participated CVD patients in Rehabilitation Program at different levels of health network -Percent of recurrent MI and strokes(in one month later)	-Budget allocation -curriculum for CVD rehabilitation -National program on CVDR –Guidelines for CVDR -Educated manpower	By the end of 2020
			Education for physicians -Integrating the CVDRP in PHC -Ensuring CVDRP staffs(rehabilitation medicine specialist, nurses, nutritionists/dietician, psychologist, physical activity training coaches)	subcommittee	-Trained staffs at different of health levels(hospitals, PHC) (20% every year) -Participated patients in rehabilitation program(at least 80%, 20% increase every year) -Reduced recurrent MI and strokes in one month later(at least 80% , 20% every year)	-Percent of hospitals with required rehabilitation wards manpower		
			Mentioned points could be consider for: Cancers Diabetes Chronic Respiratory Diseases					
		Community participation	- Community partnerships or Charities helping in equipping Hospitals' CVDR wards -		-Charities help in equipping Hospitals CVDR wards (at least 20%)	-Percent of equipped hospitals by community partnerships		By the end of 2025
		PHS reform and family physician in Iran and urban area	Ensuring provision of Psychology and nutrition services at lowest level of PHC -Public education					

	Health Care	Emergency care	CVD -Performing CVD emergency care and CPR course for general population (staff,workers,students,soldures,militaries,...) - Performing CVD emergency care and CPR course for Health workforce -Public Education on CPR by mass media -Providing CPR equipments(defibrillator) for public palces; work places; ambulances (prehospital services) -Reducing the duration of on time treatment (through process refinement and guidelines implementation) -Improving hospital emergency ward (outpatient) services by early diagnosis measures(improving PPCI) -Improving quality of hospital CCU wards (inpatient services)	- MOHME-Deputy for Curative affairs - MOHME-Deputy for Public Health -Mass media (IRI Broadcasting , press, magazine , newspapers,...)	-Reduced deaths resulting from CVD emergencies(MI, Stroke) (at least 80% of patients receive on time care,20% increase every year): -Equipped ambulances with defibrillator (20% every year) -Trained health workforce (20% increase every year) -Trained population (10% of target groups every year) resulting from CVD attacks(MI, Stroke) -Patients receiving the essential drugs after discharging (at least 90%,) -Increased the mean age of	-Mortality rate resulting from CVD (MI &Stroke) -Percentage of CVD patients (IHD,CAD,MI,Stroke,..) receiving on time health care before and in hospitals -Percent of equipped ambulances with defibrillator -Percent of trained health workforce -Enhanced people Awareness - The mean age of death resulting from CVD attacks (MI, Stroke) -Percentage of patients receiving essential drugs after discharging		By the end of 2020
			-Strengthening MI registry in CCU wards in Hospitals		death resulting from CVD attacks(MI, Stroke)(10% every year) -Reduced mortality resulting from CVD attacks(MI, Stroke) (at least 80% reduction in deaths in the first month after CVD events(MI,stroke),20% decrease every year)			
			<u>Mentioned points could be consider for:</u> <u>Cancers</u> <u>Diabetes</u> <u>Chronic Respiratory Diseases</u>					

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
2- At least 10% relative reduction in the harmful use of alcohol, as appropriate,	**Governance**	Comprehensive Plan "Prevention, Treatment, and Reduction of Alcohol Intoxication, 2011-	National Committee of Alcohol Prevention and Control Meetings Substance Abuse Prevention and Treatment Office (SAPTO), Mental Health,	Ministry of Health Ministry of Interior Ministry of Welfare State Welfare	Availability of national policy document	Availability of national policy document		2011-2015
within the national context		2015" endorsed by High Council of Health and Food Security and High Social Council of MoI National Policy Document "Prevention, Tackle, Treatment, Harm Reduction and Rehabilitation of Alcohol Use, 2013-2017"	Social Health and Addiction Department (MeHSHAD) meetings	Organization Drug Control Headquarter IRIB Police Justice System				
	Risk Reduction	Primary prevention & integration in general health system Treatment	Development of a service package for integration of alcohol services in primary health care system [The family physician program] Standardization of AUDIT in Farsi To strengthening outpatient alcohol treatment in 150 outpatient treatment centers To strengthening inpatient alcohol treatment services in 6 academic psychiatric ward	MoH Medical Universities Private Sector Drug Control Headquarter State welfare organization	Availability of standard package for PHC and general health settings Availability of standard treatment programs at outpatient and inpatient level			2011-2015

	Surveillance	Death Registry	**CVD** -Developing NCDRFs surveillance system to NCDs death registry system -Making electronic system for data registry -Strengthening routine data registry -Strengthening MI registry system -Educating physicians for accurate death registry based on death registry guideline(compulsory continues education course)	- MOHME Deputy for Curative affairs - MOHME Deputy for Health(NCD Management Center, Health Network Development Center, Family and population Health Center) -Vital Sign Registry Organization -NCD Committee	-On time Registry (at least 90% of data) -Correct and valid registered data(at least 90% of data) -Active major NCDs' Deaths registry (4 major NCDs surveillance) (100%) -Trained physicians(at least 50%, 10% every year)	-Quality of Death registry system (Percent of on time registered data and Percent of Correct and valid registered data) -Percent of trained physicians on the Death Registry system	-Electronic system -Registry form -HIS in hospitals	By the end of 2020
		Death Registry Cardiovascular & Chronic Respiratory disease Registry	Creating a system of identification, Surveillance,monitoring and reporting of morbidity and mortality associated with inhalation of air quality (Air Borne Disease) in country	Ministry of health and Medical education	To implement and evaluation of good surveillance of air borne diseases to find Health Impact assessment of air pollution			2 years
		--PM2.5 & PM10 monitoring in Mega and Metropolitan cities [1] - Benzene & Benzo α Pyrene [2]	Establish evaluated monitoring Stations for goal air pollutants (PM2.5,PM10,Benzene , Benzo α Pyrene) at least 43 cities over 300 thousand inhabitants	Department of Environment , Ministry of health and Medical education	To achieve National profile of all air pollution by approach habitant exposure and at risk group			2 years

	Surveillance	STEPS- GSHS- GYTS	To conduct a KAP study on alcohol, and other main drug of abuse including opioids and stimulants Development of health related alcohol information system	MoHME Legal Medicine Organization Medical Universities Private Sector Drug Control Headquarter State welfare organization	To improve the routine data gathering and surveys on health related alcohol indicators			2011-2015

		Education						
	Health Care	Primary prevention & integration in general health system	Development of a service package for integration of alcohol services in primary health care system [The family physician program] Standardization of AUDIT in Farsi To strengthening outpatient alcohol treatment in 150 outpatient treatment centers To strengthening inpatient alcohol	MoHME Medical Universities Private Sector Drug Control Headquarter State welfare	Availability of standard package for PHC and general health settings Availability of standard treatment programs at			2011-2015
		Treatment	treatment services in 6 academic psychiatric ward	organization	outpatient and inpatient level			

						policy. – Existence of academic centers of excellence with focus on diet and physical activity. – Coordinating mechanism headed or chaired by Ministry of Health. – Existence of clear and sustainable national and/or sub-national budget for action on physical activity. – Existence of a resource mobilization plan for action on physical activity.		
	Risk Reduction	School based approach	Health promoting school program ,dynamic area established, integrate PA in health identification , Encourage schools and universities to adopt standards for the inclusion of physical activity in before and after-school programs. Require pre-service and continuing education for physical education and elementary classroom teachers to deliver high-quality physical education	Education, Health, media	Standard guidelines for physical activity in schools, increased walking /cycling to and from school, Overweight and obesity reduction,	Number of physical activity standard training in schools and universities , Number of pre-service and continuing education for physical education coaches and elementary classroom teachers , Provide facilities, equipments, appropriately		

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
3- A 20% relative reduction in prevalence of insufficient physical activity	**Governance**	Budget allocation in MOHME National plan	– Enforcement The 5th Five Years Law development Program in I.R of Iran, – National plan for physical activity promotion	Governmental specially - Ministry of education - Ministry of health and medical education - Ministry of higher education - Industry - Ministry of sport &youth - Media - Ministry of rods and urban development	Intersectional coordination in physical activity promotion, Budget allocation,	– Number of sessions for Organizing and forming advisory committee sessions – Existence of suitable process for reporting of physical activity guideline , – Existence of an expert advisory mechanism with active responsibility to advise on the development and implementation of the action plan. – Existence of coordinating mechanism (an organization, committee or other body) to oversee, develop and implement the national plan. – Expert advisory mechanism with representation from all key sectors and disciplines. – Expert advisory mechanism with clear mandate, lines of accountability and ability to influence		2015 - 2020

Community based approach		-Use community mobilization techniques to recruit and engage members, volunteers, and constituents. -Use all available communication channels to members, volunteers, and constituents, including print publications, websites, social media, broadcast media, and newsletters to promote engagement in behavior change and advocacy Use enhanced strategies, such as culturally tailored programs, materials, and communication channels, to reach special populations, - Develop a highly visible national logo, campaign brand, and physical activity messages. -Develop a style guide and training manual on the use of the mass media messages and national logo and branding stakeholders. Involve users in creating these tools.	Municipality, ministry of health, ministry of sport and youth, high provincial council,			• the proportion of people who agree with the statement: 'I don't have the time to walk to work,' before and after the intervention , • Number of NGOs working on physical activity. • Active NGO participation in the implementation of the national policy on physical activity. • Number of awareness-raising activities for consumers performed by NGOs. -Existence of a clear national programme or campaign for physical education and public awareness. -Existence of sustained institutional support to promote and implement national physical activity guidelines. -Number of channels used to communicate the messages on physical activity. -Percentage of the population or specific target population reached with the physical activity communication campaigns or messages. -Number of lessons curriculum for Physical Activity promotion. -Identify different target group for educational plan. -Number of key messages related to promoting physical activity for health. -Number of materials, and communication channels, to reach special populations.		

			and physical activity programs.			trained staff to provide high-quality physical education and activity programming, number of children who walk to school daily , Number of children active for 60 minutes+ per day.		
		Work place based approach	Identify key policies and activities that employers, both private and public, can implement to promote physical activity in the workplace. Develop legislation and policy agendas that promote employer-sponsored physical activity program. Develop and implement an advocacy agenda. Work with employers to make physical activity practices and policies. Identify funding sources for advocacy activities	Ministry of industry, mine and trade, ministry of work, welfare and social affairs	More than 50 % be active in work place, Increased the physical and sport facility equipment in work place	Number of persuasive policies and laws that employers, both private and public, can implement to promote physical activity in the workplace. • Number of companies implementing the national policy on physical activity. • Number of companies engaging in activities related to physical activity with the relevant government sectors. • Percentage of companies engaged in diet and physical activity education campaigns in accordance with national guidelines. • Number of national projects promoting physical activity funded by industry. • Number of public–private partnerships promoting physical activity.		
						• Percentage of nationally-represented companies having a corporate social responsibility policy that includes a physical activity dimension in line with national policies and priorities. • Percentage of private companies supporting physical activity promotion campaigns nationally. • Percentage of food and non-alcoholic beverage companies sponsoring sports events.		

						population offered advice on physical activity by primary care team.		
	Surveillance	STEP, - GSHS- GYTS- CASPIAN National monitoring and evaluation framework for physical activity	Data collection, Data analysis, Data entry	Ministry of Health, Ministry of sport and youth , Ministry of Education, Ministry of roads and urban development	Evaluate and monitor the national physical activity every year			
Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
4- A 30% relative reduction in mean population intake of salt/sodium	**Governance**	Revising Standards regarding salt in food products	-Establishing technical committee	Nutrition Department, FDA,ISIRI, Ministry of Industry , Trade and Mines,	Reformulate food products regarding to salt	Number of food products with reduced salt standard		By the end of 2016
		Regulating food marketing	- To develop nutrient profiling module - To develop the list of unhealthy food product based on the nutrient profile modules	Nutrition Department, FDA,ISIRI, National Nutrition Institute ,Ministry of Industry , Trade and Mines, IRIB, Ministry of Finance	The list of forbidden advertised unhealthy foods will be developed and revised annually according to article 37 of 5th five years development plan	Number of restricted advertising of unhealthy food products		By the end of 2016
	Risk Reduction	Enforcement the standards	- To form a work group for developing suggestions to be approved by the supreme council	Supreme Council of Health and Food security	- Legislation for obligatory implementing the revised salt			By the end of 2016
					standards			
	Surveillance	Substitution of sodium	- Encourage food industry for usage low sodium salt (replaced with KCL)	- FDA - Nutrition Department - National Nutrition Institute - ISIRI - Food Industry	- Low sodium salt will be produces and used in food products			By the end of 2016

	Health Care	-Use a health care systems approach to promote physical activity and prevent and treat physical inactivity such as Obesity clinics. -Assess and discuss with their clients regard to physical activity by all health care providers.	-Establish a specific unit for coordinating of physical activity programs in ministry of health &medical education -Disseminate current best-practice guidelines for promoting physical activity in high risk subpopulations. -Establish a national network of programs, providers and advocates for physical activity as a key component of	Ministry of health and medical edcation	Classification of physical activity sautés of client in health care centers,	Number of PA center, •Presence coordinating program center for Physical Activity promotion in MOH. •Number of physical activity consultant centers. •Presence of advocacy plan in Physical Activity promotion.		
		-Create, maintain, and leverage cross-sector partnerships and coalitions that implement effective strategies to promote physical activity.	I.R.IRAN health system. -Ensure that all health care professional organizations encourage their members to assess clients' physical activity. Include fields for tracking clients' physical activity in electronic health records. -Develop a Healthcare Effectiveness and Data Information Set (HEDIS) measure for physical activity. -Encourage health care professionals to be role models for active lifestyles for peoples. -Encourage public health professionals to both educate and learn from partners in order to strengthen the effectiveness of the partnership and the efforts of each member. -Examine successful cross-sector partnerships to identify and incorporate key elements of success. -Provide sustained resources public health agencies that support physical activity practitioners to act as conveners of multi-sector coalitions and to provide leadership for strategic partnerships.			•Provide reporting system current national Physical Activity promotion program. •Presence of an advocacy health center for Physical Activity promotion •Support research on Physical Activity promotion. •Number of evidence based and low cost interventions. •Physical activity assessment integration in provider health services •Presence referral system for health problems related to Physical inactivity. • Provision of counseling on physical activity, by a qualified professional, included in the national primary health care plan. • Percentage of government health facilities offering physical activity counselling. • Relevant physical activity content integrated into university curricula for health professionals. • Percentage of the		

		Tax/ Retail price	-Proposing the draft law on Tobacco Excise tax system to the Parliament	-Parliament -National HQ of tobacco -High level council for health and food security -Ministry of Economy and Financial affairs	-Reduction of tobacco consumption -Reduction of accessibility of tobacco products	60% of the retail price will be raised by tax		2016
		Enforcement	-Boarder control for smuggled tobacco products -Implementing controlling measures including tracking and tracing tobacco products	-National HQ of tobacco control -National HQ of fighting against smuggling -Ministry of Industry	reduction in tobacco smuggling	10% relative reduction in tobacco smuggling		2016
			Market control through operating the licensing system from whole up to the retail sale	-National HQ of tobacco -Ministry of industry	Decreased smuggled tobacco products at Market levels	Licensing all tobacco sellers		2016
			Implementing Tobacco Plain packaging	-National HQ of tobacco control - National Standard Organization -Ministry of industry	Better controlling the illicit tobacco products at boarder and market level	All tobacco packaging of products are in plain format		2016
			Ban all forms of tobacco advertising, promotion and sponsorship	-National HQ of tobacco control -All relevant Agencies	Comprehensive implementation of banning tobacco advertisement	Zero Tobacco advertisement, Promotion and Sponsorship		2016
	Risk Reduction	Community based approach	-Implementing community based awareness raising campaign	Ministry of health I.R.I.B	-Increased knowledge about adverse health effects of tobacco Decreased tobacco consumption	- Knowledge, Practice and Attitude _ tobacco prevalence		2015 - 2025

		Community based approach	- community mobilization -Use all available communication channels	- MOHME - Ministry of sport and youth - Ministry of industry	-			By the end of 2016
		School based approach	– Health promoting through school program – Appropriate health education for students To make available healthy food	– MOHME – Ministry of Education – Ministry of industry				By the end of 2016
		Workplace based approach	– Health promoting through Workplace program – Appropriate health education for employers	– MOHME – Ministry of industry – ministry of work, welfare and social affairs				By the end of 2016
		STEP	To determine average salt consumption	- Nutrition Department, National Nutrition Institute NCD Committee	Data on average salt consumption			2018
Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process	Monitoring & Evaluation indicators	Resources required	Time Period
					Indicators			
5- A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years.	**Governance**	Enforcement/smuggling	Strengthening National Tobacco Control Headquarters (HQ)	Ministries of Health, Education, Culture and Islamic guidance, Industry, Police force, Parliament, I.R.I.B, NGOs	Better enforcement of Tobacco Control Laws and Regulations	Number of HQ session (At least two session per year)		2015-2025
			Ratifying the protocol on eliminating	Parliament National HQ of tobacco control	International cooperation in controlling illicit tobacco trade will increased	protocol on eliminating illicit tobacco trade ratified		2015

	Surveillance	STEPS- GSHS- GYTS	Implementing Tobacco Surveillance System	Ministry of health National Statistical Centre	Tobacco control monitoring system improved	All standard tobacco questions integrated into relevant national surveys		2016
Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
6- A 25% relative reduction in the prevalence of raised blood pressure	**Governance**	Alignment of preventive and diagnostic guidelines(	-Holding on National Scientific/technical CVD Committee(hypertension subcommittee) sessions -Revising Hypertension assessment, diagnosis and treatment guidelines by making new approach to Hypertension diagnosis and treatment based on WHO PEN	- MOHME Deputy for Health(NCD Management Center) - MOHME Deputy for Curative Affairs -CVD Committee -NCD Committee -Food and Drug Organization	- CVD Committee held sessions(2 times per year) -Revised and Developed Hypertension guideline (by 2017)	-No. of CVD Committee held sessions -Developing Hypertension guideline	-Current Hypertension guidelines -Budget allocating	By 2017
		Revising medical students' curriculum to make them capable to manage Hypertension	-Holding on National Scientific/technical CVD committee(hypertension subcommittee) sessions -Developing localized Hypertension Prevention and Control guideline(text) -Prophecy the new Curriculum to Medical Universities	MOHME Deputy for Health(NCD Management Center) -CVD Committee -NCD Committee - MOHME Deputy for Education	-Revised medical students 'Curriculum (by 2018)	-Developing medical students 'Curriculum	-	By 2018
		All salt reduction governance strategies	-Establishing technical committee	-Nutrition Department, FDA,ISIRI, Ministry of Industry , Trade and	-Reformulate food products regarding to salt	-Number of food products with reduced salt standard		Until the end of
		(Revising Standards regarding salt in food products)		Mines,				2016
		Regulating food marketing	-To develop nutrient profiling module -To develop the list of unhealthy food product based on the nutrient profile modules	Nutrition Department, FDA,ISIRI, National Nutrition Institute ,Ministry of Industry , Trade and Mines, IRIB, Ministry of Finance	The list of forbidden advertised unhealthy foods will be developed and revised annually according to article 37 of 5th five years development plan	Number of restricted advertising of unhealthy food products		Until the end of 2016

		School based approach	-Implementing School based awareness raising campaign -Integration of smoking prevention in school educational curriculum	Ministry of education Ministry of health	-Increased knowledge about adverse health effects of tobacco -Smoking prevention material is integrated into primary school curriculum	- Knowledge, Practice and Attitude _ tobacco prevalence		2015 - 2025
		Work place based approach	-Implementing awareness raising based campaign	-National HQ of tobacco control -Ministry of health -Syndicates -High level council for health and food security	-Increased knowledge about adverse health effects of tobacco	- Knowledge, Practice and Attitude _ tobacco prevalence		
			Ban of tobacco smoking in public places traditional restaurants and coffee- shops	-National HQ of tobacco control	Public places protected from tobacco smoking	100% coverage of defined public place, Except licensed tea shops 100% coverage of defined public place,		2016 2025
	Health Care	Smoking cessation clinics	Expanding Smoking cessation services	Ministry of health Health deputy Center for health networks National HQ of tobacco control	-Increased Tobacco quit rate	One Tcc in each District at health network in the country		2016

		Work place based approach		Ministry of industry, mine and trade, ministry of work, welfare and social affairs	More than 50 % be active in work place, Increased the physical and sport facility equipment in work place	Number of persuasive policies and laws that employers, both private and public, can implement to promote physical activity in the workplace.		
		Community based approach		Municipality ,health, high provincial council,		the proportion of people who agree with the statement: 'I don't have the time to walk to work,' before and after the intervention ,		
	Health Care	Effective continuous education	-Prophesy the new Hypertension guideline to MOHME Continuous Education Center -Making compulsory the Continuous Education course(by revival of medical office justification)	-MOHME Deputy of Education - MOHME Deputy for Health(NCD Management Center) -CVD Committee -NCD Committee	-Trained Physicians (at least 90%, 20% every year)	-Prophecy of the regulation to Continuous Education Center -Percent of Physicians participated in Hypertension prevention and control guideline Course	-The new Hypertension guideline -Regulation for making compulsory the course -Budget allocating	By the end of 2020
		Effective public education	-Education in health centers based on validated document based guidelines and educational package and respondent to the different programs target groups needs -Education by mass media and other organizations and offices based on validated document based guidelines and educational package and respondent to the different programs target groups needs	- Mass Media - MOHME Deputy for Health(NCD Management Center) -CVD Committee -NCD Committee	-Educated people(target groups) in Health centers (at least 20% , 5% every year) -People awareness on Hypertension(at least 20% of people to be awared, 5% every year)	-Percent of educated /trained people(target groups) -Percent of people awareness	-Budget allocating	By the end of 2020
	Surveillance	Continuous research on population based	-Strengthening NCDRFs surveillance system	MOHME Deputy for research and	-list of Prioritized researches on Hypertension and its risk	- Prioritizing the researches on Hypertension and its risk	-Budget allocating -professional staff	By the end of

		All physical activity governance strategy Budget allocation in MOH	-Enforcement The 4th Five Years Law development Program in I.R of Iran	Governmental specially - Ministry of education health -Ministry of higher education Industry -Ministry of sport &youth Media -Ministry of rods and urban development	increased of PA level	-Number of sessions for Organizing and forming advisory committee sessions -Guideline provision for different target groups -Presence suitable process for reporting of physical activity guideline ,		2015 - 2020
		National plan	National plan for PA promotion					
	Risk Reduction	All salt reduction governance strategies	-To form a work group for developing suggestions to be approved by the	-Supreme Council of Health and Food	-Legislation for obligatory implementing the revised			Until the end of
			supreme council	security	salt standards			2016
		-Substitution of sodium	-Encourage food industry for usage low sodium salt (replaced with KCL)	-FDA -Nutrition Department National Nutrition Institute -ISIRI -Food Industry	-Low sodium salt will be produces and used in food products			Until the end of 2016
		All physical activity governance strategy School based approach	-Health promoting school program -dynamic area established - integrate PA in students health identification	-Education, -Health, - media	-Standard guidelines for physical activity in schools, -increased walking /cycling to and from school, -Overweight and obesity reduction,	-Number of physical activity standard training in schools and universities -Number of pre-service and continuing education for physical education coaches and elementary classroom teachers -Provide facilities, equipments, appropriately trained staff to provide high-quality physical education and activity programming, number of children who walk to school daily , Number of children active for 60 minutes+ per day		

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
7- Halt the rise in diabetes and obesity	**Governance**	Alignment and implementing the preventive and diagnostic guidelines All physical activity governance strategy	-Holding on National Scientific/technical CVD Committee sessions -Revising obesity prevention, assessment and treatment guidelines by making new approach to WHO PEN -Codifying policies for control and restriction of advertizing and marketing on beverages, snakes and unhealthy foods for children -Designing and following up the performing of food labeling law(by traffic light system or coloring for showing the risk of food nutrients) -Designing and following up the approval and performing of laws and regulations related to updating the production, preparation and distribution of food substances standards (from farm to table) -Designing and following up the approval and performing of laws and regulations related to restriction of advertizing on harmful foods in mass media -Subsidizing the healthy foods	- MOHME Deputy for Health(NCD Management Center) - MOHME Deputy for Curative Affairs -CVD Committee -NCD Committee -Food and Drug Organization	- CVD Committee held sessions(2 times per year) -Revised and Developed obesity guideline (by 2017) -Food labeling(at least 80% of foods) -Updated laws and regulations and standards (at least 80%) -Restricted advertisements on harmful foods in mass media (at least 80% of illegal advertisements) -Subsidized the healthy foods(at least the 20% of them) -Reduction or halt the prevalence of obesity	-No. of CVD Committee held sessions -Developing obesity guideline -Percent of food labeling -Prevalence of overweight and obesity	-Current obesity guidelines -Budget allocating	By 2020
		Enforce integrated action plan for prevention and control of diabetes, hypertension, overweight and obesity and dyslipidemia in Primary Health Care (PHC)	• Establishing technical committee • Integrated the action plans for individual disease and risk factors • Approve the integrated action plan by The national advisory committee	• High level NCD committee • Health Deputy of MOH • NCD Department • The national advisory committee	• The integrated action plan	• Presence of integrated action plan	• Individual Action plans for DM and other risk factors • WHO Recommendations	By end of 2015

		intervention	-Prioritizing the researches needed for prevention and control of Hypertension -Prioritizing the researches needed for evaluation of Hypertension population based intervention -Making electronic system for data registry -Strengthening routine data registry -Codification of monitoring and evaluation indicators of the program in the health sector -Analyzing and interpreting monitoring and evaluating results at the national and provincial levels for giving feedback to different levels of health network -Prioritization of cost-effectiveness interventions for early diagnosis and treatment of CVDs -Using successful experiences of pioneer settings	Technology - MOHME Deputy for Health(NCD Management Center) -CVD Committee -NCD Committee	factors (updated every year) -list of Prioritized interventions on Hypertension and its risk factors(updated every year) -Monitoring and evaluation of the interventions progress trend based on predictions (every 2 years) - Ranking NCDs and their risk factors (every 2 years) -To achieve the target of 25% reduction of Hypertension prevalence by the end of 2025.	factors -Prioritizing the interventions on Hypertension and its risk factors -No. of performed researches on Hypertension -No. of evaluated interventions(or percent of evaluated interventions) -Prevalence of hypertension	-Evidence based interventions	2025
		CVD registry	-Strengthening NCDRFs surveillance system(for monitoring the hypertension and its risk factors and its complications) -Developing NCDs surveillance system(particularly CVD) -Strengthening NCDs death registry	- MOHME Deputy for Curative affairs - MOHME Deputy for Health(NCD Management Center, Health Network Development Center, Family and population	-On time Registry(at least 90% of data, 20% increase every year) -Correct and valid registered data(at least 90% of data) -Major NCDs Data registry(by 2020)	Quality of registry system: - Percent of on time registered data and -Percent of valid registered data	-Electronic system -Registry form	By the end of 2020
			system(particularly CVD) -Making electronic system for data registry -Strengthening routine data registry -Strengthening and developing MI registry system to other CVDs	Health Center) -Vital Sign Registry Organization -NCD Committee -CVD committee	-Strengthened NCDs Deaths registry(by 2020)			

		Accomplishing applied research on NCD and its	• Conduct applied research • Appropriate NCD subjects for student thesis	• Research Deputy of MOH • Health Deputy of	• Developing research network • Useful scientific and	• At least 50% projects in each university on NCD • At least 40% of all	• Published Thesis and Articles • Projects' Reports	By June
		risk factors		MOH • NCD Department • Research Centers and institutes • Universities	documented finding for promotion of NCD program • Useful information for intervention program designing	postgraduate research topics related to NCD		2017
	Risk Reduction	Revision and enforcement of standards All harmful use of alcohol governance strategy All physical activity risk reduction strategy	-Holding on National Scientific/technical CVD Committee sessions -Collaboration with nutrition technical committee -Strengthening the implementation of National Comprehensive CVD Prevention and Control Program -Strengthening the intersectoral coordination by developing National intersectoral collaboration program for CVD control (for approval in high level health council) -Advocacy for partnership and collaboration of related private sectors -Developing counseling guidelines and self-care materials for prevention and control of overweight and obesity -Developing nutritional guideline for prevention and control of overweight and obesity	-FDO -Nutrition Department, - Ministry of Industry, Trade and Mines, -Ministry of Sport and Youth - MOHME Deputy for Health(NCD Management Center, Health Network development Center, Family and population Health Center, Health Education and Promotion office) -CVD Committee -NCD Committee -Food and Drug Organization	-Integrated CVD Program -Developed counseling guidelines and self-care educational materials -Developed nutritional guideline	-Integrating the National CVD Program -No. of CVD Committee held sessions -Developing counseling guidelines and self-care educational materials -Developing nutritional guideline -Prevalence of overweight and obesity	- Current obesity guideline -Budget allocating	By 2017
		Promote public health literacy and culture	• Produce Educational Material • Education	• MOH • NCD Department	• Perform the International Diabetes'	• At least 5 Mass Media subjects	• Published Media • Broadcasting	Yearly

		Effective Implementation of integrated program for prevention and control of diabetes, hypertension, overweight and obesity and dyslipidemia based on Population wide and individual intervention approaches	• Implementation of integrated program in the Health System	• High level NCD committee • Health Deputy of MOH • Office for Health Network • NCD Department	• Identification of people with risks • Intervention • Stop or delay progression toward developing overt diseases or Complications	• % Coverage • Situational Analysis • Trends of DM and other risk factors	• Reports from Universities • Reports of monitoring and Evaluation	By end of 2018
		Strengthen capacity of Health System particularly at primary care level	• Re-orientation of health system to address the prevention of NCD and the underlying social determinants • Employment of needed educated manpower	• High level NCD committee • Health Deputy of MOH • Office for Health Network	• Presence of sufficient Health facilities with standard equipment and manpower • Providing standard health services • Proper Health Coverage particularly in remote regions and poor communities	• Number of standard Health Homes and Centers at national and Provinces levels	• Universities' Reports • Reports of monitoring and Evaluation	By end of 2018
		Increase and prioritize budgeting allocation	• Precise Financing Calculation • Raising adequate funds for universal coverage	• MOH • Health Deputy of MOH • NCD Department	• Allocate enough budget	• Compare needed budget and allocate budget • % obtained budget	• Budget allocation list of NCD	Yearly
		Engage private health sectors and related non-health sectors (multi-sectorial actions)	• Collaboration • Sign of Agreement	• MOH • Supreme Council of Health and Food security • NCD Department • Office of health education at MOH • Universities • Privet Sectors • NGOs • Mass Media	• Proper collaboration based on the agreements substances	• % of achievement of the agreements substances	• Progression Reports	Yearly
		Reinforce health system and efficient use of health care resources	• Need assessment • Define basic diagnostics and essential medications	• MOH • Health Deputy of MOH	• Provide standard services	• Evaluation of service compare to standard • 10% Increase compared to previous year	• Family Files at health Home and Health Centers	Yearly
		Provide equitable opportunities for early detection and effective intervention for all	• Easy access to health system	• MOH • Health Deputy of MOH • NCD Department • Food and Drug Administrative • Welfare Organization	• Proper coverage for female and Male • Proper coverage for poor people • Proper coverage for city margin • Proper coverage for remote areas	• %50 coverage for female and Male • %50 coverage in poor regions • %50 coverage for city margin • %50 coverage for remote areas	• Reports from universities • Reports of monitoring and Evaluation	By June 2017

			scale - Providing weight scale equipments for public places -Capacity building and Ensure nutritionist/ dietician at the lowest level of PHC for counseling and prescribing healthy diet -Educating people by mass media and health workers for identifying BMI -Giving incentives to obese people(weight scale, measurement tape, cooking book) in health events -Screening weight measurement in health events -Healthy diet Counseling in health events -Printing BMI chart -Identifying and treating overweight and obesity From childhood in child hood care - Identifying and treating overweight and obesity in schools (by students Health Identification) -Promotion of exclusive breast feeding by 6 months and continue to breast feeding to 2 years	-Mass media (IRI Broadcasting , press, magazine, newspapers,…)	20% increase every year) -Increased using of weight scale(self care) (10% every year) -Increased weight loss in overweight and obese people (10% every year) - Increased weight loss and maintain to normal weight in obese people(well weight controlled) (10% every year) -Obese people receiving dietitian counseling (at least 50%) - Weight screening at health workers visits (at least 30% of visits once a year) -Identified obese children	-Percent of weight loss in overweight and obese people -Percent of well controlled obese people -Percent of people having weight scale at home -Percent of obese people received dietitian counseling -Percent of weight screening at health workers visits(once a year) -Percent of obese children at each level of school based screening		

		regarding diabetes and other CV via healthy behaviors and self-care and avoiding exposing to risk factors		• Office of health education at MOH • Mass Media • Ministry of Education • Municipalities	day • At least one national Campaign regarding Diabetes and other risk factors	• 1 Teasers • 5 TV and Radio Program	media	
		Primary prevention with Assessing and Managing CVD risk in population with risk factors	• Using WHO/ISH risk prediction Charts • Proper Intervention	• MOH • NCD Department • Universities	• Risk prediction • Intervention based on PEN guideline • follow-up	• 50% Risk prediction in people living in rural, cities borders and cities with less than 50000 population • Starting intervention in 50% of people with more than 20% risk • At least Follow-up of 50% of people with more than 20% risk	• Family files • Data files	By June 2017
		Community engagement and empowerment of people for self-care	• Collaboration • Third party • Education	• MOH • NCD Department • Mass Media • Ministry of Education • Municipalities • Ministry of culture • Religious Places, Mosques, … • NGO, Groups and Associations • Private sector	• Collaboration in performing Diabetes and other risk factors occasions • Collaboration in social activities and campaigns • Public education	• At least one collaboration in performing diabetes and other risk factors occasions in each university • Published one Educational Material for Religious Places regarding management of diabetes and other risk factors during meeting or trip	• Universities' Reports	Yearly
	Health Care	-Identifying and treating overweight and obesity From childhood	-Revising obesity prevention, assessment and treatment guidelines by making new approach to WHO PEN -Encouraging people to have weight	- MOHME Deputy for Curative affairs - MOHME Deputy for Health	-Reduction of overweight and obesity(at least 10% every year) -Receiving consultation (at least 80% of obese people ,	-Prevalence of overweight and obesity -Percent of Receiving consultation by dietician	-Budget allocating	By the end of 2025

		Define the monitoring and evaluation indicators	• Define the "Health Panel" including important indicators of integrated program • Distributed in all universities • Request the Panel o	• NCD Department	• Continued and timely evaluation of the national program	• All operational indicators based on the Integrated National Program	• Universities' Reports • Family Files • The NCD Health Panel	Yearly
		Insurance coverage for all PHC services	• Insurance coverage	• Insurance companies • MOH	• Full coverage of patients regarding Diabetes and other NCD risk factors	• % of Medications under Insurance coverage • % of diagnostic procedures under Insurance coverage • % of treatment procedures under Insurance coverage	• Universities' Reports • Family Files • Hospital Records	Yearly
		Empowerment of patients and their families for self-care	• Education • Provide Self Care Materials, facilities and devices (glucometer, …)	• MOH • NCD Department • Universities • NGOs • Municipalities • Ministry of culture during religious meetings and trips	• Better patient compliance to treatment • Effective self-monitoring by patient and their family • Achieving better management of health problems	• % of active files in each Health Home and center based on national guideline • % of patients with good metabolic controls in each Health Home and center based on national guideline	• Universities' Reports • Family Files	Yearly
	Surveillance	Strengthening the weight registration system	-Establishing registration system -Strengthening the NCDs surveillance system(STEPs), -Developing and monitoring and evaluation of overweight and obesity prevention program in schools -Designing and using data management panel of NCDs and their risk factors at different levels of health system -Strengthening the routine survey on children ,adolescence and youth obesity	- MOHME Deputy for Health (NCD Management Center, Health Network Development Center, Family and population Health Center)	-Ponitoring the trend of overweight and obesity -			By 2017
		Strengthen and Upgrade the DM registry system Gathering reliable health information of people via SEPAS system STEPs	Provide Computer and High-speed Internet for all levels of Health System Educate personnel for data entrance To complete the DM registry system regarding data on Hypertension, Obesity, and Dyslipidemia	MOH NCD Department Universities	Reliable data Gathering system Ability to link all health information of a person regarding the National Code	% of records	Universities' Reports	Yearly

			- Routine screening of overweight and obesity in PHC - Providing counseling by dietitian at lowest level of PHC -Integrating weight screening at every health workers visit -Developing and monitoring and evaluation of overweight and obesity prevention program in schools					
		Provide prevention, early detection and cost effective case management	• Education • early detection • Cost Effective management based on national guidelines	• MOH • NCD Department • Universities • Scientific Associations • Private sector	• Continuous education GPs and other health services providers • Distribution the national guidelines • Proper clinical practice	• Number of Educational workshop seminars , ... • Prevention of hospitalization due to hypoglycemia or hyperglycemia • Prevention of disabling outcome (blindness, dialysis, foot amputation, MI , and Stroke)	• Universities' Reports • MI registry System	Yearly
		Access to basic diagnostics and essential medications to prevent complications, improve quality of life and productivity	• Provide accessible Health system • Provide essential and effective medication	• MOH • NCD Department • Universities • Ministry of Industry, Trade and Mines, Oil Industry	• Availability of health services and medications • Prevent disabilities • improve quality of life and productivity	• 10% Prevention of disabling outcome (blindness, dialysis, foot amputation, MI , and Stroke) • 10% improvement in quality of life and productivity	• Universities' Reports • MI registry System • Projects' Reports	By June 2017
		Standardization of diagnostic and	• Update guidelines • To equip health system with	• MOH • NCD Department	• Providing standardized health services	• % of improved HbA1C in diabetics	• Universities' Reports	By June
		investigation procedures and medications prescription	necessary diagnostic equipment	• Universities • Scientific Associations • National Advisory Committee		• % of improvement in Pre-diabetics		2017
		Efficient referral and follow-up system	• Implementation of referral and follow-up system in PHC • Effective collaboration with higher levels of health system (Clinics, Hospitals , palliative centers, ...)	• MOH • NCD Department • Universities • Privet sectors	• Increase patients referral rate to higher levels	• Up to 90% of patients refereed to higher levels	• Universities' Reports • Family Files	By June 2017

			-Integrating the counseling to prevent heart attack and strokes in the first level of PHC(by Behvarz/Health care providers) -Ensuring the counselors (Psychologists, nutritionist) at lowest level of the PHC -Using mass media for public education -Collaboration and corporation in capacity building and training staffs and manpower via needs assessment. -Intersectoral coordination and advocacy for legislation in the field of reduction of risk factors	- MOHME Deputy for Development and Manpower -MOHME Deputy for Education -Mass Media	-Trained staff (at least 80%) -Spplied drugs (at least 90%) - CVD patients receiving drug therapy and counseling (at least 50%) -Ensuring coverage of accessibility to the drug treatment and counseling for the prevention of heart attacks and strokes for the eligible persons(at least 50% by the end of 2025). -Ensuring essential drugs and technologies for treatment of NCDs in governmental and private sectors (at least 80% by the end of 2025)	essential drugs and technologies for treatment of NCDs in governmental and private sectors		
	Health Care	Engagement of private sector	CVD -Strengthening the inter sectoral coordination by developing national intersectoral collaboration program for CVD control (for approval in high level health council) -Advocacy for partnership and collaboration of related private	-Iran Heart Associations -Atherosclerosis Association -Endovascular Association - Deputy for Health(NCD Management Center)	-Reduced burden of Health costs on CVD -Collaboration between private sectors and NGOS and Deputy for Health(NCD Management Center)	-No. of private sectors partnerships (or percent)	-Regulations and programs for partnerships and collaboration	By 2020

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
8- At least 70% of eligible people receive drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes.	**Governance**	Developing and integration of the national guidelines	-Developing National Comprehensive CVD Prevention and Control Program with the WHOPEN approach -Developing and Preparing commitments and standards of integration of National CVD Prevention and Control Program in Health care Networks -Developing CVD prevention and control guideline -Developing counseling guidelines and self-care educational materials	- MOHME Deputy for Curative affairs - MOHME Deputy for Health(NCD Management Center, Health Network development Center, Family and population Health Center, Health Education and Promotion office) -CVD committee NCD committee	- Prepared National CVD Prevention and Control Program with the WHOPEN approach(by 2017) -Prepared commitments and standards of integration of National CVD Prevention and Control Program in Health care Networks(by 2017) -Developed counseling guidelines and self-care materials	-Integrating the National CVD Program	-Budget allocating	By 2018
		Enforcement of the national guidelines	-Prophecy the (NCVDPC) to the MS&HS universities and integrating the program in PHC level -Holding workshops for training health workers on how to implement the (NCVDPC) -Making access to the essential technologies and necessary drugs to control CVD/Hypertension and their risk factors by prediction and supplying the anti hypertension drugs and provide requisite resources at different particularly lowest level of the PHC	MOHME Deputy for Curative affairs - MOHME Deputy for Health(NCD Management Center, Health Network development Center, Family and population Health Center, Health Education and Promotion office) -Food and Drug Organization	**- integrated the national guidelines(by 2017)** -List of predicted drugs(by 2017) -List of needed Health workers(counselor)(by 2017) -Percent of ensured needed counselors (Psychologists, nutritionist,..)(10% every year)	-Percent of ensured needed counselors (Psychologists, nutritionist,..) -Percent of trained staff -Percent of supplied drugs -Percent of ensured needed counselors -Percent of CVD patients receiving drug therapy and counseling -Percent of ensuring		By 2020

		Improving the quality of healthcare (private/ public, outpatient/inpatient)	-Improving the health care delivery at secondary and tertiary levels by advocacy and strengthening the referral system -Appropriate case finding in health houses, health centers and health posts according to age groups of people referr to health houses/centers 3-Initial assessment of population under coverage of health centers to identify risk factors and high risk groups -Regular managing and caring of identified patients and refer them to specialized level if necessary -Updating and making native and localizing the screening, case finding , treatment and prevention of CVD and their risk factors guidelines and protocols -Establishing electronic record and information system of health care in delivering CVD prevention and	- MOHME Deputy for Health(NCD Management Center, Health Network Development Center, Family and population Health Center) - MOHME Deputy for Curative affairs -Insurance Organization	-Reduced CVD complications(5% reduction in CVD complications every year, - Reduced CVD mortality(25% reduction in CVD mortality by 2025) -Increased CVD patients' quality of life	-Percent of CVD complications incidence in patents -Mortality rate of CVD in patients -Quality of life	-budget allocating	By the end of 2025
			treatment services -Designing and performing programs on increasing access to the necessary counseling services (website, phone counseling, mobile health) -Designing technical and up-down managerial monitoring and evaluation system at different levels of health system for promotion of the quality of the NCDs prevention and control program. -Designing and performing audit system for prevention and control of NCD -Monitoring and Evaluation of the trend of CVD complications and deaths					

			sectors -Engaging the representatives of private sectors in CVD risk factors subcommittees -Engaging NGOs in planning the program(for approval of extent of duties and commitments of partnerships in the program implementation) -Coordination and advocacy for considering the attached health document in planning the developmental programs -Intersectoral collaboration with the non-governmental organizations in the line of building\establishing healthy environment (work places in offices and factories, schools, green spaces and lands, universities, health centers and….) -Preparing and printing educational materials	-Other CVD NGOs' and public institutions				
		CVD Risk score	-Developing guideline for CVD risk scoring -Grading people(30 years and more) by developing CVD risk score chart -Identifying the high risk people(30 years and more) -Counseling and Treatment based on	- MOHME Deputy for Health(NCD Management Center, Health Network Development Center, Family and population Health Center) - MOHME Deputy for	-Identified high risk groups(20% and more)(50% by 2020) -Receiving treatment based on risk score(counseling, thiazide and statin) (50% by 2020) -Reduction of CVD events	-Percent of people based on risk score(<10%, 10-19%, 20-29%, ≥30%) -Percent of eligible people receiving treatment based on risk score -Percent of CVD events incidence(MI,stroke,death)in	-budget allocating for screening risk factors in the population	By 2020
			risk score -Providing and printing localized Risk Score Chart for health centers/settings	Curative affairs -Insurance Organization	incidence in target groups (5% every year) -Reduction of CVD risk factors in target groups (5% every year)	above mentioned patients		

					eating…)(5% every year)			
	Surveillance	Healthcare quality survey (H.Q.S)	-Strengthening the data gathering system. -Strengthening the reporting system and mechanizing it at different levels. -Strengthening the applied researches quality on the NCDs and their risk factors. -Implementing the national surveys related to CVD and its risk factors healthcare quality in appropriate periodical time. -Promoting utilizing data and information -Designing and performing localized survey according to the results of analyzing and with collaboration and participation of all of the organizations and stakeholders in local communities -Giving priority to research plans related to NCDs in universities and research centers and or allocating part of research budget of research centers and universities to research plans pertain to NCDs -Establishing surveillance system technical committee considering the whole aspects of surveillance	- MOHME Deputy for Health(NCD Management Center, Health Network Development Center, Family and population Health Center) -MOHME Deputy for Curative Affairs(SDH Office) -	-Performed survey on (H.Q.S)(2017) -Improved health care quality	-Health care quality		By the end of 2020
			(exposed, outcome, health system and other sectors response) -Establishing registration system and documentation of data and attained information in surveillance system, monitoring and evaluation of NCDs practicable to stakeholders (scientists, olicymakers, people) -Designing and using data management panel of NCDs and their risk factors at different levels of health system					

		Home care	-Developing home care guideline for CVD and its risk factors -Routine screening and case finding of high blood pressure and high blood sugar through home care and self care according to guideline - Routine screening and case finding of high blood lipid through home care and self care according to guideline -Control of blood pressure , blood sugar and blood lipid by patients according to guideline	- MOHME Deputy for Health (NCD Management Center, Health Network Development Center, Family and population Health Center) -Mass Media	-Using blood pressure devices(preferably automated devices) at home(5% increase every year) -Early detection of high blood pressure (5% of hypertensive patients to be identified by home care every year) -Using automated blood sugar devices at home(3% increase every year) -Early detection of high	-Percent of people having blood pressure devices(preferably automated devices) -Percent of hypertensives to be detected from home care -Percent of people having automated blood sugar devices -Percent of Diabetics to be detected from home care -Percent of people having automated blood lipid	-budget allocating for education	By the end of 2020
					blood glucose(5% of patients to be identified by home care every year) -Using automated blood lipid devices at home(1% increase every year) -Early detection of high blood lipid (5% of patients to be identified by home care every year) - Using weighting devices at home(1% increase every year) -Increased disease control (5% every year)	devices -Percent of hyperlipidemia to be detected from home care -Percent of people having weighting devices - Percent of disease control (blood pressure,glucose and lipid,weight)		
		Self-care	-Promotion of public health cultural and health literacy in the field of healthy behaviors and self care and avoiding exposing to risk factors -Developing and dissemination of the self care culture in all of the Health system centers and units -Designing and performing self care program at different levels of health care network and at different organizations	- MOHME Deputy for Health(NCD Management Center, Health Network Development Center, Family and population Health Center) -Mass Media	-Reduction of incidence of diseases(CVD,HTN, obesity, …)(5 % every year) -Reduction of complications resulting from CVD …)(2 % every year) -Increasing of physical activity…)(5 % every year) -Decreasing of smoking…)(2 % every year) -Increasing of quitting smoking…)(2 % every year) -Improving Healthy	-Percent of incidence of diseases(CVD,HTN, obesity, …) -Percent of incidence of complications resulting from CVD -Percent of inactivity -Percent of smoking - Percent of quitting smoking - Percent of Healthy eating -	-budget allocating for education	By the end of 2020

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
10- Zero trans fatty acids in edible oils and food products	**Governance**	Enforcement by supreme council	To prepare the draft of legislations by working group	FDA, Nutrition Department, National Nutrition Institute, Ministry of Industry, Trade and Mines, Oil Industry	Legislations to reduce TFA and SFA in edible oil and food products			
		Revision and enforcement of standards	Establishing the technical committee	FDA, Nutrition Department, ,ISIRI, Ministry of Industry, Trade and Mines, Oil Industry	Zero Fatty acid in edible oil and food products	% of TFA and SFA in edible oil and food products		
		Targeting oil subsidies	To form a working group - To determine the vulnerable groups to receive subsidies	Nutrition Department, National Nutrition Institute, Ministry of Industry , Trade and Mines, Ministry of Finance, MPO,	Targeted edible oil subsidies			
	Risk Reduction	Community based approach	Educational Camping's	Nutrition Department, Ministry of Education, IRIB, Ministry of Culture, Municipalities,	Improved nutritional awareness on reducing oil consumption	% of awareness		
		School based approach	- Healthy School canteen Conducting workshops, seminars, … (teachers, school children, parents)	Ministry of Education, Nutrition Department, NCD Committee, Health education Department	Improved nutritional awareness of teachers , schoolchildren	% of aware ness (KAP on oil consumption pattern and health effects)		
		Workplace based approach	To develop guideline on healthy diet regarding to edible oil	Nutrition Department , National Nutrition Institute, NCD Committee	Legislation on Health menus in workplaces	% of workplaces to implement the guideline		Until the end of 2016
	Surveillance	Food Consumption survey	To develop proposal	Nutrition Department, National Nutrition Institute	Food consumption pattern at the national and provincial level			Until the end of 2018

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
9- An 100% availability of the affordable basic technologies and national essential medicines, including generics, required to treat major non communicable diseases in both public	**Governance**	-						
	Risk Reduction	- Promote utilization all patients at risk to diabetic, hypertension and lipid modifying medicines at affordable cost.						
	Health Care	- Improve access to and uilization of safe, affordable and high quality essential medicines and technologies for						
and private facilities.		common NCDs; - Improve access to essential palliative care						
	Surveillance	- Strengthen national lab network and Providing lab equipment to monitoring risk factors in food and medicines.						

	Health Care	Drivers' occupational health examinations Improved Post Crash Care	Driver health examinations using ministry of health's guidelines Expanding the EMS Infrastructure Expanding Air Ambulance Program (Health Evolution Plan) Expanding Motor Ambulances Program (Health Evolution Plan)	- Road maintenance and transportation - Occupational Medicine centers Ministry of Health All Community Members	Reduction in road traffic fatality rate reduction in road traffic fatality rate Improved Quality of Pre Hospital Care Improved Time Performance for EMS System Acceptable Coverage for Rural Roads	Road traffic fatality rate Number of EMS Stations(Ground, Air) Number of Ground EMS Stations Per 100 KM Number of Ambulances EMS Response Time EMS Coverage for Road Traffic Injuries Land Coverage by Air Ambulance (%)	Ministry of Health & Medical Education	Annually During the Decade of Action for Road Safety 2011- 2020
			Providing Current Medical Education Courses for EMS Technicians Providing Emergency Care as a Bachelor Course		Improved Quality of Pre Hospital Care	Number of Training Courses Number of Trained Technicians Number of Medical Universities Offering Bachelor Course Number of Accepted and Bachelor Graduated Technicians		
			Expanding the Relief & Rescue(Fire		Improved Quality of Pre	Number of Relief & Rescue Stations		

Special Target for Iran

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
20% Annual Reduction in the Number of Accidents Death	Governance	Appropriate budget allocation Preventive rules modification Especial attention to Standards in industry Promoting intersectional cooperation Integrated Road Safety Management	- Preparation of "professional drivers' basic health package" - Meetings to promote association between government organizations - Professional drivers insurance Budget allocation Establish a Lead Agency to Guide the National Road Safety Efforts	- Road maintenance and transportation organization - Social security organization - Ministry of interior - Police Ministry of Health All Responsible Authorities in the field of Road Safety: Emergency Management Center(MOH&ME), Red Crescent, Traffic Police, Ministry of Road & Urban Planning, Ministry of Interior, Ministry of Education,	Reduction in road traffic fatality rate reduction in road traffic fatality rate Lead Agency to Oversee and/or Coordinate all Road Safety Activities Shared Vision Common Language	Road traffic fatality rate Number of Road Safety Commission Annual Meetings. Number of Approvals According to the Meeting Minute	Road Safety Commission	Annually (Iranian Calendar)
			Develop a Strategic Plan	Road Maintenance Organization(RMO), Standard Organization, Insurance Company.	10 Years National Road Safety Strategic Plan 2011-2020	Achievements (%) based on the Plan		
			Set Realistic Targets		10% Reduction in the Number of Road	Number of Road Traffic Death		

			Free of Charge Care to All Road Traffic Injured Victims Based on the 4th & 5th Soci- Economic Cultural Developmental Agenda	All Community Members with Special Focus on Poor Road Users who Can't Afford Catastrophic Medical Care Costs	Free of charge care	Number of Reimbursed Admissions for Road Traffic Injured Victims Out of Pocket Payment For Road Traffic Injuries.	Central Insurance Organization Ministry of Health & Medical Education	Stareted in 2007 & will be Continued Annually During the Decade of Action for Road Safety 2011- 2020
	Surveillance	Death registry Random drug tests Establish and Support Data Systems for on-going Monitoring and Evaluation	Random drug usage tests Road Traffic Reimbursement Data Bank, Based on ICD10 Police Road Traffic Police, Data Bank Speed Camera's Surveillance System	- Ministry of health Police Road Safety Commission Emergency Management Center(MOH& ME)	Reduction in road traffic fatality rate reduction in road traffic fatality rate Integrated Road Traffic Injuries Information System	Road traffic fatality rate Number of Published Status Report	Road Safety Commission	2016-2020

			Extinguishing) Infrastructure		Hospital Services	Number of Relief & Rescue Stations Per 100 KM Number of Relief & Rescue Vehicles		
			Expanding Emergency Medicine Discipline Attending Specialized Physicians Plan (Health Evolution Plan) Providing Current Medical Education Courses for General Practitioners and Specialists Implementing Trauma System Approach		Improved Quality of Hospital Care	Number of Medical Universities Offering Emergency Medicine Specialty Course Number of Hospitals Implemented Attending Specialized Physicians Plan Mean Number of Attending Physician per Night Shifts Number of Training Courses Number of Trained Physicians Number of Trauma Centers	Ministry of Health & Medical Education	

		Increasing accessibility	Decreasing the price of fruits and vegetables through: - production incentives - facilitated farmer's access to the market - holding continuous training events for the farmers	1- MINISTRY OF AGRICULTURE 2- MINISTRY OF MINISTRY OF INDUSTRY, MINES AND TRADE 3- MINITRY OF JUSTICE-TAZIRAT ORG 4- MINICIPALITIES 5- GUILDS	
		Decreasing air pollutants	Enforcement of Clean Air Act	1. MINISTRY OF INTERIOR 2. MINISTERY OF PETROLEUM 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. ENVIRONMENAL PROTECTION ORG 5. MOHME 6. MUNICIPALITIES	
		Decreasing soil pollutants	Decreasing utilization of unsafe fertilizers	1. NATIONAL ORG OF STANDARDS 2. MINISTRY OF AGRICULTURE 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. MOHME	
			Decreasing utilization of unsafe pesticides	1. NATIONAL ORG OF STANDARDS 2. MINISTRY OF	

Intersectoral section

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
1- A 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	**Governance**	- Bringing NCD priorities into the agenda of High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**			
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document				
	Risk Reduction	Health education and promotion	Enhancing public KASP regarding major NCD risk factors through: - Media campaigns - Routine programs - Curricula - Extracurricular activities	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORGANIZATION 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL For IMAMS 6. MOHME				

	Surveillance	-In/Out patient registries -Death registry -Cancer registry	Scheduled reports are prepared and disseminated	1. MOHME 2. FORINSIC MEDICINE ORG 3. NATIONAL ORGANIZATION FOR CIVIL REGISTRATION				
2- 10% reduction in the harmful use of alcohol	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**			
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document				
	Risk Reduction	Access reduction	Reducing access to alcoholic beverages through law enforcement	1. JUDISIARY SYSTEM 2. SECURITY FORCES 3. BASIJ FORCES 4. DEPARTMENT OF ANTI-SMUGGLING AND TRAFFICKING				
	Risk Reduction Health Care	Health education and promotion	Improvement of public KASP regarding alcohol abuse	1. MINISTRY OF EDUCATION 2. MINISTRY OF				

				AGRICULTURE 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. MOHME	
	Health Care	Screening	Development and implementation of NCD risk factor screening programs (using USPSTF guidelines)	1. MOHME 2. NATIONAL HEALTH INSURANCE ORG 3. IRIMC	
		Self-care	Provision of affordable self-care utensils for NCD patients (sphygmomanometer, finger prick blood tests, etc.)	1. MOHME 2. NATIONAL HEALTH INSURANCE ORG 3. MINISTRY OF INDUSTRY, MINES AND TRADE	
		Improving pre-hospital emergency care	Enhancement of public and professional Basic Life Supports (BLS) knowledge and practice	1. RED SCRESENT SOCIETY 2. IRIMC 3. HEART ASSOCIATION 4. MOHME 5. NATIONAL RADIO AND TV ORG	
			Incorporation of first aid subjects in curricula	1. MOHME 2. MINISTRY OF SCIENCE 3. MINISTRY OF EDUCATION 4. VOCATIONAL TRAINING ORG	

			Youth Risk Behaviors - Preparation of annual report from seized alcoholic products	AND YOUTH	
3- 20% reduction in prevalence of insufficient physical activity	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Environmental modification	Increasing per capita area of public open space, including sports centers , parks , etc.	1-MUNICIPALITIES 2-MINISTRY OF SPORTS AND YOUTH	
			Increasing designate biking lanes	MUNICIPALITIES	
			Increasing standard	MUNICIPALITIES	

				SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL FOR IMAMS 6. MINISTRY OF SPORTS AND YOUTH 7. MOHME	
		Service provision	Increasing access to counseling services for alcoholics	1. MOHME 2. STATE WEFARE ORG OF IRN	
	Surveillance	Survey/s and seizure statistics	-Conducting STEPS, GSHA, KASP surveys - Conducting National	1. MOHME 2. SECURITY FORCES 3- MINISTRY OF SPORTS	

		- Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	evaluation studies		
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Market control	Development of national standards for salt/sodium content of industrial food products, and enforcing them	1. MOHME 2. NATIONAL STANDARD ORG 3. MINISTRY OF INDUSTRY, MINES AND TRADE	
		Health education and promotion	Improvement of public KASP regarding safe limits of salt consumption	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL FOR IMAMS 6. MOHME	
	Health Care	NA	NA	NA	
	Surveillance	Survey Product statistics		1. MOHME 2. MINISTRY OF INDUSTRY, MINES AND TRADE	

			pavements		
		Health education and promotion	Improvement of public KASP regarding physical activity in workplace, transportation and leisure time	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL FOR IMAMS 6. MINISTRY OF SPORTS AND YOUTH 7. MOHME	
	Health Care	Service provision	Provision of physical activity counseling through family physician initiative	1. MOHME 2. MINISTRY OF WELFARE	
	Surveillance	Survey/s, statistics	-Conducting STEPS and GSHS, KASP survey - Construction statistics - Timely reporting and dissemination of info	1-MOHME 2-MUNICIPALITIES 3-MINISTRY OF SPORTS AND YOUTH	
4- 30% reduction in mean population intake of salt/sodium	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**

			tobacco products	2. MUNICIPALITIES 3. GUILDS	
		Access reduction	RESTRICTION IN TOBACCO CULTIVATION	MINISTRY OF AGRICULTURE	
		Health education and promotion	Improvement of public KASP regarding smoking	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINISTRY OF DEFENCE 5. MINITRSY OF ISLAMIC GUIDANCE 6. POLICY- MAKING COUNCIL FOR IMAMS 7. MOHME	
		Quality	Establishing/controlling standards of domestic and imported tobacco products	1. NATIONAL STANDARD ORG. 2. MOHME 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. TOBACCO COMPANY OF IRAN	

5- 30% reduction in prevalence of current tobacco use	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Taxation	Increasing tax for domestic and imported tobacco products	1. MINISTRY OF ECONOMIC AFFAIRS AND FINANCE 2. MINISTRY OF INDUSTRY, MINES AND TRADE	
		Law enforcement	ENFORCING BANS OF TOBACCO USE IN PUBLIC PLACES	1. SECURITY FORCES 2. MUNICIPALITIES	
		Law enforcement	ENFORCING SALE RESTRICTIONS	1. SECURITY FORCES 2. MUNICIPALITIES 3. GUILDS	
		Law enforcement	Increasing seized smuggled	1. SECURITY FORCES	

				AND TV ORG 4- MINISTRY OF DEFENCE 5- MINITRSY OF ISLAMIC GUIDANCE 6- POLICY- MAKING COUNCIL FOR IMAMS 7- MOHME	
	Health Care	Service quality improvement	Improving quality of care of hypertensive patients through CMEs, medical guideline, curricula	1- MOHME 2- IRIMC 3- HEART ASSOCIATION	
	Surveillance	-In/out patient registries -Surveys	-National diabetes and hypertension programs -STEPS	MOHME	
7- Halt the rise of diabetes and obesity	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for NCD related action plans in the annual budget of the involved organizations	All involved sectors in this document	

	Health Care	Service provision	INCREASED ACCESS TO SMOKE SECCATION SERVICES	1. MINISTRY OF COOPERATION, LABOR AND WELFARE- NATIONAL ORGANIZATION OF HEALTH INSURANCE 2. MOHME 3. MUNICIPALITIES	
	Surveillance	Survey/s Market info	-Conducting STEPS, GYTS, GSHS -Market statistics -Smuggling forecasts	1- MOHME 2- MINISTRY OF INDUSTRY, MINES AND TRADE 3- SECURITY FORCES	
6-25% reduction in the prevalence of high blood pressure	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Health education and promotion	Improvement of public KASP regarding HTN	1- MINISTRY OF EDUCATION 2- MINISTRY OF SCIENCE AND TECHNOLOGY 3- NATIONAL RADIO	

		initiatives	budget of the involved organizations		
	Risk Reduction				
	Health Care	R&D	Promoting RCTs in the field of traditional medicine that target NCDs	1- MOHME 2- MINISTRY OF SCIENCE 3- RESEARCH SUPPORT FUND	
	Surveillance	Survey/s Statistics	-Utilization studies - Patient satisfaction survey/s -Insurance companies statistics	1- MOHME 2- MINISTRY OF WELFARE	
9- 100% availability of essential NCDs medicines and basic technologies to treat major NCDs	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	

	Risk Reduction		TARGET 1 AND 3	TARGET 1 AND 3	
	Health Care	Service provision	Expanding the coverage of the national diabetes program to large cities	1- MOHME 2- MINISTRY OF WELFARE	
		Service quality	Improving quality of care of diabetic patients	1- MOHME 2- IRIMC 3- DIABETES ASSOCIATIONS	
	Surveillance	Risk factor surveillance	STEPS	MOHME	
8- At least 70% of eligible people receive drug therapy and counseling to prevent heart attack and strokes	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of	-Earmarking funds for related action plans in the annual	All involved sectors in this document	

	Risk Reduction	Policy enforcement	Control over domestic and imported cooking and industrial dietary oils	1- MOHME 2- NATIONAL STANDARD ORG	
		Health education and promotion	Improvement of public KASP regarding healthy cooking oil	1- MINISTRY OF EDUCATION 2- MINISTRY OF SCIENCE AND TECHNOLOGY 3- NATIONAL RADIO AND TV ORG 4- MINISTRY OF DEFENCE 5- MINITRSY OF ISLAMIC GUIDANCE 6- POLICY-MAKING COUNCIL FOR IMAMS 7- MOHME	
	Health Care	NA	NA	NA	
	Surveillance	STATISTICS	Reporting the related stats annually	MINISTRY OF INDUSTRY, MINES AND TRADE	

	Risk Reduction	NA	NA	NA	
	Health Care	Subsidies	Reimbursement of catastrophic payments for uninsured NCD medicines/technologies	1- SPECIAL DISEASE FOUNDATION 2- EMDAD RELIEFE ORG 3- MOHME 4- NATIONAL INSURANCE ORG	
	Surveillance	-Survey/s -Statistics	-Utilization study - Patient satisfaction survey/s -Insurance companies statistics	3- MOHME 4- MINISTRY OF WELFARE	
10- Zero trans fatty acids in edible oils and food products	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	

Targets	Scope	Strategies	Activities	Stakeholders	Desired outcome	Evaluation indicators	Resources	Time Period
	Risk Reduction	Education Promoting Health literacy Identifying Risk factors	Public Education Courses to educate drivers, health care employees, etc. Raising Awareness Campaigns	All Community Members with Especial Focus on High Risk Groups Road maintenance and transportation	Reduction in road traffic fatality rate reduction in road traffic fatality rate Safe Road Users including: First Responder Training Advocacy & Capacity Building	Road traffic fatality rate Number of Trainees Number of Campaigns/ National and International Events	Road Safety Commission	Annually During the Decade of Action for Road Safety 2011- 2020

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
20% Annual Reduction in the Number of Accidents Death	Governance	Appropriate budget allocation Preventive rules modification Especial attention to Standards in industry Promoting intersectional cooperation Integrated Road Safety Management	- Preparation of "professional drivers' basic health package" - Meetings to promote association between government organizations - Professional drivers insurance Budget allocation Establish a Lead Agency to Guide the National Road Safety Efforts	- Road maintenance and transportation organization - Social security organization - Ministry of interior - Police Ministry of Health All Responsible Authorities in the field of Road Safety: Emergency Management Center(MOH&ME), Red Crescent, Traffic Police, Ministry of Road & Urban Planning, Ministry of Interior, Ministry of Education, Road Maintenance Organization(RMO), Standard Organization, Insurance Company.	Reduction in road traffic fatality rate reduction in road traffic fatality rate Lead Agency to Oversee and/or Coordinate all Road Safety Activities Shared Vision Common Language	Road traffic fatality rate Number of Road Safety Commission Annual Meetings. Number of Approvals According to the Meeting Minute	Road Safety Commission	Annually (Iranian Calendar)
			Develop a Strategic Plan		10 Years National Road Safety Strategic Plan 2011-2020	Achievements (%) based on the Plan		
			Set Realistic Targets		10% Reduction in the Number of Road	Number of Road Traffic Death		

			Expanding the Relief & Rescue(Fire Extinguishing) Infrastructure		Improved Quality of Pre Hospital Services	Number of Relief & Rescue Stations Number of Relief & Rescue Stations Per 100 KM Number of Relief & Rescue Vehicles		
			Expanding Emergency Medicine Discipline Attending Specialized Physicians Plan (Health Evolution Plan) Providing Current Medical Education Courses for General Practitioners and Specialists Implementing		Improved Quality of Hospital Care	Number of Medical Universities Offering Emergency Medicine Specialty Course Number of Hospitals Implemented Attending Specialized Physicians Plan Mean Number of Attending Physician per Night Shifts Number of Training Courses Number of Trained Physicians Number of Trauma Centers	Ministry of Health & Medical Education	

Targets	Scope	Strategies	Activities	Stakeholders	Desired outcome	Evaluation indicators	Resources	Time Period
	Health Care	Drivers' occupational health examinations Improved Post Crash Care	Driver health examinations using ministry of health's guidelines Expanding the EMS Infrastructure Expanding Air Ambulance Program (Health Evolution Plan) Expanding Motor Ambulances Program (Health Evolution Plan)	- Road maintenance and transportation - Occupational Medicine centers Ministry of Health All Community Members	Reduction in road traffic fatality rate reduction in road traffic fatality rate Improved Quality of Pre Hospital Care Improved Time Performance for EMS System Acceptable Coverage for Rural Roads	Road traffic fatality rate Number of EMS Stations(Ground, Air) Number of Ground EMS Stations Per 100 KM Number of Ambulances EMS Response Time EMS Coverage for Road Traffic Injuries Land Coverage by Air Ambulance (%)	Ministry of Health & Medical Education	Annually During the Decade of Action for Road Safety 2011- 2020
			Providing Current Medical Education Courses for EMS Technicians Providing Emergency Care as a Bachelor Course		Improved Quality of Pre Hospital Care	Number of Training Courses Number of Trained Technicians Number of Medical Universities Offering Bachelor Course Number of Accepted and Bachelor Graduated Technicians		

Targets	Dimension	Strategies	Activities	Related Stakeholders	Desired Outcome/Output/Process Indicators	Monitoring & Evaluation indicators	Resources required	Time Period
1- A 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	**Governance**	- Bringing NCD priorities into the agenda of High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**			
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document				
	Risk Reduction	Health education and promotion	Enhancing public KASP regarding major NCD risk factors through: - Media campaigns - Routine programs - Curricula - Extracurricular activities	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORGANIZATION 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL For IMAMS 6. MOHME				

			Trauma System Approach					
			Free of Charge Care to All Road Traffic Injured Victims Based on the 4th & 5th Soci- Economic Cultural Developmental Agenda	All Community Members with Special Focus on Poor Road Users who Can't Afford Catastrophic Medical Care Costs	Free of charge care	Number of Reimbursed Admissions for Road Traffic Injured Victims Out of Pocket Payment For Road Traffic Injuries.	Central Insurance Organization Ministry of Health & Medical Education	Stareted in 2007 & will be Continued Annually During the Decade of Action for Road Safety 2011- 2020

Targets	Scope	Strategies	Activities	Stakeholders	Desired outcome	Evaluation indicators	Resources	Time Period
	Surveillance	Death registry Random drug tests Establish and Support Data Systems for on-going Monitoring and Evaluation	Random drug usage tests Road Traffic Reimbursement Data Bank, Based on ICD10 Police Road Traffic Police, Data Bank Speed Camera's Surveillance System	- Ministry of health Police Road Safety Commission Emergency Management Center(MOH& ME)	Reduction in road traffic fatality rate reduction in road traffic fatality rate Integrated Road Traffic Injuries Information System	Road traffic fatality rate Number of Published Status Report	Road Safety Commission	2016-2020

	Health Care	Screening	Development and implementation of NCD risk factor screening programs (using USPSTF guidelines)	1. MOHME 2. NATIONAL HEALTH INSURANCE ORG 3. IRIMC	
		Self-care	Provision of affordable self-care utensils for NCD patients (sphygmomanometer, finger prick blood tests, etc.)	1. MOHME 2. NATIONAL HEALTH INSURANCE ORG 3. MINISTRY OF INDUSTRY, MINES AND TRADE	
		Improving pre-hospital emergency care	Enhancement of public and professional Basic Life Supports (BLS) knowledge and practice	1. RED SCRESENT SOCIETY 2. IRIMC 3. HEART ASSOCIATION 4. MOHME 5. NATIONAL RADIO AND TV ORG	
			Incorporation of first aid subjects in curricula	1. MOHME 2. MINISTRY OF SCIENCE 3. MINISTRY OF EDUCATION 4. VOCATIONAL TRAINING ORG	
	Surveillance	-In/Out patient registries -Death registry -Cancer registry	Scheduled reports are prepared and disseminated	1. MOHME 2. FORINSIC MEDICINE ORG 3. NATIONAL ORGANIZATION FOR CIVIL REGISTRATION	

		Increasing accessibility	Decreasing the price of fruits and vegetables through: - production incentives - facilitated farmer's access to the market - holding continuous training events for the farmers	1- MINISTRY OF AGRICULTURE 2- MINISTRY OF MINISTRY OF INDUSTRY, MINES AND TRADE 3- MINITRY OF JUSTICE-TAZIRAT ORG 4- MINICIPALITIES 5- GUILDS	
		Decreasing air pollutants	Enforcement of Clean Air Act	1. MINISTRY OF INTERIOR 2. MINISTERY OF PETROLEUM 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. ENVIRONMENAL PROTECTION ORG 5. MOHME 6. MUNICIPALITIES	
		Decreasing soil pollutants	Decreasing utilization of unsafe fertilizers	1. NATIONAL ORG OF STANDARDS 2. MINISTRY OF AGRICULTURE 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. MOHME	
			Decreasing utilization of unsafe pesticides	1. NATIONAL ORG OF STANDARDS 2. MINISTRY OF AGRICULTURE 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. MOHME	

	Reduction Health Care	and promotion	KASP regarding alcohol abuse	EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL FOR IMAMS 6. MINISTRY OF SPORTS AND YOUTH 7. MOHME	
		Service provision	Increasing access to counseling services for alcoholics	1. MOHME 2. STATE WEFARE ORG OF IRN	
	Surveillance	Survey/s and seizure statistics	-Conducting STEPS, GSHA, KASP surveys - Conducting National Youth Risk Behaviors - Preparation of annual report from seized alcoholic products	1. MOHME 2. SECURITY FORCES 3- MINISTRY OF SPORTS AND YOUTH	

2- 10% reduction in the harmful use of alcohol	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**			
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document				
	Risk Reduction	Access reduction	Reducing access to alcoholic beverages through law enforcement	1. JUDISIARY SYSTEM 2. SECURITY FORCES 3. BASIJ FORCES 4. DEPARTMENT OF ANTI-SMUGGLING AND TRAFFICKING				
	Risk	Health education	Improvement of public	1. MINISTRY OF				

		Health education and promotion	Improvement of public KASP regarding physical activity in workplace, transportation and leisure time	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL FOR IMAMS 6. MINISTRY OF SPORTS AND YOUTH 7. MOHME	
	Health Care	Service provision	Provision of physical activity counseling through family physician initiative	1. MOHME 2. MINISTRY OF WELFARE	
	Surveillance	Survey/s, statistics	-Conducting STEPS and GSHS, KASP survey - Construction statistics - Timely reporting and dissemination of info	1-MOHME 2-MUNICIPALITIES 3-MINISTRY OF SPORTS AND YOUTH	
4- 30% reduction in mean population intake of salt/sodium	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**

3- 20% reduction in prevalence of insufficient physical activity	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Environmental modification	Increasing per capita area of public open space, including sports centers , parks , etc.	1-MUNICIPALITIES 2-MINISTRY OF SPORTS AND YOUTH	
			Increasing designate biking lanes	MUNICIPALITIES	
			Increasing standard pavements	MUNICIPALITIES	

5- 30% reduction in prevalence of current tobacco use	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Taxation	Increasing tax for domestic and imported tobacco products	1. MINISTRY OF ECONOMIC AFFAIRS AND FINANCE 2. MINISTRY OF INDUSTRY, MINES AND TRADE	
		Law enforcement	ENFORCING BANS OF TOBACCO USE IN PUBLIC PLACES	1. SECURITY FORCES 2. MUNICIPALITIES	
		Law enforcement	ENFORCING SALE RESTRICTIONS	1. SECURITY FORCES 2. MUNICIPALITIES 3. GUILDS	

		- Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	evaluation studies		
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Market control	Development of national standards for salt/sodium content of industrial food products, and enforcing them	1. MOHME 2. NATIONAL STANDARD ORG 3. MINISTRY OF INDUSTRY, MINES AND TRADE	
		Health education and promotion	Improvement of public KASP regarding safe limits of salt consumption	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINITRSY OF ISLAMIC GUIDANCE 5. POLICY- MAKING COUNCIL FOR IMAMS 6. MOHME	
	Health Care	NA	NA	NA	
	Surveillance	Survey Product statistics		1. MOHME 2. MINISTRY OF INDUSTRY, MINES AND TRADE	

	Health Care	Service provision	INCREASED ACCESS TO SMOKE SECCATION SERVICES	1. MINISTRY OF COOPERATION, LABOR AND WELFARE- NATIONAL ORGANIZATION OF HEALTH INSURANCE 2. MOHME 3. MUNICIPALITIES	
	Surveillance	Survey/s Market info	-Conducting STEPS, GYTS, GSHS -Market statistics -Smuggling forecasts	1- MOHME 2- MINISTRY OF INDUSTRY, MINES AND TRADE 3- SECURITY FORCES	
6-25% reduction in the prevalence of high blood pressure	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	
	Risk Reduction	Health education and promotion	Improvement of public KASP regarding HTN	1- MINISTRY OF EDUCATION 2- MINISTRY OF SCIENCE AND TECHNOLOGY 3- NATIONAL RADIO AND TV	

		Law enforcement	Increasing seized smuggled tobacco products	1. SECURITY FORCES 2. MUNICIPALITIES 3. GUILDS	
		Access reduction	RESTRICTION IN TOBACCO CULTIVATION	MINISTRY OF AGRICULTURE	
		Health education and promotion	Improvement of public KASP regarding smoking	1. MINISTRY OF EDUCATION 2. MINISTRY OF SCIENCE AND TECHNOLOGY 3. NATIONAL RADIO AND TV ORG 4. MINISTRY OF DEFENCE 5. MINITRSY OF ISLAMIC GUIDANCE 6. POLICY- MAKING COUNCIL FOR IMAMS 7. MOHME	
		Quality	Establishing/controlling standards of domestic and imported tobacco products	1. NATIONAL STANDARD ORG. 2. MOHME 3. MINISTRY OF INDUSTRY, MINES AND TRADE 4. TOBACCO COMPANY OF IRAN	

	Risk Reduction		TARGET 1 AND 3	TARGET 1 AND 3	
	Health Care	Service provision	Expanding the coverage of the national diabetes program to large cities	1- MOHME 2- MINISTRY OF WELFARE	
		Service quality	Improving quality of care of diabetic patients	1- MOHME 2- IRIMC 3- DIABETES ASSOCIATIONS	
	Surveillance	Risk factor surveillance	STEPS	MOHME	
8- At least 70% of eligible people receive drug therapy and counseling to prevent heart attack and strokes	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	

				ORG 4- MINISTRY OF DEFENCE 5- MINITRSY OF ISLAMIC GUIDANCE 6- POLICY- MAKING COUNCIL FOR IMAMS 7- MOHME	
	Health Care	Service quality improvement	Improving quality of care of hypertensive patients through CMEs, medical guideline, curricula	1- MOHME 2- IRIMC 3- HEART ASSOCIATION	
	Surveillance	-In/out patient registries -Surveys	-National diabetes and hypertension programs -STEPS	MOHME	
7- Halt the rise of diabetes and obesity	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for NCD related action plans in the annual budget of the involved organizations	All involved sectors in this document	

	Risk Reduction	NA	NA	NA	
	Health Care	Subsidies	Reimbursement of catastrophic payments for uninsured NCD medicines/technologies	1- SPECIAL DISEASE FOUNDATION 2- EMDAD RELIEFE ORG 3- MOHME 4- NATIONAL INSURANCE ORG	
	Surveillance	-Survey/s -Statistics	-Utilization study - Patient satisfaction survey/s -Insurance companies statistics	3- MOHME 4- MINISTRY OF WELFARE	
10- Zero trans fatty acids in edible oils and food products	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	

	Risk Reduction				
	Health Care	R&D	Promoting RCTs in the field of traditional medicine that target NCDs	1- MOHME 2- MINISTRY OF SCIENCE 3- RESEARCH SUPPORT FUND	
	Surveillance	Survey/s Statistics	-Utilization studies - Patient satisfaction survey/s -Insurance companies statistics	1- MOHME 2- MINISTRY OF WELFARE	
9- 100% availability of essential NCDs medicines and basic technologies to treat major NCDs	**Governance**	- Bringing related priority subjects into the agenda of the High Council of Health - Establishing National NCD Committee - Establishing joint technical teams between MOHME and other involved organizations - Joint action planning	- Signing individual MOUs between MOHME and relevant stakeholders - Holding regular, planned technical meetings -Ongoing reporting to decision-maker authorities -Conducting scheduled internal and external evaluation studies	All involved sectors in this document	**This section will be completed after detailed planning by joint technical teams**
		Sustainably financing of initiatives	-Earmarking funds for related action plans in the annual budget of the involved organizations	All involved sectors in this document	

	Risk Reduction	Policy enforcement	Control over domestic and imported cooking and industrial dietary oils	1- MOHME 2- NATIONAL STANDARD ORG	
		Health education and promotion	Improvement of public KASP regarding healthy cooking oil	1- MINISTRY OF EDUCATION 2- MINISTRY OF SCIENCE AND TECHNOLOGY 3- NATIONAL RADIO AND TV ORG 4- MINISTRY OF DEFENCE 5- MINITRSY OF ISLAMIC GUIDANCE 6- POLICY- MAKING COUNCIL FOR IMAMS 7- MOHME	
	Health Care	NA	NA	NA	
	Surveillance	STATISTICS	Reporting the related stats annually	MINISTRY OF INDUSTRY, MINES AND TRADE	

Chapter 8

Challenges and opportunities of the Islamic Republic of Iran in terms of prevention and controlling the NCDs

Key Point

- The present chapter aims to review the factors affecting the prevalence of NCDs in general population of Iran, as well as to discuss the existing opportunities of the country which would be helpful to assist the committee to reach its own goals in terms of preventing and controlling the NCDs in the community.

The present chapter aims to review the factors affecting the prevalence of NCDs in general population of Iran, as well as to discuss the existing opportunities of the country which would be helpful to assist the committee to reach its own goals in terms of preventing and controlling the NCDs in the community. Some selected opportunities are generally categorized as "primary healthcare", "family physician program" and "integration of the medical education and health in the ministry of health of Iran", which have been discussed in detail as following:

7.1. Factors Affecting Non-communicable Diseases in the Islamic Republic of Iran

Achieving the highest possible level of health is a basic human right as presented in the Constitution of the World Health Organization (WHO). Health is crucial for individual welfare as it provides several economic, social, and cultural interests for individuals, families, and countries because people become very dynamic in every respect. According to what was said, it is important to consider the role of people as an essential milestone for making effective policies in the country with respect to the prevention and control of non-communicable diseases. To this end, it is necessary that the factors affecting non-communicable diseases be identified and examined.

Thus, Iranian National Committee for NCDs Prevention and Control and related Risk Factors summarizes the intervention factors for the control of non-communicable diseases in seven items: background factors, contextual factors, lifestyle, occupational factors, accidents and events, physiological factors, and pathological factors. The reason for choosing these seven factors is that the factors are regarded as the major components of the country's development and, accordingly, require short- and long-term planning. Although, changes in the background and contextual factors are among the macro goals of the country's development, they require complex interventions and targeted and long-term

planning and policy-making that are available in the future; these will be discussed briefly.

On the other hand, changes in lifestyle and occupational factors and reducing accidents and events are among the components that require changes in cultural and environmental infrastructures; these factors need to modify and conform to the international standards in the not too distant future. However, changes in physiological and pathological factors are closer to the committee's objectives in the area of the prevention and control of non-communicable diseases and are achievable in the short run. Developing the culture of the prevention and control of blood pressure, blood sugar, blood lipid, obesity, overweight, etc. (which are among physiological factors) can prevent people from catching non-communicable diseases such as cancers, cardiovascular disease, diabetes, strokes, etc. (which are among pathological factors) and, accordingly, help them experience a better life and, ultimately, a longer life expectancy. The physiological and pathological factors are will be explained in details below.

In the conceptual framework of the committee, the contextual factors are classified into three categories: unhealthy environment, geographic-related threatening factors, markets and industries. Unhealthy environment includes all the factors that are harmful to public health such as poor quality and quantity of water, low rainfall, unfavorable climatic variations, domestic incidents, traffic accidents, occupational accidents, natural disasters, and air pollution. The market includes factors such as non-credit markets, lack of affordability for producing/using healthy products, spending leisure time in order to earn a living, the distribution of the basket of goods and economic subsidies without regard to the policies related to the control of non-communicable diseases, imports of unhealthy products, the unhealthy system of distribution (transport) of food products, and insufficient infrastructures of road transport in the country. In the industrial sector, some noteworthy cases include the food industry producing unhealthy products (including high levels of salt, saturated fat, poor access to substances including unsaturated fatty acids, trans fatty acids, etc.), pollutant industries (industries including the manufacture of cement, lime and gypsum, iron steel production equipment, production of copper, etc.), industrial products lacking ergonomic features (including industry manufacturers of beds and mattress, chairs and tables, etc.), automotive industry manufacturers of unsafe vehicles such as low production of vehicles equipped with occupant protection systems (with enough airbags), poor infrastructures, the country's non-standard traffic, low proportion of inter-city highways to the country's road network.

Contextual factors include urbanization, aging, and social determinants of health. Urbanization factors such as inadequate city standards related to clean cities and inadequate city standards that are health-friendly can have an important effect on developing non-communicable diseases. The social determinants of health include class differences, gender-related and ethnic discrimination, poverty, illiteracy, marginalization, and loss of social capital.

To change the lifestyle as an intervention factor in the control of non-communicable diseases, interventions presented by WHO are noteworthy. Moreover, interventions should be considered in order to correct unhealthy diets (such as low or no consumption of seafood with omega-3 fatty acids, low consumption of unsaturated fatty acids, low milk consumption, high consumption of red meat, etc.), smoking, alcohol consumption, drug use, physical inactivity, lack of follow-up treatment, diets and other regimes, stressful life, and psychosocial factors.

Among the occupational factors to be considered for the prevention and control of non-communicable diseases are occupational cancer-causing substances (carcinogens), the causes of asthma (such as asbestos, benzene, nickel, etc.), particles, gases and vapors, noise, risk factors of occupational accidents and events, and ergonomic factors causing occupational lumbago. Accidents and events are regarded as another factor that should be considered in the prevention and control of non-communicable diseases. These include road accidents and other non-intentional accidents, medical errors, unintentional violence including domestic and street violence, suicide, and sexual abuse of children.

Physiological factors, including elevated blood pressure and blood sugar, overweight (obesity), elevated blood lipid, low bone mineral density, low glomerular filtration rate, lack of vitamin D, A, zinc, and iron. It is necessary to take measures for the prevention and control of non-communicable diseases

with respect to each of the factors mentioned. For each factor, interventions are presented at four levels of basic and primary prevention, the services of second and third levels, steps that must be taken for effective service delivery, and services after discharge.

At the basic or primary level, the prevention services include education and changes in lifestyle (for the public and special populations such as children, students, public sector employees, barracks, military bases, and other target groups), medical interventions for prevention, and screening, treatment, and rehabilitation interventions. At this level, measures for effective service delivery should also be taken into consideration. These include ratification of supportive rules required by local regulations, ministerial regulations and instructions, regulations and instructions ratified by the government, rules ratified by the parliament, and rules ratified in the upper-hand documents (5-year Development Plan). Other measures to be considered for effective service delivery include providing access, increasing coverage, improving quality, increasing efficiency and justice, increasing satisfaction with the performance of the health care system, improving the quality of life, increasing life expectancy, and reducing mortality indicators. Services at second and third levels include education, changes in lifestyle, diagnostic interventions (laboratory and scanning interventions), and treatment, drug, and rehabilitation interventions.

Following services at second and third levels, other measures should be considered to provide the service effectively. These include ratification of required supportive rules as mentioned for the primary level, providing access, increasing coverage, improving quality, increasing efficiency and justice, increasing satisfaction with the performance of the health care system, reducing costs paid out of pocket, reducing exorbitant costs, improving the quality of life, increasing life expectancy, and reducing mortality indicators. After these steps, some interventions should be implemented in the area of after-discharge and home care services. All the aforementioned interventions should be considered and implemented for each of the physiological factors.

Finally, pathological factors include cardiovascular diseases, strokes, diabetes, cancers, asthma (COPD), mental disorders, back pain, and chronic kidney diseases. For all these factors, interventions required for physiological factors need to be considered. In addition, in the case of cardiovascular disease, strokes, and asthma (COPD), another level of pre-hospital emergency services before the services of the second and third levels are required.

7.2. Primary health care (Behvarz system) and its possible role to prevent and control the NCDs in rural areas of I.R. Iran

The Behvarz system uses community health workers to provide primary health care in rural Iran—areas with populations generally less than 5,000 people and those with agriculture as the main economic activity. Community members with at least primary education are recruited into the Behvarz program on the basis on their performance in an entrance examination. Newly appointed Behvarz workers undergo 2 years of classroom and practical training before beginning work in their own local community. Behvarz workers receive regular training throughout their career, a fixed salary that is about a sixth of that of physicians, and a performance based bonus of no more than 5% of their salary.

Between 1996 and 2002, the program was expanded to incorporate diabetes prevention and control. As a part of the protocol established by the National Plan for Prevention and Control of Diabetes, Behvarz workers are trained to identify high-risk groups—those aged 30 years or older who are pregnant, have a family history of diabetes, or are overweight. High-risk individuals are referred to physicians who visit the local community in so-called health houses for diabetes testing and, as required, treatment. Diagnosis, treatment, and lifestyle advice, as well as the date of the subsequent physician visit, are recorded by a Behvarz worker.

Diagnosed patients obtain their subsidized drugs from the medical team visiting the health house. Behvarz workers then follow up patients with diabetes monthly to check that they are adhering to their treatment, to arrange for new drug supply, to examine them for symptoms of hyperglycemia (e.g. diabetic wounds and ulcers), and to refer patients with symptoms such as ulceration, painful limbs, and

blurred vision to physicians at the rural health centers. The physicians to whom the patients are referred are expected to treat on the basis of well-developed guidelines, with patients advised by their local Behvarz worker to visit physicians at least once every 3 months. Behvarz workers are also responsible for holding training sessions on healthy diet and lifestyle for, among others, individuals who are at high risk for diabetes. Although Iran has a program for the management of hypertension, at the time of this study the program did not have a specific role for Behvarz workers or detailed guidelines for physicians.

Behvarz system might act as a unique opportunity to prevent and control the NCDs in rural areas of Iran. This should be considered that the Behvarz workers come from the rural community and are familiar with the socio-cultural characteristics of people in rural areas. Besides, this is much more feasible for them to connect with the rural people and teach them the NCDs preventive methods (such as more physical activities and consumption of more fruits and vegetables). Due to the close relationship with the indigenous people, Behvarz workers can also act as a brilliant research assistant in rural areas of Islamic Republic of Iran in terms of data collection process.

7.3. Is "family physician (FP) program" an effective system to reduce the risk of NCDs in Iran?

The main objective of the Universal Health Coverage (UHC) is to ensure that the entire people around the world obtain their required health-care services without any financial problems when paying for them. Successfulness of the UHC requires the inevitable parameters including 1. A strong, efficient, well-run health system, 2. A system for financing health services, 3. Access to essential medicines and technologies, and 4. A sufficient capacity of well-trained, motivated health workers [2]. Although reaching the entire UHC's objectives seem extremely difficult, but with collaboration of the involved countries would be possible. Family physician is one of the programs developed by the MOHME in line with the UHC main objectives in Iran.

As mentioned below, Family physician is one of the equitable and affordable programs developed in line with the goals of the universal health coverage. FP program began from 2005 in rural areas of Iran. However, the history of this program in urban areas does not exceed 3 years (began from 2011), in only

two provinces of Iran. Some selected advantages and successes of this program during the period of development have been discussed as following.

The number of physicians in rural areas (those with <20 000 inhabitants) has increased from less than 2000 in 2005 to more than 6000 in 2006, just 1 year after implementation of this program, and their income has increased from 1·5 million Iranian Rials to 15 million Rials per month. Nearly 50% of health centers now have acceptable residential places for family physicians, and health-care access has strikingly improved in rural areas; for the first time after reaching a plateau in neonatal and maternal mortality since the 1990s, up to a 35% reduction in both indices has been achieved in some remote rural areas.

One main issue in Iran's family physician program is that physicians are not trained for the responsibility of working in rural areas. To overcome this problem, a short mandatory course is arranged at the beginning of the contract, with a continuous professional development program recently expanded by means of internet based virtual learning. Arrangements have been made for those working as family physicians for at least 3 years to enter specialty training. However, financing is still a challenge to this program. The newly established Ministry of Welfare was assigned to establish the infrastructure and payments for the family physician program instead of the Ministry of Health, and the program encountered some major obstacles in the beginning. The situation has improved since, but it is far from ideal.

Among the preset goals, the Family Physician Project was set up to bring health care into deprived areas, and monetary bonuses were added to compensate for the draw backs of living and working in these areas. At some centers, the capitation method of payment (i.e., that not related to performance) is thrice the base payment of a professor in the best universities. Most general practitioners get into the project only as part of their obligatory 2-year public service. For male physicians who do their military service concomitantly with their public obligations, working as a family physician will increase the capitation income 40-fold compared with military physicians serving in the same area. We should add that other bonuses and an additional pay for- performance system of payment are in place at some centers.

In conclusion, it seems that the existing incentives persuade the physicians to get involved in FP program more than the past. Existence of a physician alongside the "Behvarz Workers" might be much more effective not only to prevent and control the NCDs through performing preventive and curative activities, but also to improve the healthcare system around the country. Expansion of the FP program

from rural to urban areas should be considered as another opportunity to reach the goals of Iranian national committee for prevention and control of NCDs.

7.4. Integration the medical education and health in the ministry of health and medical education of Islamic Republic of Iran

In the first half of the 20th century, with the return of Iranian medical graduates and the establishment of medical colleges along modern lines, much progress was made in the development and availability of trained manpower and specialized faculties of medicine. Despite all this, there were shortcomings in meeting high international standards both qualitatively and quantitatively, mainly in the teaching of basic and para clinical sciences and the development of medical research. Since 1979, following the Islamic revolution, great advances have been made in medical education. Overall, considering the 8-year war imposed by Iraq and its socio-economic consequences, Iran made a tremendous effort in training the skilled manpower needed in the country, towards attaining self-sufficiency in various fields, mainly in meeting the demand for medical personnel.

The unprecedented advances of recent years, particularly in the fields of immunology, biochemistry, and genetics, the emphasis on prevention of disease, and the initiation of the "health for all" approach by the World Health Organization (WHO) and governments have highlighted the need for a fundamental change in approaches to medical education. The last three decades revealed that traditional methods of teaching in medical sciences could no longer meet the demands of communities. This has led to most newer medical schools and many older ones to try and adapt to the needs of the people move towards more community oriented medical education (COME) or problem based learning (PBL) or both as the basis for further education.

From 1988 - 1993, the movement gained momentum at international congregations and assemblies and led to the endorsement of a declaration, in which the world federation of medical education (WFME), despite acknowledging the importance of newer advances in teaching methods, found the

above to be inadequate, emphasizing the need for more realistic fundamental changes in medical education, in keeping with the ever-changing cultural, and political needs of communities.

In the 1980s, serious efforts were made to alleviate shortcomings in the lack of skilled manpower – efforts particularly noticeable in the medical faculties. The 1990s saw a concentrated effort put into enhancing the quality of medical education, based on PBL and student oriented learning, newer concepts of student and lecturer evaluation, development of community oriented medicine, all issues focused upon by education policy makers for the designing and implementation of future strategies.

To overcome problems being faced by the two ministries of health and that of higher education, regarding in particular the issues of community health and training of health-care personnel, the establishment of the Ministry of Health & Medical Education was a turning point in the progress of medical education in Iran. This led to an increase in the number of universities of medical sciences, faculty members, student admissions and graduations, conferences and workshops, and a relative quantitative and qualitative growth in medical research and publications. Needless to say, for the achievement of all the above, education development centers were established with the development of related policies and strategies.

Apart from being certified, graduates must be adequately skilled in using the knowledge they have attained. Despite taking graduate and postgraduate courses, it is an accepted fact that regular updates are imperative for practitioners and specialists for them to maintain the required level of competency. Medical education, today, therefore consists of undergraduate, postgraduate, in service, and community oriented medical education, which keeps practitioners, both general and specialized, in constant touch with any and all advances made in their related fields.

Continuing Medical Education (CME), has, in the past two decades, been constantly endorsed and recommended as the appropriate approach for tackling the challenges faced in present day medical education. Following an act passed by parliament of the Islamic Republic of Iran making CME compulsory; a 5-year CME program from 1991 – 1995 was implemented throughout the country. In 1997, the CME act was revised, requiring all physicians to undergo courses in CME, to be able to continue practicing in Iran. Needless to say, CME has and continues to enhance academic status and progress of practitioners and medical education in general. The integration of medical education and the country's health care system has proved to be pivotal in the success of CME in Iran.

Drawing on the above-mentioned circumstances, the advantages of combining the medical education and health-related activities in ministry of health and medical education seem crystal clear. Focusing on the appropriate curriculums -based on the existing challenges of the country- to train professional manpower, as well as creating suitable research atmosphere to find evidence-based solutions are among the parameters demonstrating the effectiveness of the anecdotal combination on boosting the existing healthcare system of Iran, and consequently to prevent and control the NCDs as the most important health-related problems in this country.

7.5. Conclusion

The Iranian national committee for prevention and control of NCDs was set up with the overall goal of reducing the mortality rate due to non-communicable diseases by 25% up to 2025, a reduction rate that has been recommended by the World Health Organization for all countries. However, it is crystal clear that the national objectives would be determined based on the country's conditions, and the progress rate would be specified according to the national requirements and resources. These objectives include –but not restricted to-: Reducing the rate of early death due to non-communicable diseases; Reducing the rate of physical inactivity; Reducing sodium consumption; Reducing tobacco use; Reducing alcohol consumption; Reducing the cases of high blood pressure; Preventing the rates of obesity and diabetes from increasing; Increasing the coverage of pharmacotherapy and consultation; Increasing the coverage of technologies and essential drugs required for patients of non-communicable diseases.

As indicated in the anecdotal parts of the present chapter, primary healthcare system (Behvarz Workers), Family Physician program, as well as the combined educational and healthcare activities are among –but not restricted to- the possible opportunities of Iranian health care system to prevent and control the consequences of non-communicable diseases in the country. All in all, it should be taken into account by the international health policy-makers that: 1. the objectives of the global stakeholders should be developed for each country, based on the local situation of the target country. 2. Reaching the entire goals of WHO during the defined period of time seems optimistic. 3. Even with performing the entire recommendation, reduction in mortality rates might be less than the expected.

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