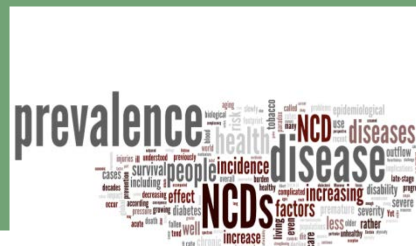
بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

Non-Communicable Diseases in the world and Iran



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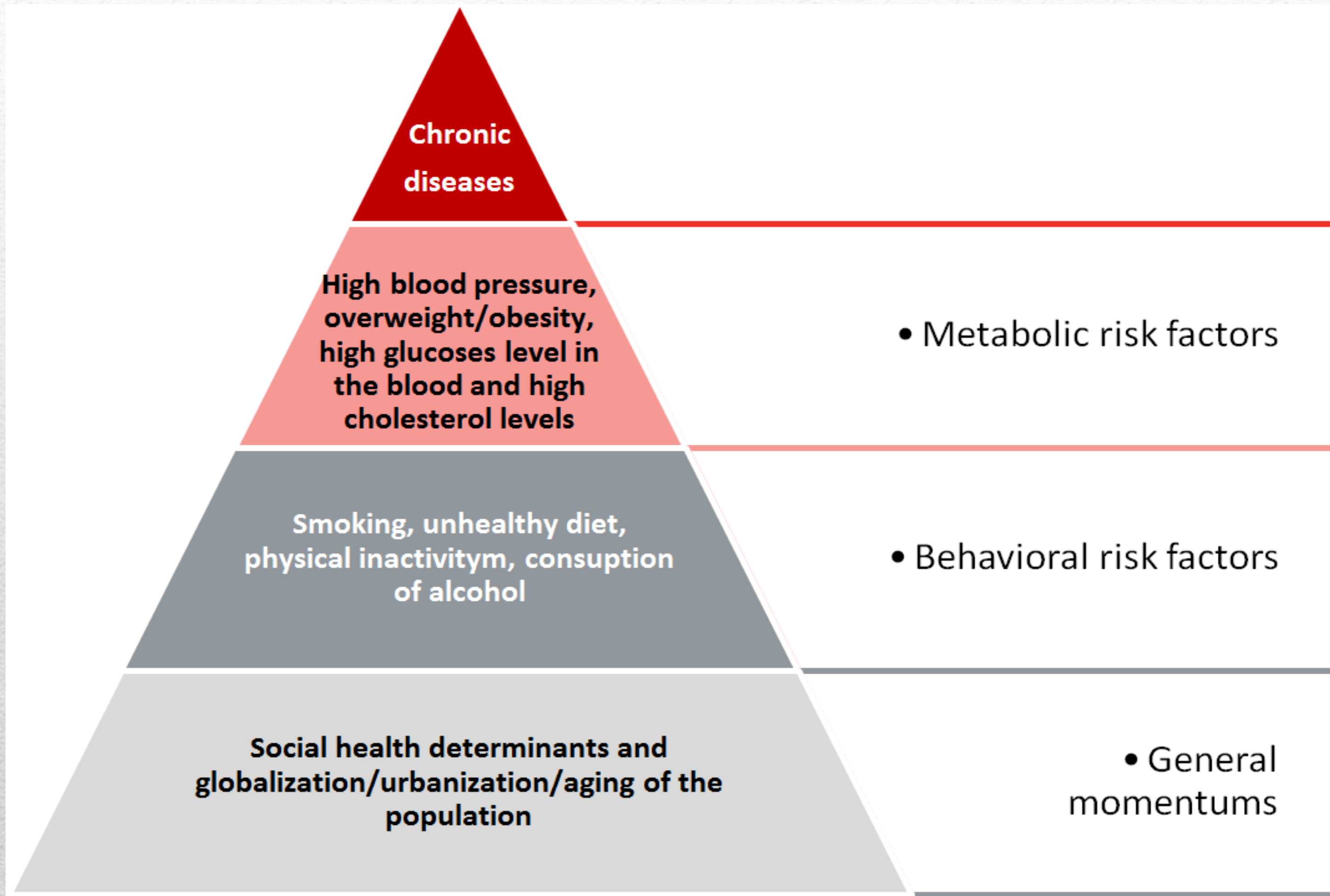
17 October 2015

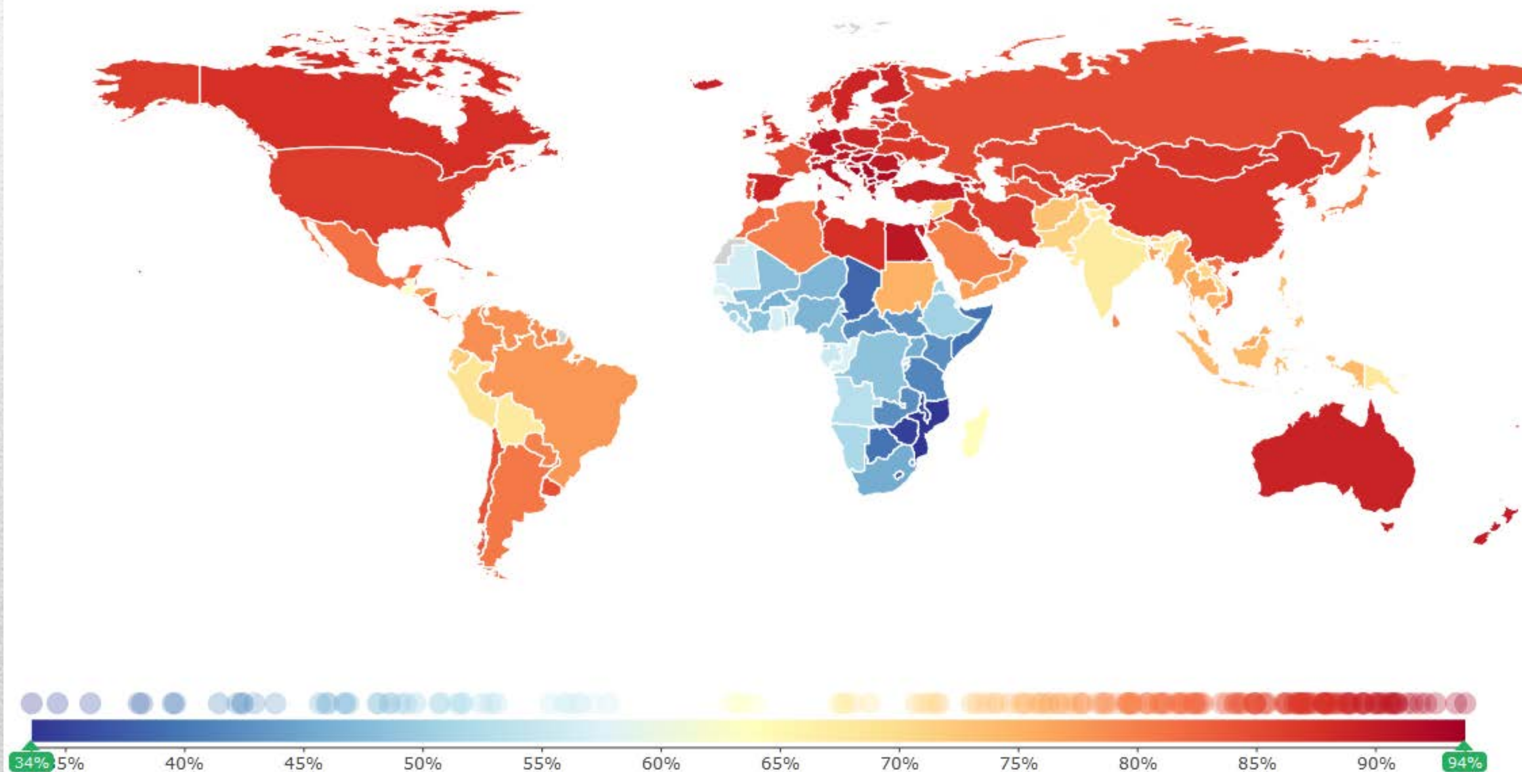
Risk Factors of Non Communicable Diseases



Non Communicable Diseases in the World

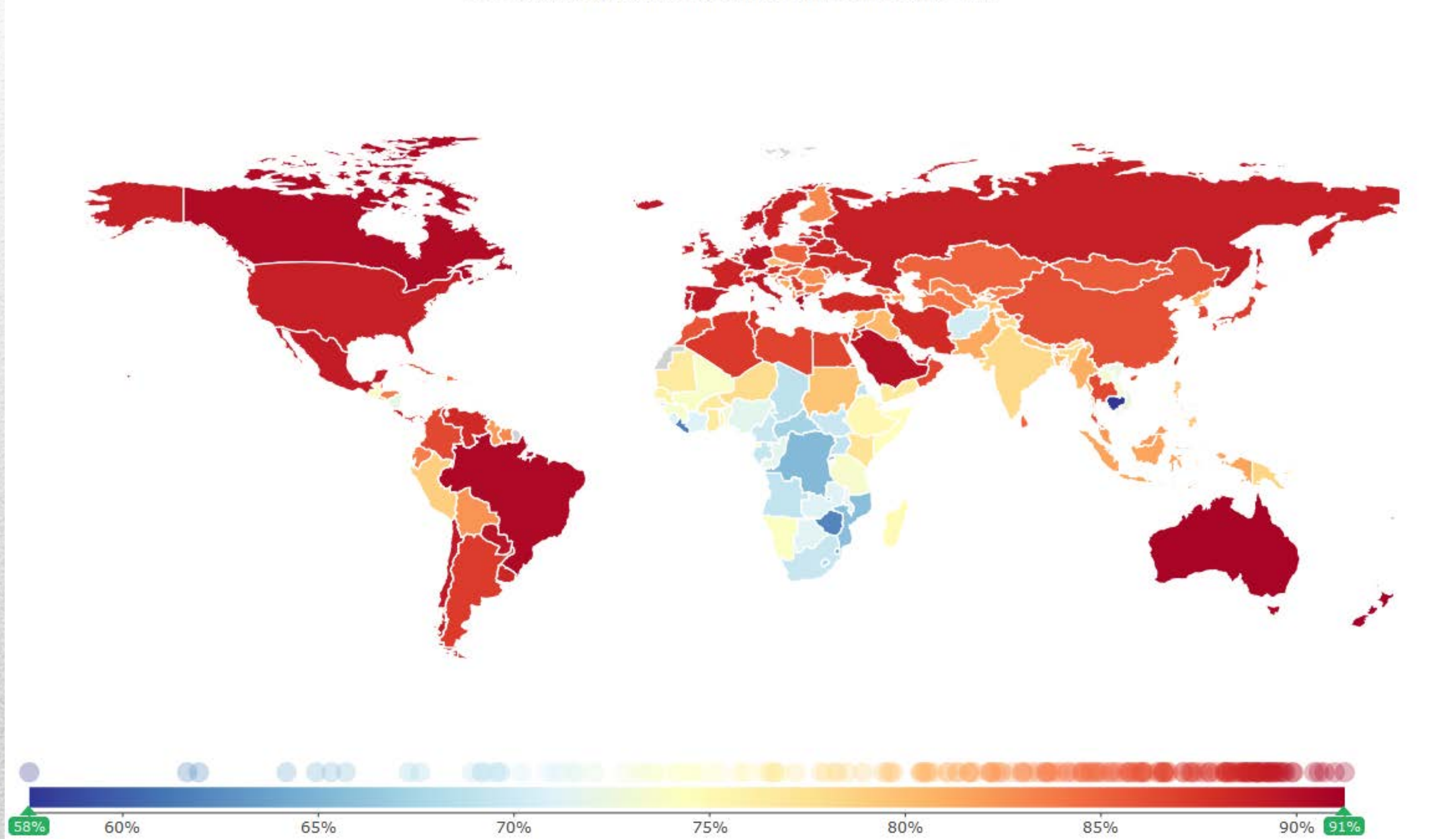
- *In 2013, 38 million people died from non-communicable diseases representing 69.7% of total death*
- *Occurrence of three-quarters of deaths caused by NCDs in low- and middle-income countries*
- *Increase in the incidence of NCDs caused by social factors such as urbanization, changes in diet and lifestyle, as well as increased life expectancy*
- *16 million deaths caused by NCDs in people younger than 70 in the world*
- *Currently, more than 53% of burden of diseases is caused by non-communicable diseases at the globe*

Non communicable Death in the World



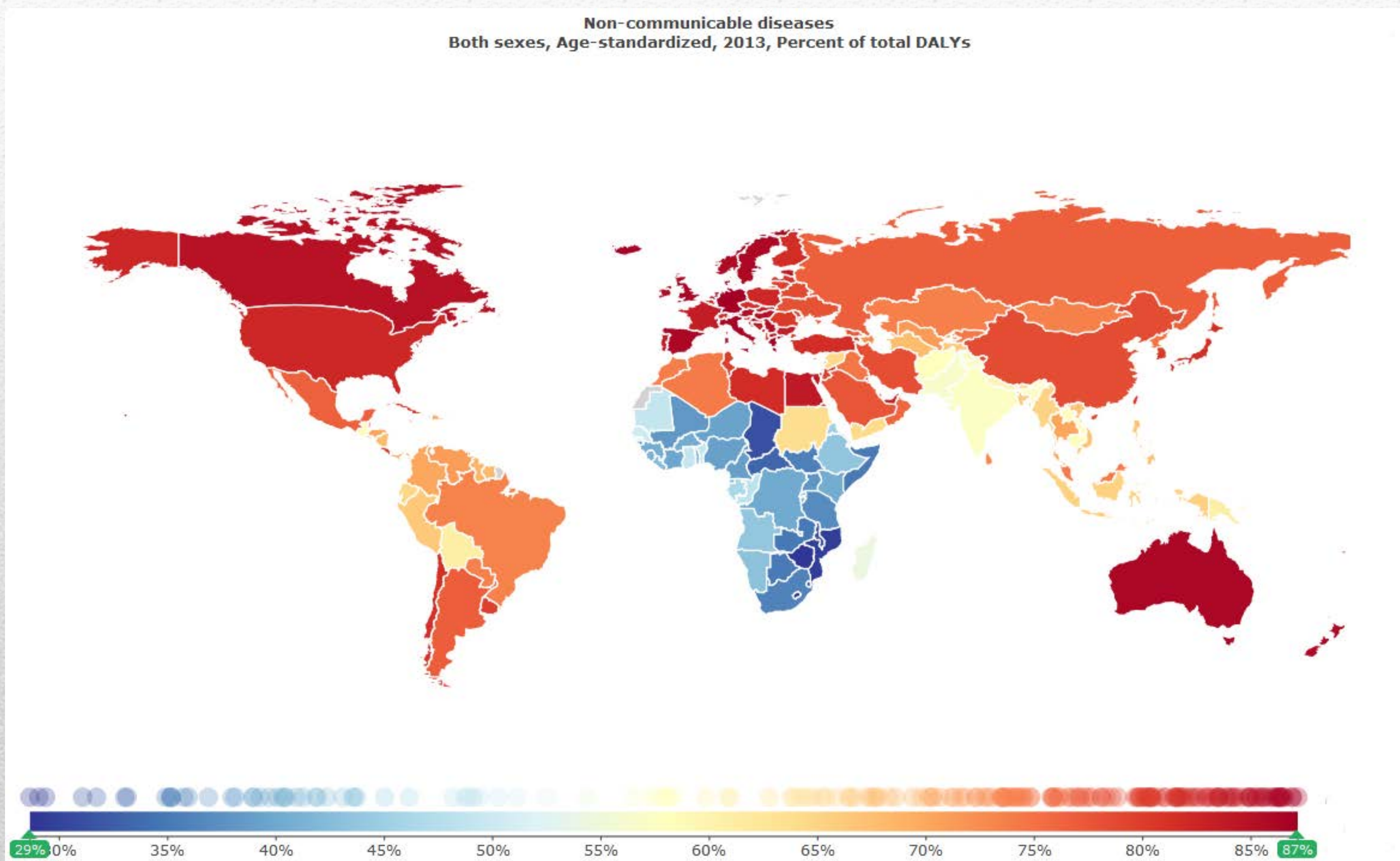
80% of total death in the world related to NCDs

Non communicable YLDs in the World



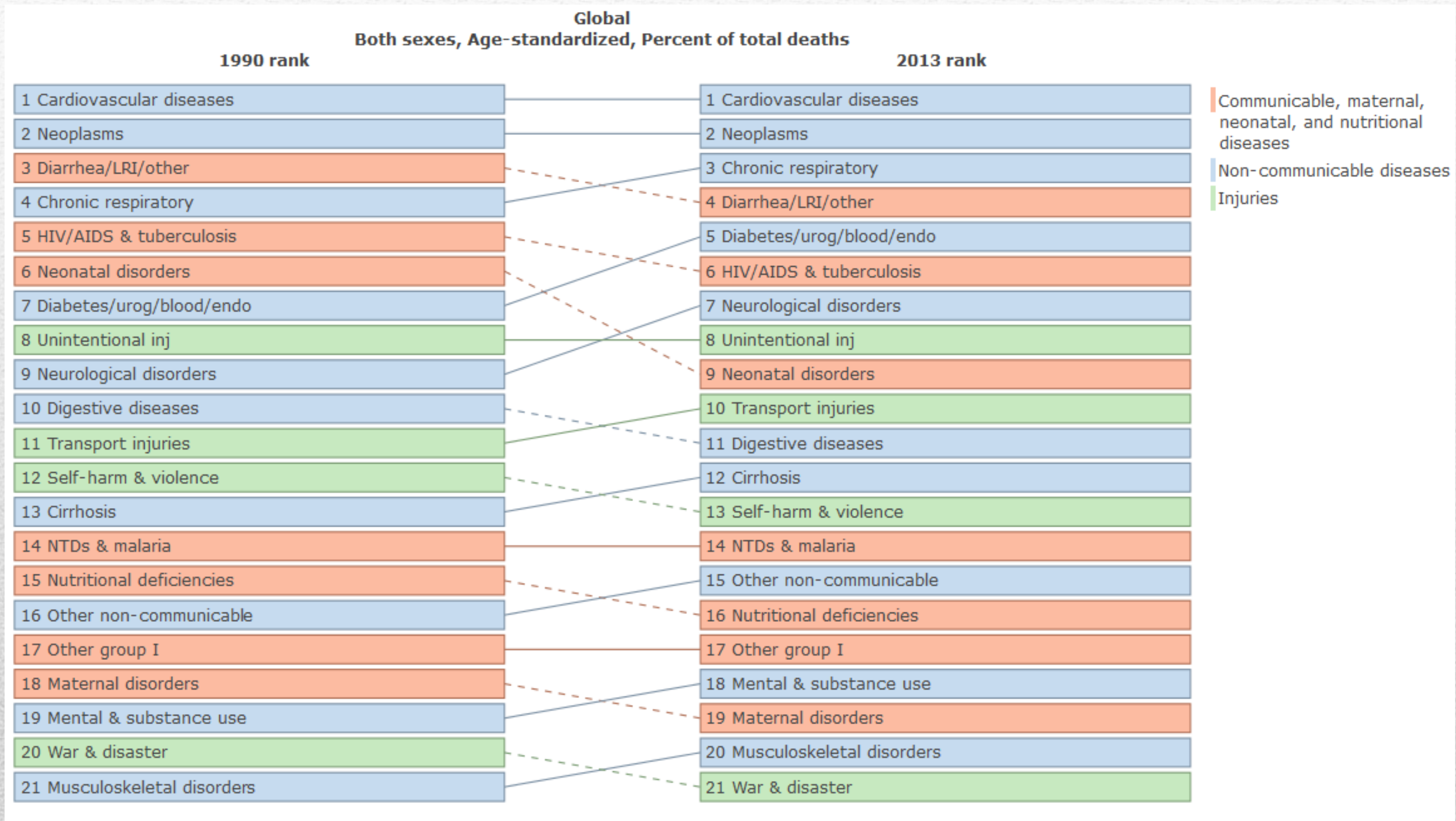
82% of total YLDs in the world related to NCDs

Non communicable DALYs in the World



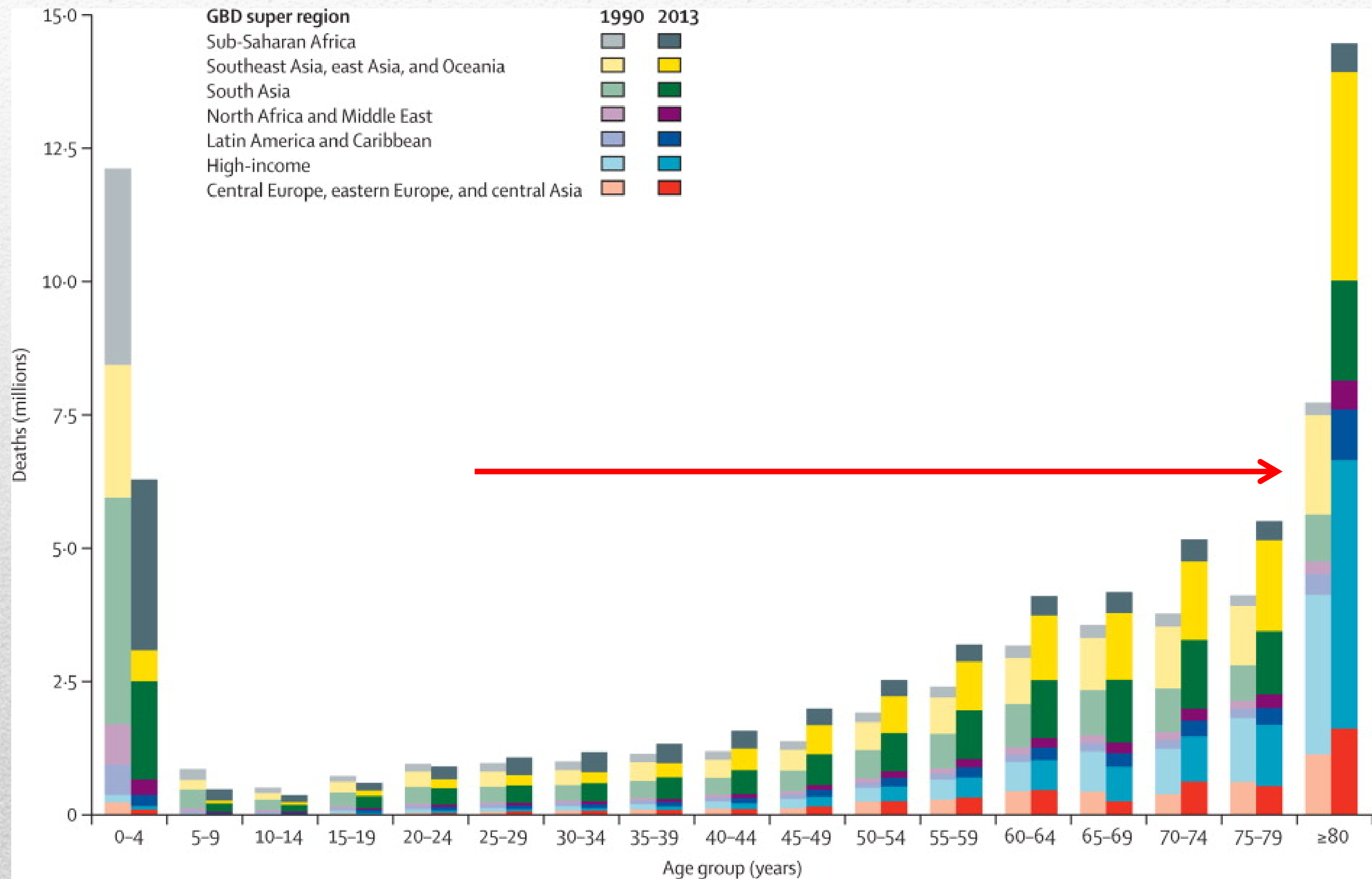
About 70% of total DALYs in the world related to NCDs

Cause of Death in the World



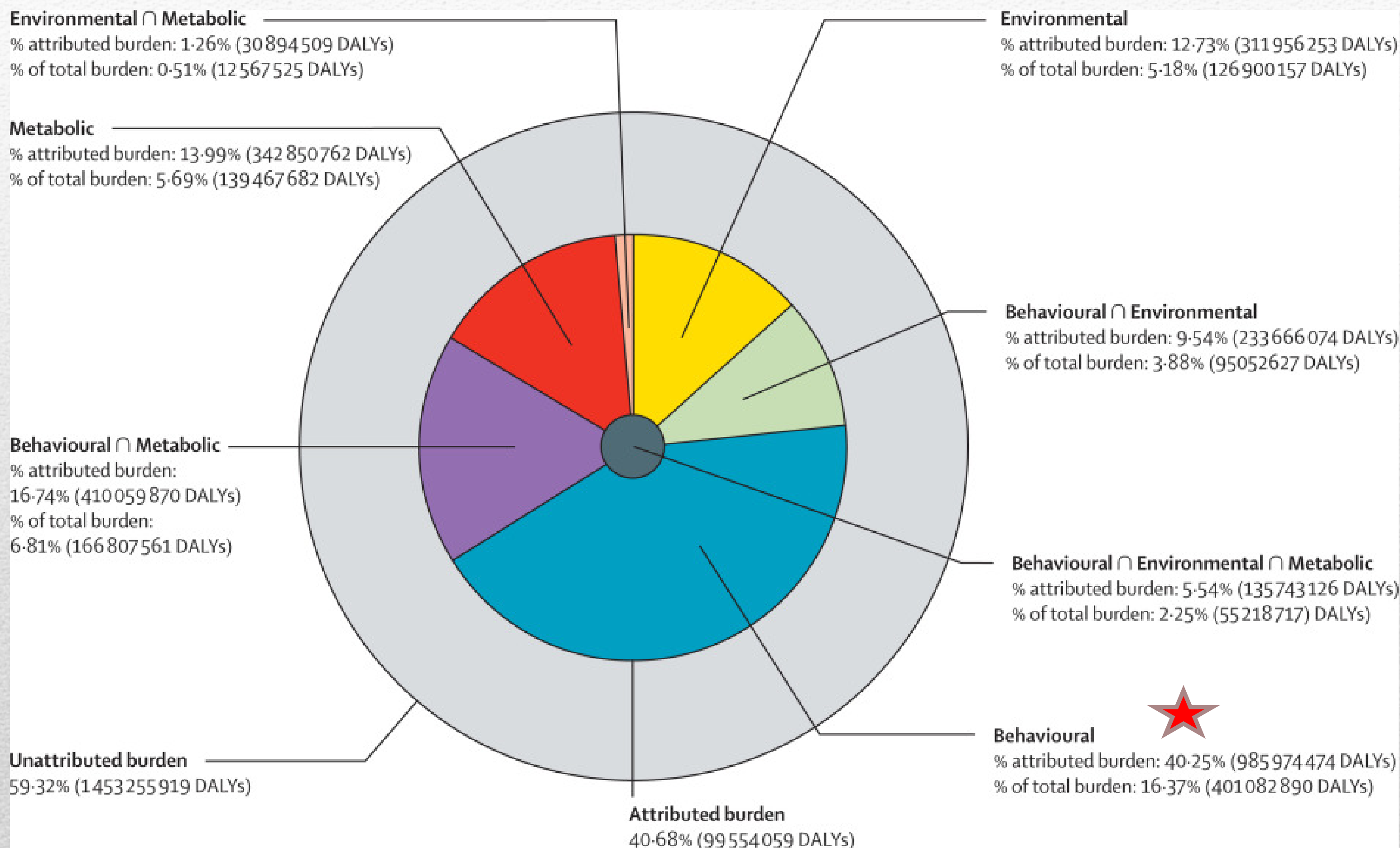
12.8% increase of NCDs' Death in the world from 1990 to 2013

NCDs' Death in the World by age group



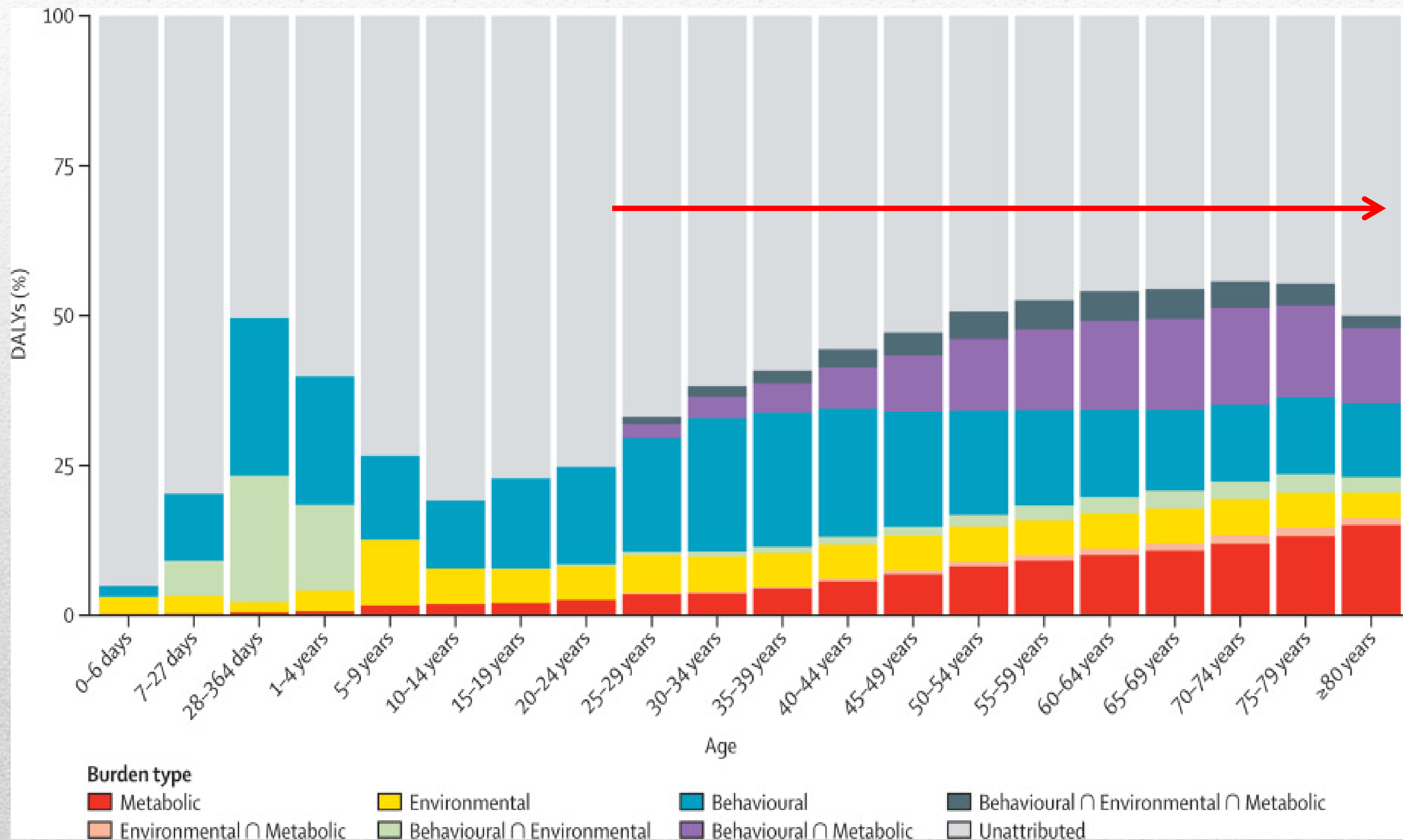
Decrease of NCDs' Death in children and increase in adults
1990 to 2013

NCDs' Risk Factors in the World



Attention to Behavioral Risk factors

NCDs' Risk Factors in the World by Age group



Attention to Behavioral Risk factors

Cause of Death in Middle East

Males, Age-standardized, 2013

Females, Age-standardized, 2013

Afghanistan
Bahrain
Djibouti
Egypt
Iran
Iraq
Jordan
Kuwait
Lebanon
Libya
Morocco
Oman
Pakistan
Qatar
Saudi Arabia
Somalia
S Sudan
Sudan
Syria
Tunisia
UAE
Yemen

100% 80% 60% 40% 20% 0%

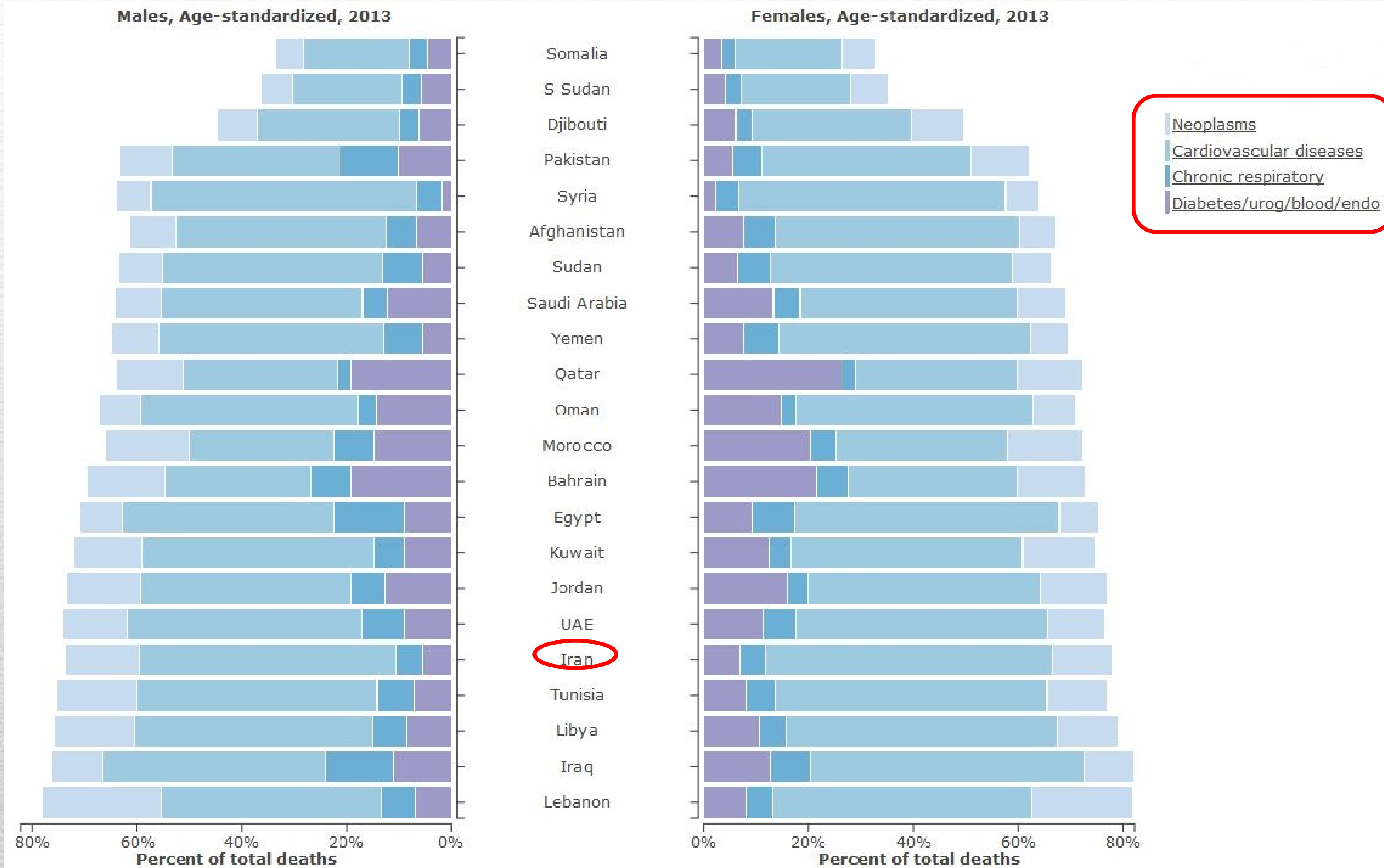
Percent of total deaths

0% 20% 40% 60% 80% 100%

Percent of total deaths

- HIV/AIDS & tuberculosis
- Diarrhea/LRI/other
- NTDs & malaria
- Maternal disorders
- Neonatal disorders
- Nutritional deficiencies
- Other group I
- Neoplasms
- Cardiovascular diseases
- Chronic respiratory
- Cirrhosis
- Digestive diseases
- Neurological disorders
- Mental & substance use
- Diabetes/urog/blood/endo
- Musculoskeletal disorders
- Other non-communicable
- Transport injuries
- Unintentional inj
- Self-harm & violence
- War & disaster

Four main NCDs' Death in Middle East

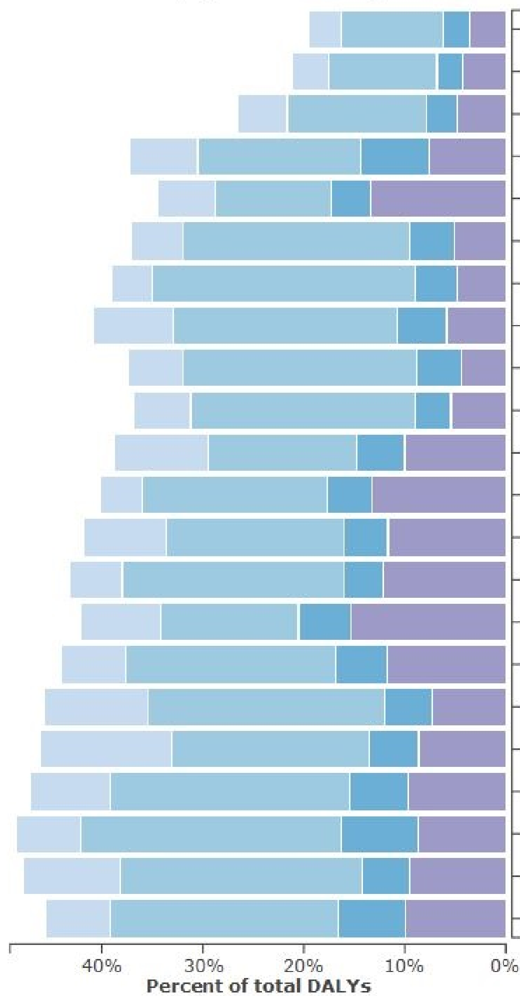


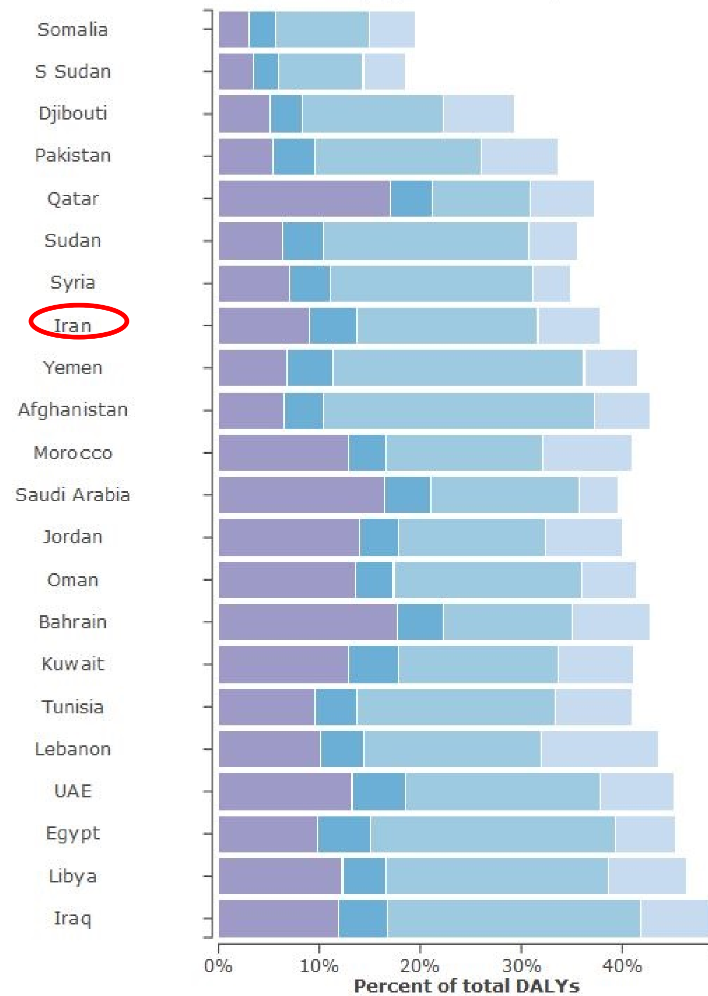
Attention to Cardiovascular diseases

Four main NCDs' YLDs in Middle East

Attention to Diabetes

Four main NCDs' DALYs in Middle East

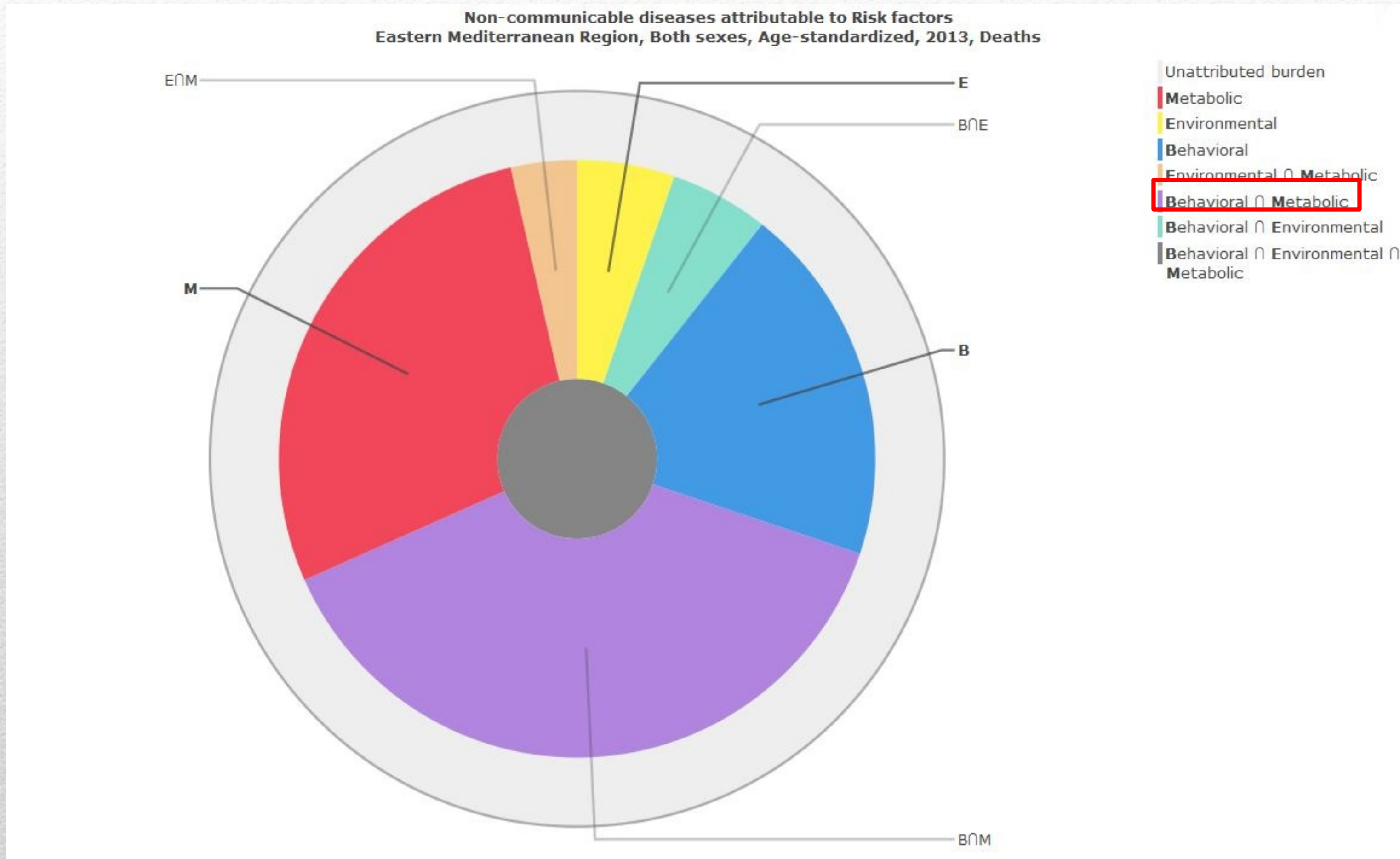




- Neoplasms
- Cardiovascular diseases
- Chronic respiratory
- Diabetes/urog/blood/endo

Attention to Cardiovascular diseases

NCDs' Risk Factors in Middle East



Attention to Behavioral and Metabolic Risk factors

NCDs' Death Heat Map in Middle East

Both sexes, Age-standardized, 2013, Deaths per 100,000

	Afghanistan	Bahrain	Djibouti	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Morocco	Oman	Pakistan	Qatar	Saudi Arabia	Somalia	S Sudan	Sudan	Syria	Tunisia	UAE	Yemen
Cardiovascular diseases	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1
Neoplasms	3	3	4	5	2	4	3	2	2	2	3	4	3	3	3	4	4	2	3	2	2	3
Diabetes/urog/blood/endo	4	2	5	4	3	2	2	3	3	3	2	2	5	2	2	5	5	5	7	3	3	5
Neurological disorders	9	5	14	7	4	6	4	5	4	5	5	6	10	4	6	14	15	6	5	5	5	6
Chronic respiratory	5	4	7	3	5	3	5	6	5	4	4	7	4	9	7	7	7	4	4	4	4	4
Diarrhea/LRI/other	2	6	2	6	6	5	6	4	6	6	6	3	2	7	4	1	1	3	6	6	6	2
Transport injuries	8	9	13	11	7	11	9	7	9	7	10	5	12	5	5	12	10	7	8	7	7	9
Neonatal disorders	10	13	10	12	8	8	10	12	10	12	7	15	6	12	11	9	11	9	13	11	13	7
Unintentional inj	6	7	12	9	9	7	7	9	7	9	9	8	7	6	8	11	13	11	9	8	8	11
Other non-communicable	15	8	15	10	10	10	8	8	8	10	15	10	16	8	9	16	17	14	12	9	11	14
Digestive diseases	11	11	9	8	11	15	11	11	12	11	12	12	8	13	13	10	9	13	10	12	10	13
Self-harm & violence	14	10	16	14	12	9	13	14	13	14	14	14	15	11	14	18	18	15	16	13	12	16
Cirrhosis	12	12	11	2	13	12	12	10	11	8	8	9	11	10	10	13	14	10	11	10	9	8
Mental & substance use	19	14	19	15	14	14	14	18	15	16	13	18	20	14	15	19	19	19	17	16	15	21
HIV/AIDS & tuberculosis	7	17	3	17	15	13	17	13	14	17	11	16	9	17	12	3	3	8	20	14	14	12
Other group I	17	15	18	13	16	18	19	16	16	18	16	11	14	16	17	17	16	17	15	15	16	18
Musculoskeletal disorders	20	16	20	18	17	20	15	15	17	19	18	17	19	15	18	20	20	20	21	18	18	20
Nutritional deficiencies	16	18	6	16	18	16	16	17	18	15	17	13	13	18	16	6	6	18	14	17	17	17
Maternal disorders	13	19	17	19	19	19	20	19	21	21	19	20	17	20	20	15	12	16	18	19	20	15
NTDs & malaria	18	20	8	20	20	17	18	20	20	20	20	19	18	19	19	8	8	12	19	20	19	10
War & disaster	21	21		21	21				19	13			21		21	21		21	2	21	21	19

NCDs' YLDs Heat Map in Middle East

Both sexes, Age-standardized, 2013, YLDs per 100,000

	Afghanistan	Bahrain	Djibouti	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Morocco	Oman	Pakistan	Qatar	Saudi Arabia	Somalia	S Sudan	Sudan	Syria	Tunisia	UAE	Yemen
Mental & substance use	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Musculoskeletal disorders	2	2	3	1	2	2	2	4	4	2	2	3	3	2	3	3	4	2	2	2	2	2
Other non-communicable	3	3	2	2	3	3	3	2	2	3	3	2	2	3	4	2	2	3	3	3	3	3
Neurological disorders	6	5	7	5	4	5	5	5	5	5	5	5	4	5	5	9	8	5	5	5	5	5
Diabetes/urog/blood/endo	7	4	6	4	5	4	4	3	3	4	4	4	5	4	2	7	7	4	4	4	4	6
Chronic respiratory	8	7	5	7	6	8	6	6	7	7	7	6	6	6	6	5	5	8	7	7	6	7
Nutritional deficiencies	4	6	4	6	7	7	7	7	8	6	6	7	7	7	7	4	6	6	8	6	7	4
Cardiovascular diseases	12	8	9	8	8	9	9	8	9	8	8	8	9	8	8	10	10	9	10	8	8	8
Neonatal disorders	14	10	15	9	9	10	8	11	10	9	9	9	13	11	12	16	15	11	9	10	12	13
Diarrhea/LRI/other	11	9	13	10	10	12	10	9	11	10	10	11	10	10	11	11	12	10	11	9	9	12
Unintentional inj	10	11	11	11	11	11	11	10	12	11	11	12	8	9	9	13	11	13	12	12	10	9
Transport injuries	9	12	14	13	12	13	12	12	13	12	12	10	11	12	10	15	13	14	17	11	11	11
War & disaster	5	21	18	19	13	6	21	16	6	14	17	17	14	21	21	8	21	12	6	21	21	15
Digestive diseases	15	14	12	14	14	14	13	13	15	15	13	13	12	14	13	12	14	15	13	13	14	14
Other group I	16	15	17	16	15	17	16	15	16	17	15	16	19	15	14	17	17	16	15	15	16	16
Neoplasms	17	13	16	15	16	16	14	14	14	16	14	15	15	13	16	18	16	18	16	14	13	17
NTDs & malaria	13	16	8	12	17	15	15	21	17	13	16	14	17	16	15	6	3	7	14	16	17	10
Self-harm & violence	19	18	20	20	18	18	17	18	19	19	19	20	20	18	19	20	19	21	19	19	19	20
HIV/AIDS & tuberculosis	20	17	10	18	19	19	19	17	18	18	18	18	16	17	17	14	9	17	18	17	15	19
Cirrhosis	21	19	21	17	20	20	18	19	20	20	20	19	21	19	18	21	20	20	20	18	18	21
Maternal disorders	18	20	19	21	21	21	20	20	21	21	21	21	18	20	20	19	18	19	21	20	20	18

NCDs' DALYs Heat Map in Middle East

Both sexes, Age-standardized, 2013, DALYs per 100,000

	Afghanistan	Bahrain	Djibouti	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Morocco	Oman	Pakistan	Qatar	Saudi Arabia	Somalia	S Sudan	Sudan	Syria	Tunisia	UAE	Yemen
Cardiovascular diseases	1	2	1	1	1	1	1	1	1	1	1	1	1	4	1	3	3	1	2	1	1	1
Mental & substance use	9	3	8	6	2	4	4	2	3	4	3	4	8	1	3	8	8	5	3	2	3	6
Other non-communicable	6	4	7	2	3	3	3	3	4	3	6	3	6	3	4	7	6	2	4	3	4	3
Musculoskeletal disorders	11	5	11	4	4	6	5	7	7	6	7	6	10	5	5	11	12	6	5	6	5	8
Diabetes/urog/blood/endo	3	1	9	3	5	2	2	4	5	2	2	2	5	2	2	10	10	7	6	5	2	5
Neoplasms	5	6	4	8	6	5	6	5	2	5	4	7	4	8	10	9	9	8	9	4	6	7
Neonatal disorders	4	11	6	11	7	7	8	11	9	9	5	11	3	11	9	5	5	4	11	10	13	4
Neurological disorders	16	7	15	10	8	10	7	6	6	7	8	8	11	6	7	17	18	11	7	8	8	12
Chronic respiratory	10	8	12	7	9	8	9	8	8	8	10	10	7	10	8	12	13	10	8	9	7	9
Transport injuries	8	10	14	14	10	14	12	9	14	10	11	5	12	7	6	14	14	12	13	7	9	13
Diarrhea/LRI/other	2	9	3	9	11	9	10	10	11	11	9	9	2	12	11	1	1	3	10	11	10	2
Unintentional inj	7	13	13	12	12	11	11	13	13	12	12	12	9	9	12	13	15	15	14	12	11	14
Nutritional deficiencies	13	12	10	13	13	13	13	12	12	13	13	13	14	13	13	6	7	14	12	13	12	10
Self-harm & violence	15	14	19	17	14	12	14	16	15	16	14	17	18	14	16	21	20	17	18	16	16	19
Digestive diseases	17	15	16	15	15	19	15	15	16	17	17	16	15	15	17	16	17	19	15	14	15	17
Cirrhosis	19	17	17	5	16	18	16	14	17	14	15	14	16	16	14	18	19	16	17	15	14	15
Other group I	21	16	20	16	17	20	18	18	19	19	18	15	19	17	18	20	16	20	16	17	18	20
War & disaster	18	21	21	21	18	15	21	19	10	15	21	20	21	21	21	19	21	21	1	21	21	21
HIV/AIDS & tuberculosis	12	18	2	19	19	16	20	17	18	20	16	18	13	19	15	2	2	13	21	18	17	16
NTDs & malaria	20	19	5	18	20	17	17	21	20	18	20	19	20	18	19	4	4	9	19	19	19	11
Maternal disorders	14	20	18	20	21	21	19	20	21	21	19	21	17	20	20	15	11	18	20	20	20	18

NCDs' Risk Factors, Death Heat Map in Middle East

Both sexes, Age-standardized, 2013, Deaths per 100,000

	Afghanistan	Bahrain	Djibouti	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Morocco	Oman	Pakistan	Qatar	Saudi Arabia	Somalia	S Sudan	Sudan	Syria	Tunisia	UAE	Yemen
High blood pressure	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1
High body-mass index	2	2	2	2	2	2	2	2	3	2	3	3	2	1	3	2	2	2	2	3	2	2
High total cholesterol	15	7	11	9	3	6	6	4	5	8	10	6	9	5	7	17	16	11	7	6	4	11
High sodium	5	4	9	3	4	5	5	6	12	4	6	4	5	6	5	9	8	5	3	5	7	5
High fasting plasma glucose	4	3	3	5	5	3	3	3	4	3	2	2	3	2	2	4	4	4	4	4	3	4
Smoking	7	5	4	4	6	4	4	7	2	5	4	12	4	10	10	8	7	12	6	2	5	3
Low physical activity	8	6	10	10	7	8	8	5	6	7	5	5	12	4	6	12	12	6	8	7	6	9
Ambient particulate matter	11	9	7	7	8	10	10	8	7	9	11	8	10	9	8	16	10	9	9	11	8	7
Low fruit	6	11	5	6	9	9	14	11	11	6	9	10	6	12	12	5	5	7	5	8	11	6
Low whole grains	9	10	17	11	10	11	9	10	8	11	7	7	15	8	9	11	11	10	10	9	9	10
Low fiber	17	12	20	19	11	15	15	16	13	14	16	15	18	15	15	19	19	18	14	15	16	17
Low omega-3	13	14	15	16	12	13	12	13	10	12	14	13	14	11	14	21	20	15	11	12	12	16
Low glomerular filtration	14	8	6	8	13	7	7	9	9	10	8	9	7	7	4	6	6	13	13	10	10	12
Low vegetables	12	13	8	12	14	12	11	12	14	13	12	11	11	13	11	10	9	14	12	13	13	8
Low PUFA	18	21	19	18	15	16	16	15	15	16	18	16	19	18	16	18	18	19	15	16	17	18
Low nuts and seeds	16	15	13	14	16	14	13	14	16	15	13	14	16	14	13	15	15	16	17	14	14	14
Lead	10	30	12	15	17	17	26	31	25	30	19	19	17	31	21	7	14	8	16	17	32	15
High trans fat	19	20	23	20	18	19	18	17	17	17	26	18	13	19	20	23	24	20	19	20	20	21
Alcohol use	20	17	14	13	19	20	17	18	19	19	17	17	20	16	17	13	13	17	20	18	15	20
Secondhand smoke	21	24	22	17	20	18	19	19	18	18	25	21	22	25	18	20	23	22	18	19	23	19
Drug use	28	19	21	22	21	22	20	29	26	24	15	27	31	21	19	22	22	25	26	22	24	26
Household air pollution	3	25	16	31	22	25	33	24	33	23	21	23	8	34	22	3	3	3	31	27	34	13
Ozone	23	18	31	21	23	21	23	22	24	22	29	24	24	24	23	34	25	24	21	23	19	23
Radon	31	31	34	32	24	32	29	32	28	32	32	32	30	30	32	33	34	33	32	32	30	32
Occupational carcinogens	25	16	30	26	25	26	25	20	20	20	22	26	25	17	24	30	31	23	23	21	18	22

NCDs' Risk Factors, YLD Heat Map in Middle East

Both sexes, Age-standardized, 2013, YLDs per 100,000

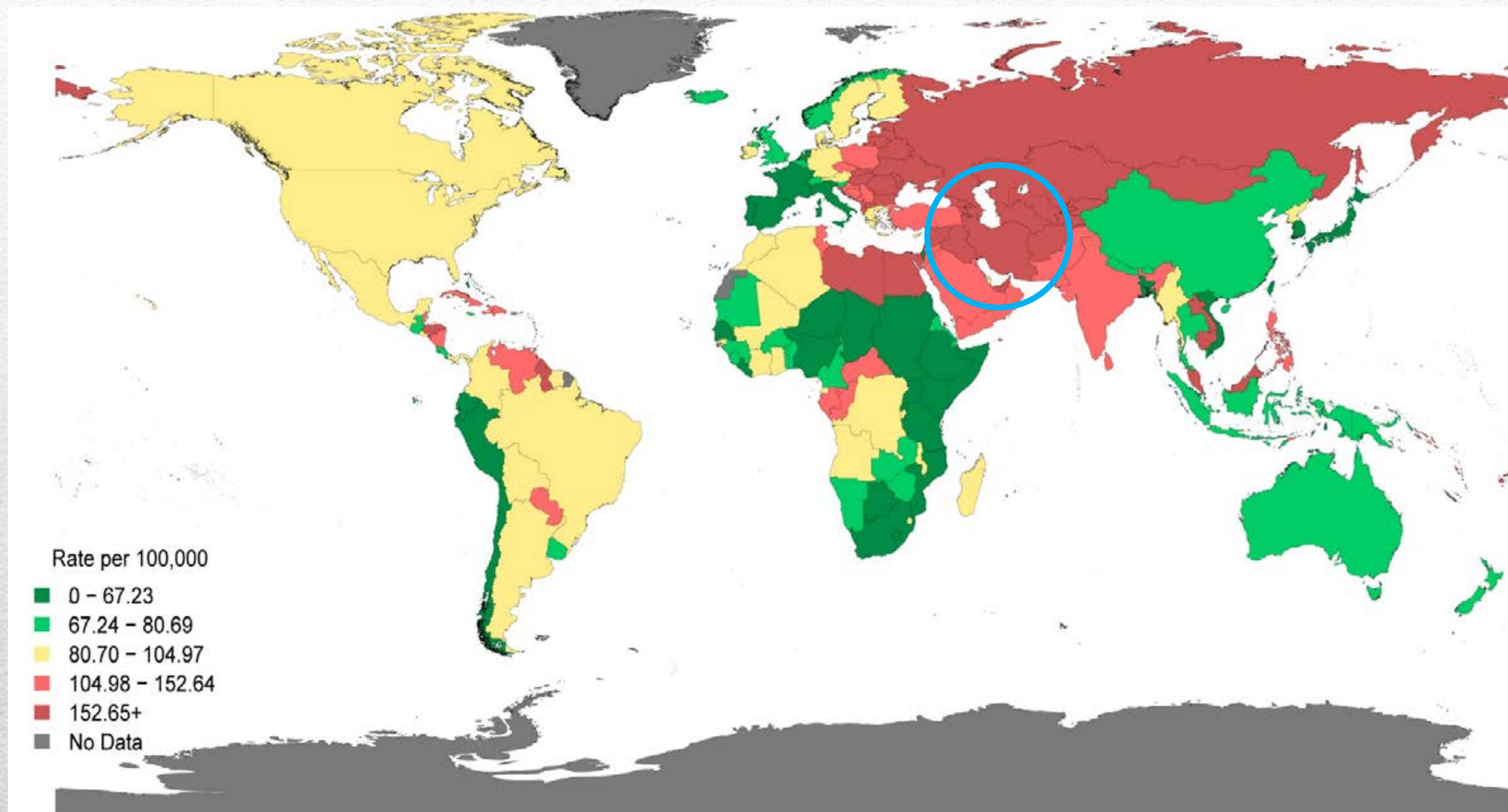
	Afghanistan	Bahrain	Djibouti	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Morocco	Oman	Pakistan	Qatar	Saudi Arabia	Somalia	S Sudan	Sudan	Syria	Tunisia	UAE	Yemen
High body-mass index	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	2	1
High fasting plasma glucose	2	2	3	2	2	2	2	2	2	2	2	2	1	2	1	4	4	2	2	2	1	2
Drug use	3	3	8	4	3	5	3	3	3	3	4	3	11	3	3	9	8	4	3	3	3	5
High blood pressure	6	6	2	6	4	6	7	7	6	7	6	5	5	5	6	3	3	6	5	6	8	6
Occupational ergonomic	4	8	5	3	5	4	8	15	14	8	3	7	3	7	9	2	2	3	7	5	7	3
Smoking	5	5	6	5	6	3	5	6	4	5	5	9	4	8	8	11	11	7	8	4	4	4
Low glomerular filtration	8	10	4	9	7	9	9	8	8	9	9	8	7	9	11	5	6	8	9	8	9	7
Intimate partner violence	11	13	9	16	8	15	12	12	10	10	10	10	8	18	13	10	10	10	10	9	15	8
Low whole grains	9	4	19	7	9	7	4	4	5	4	7	4	14	4	4	15	14	9	4	7	5	9
Low physical activity	10	7	15	8	10	8	6	5	7	6	8	6	13	6	5	17	17	11	6	10	6	11
High sodium	13	9	14	12	11	11	14	13	17	14	12	12	16	12	15	16	15	15	14	12	17	13
High total cholesterol	25	20	20	19	12	18	18	20	19	20	19	20	24	20	20	21	22	23	20	20	21	20
Occupational noise	15	17	10	13	13	16	17	14	13	16	14	16	10	14	16	8	7	13	15	13	14	14
Occupational particulates	16	18	12	17	14	19	20	19	15	17	16	19	12	11	19	13	13	16	16	15	16	17
Childhood sexual abuse	17	19	7	21	15	20	16	18	18	18	17	18	9	19	17	7	9	17	17	16	19	18
Alcohol use	12	12	11	11	16	10	15	17	12	15	11	14	15	16	14	12	12	12	11	11	11	12
High red meat	19	14	26	15	17	13	13	9	11	12	18	13	19	15	12	30	30	20	13	18	10	24
Ozone	20	15	24	18	18	17	19	16	16	19	20	17	18	13	21	29	16	25	18	19	13	23
Ambient particulate matter	23	21	18	20	19	21	21	21	21	21	24	21	17	22	18	27	23	22	22	24	20	19
Low nuts and seeds	18	16	17	10	20	14	11	11	20	13	15	15	21	17	7	18	18	18	19	17	18	16
Occupational asthmagens	24	24	22	27	21	24	22	23	22	24	25	22	28	24	23	20	20	21	24	23	23	26
Low fiber	27	23	29	26	22	25	25	27	25	25	27	25	29	23	25	26	27	27	26	25	25	27
Low fruit	22	25	21	23	23	23	26	24	23	22	23	24	23	26	26	19	21	24	23	22	24	22
Lead	14	32	16	22	24	22	29	32	27	28	21	29	25	33	28	14	19	14	21	21	31	15
Low vegetables	26	26	27	24	25	26	24	25	26	26	26	26	26	25	24	25	25	26	25	26	27	25

NCDs' Risk Factors, DALYs Heat Map in Middle East

Both sexes, Age-standardized, 2013, DALYs per 100,000

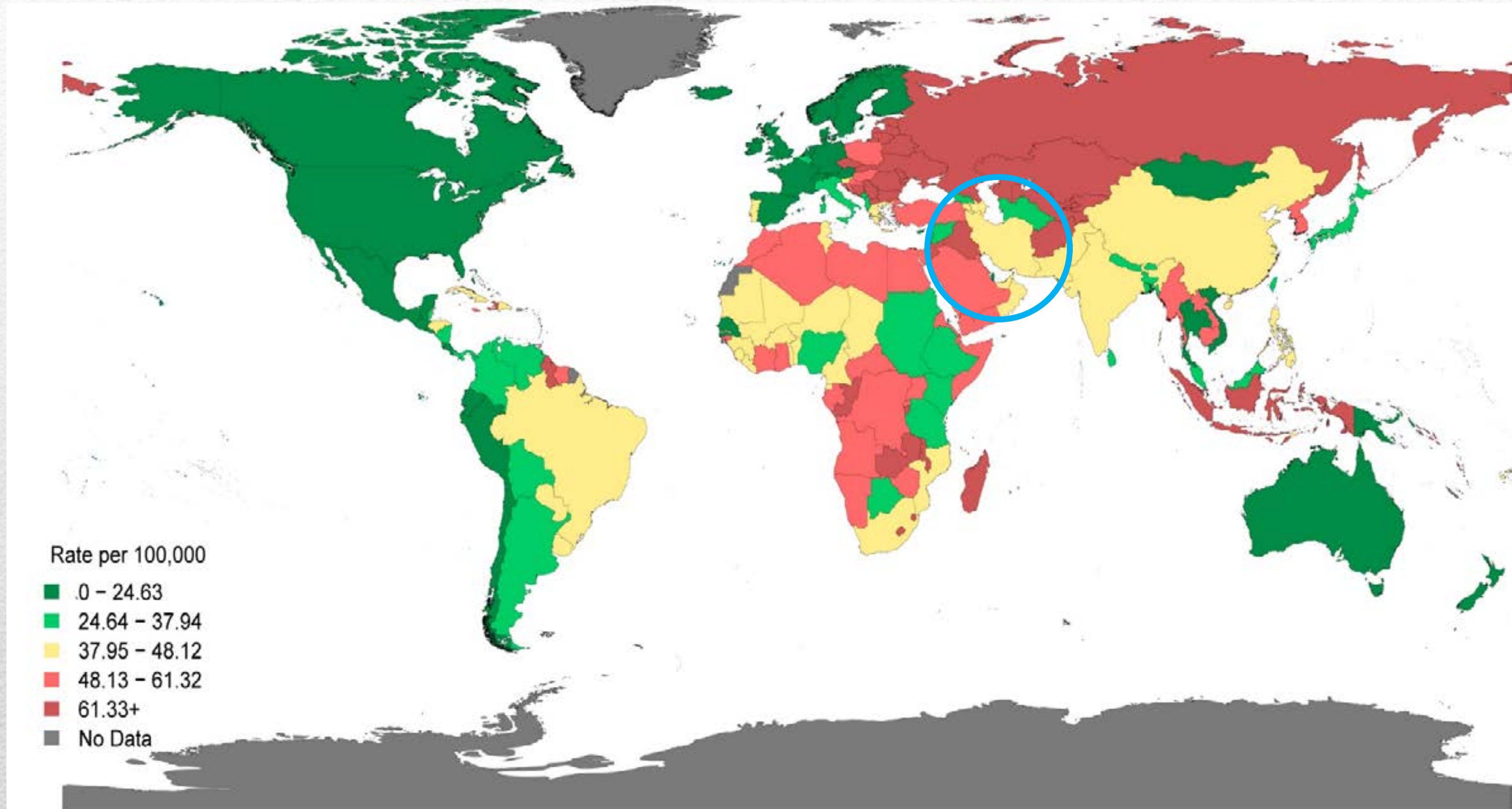
	Afghanistan	Bahrain	Djibouti	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Morocco	Oman	Pakistan	Qatar	Saudi Arabia	Somalia	S Sudan	Sudan	Syria	Tunisia	UAE	Yemen
High blood pressure	1	3	1	2	1	2	3	2	2	2	2	2	1	3	3	1	1	1	1	1	1	1
High body-mass index	2	1	2	1	2	1	1	1	1	1	1	1	2	1	1	2	2	2	2	2	2	2
High fasting plasma glucose	4	2	3	3	3	3	2	3	4	3	3	3	3	2	2	4	4	4	3	4	3	4
High total cholesterol	14	8	10	7	4	5	6	4	5	8	11	7	9	7	7	18	14	11	7	6	5	11
High sodium	5	4	9	5	5	6	8	8	13	5	6	5	6	9	8	10	8	5	6	5	7	6
Smoking	6	5	4	4	6	4	4	6	3	4	4	10	4	8	10	6	6	12	4	3	4	3
Low physical activity	9	6	12	11	7	8	5	5	6	7	5	4	13	5	4	14	13	6	9	9	6	9
Low whole grains	8	7	18	8	8	9	7	7	7	9	7	6	14	6	5	9	12	8	8	7	8	10
Low fruit	7	12	5	6	9	10	15	12	10	6	10	11	5	13	14	5	5	7	5	8	11	5
Ambient particulate matter	10	11	7	9	10	11	11	9	8	10	12	8	10	11	9	17	11	9	10	11	9	7
Low fiber	17	13	22	21	11	15	16	17	14	16	18	16	17	17	16	23	24	18	13	16	17	17
Low glomerular filtration	15	10	6	10	12	7	9	10	9	11	9	9	8	10	6	7	7	14	14	10	10	14
Drug use	19	9	19	15	13	16	10	11	12	14	8	14	24	4	11	19	19	22	15	12	12	20
Low omega-3	13	16	16	16	14	13	14	15	11	12	16	13	15	15	15	27	26	15	12	13	13	15
Low vegetables	12	15	8	13	15	12	13	14	15	13	13	12	11	14	13	11	9	13	11	14	15	8
Low PUFA	18	25	21	20	16	17	20	16	20	17	19	17	19	22	17	20	22	19	16	17	18	18
Low nuts and seeds	16	14	15	12	17	14	12	13	17	15	15	15	16	12	12	15	15	16	18	15	16	12
Occupational ergonomic	22	19	20	17	18	18	18	29	29	18	14	19	21	16	20	16	16	21	22	18	20	21
High trans fat	20	23	28	22	19	20	22	20	19	19	27	20	12	27	23	29	30	20	20	21	24	23
Lead	11	36	14	18	20	19	34	36	32	35	22	27	18	36	28	8	17	10	17	20	36	16
Intimate partner violence	30	24	24	28	21	29	23	24	24	24	23	24	25	28	24	24	25	24	23	23	29	26
Alcohol use	21	17	11	14	22	21	19	21	16	20	17	18	20	18	18	12	10	17	19	19	14	22
Secondhand smoke	23	31	27	19	23	22	24	22	22	21	29	26	29	31	22	26	29	25	21	22	27	19
Occupational particulates	24	26	26	24	24	26	26	28	26	27	26	29	23	23	30	25	20	23	25	26	26	24
Household air pollution	3	30	17	36	25	28	37	31	37	31	25	28	7	37	29	3	3	3	36	35	37	13

The mortality rate due to ischemic heart disease per 100,000 people in the world- 2010



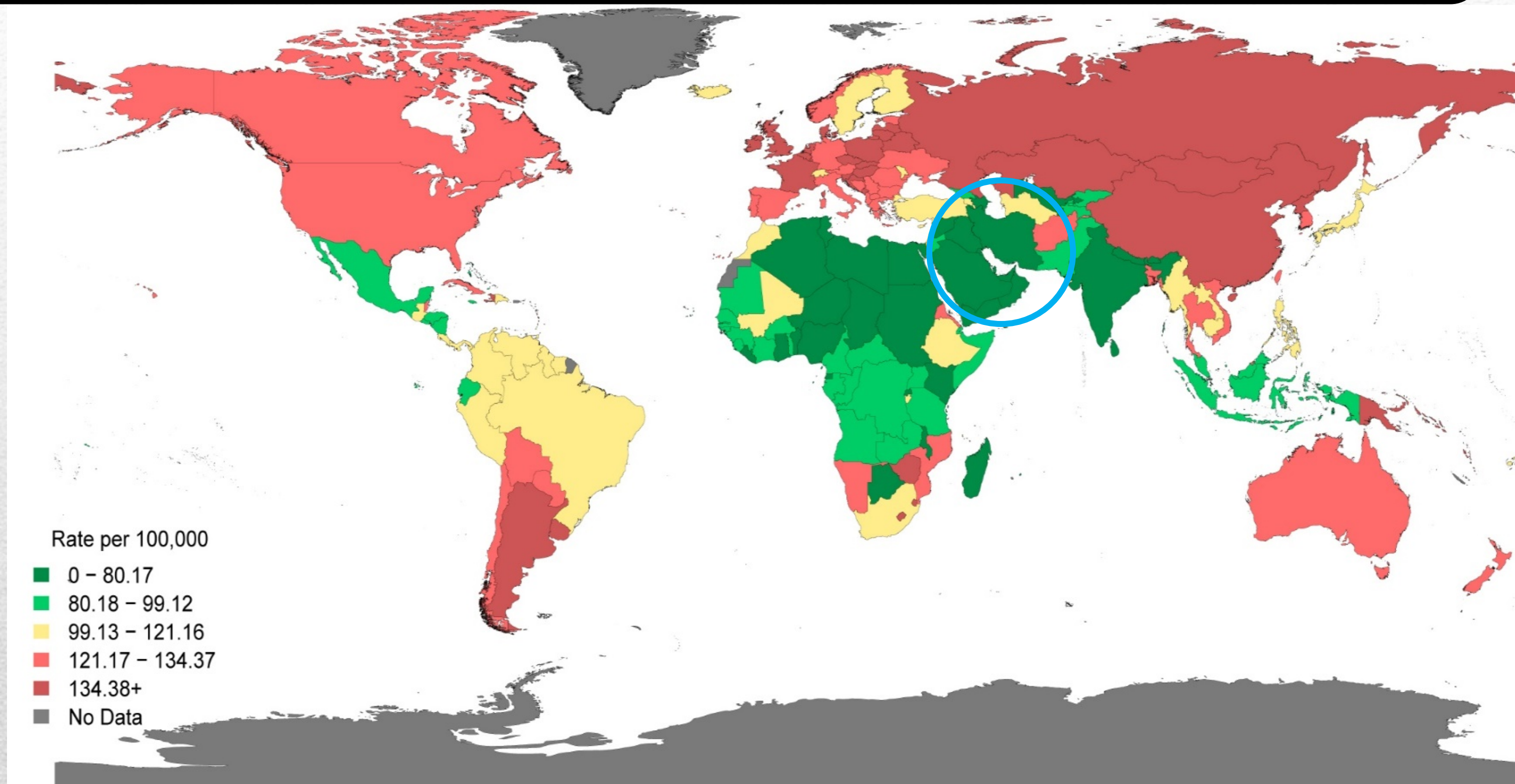
The mortality rate due to ischemic heart disease in most of the countries of Eastern Mediterranean Region is **very higher than the global mean rate** (Higher than 152.65 per 100,000)

The mortality rate due to ischemic stroke per 100,000 people in the world- 2010



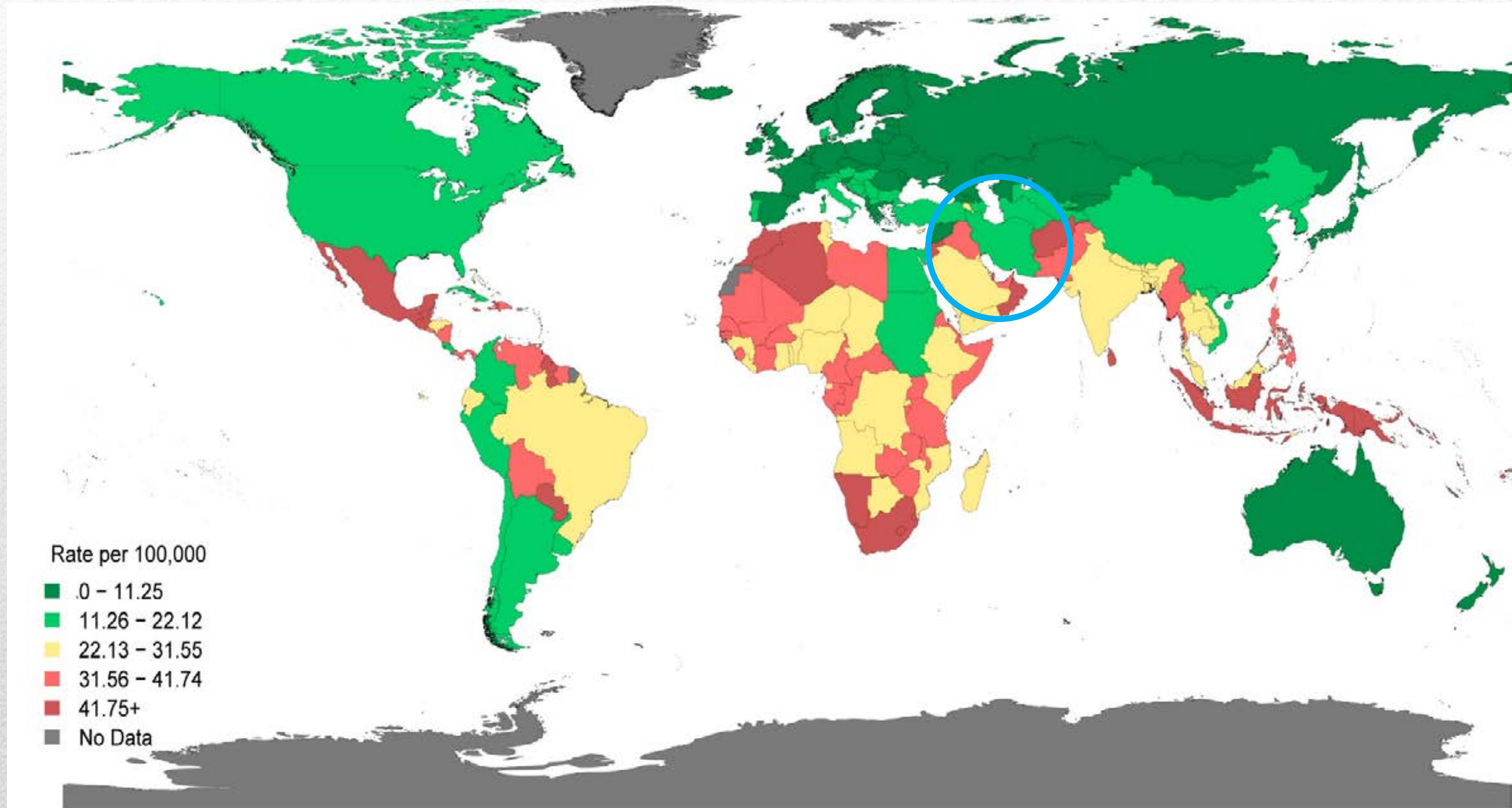
The mortality rate due to ischemic stroke in most of the countries of Eastern Mediterranean Region is **at the range of global mean rate** (Between 37.95 to 48.12 per 100,000)

The mortality rate due to cancers per 100,000 people in the world in 2010



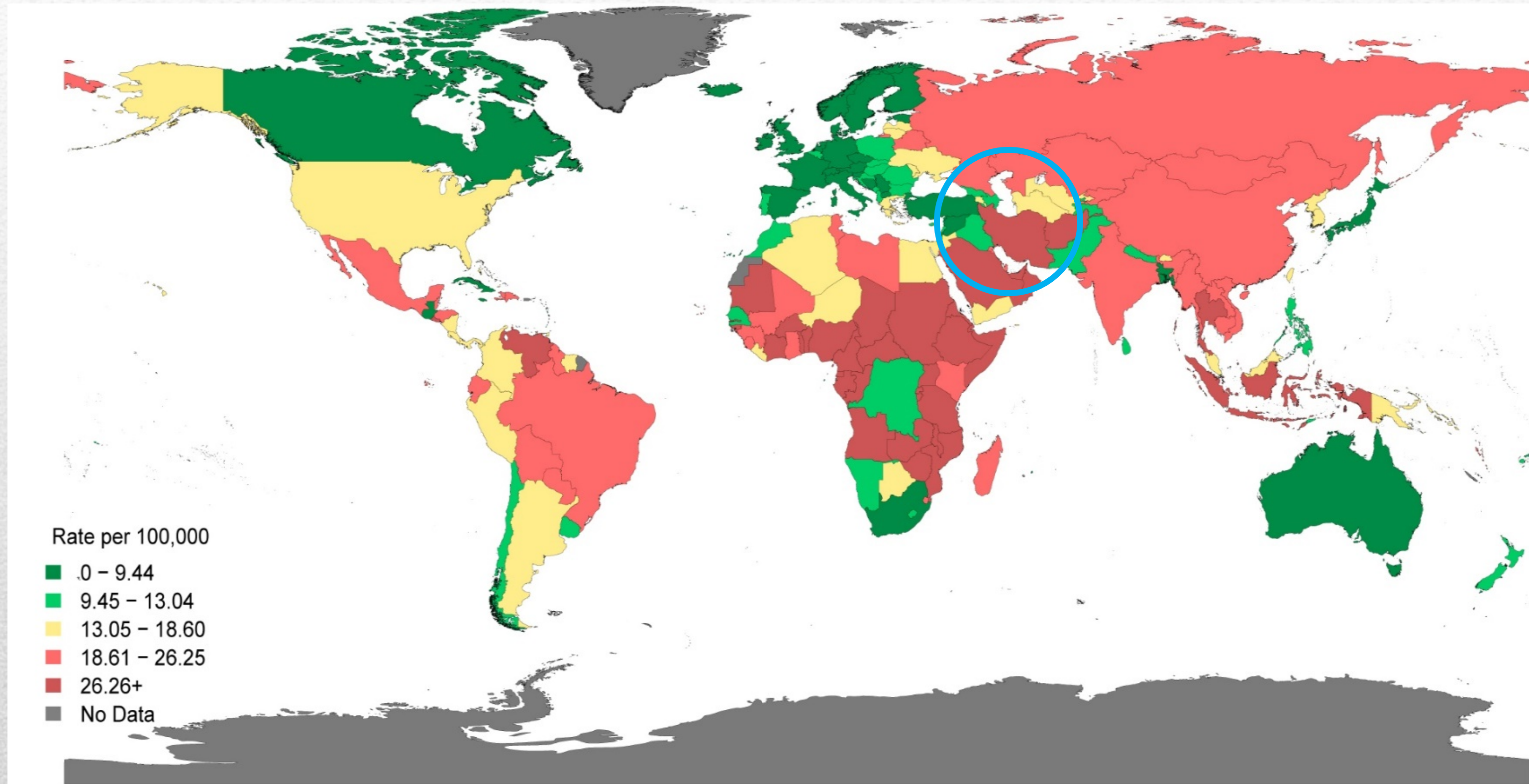
The mortality rate due to cancers in most of the countries of Eastern Mediterranean Region is **lower than the global mean rate** (between 80.18 to 99.12 per 100,000)

The mortality rate due to diabetes per 100,000 people in the world in 2010



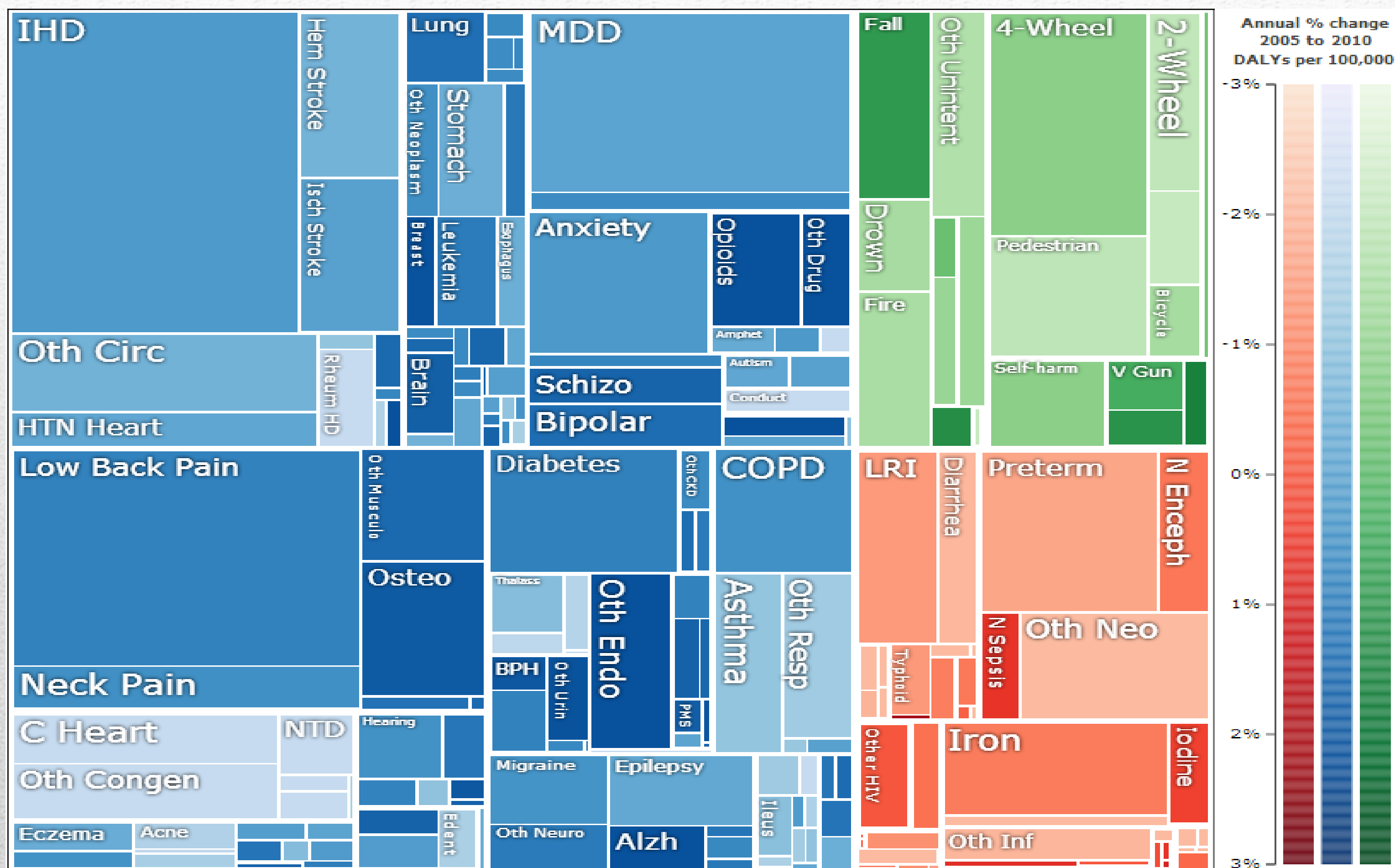
The mortality rate due to diabetes in most of the countries of Eastern Mediterranean Region is **at the range of global mean rate** (Between 22.13 to 31.55 per 100,000)

The mortality rate due to road injuries per 100,000 people in the world in 2010



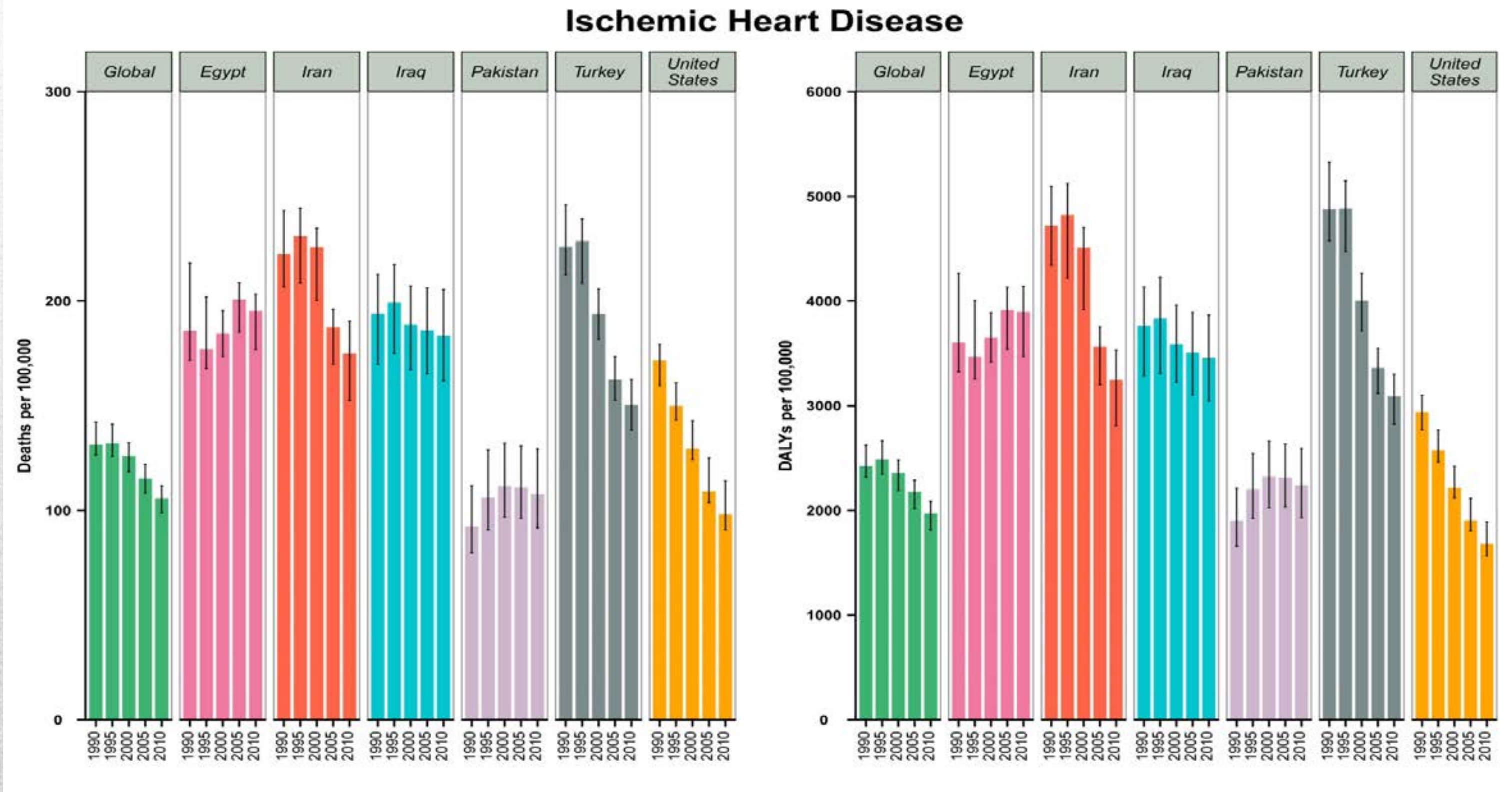
The mortality rate due to road injuries in most of the countries of Eastern Mediterranean Region is **very higher than the global mean rate** (higher than 26.26+ per 100,000)

Tree map of all causes of DALYs in Iran in 2010 (All ages , Both sexes)



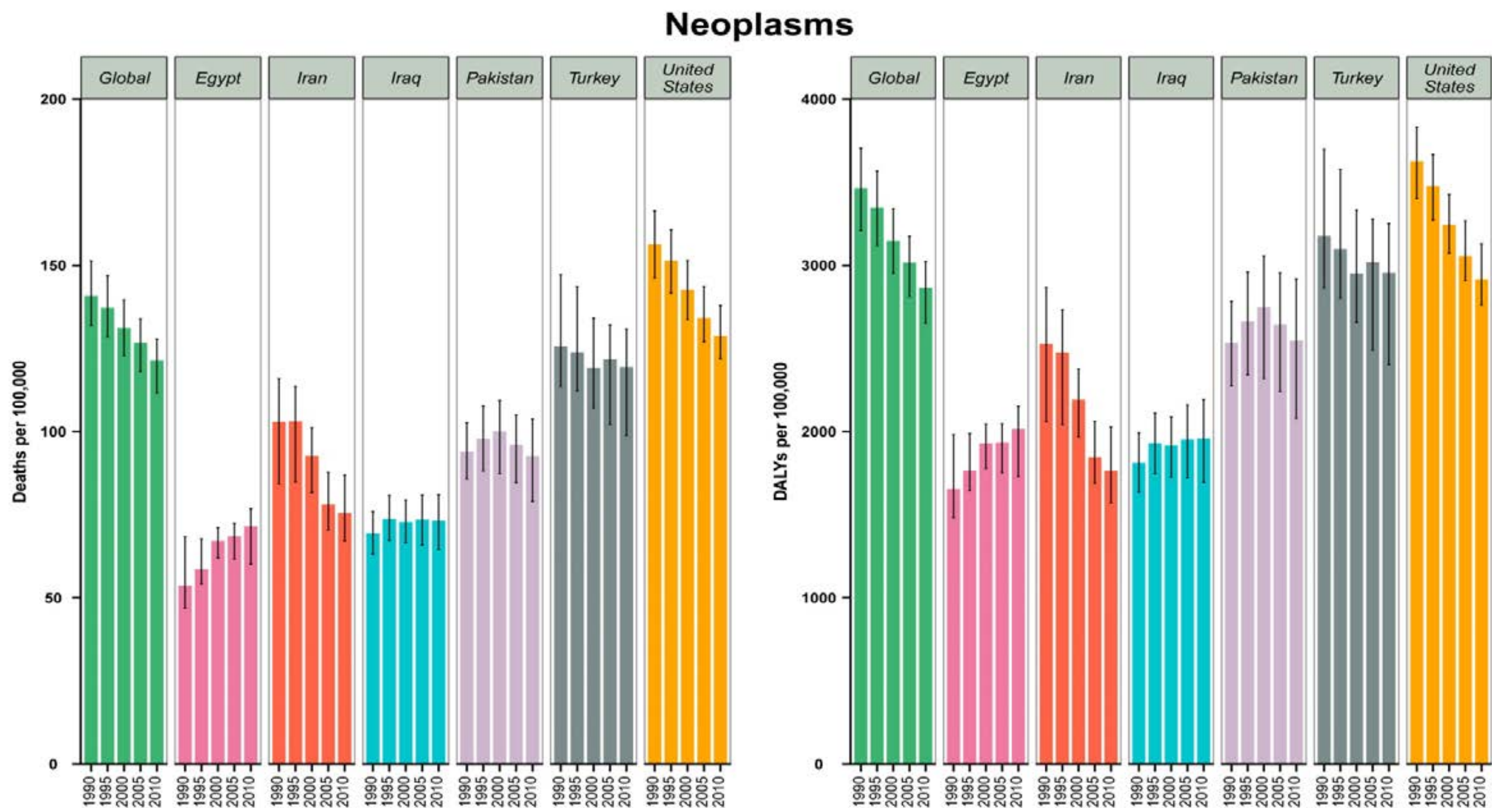
GBD 2010

Death and DALY rates due to ischemic heart disease in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



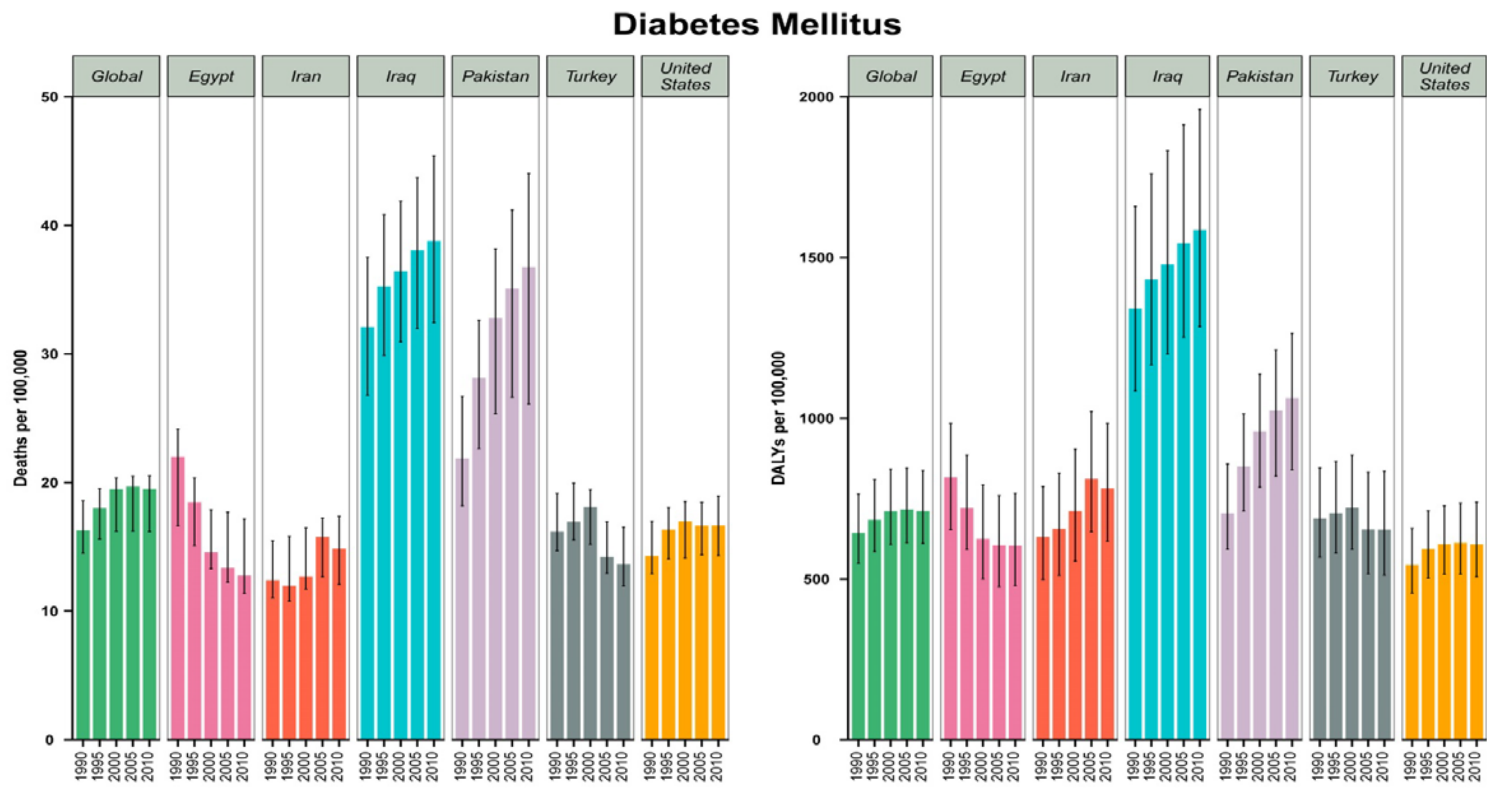
Death rate due to ischemic heart disease in Iran is higher than those in other countries and globe.

Death and DALY rates due to cancers in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



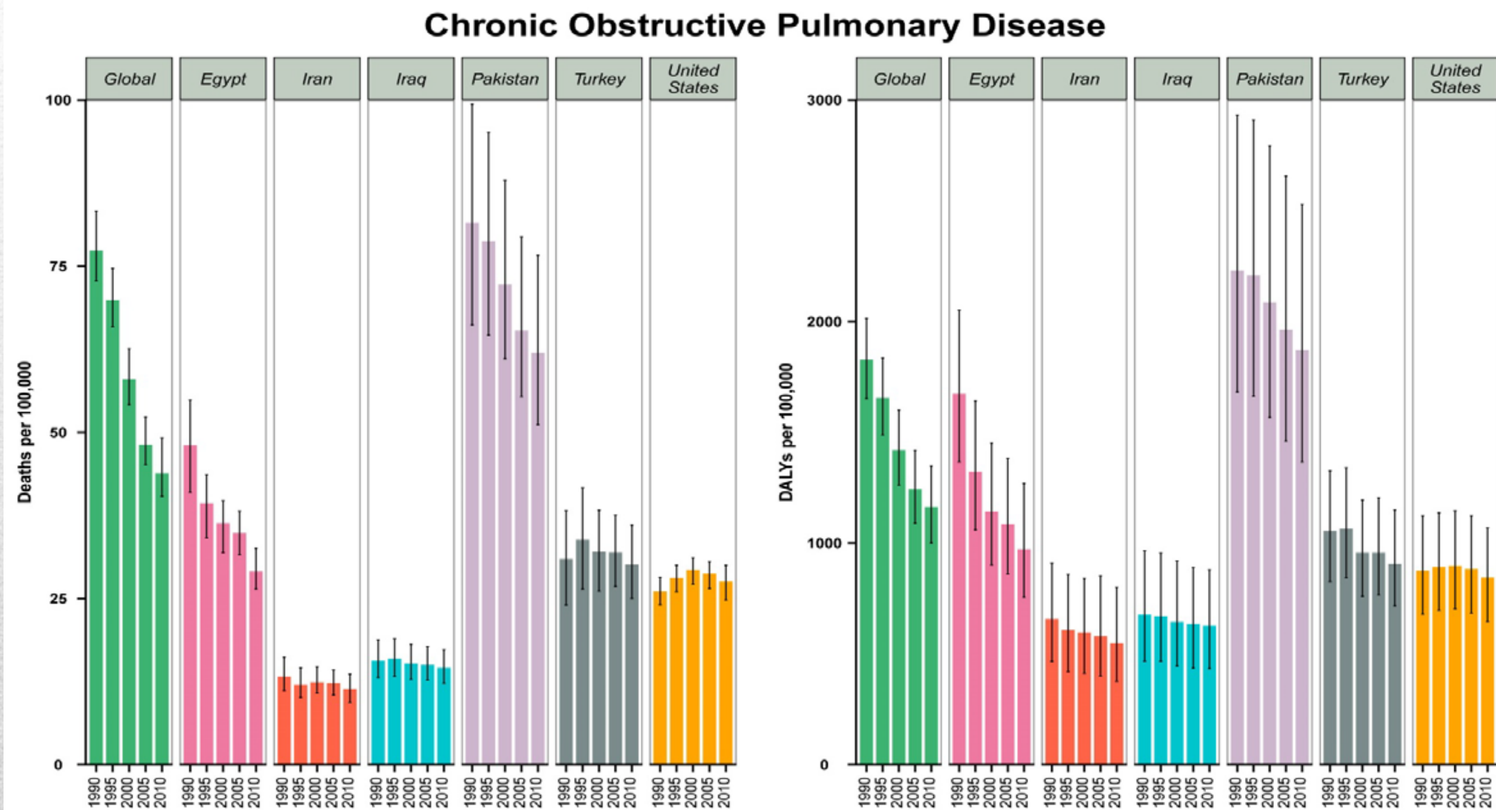
Death and DALY rates due to cancers had decreasing trend in Iran, and its rate in this country was lower than globe.

Death and DALY rates due to diabetes in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



Death and DALY rates due to diabetes had an increasing trend in Iran.

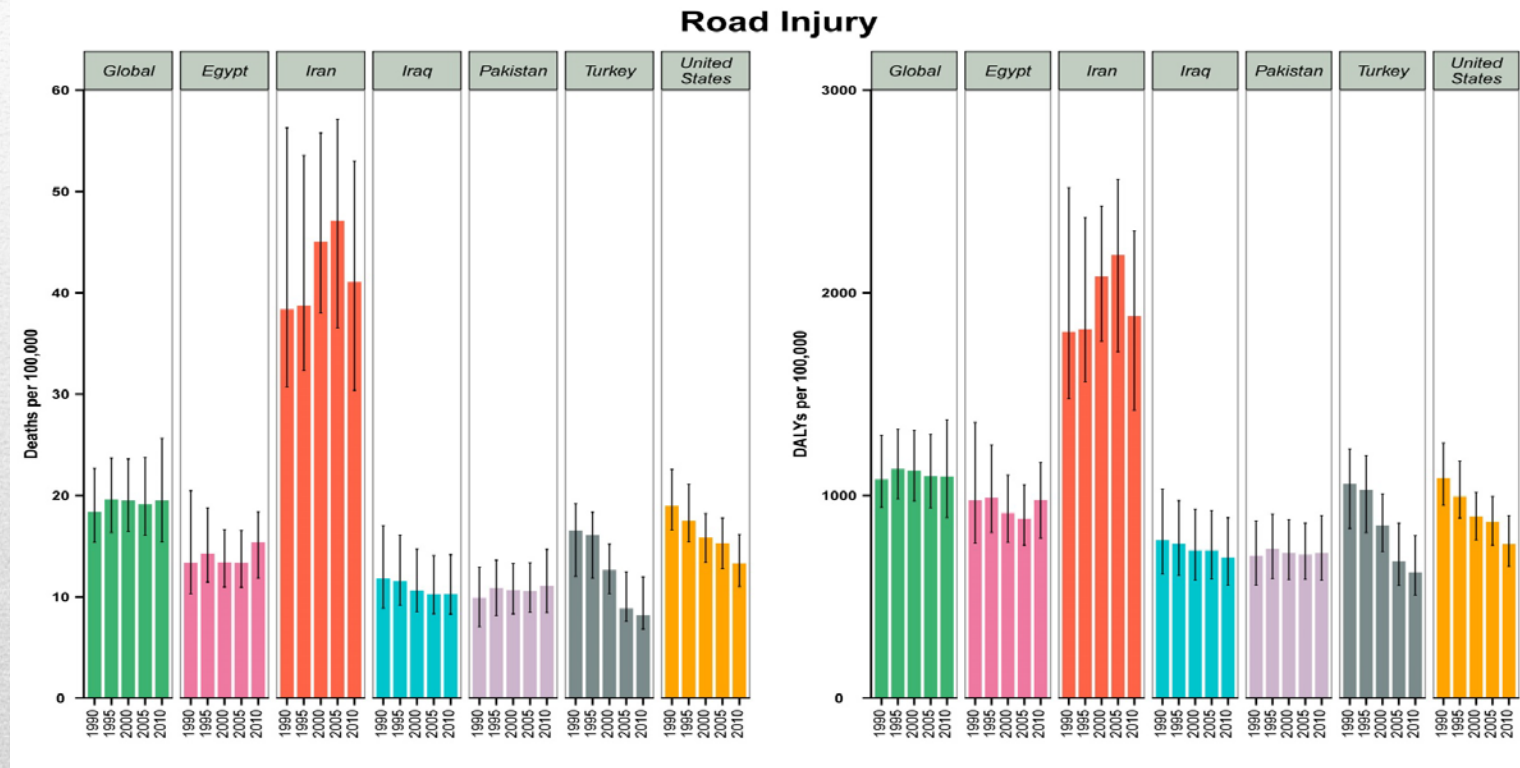
Death and DALY rates due to COPD in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



Death and DALY rates due to COPD in Iran were lower than globe.

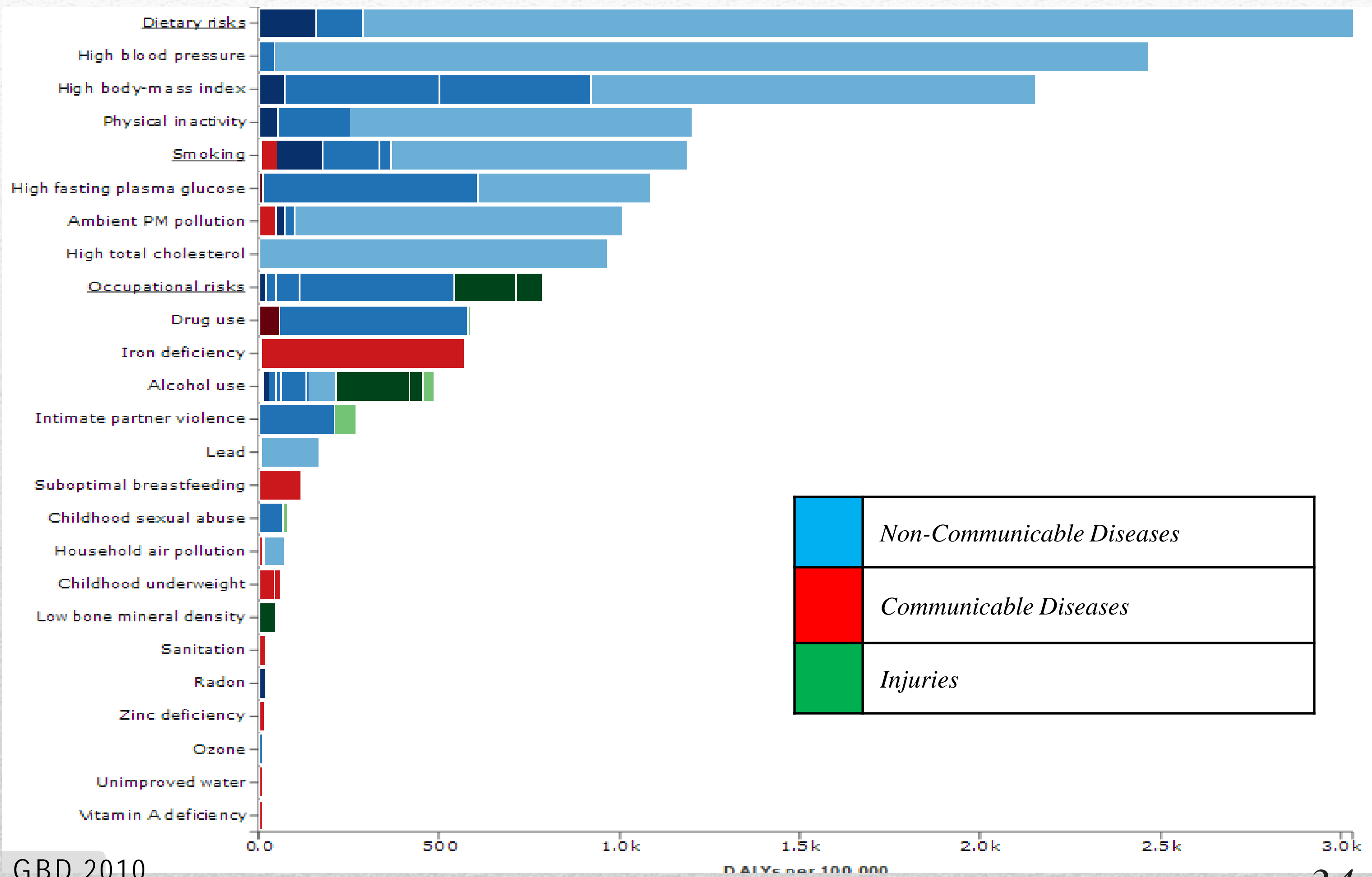
EMRI

Death and DALY rates due to road injury in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



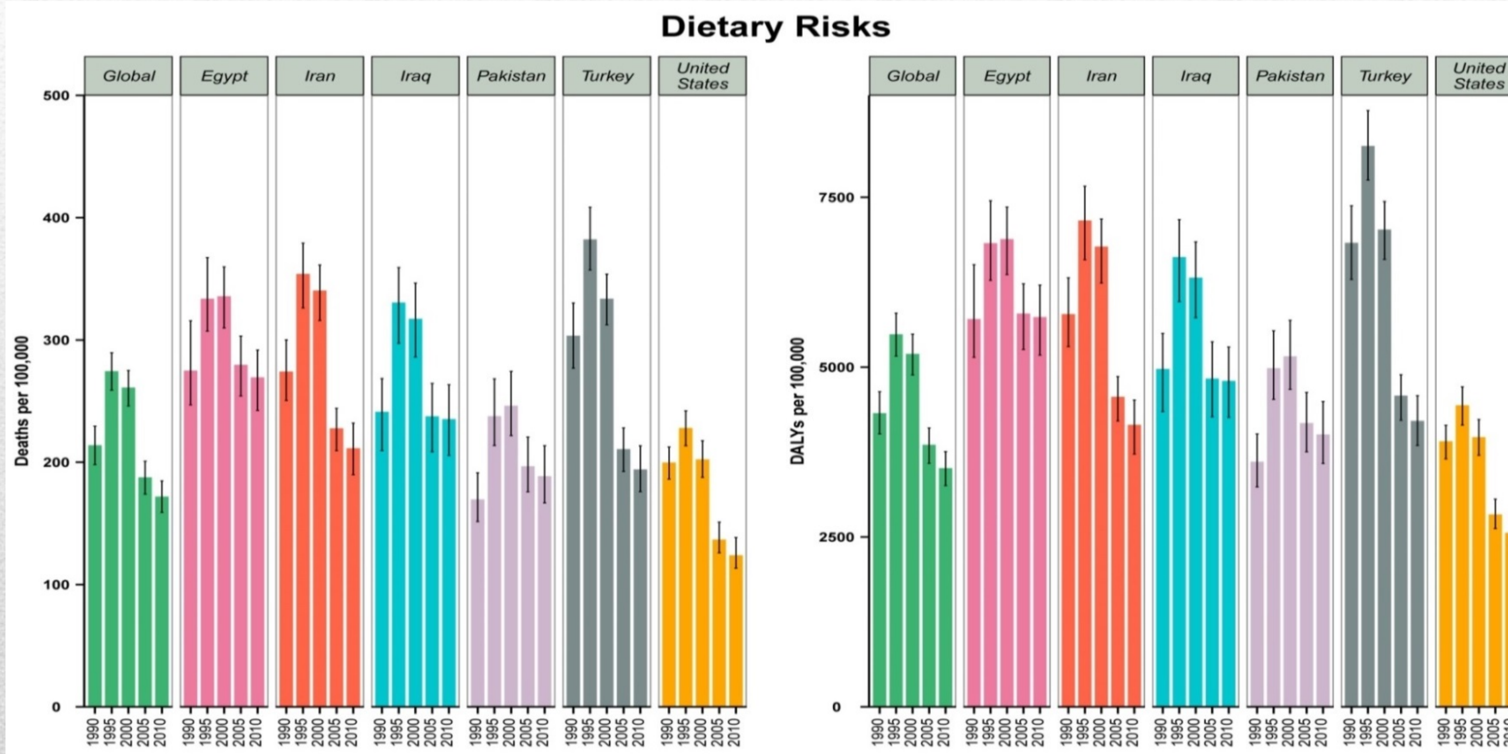
Death and DALY rates due to road injuries in Iran were higher than the other countries and globe.

Ranking and comparison of NCDs related risk factors based on DALYs (All ages, Both sexes, 2010) in Iran



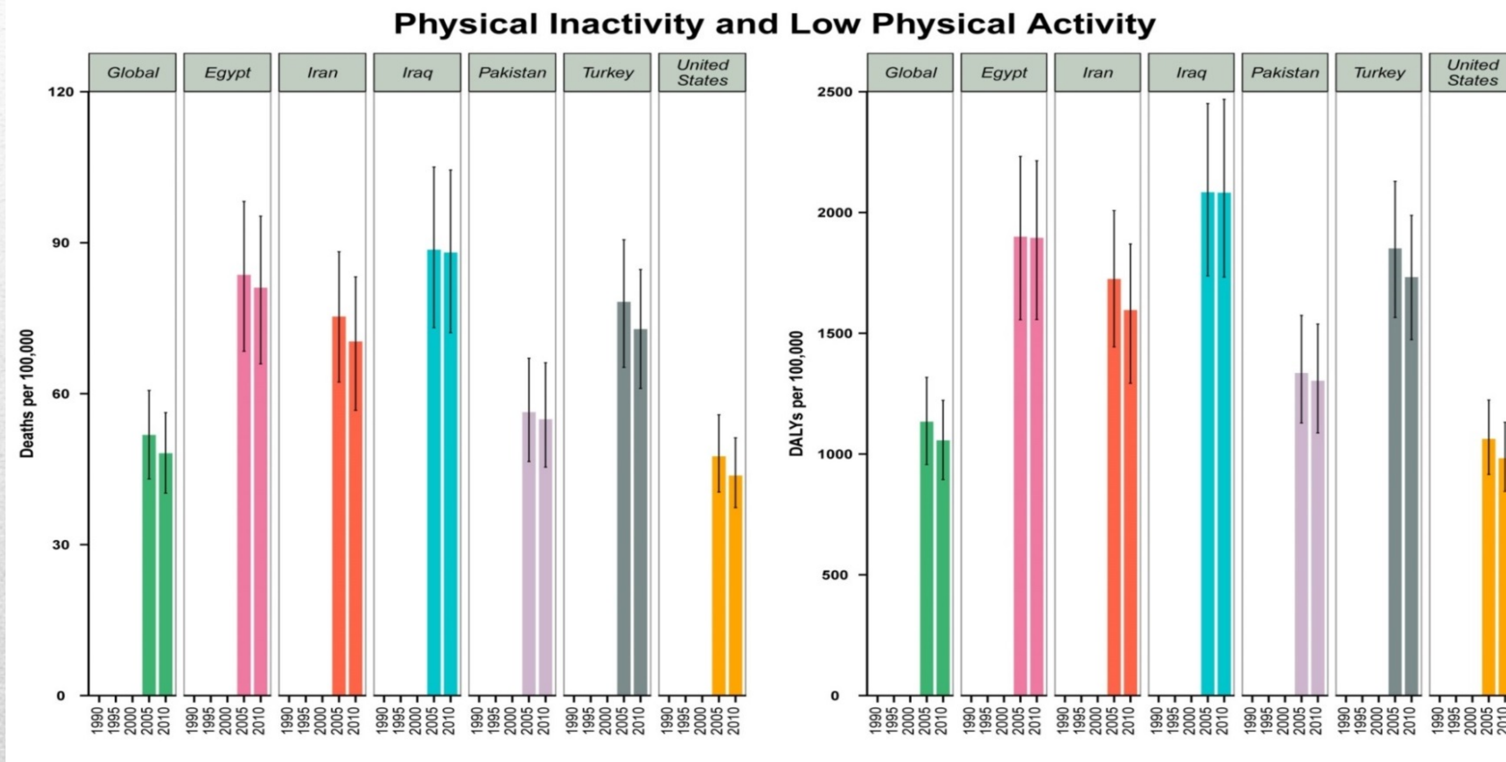
GBD 2010

Death and DALY rates attributable to dietary risk factors in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



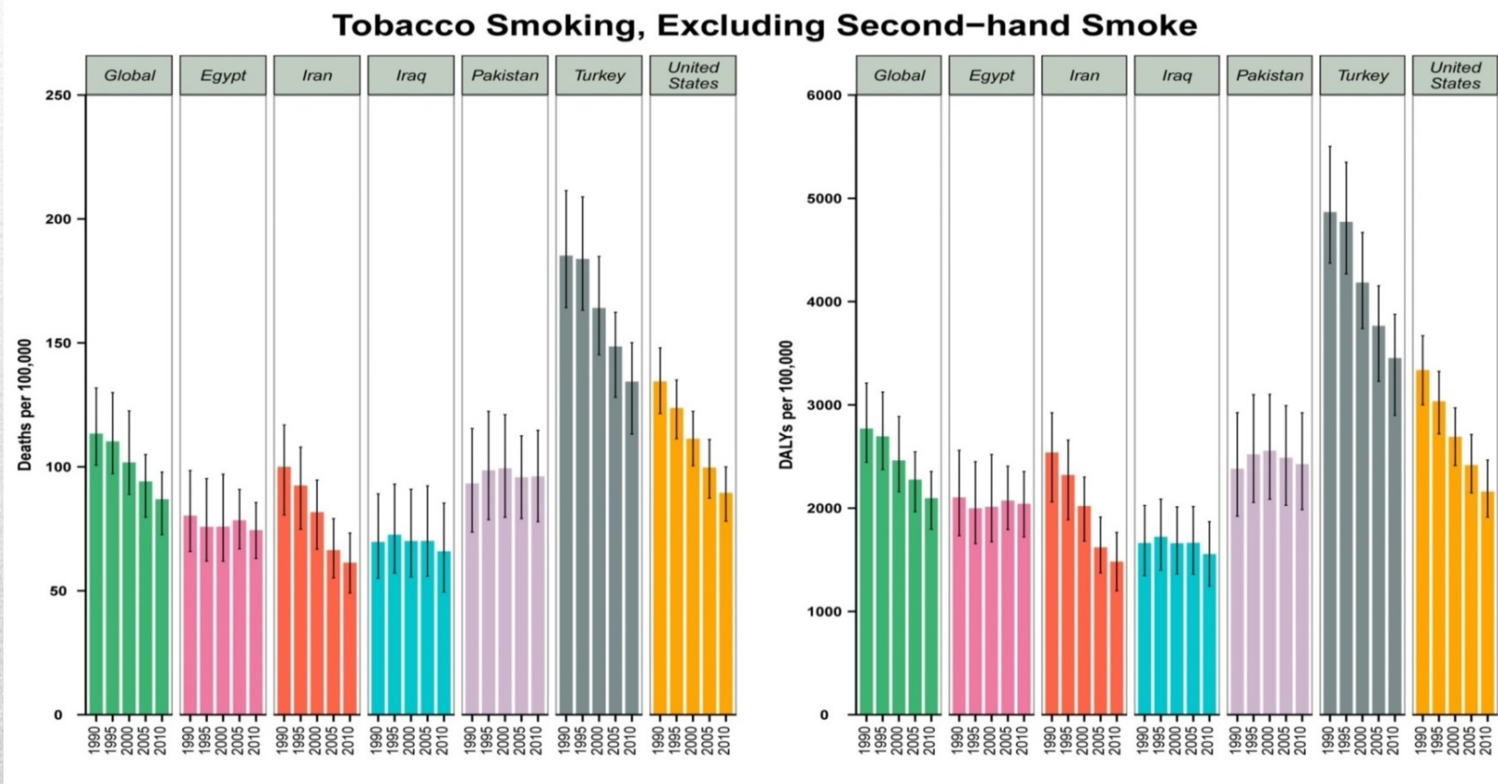
Death and DALY rates attributable to dietary risk factors in Iran were higher than global rate.

Death and DALY rates attributable to Physical inactivity and low physical activity risk factors in Iran per 100,000 compared with Globe and 5 countries- 1990 to 2010



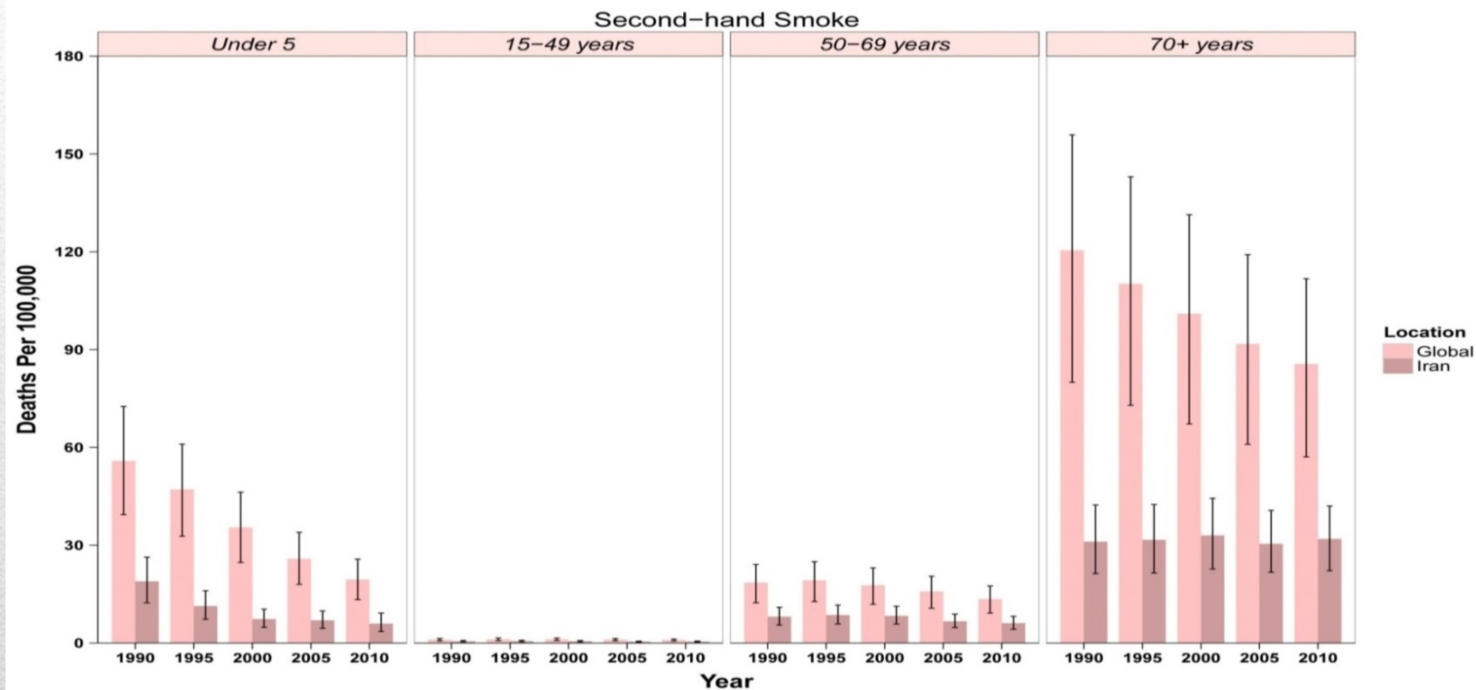
Death and DALY rates attributable to Physical inactivity and low physical activity risk factors in Iran were higher than global rate.

Death and DALY rates attributable to Tobacco smoking risk factor (excluding second-hand smoke) in Iran per 100,000 compared with Globe and 5 countries- 1990 to 2010



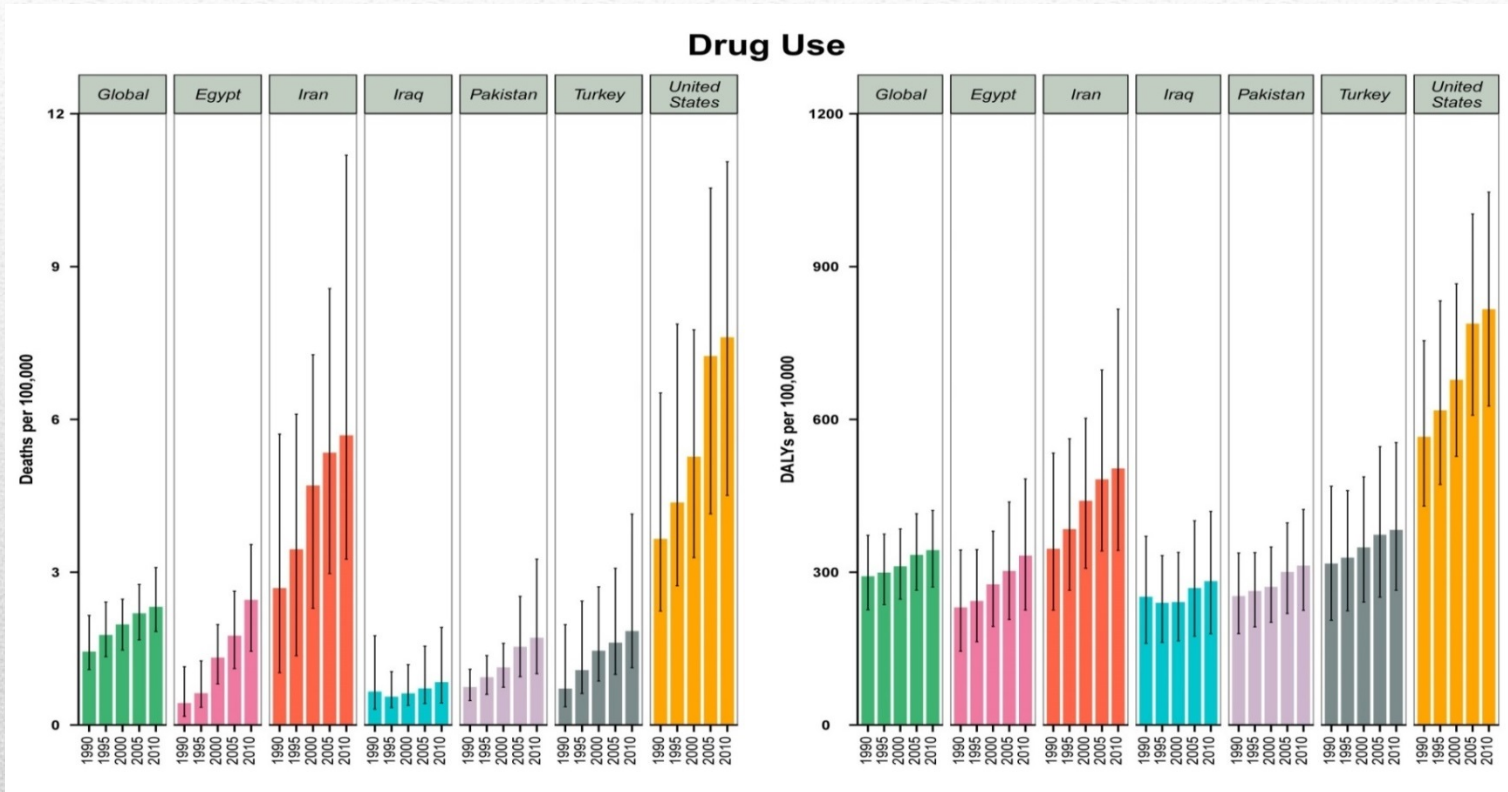
Death and DALY rates attributable to Tobacco smoking risk factor have decreased in Iran.

Death rates attributable to Second-hand smoke risk factor per 100,000 in Iran and globe 1990 to 2010



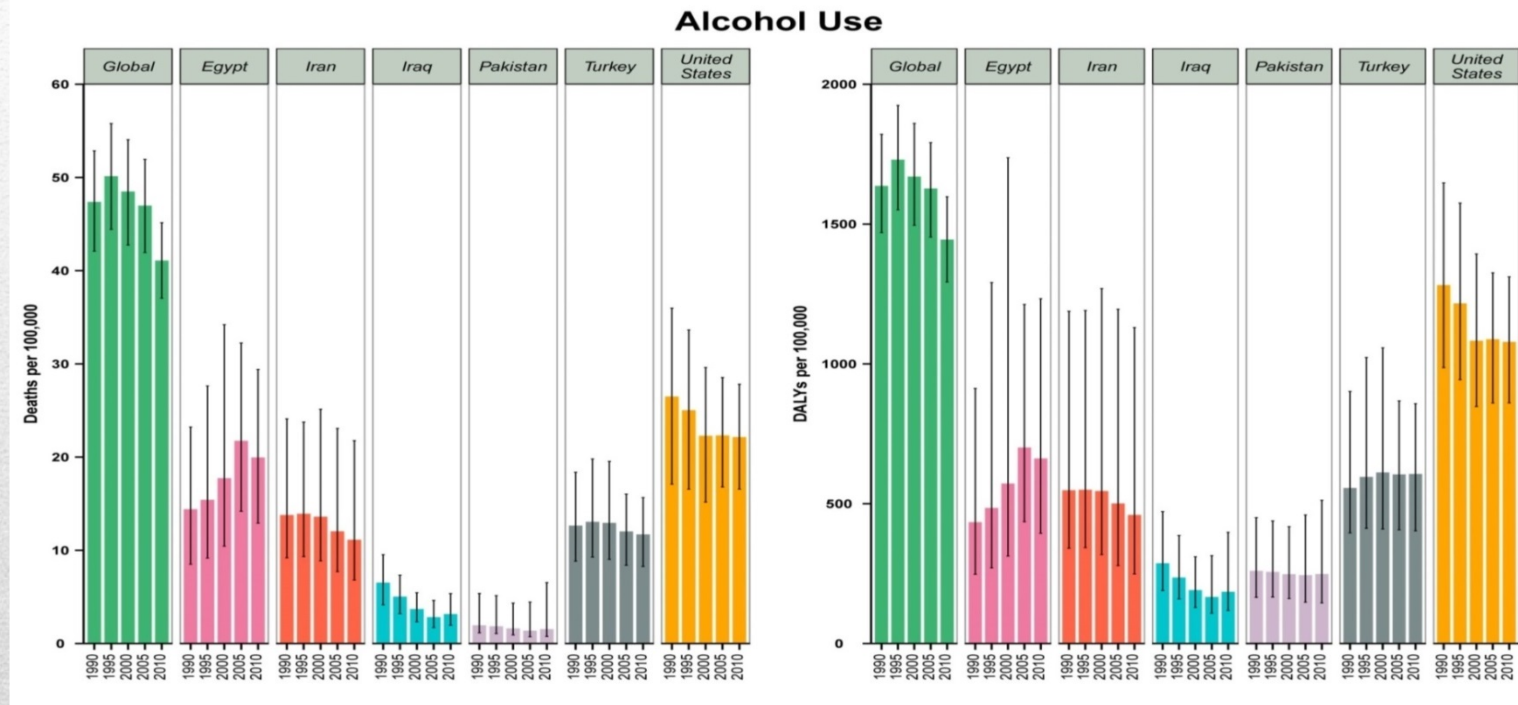
- ✓ In all the years, death rate attributable to second-hand smoke risk factor was lower than global rate .
- ✓ Under-5-year children had the highest death rate due to second-hand smoke after 70+ age group, that indicates the importance of this risk factor.

Death and DALY rates attributable to Drug abuse risk factor in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



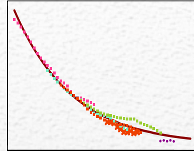
Death and DALY rates attributable to drug abuse risk factor increased in Iran. This was the same in globe and the other countries.

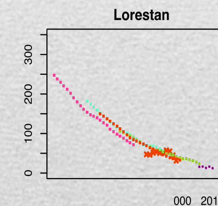
Death and DALY rates attributable to alcohol consumption risk factor in Iran per 100,000 compared with Globe and 5 countries 1990 to 2010



- ✓ Death and DALY rates attributable to alcohol consumption risk factor decreased in Iran.
- ✓ Due to its low rate in Iran, it is not an important risk factor for NCDs in this country.

Child Mortality rate at Provincial level from 1960 to 2013





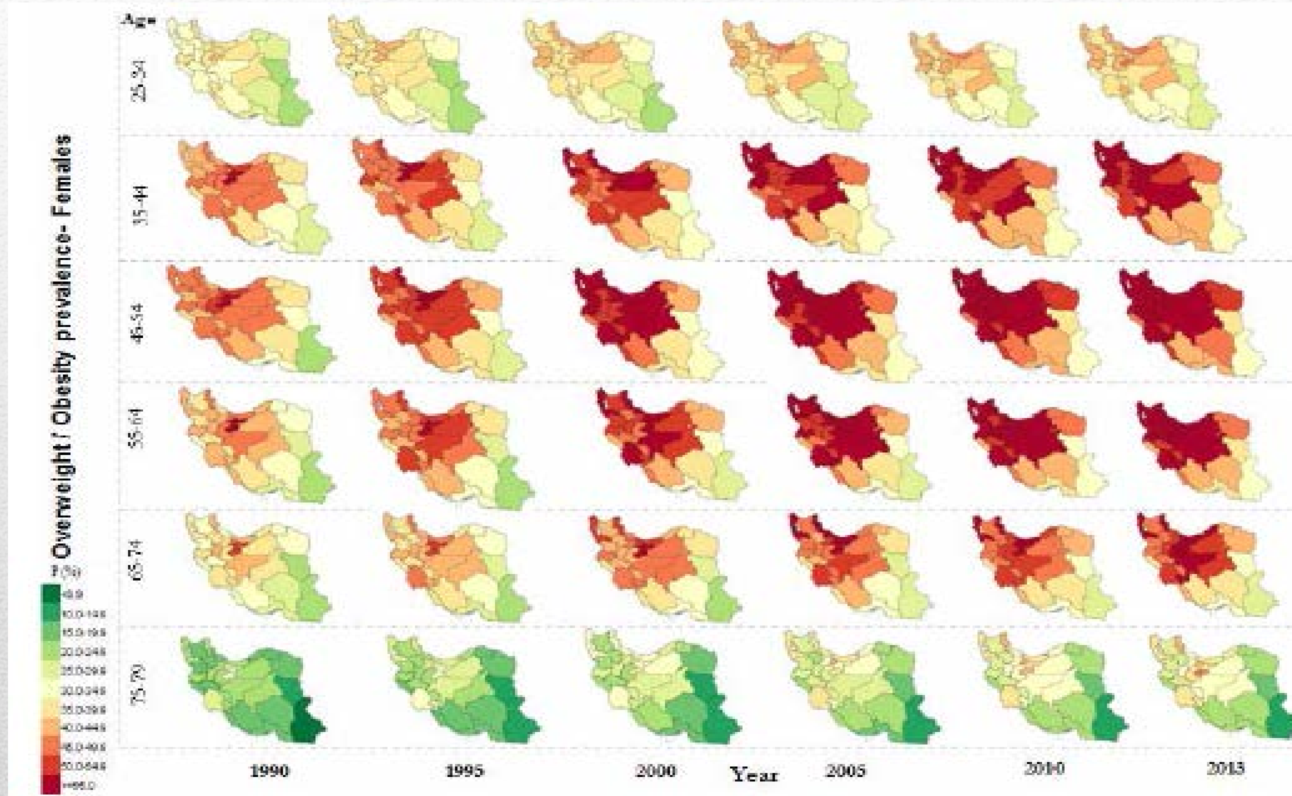
There was a great difference in child mortality among the provinces of Iran in 1960, but there was a similarity in child mortality rates of different provinces (convergence) in the year 2010 that could be due to more equitable access to necessary services.

Under 5 years Mortality rate at national level from 1960 to 2013

1. *The rate of child mortality has decreased dramatically between 1960 to 2010.*

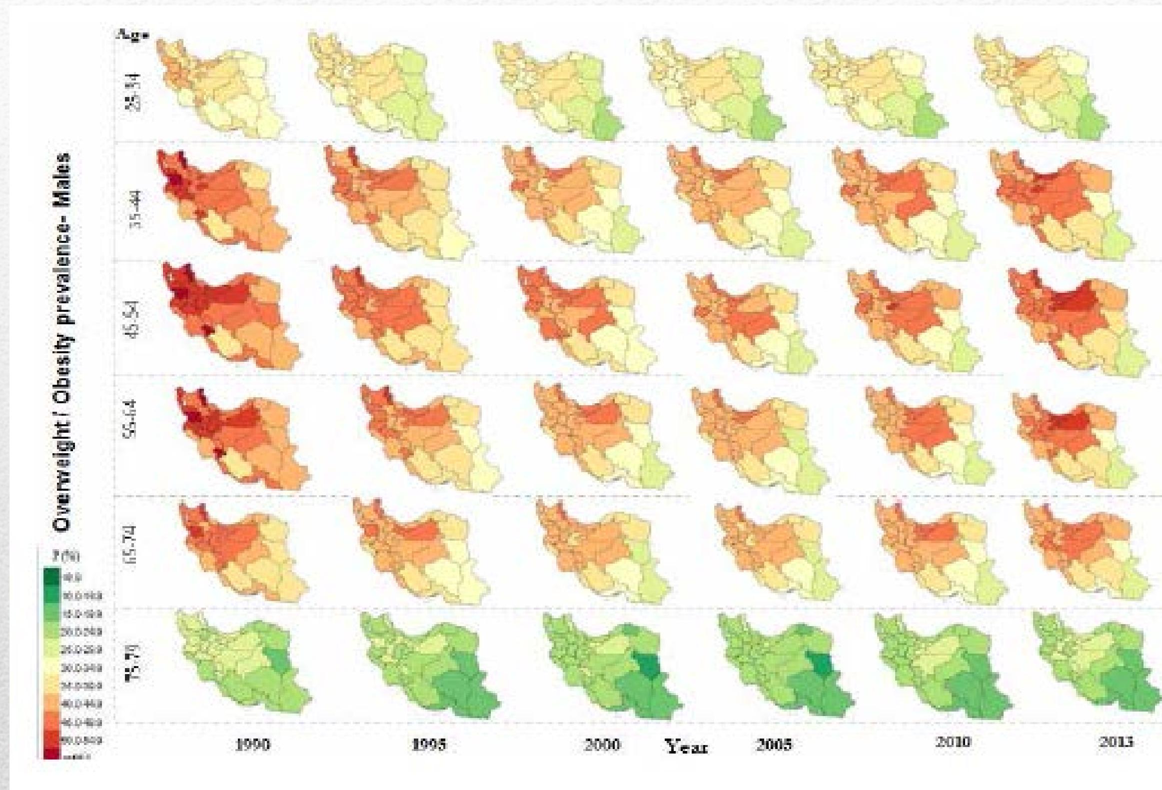
2. More equitable access to necessary services could be the reason of remarkable decline in child mortality rate in Iran, and the similarity of its rate to developed countries.

The prevalence rate of overweight/ obesity in Iranian males based on the province and age groups 1990 to 2013



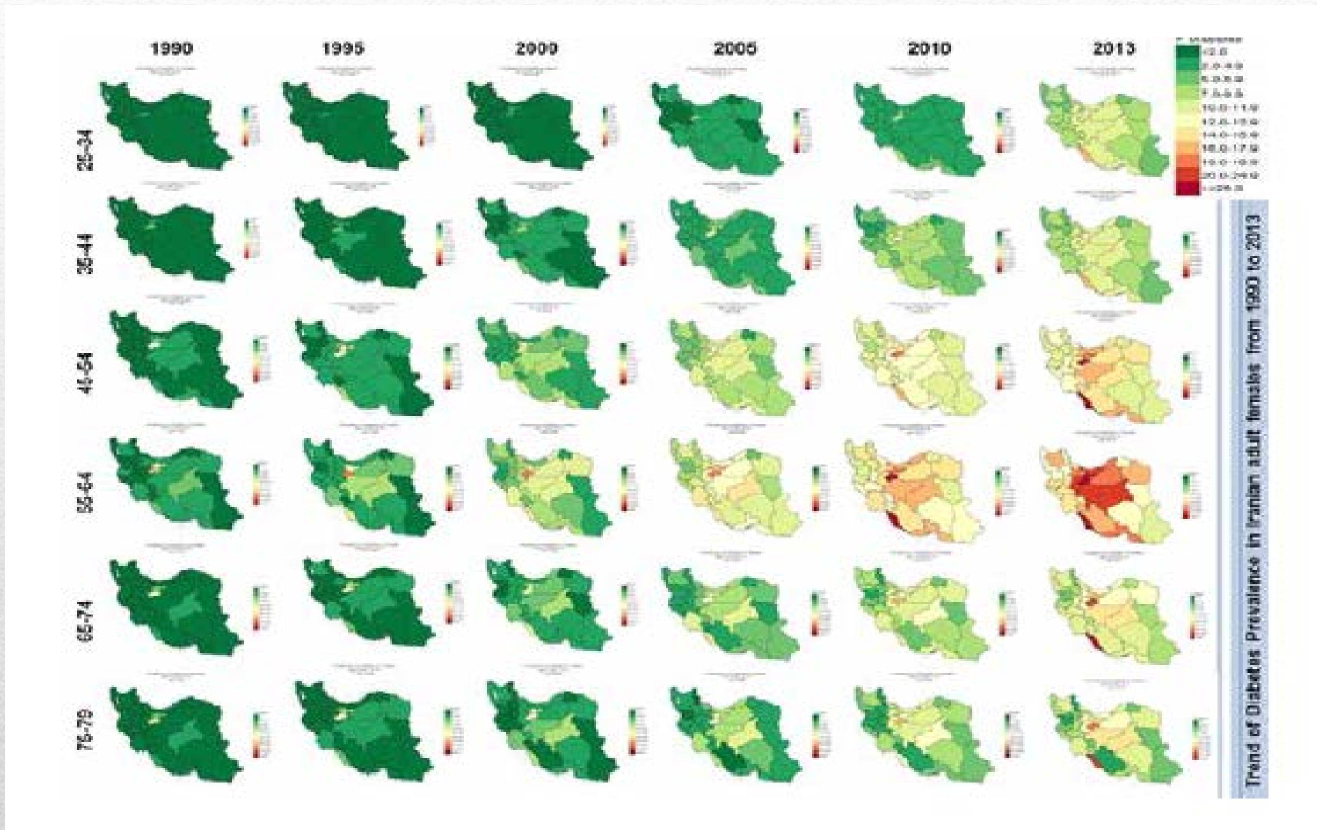
The highest prevalence rate of overweight/obesity was in 35 to 74 years old Iranian males. This prevalence rate followed the geographical distribution and it was very higher in north and north-west regions in comparison with south and south-east areas of Iran.

The prevalence rate of overweight/ obesity in Iranian females based on the province and age groups- 1990 to 2013



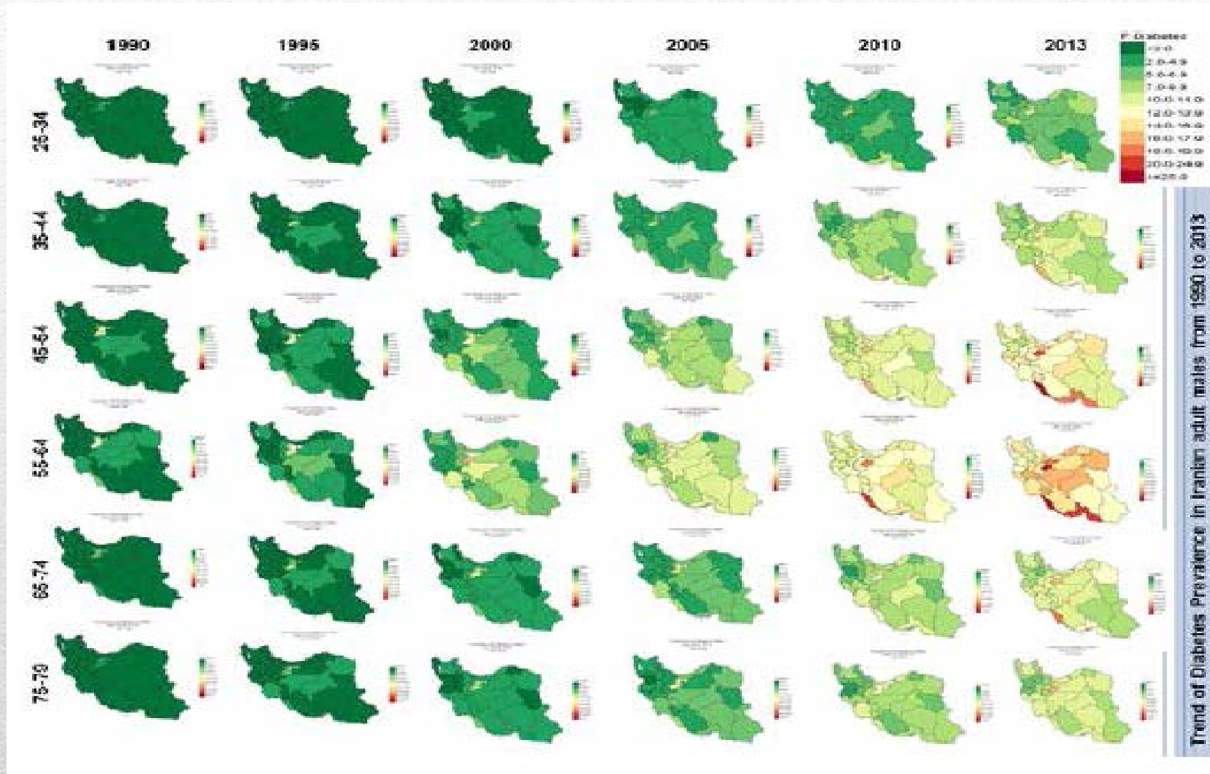
- ✓ *The prevalence rate of overweight/ obesity increased in all provinces and it was higher in rich provinces (Tehran, Alborz, Qom, Mazandaran and Guilan).*
- ✓ *Overweight/ obesity prevalence in females follows the same geographical and age pattern of prevalence in males, but the prevalence in women was remarkably higher than males.*

The prevalence rate of diabetes in Iranian females based on the province and age groups- 1990 to 2013



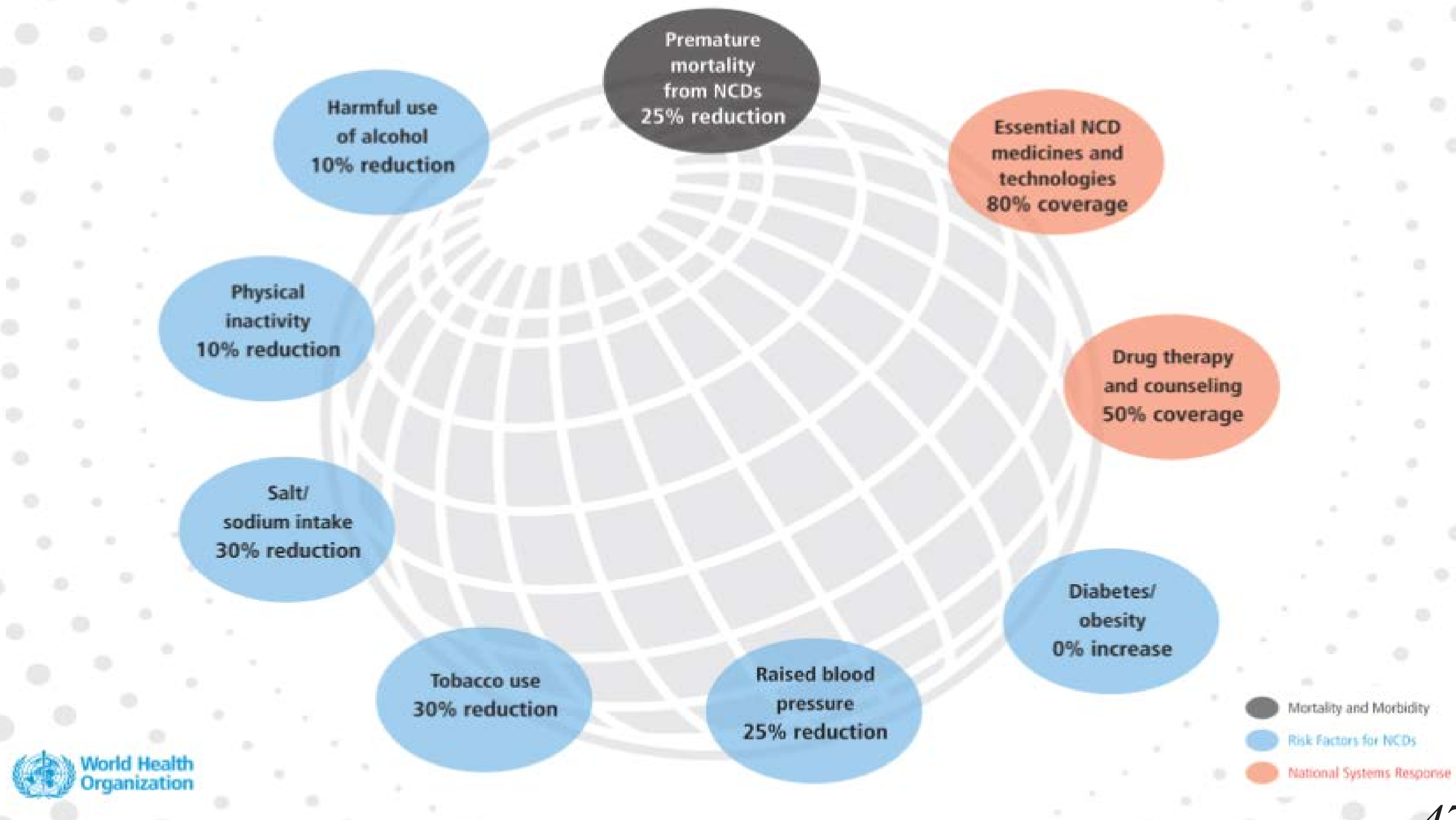
The highest prevalence rate of diabetes was in 45 to 64 years old Iranian males. This prevalence rate followed the geographical distribution and it was very higher in central regions in comparison with the other areas of Iran.

The prevalence rate of diabetes in Iranian males based on the province and age groups- 1990 to 2013



- ✓ *The prevalence rate of diabetes increased in all provinces.*
- ✓ *Diabetes prevalence in females follows the same geographical and age pattern of prevalence in males, but the prevalence in women was remarkably higher than males.*

9 voluntary global targets of WHO about NCDs by 2025



The NCD targets for Iranian population

A) The targets that are as the same as WHO targets:

Target 1. ***25%*** *reduction in the risk of premature death from cardiovascular disease, cancer, diabetes, chronic lung disease*

Target 2. *At least* ***10%*** *relative reduction in alcohol consumption*

Target 4. ***30%*** *relative reduction in the average salt intake in the population*

Target 5. ***30%*** *relative reduction in the prevalence of tobacco use in persons aged 15+ years*

Target 6. ***25%*** *relative reduction in the prevalence of high blood pressure* or contain the prevalence of raised blood pressure

Target 7. ***Halt*** *the rates of diabetes and obesity*

Target 9. *An* ***80%*** *availability of the affordable basic technologies and essential medicines, including generics in private and public sectors*

The NCD targets for Iranian population

B) different targets with the WHO targets:

Target 3. A 20% (10%) relative reduction in prevalence of insufficient physical activity

Target 8. *At least* ***70%*** *(50%) of eligible people receive drug therapy and counselling to prevent heart attacks and strokes*

Target 10. ***Zero trans fatty acid*** *in food & oily products*

******* Iran's Specific Targets***

- ✓ Target 11. 20% Relative reduction in mortality rate due to traffic injuries
- ✓ Target 12. A 10% relative reduction in mortality rate due to drug abuse
- ✓ Target 13. 20% increase in access to treatment for mental diseases

National Iranian NCDs Committee

- The reasons for establishing the national Committee for prevention and control of non-communicable diseases:

- ✓ *As a response to the remarkable increase in NCDs in the region*
- ✓ *In order to meet Iran's international commitments in the field of non-communicable diseases*
- ✓ *As a reference decision-making body for non-communicable diseases in the Ministry of Health*
- ✓ *As a solution to involve other ministries, government agencies and non-governmental organizations and to mobilize resources for the prevention and control of non-communicable diseases*

National NCDs Committee

The main goal:

To make integration in policy-making, planning, and monitoring (not implementation) on all activities in the field of non-communicable diseases and related risk factors in the Islamic Republic of Iran

National NCDs Committee

Duties:

1. Development and ratification of various aspects of "National comprehensive plan for prevention and control of NCDs and related risk factors" via collaboration with executive *representatives of all devices governance, policy, legislative, and judicial organs*

2. *Developing the operational plans for various components of the program through the relative consensus of all official executive parts of the Ministry of Health, academic elites, and agencies which support patients*

3. *National advocacy and attracting community supports for the implementation and development of the "national comprehensive plan on prevention and control of non-communicable diseases and related risk factors"*

.....to be continued

National NCDs Committee

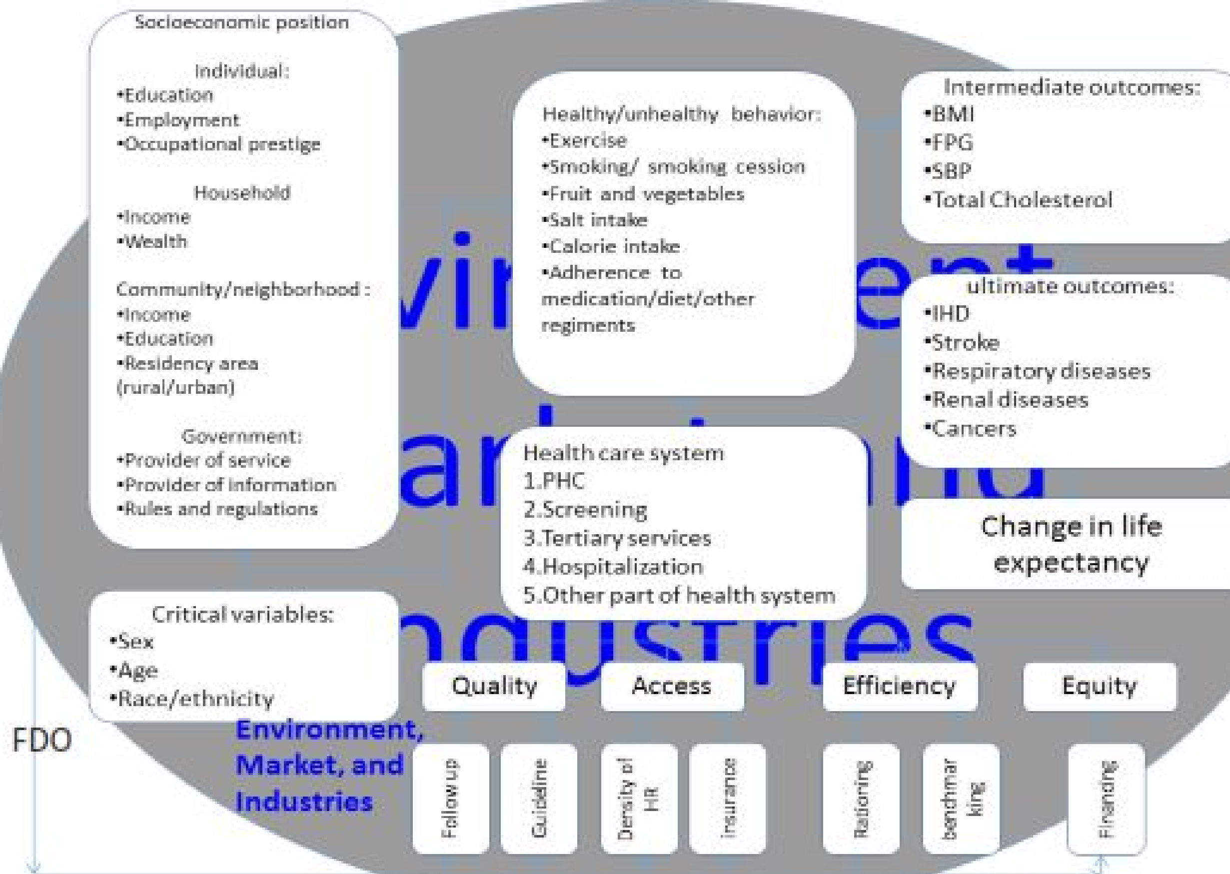
Duties:

4. Continuous monitoring of *the* annual *action plan of all sectors of the Ministry of Health that are involved in the "national comprehensive plan for prevention and control of non-communicable diseases and related risk factors" and providing continuous and systematic feedbacks to stakeholders*

5. *Supporting and monitoring the activities of university committees of the "national comprehensive plan on prevention and control of NCDs and related risk factors"*

6. *Paying attention to country's priorities, equitable access of all people to services, and cost-effectiveness considerations in development and implementation of the "national comprehensive plan for prevention and control of NCDs and related risk factors"*

Conceptual framework of INCDC



Intra-sectoral colleagues (Deputies and offices f Ministry of Health and Medical Education (MOHME)

National Committee of NCDs Prevention and Control

MOHME

Supreme Council of Health and Food Security

Deputy for Public Health

Deputy for Treatment

FDO

Deputy for Education

Deputy for Research

Deputy for Development

Inter-sectoral colleagues (Ministries and Organizations)

- Interior Ministry
- Ministry of Agriculture
- Ministry of Cooperatives, Labor, and Social Welfare
- Ministry of Culture and Islamic Guidance
- Ministry of Economic Affairs and Finance
- Ministry of Education
- Ministry of Energy
- Ministry of Industry, Mine, and Trade
- Ministry of Roads and City Planning
- Islamic Republic of Iran Broadcasting
- Ministry of Sport and Youth
- Environmental Protection Organization
- Management and Planning Organization

Cooperation memorandum of MOHME and collaborative organizations in the prevention and control of non-communicable diseases and risk factors

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"

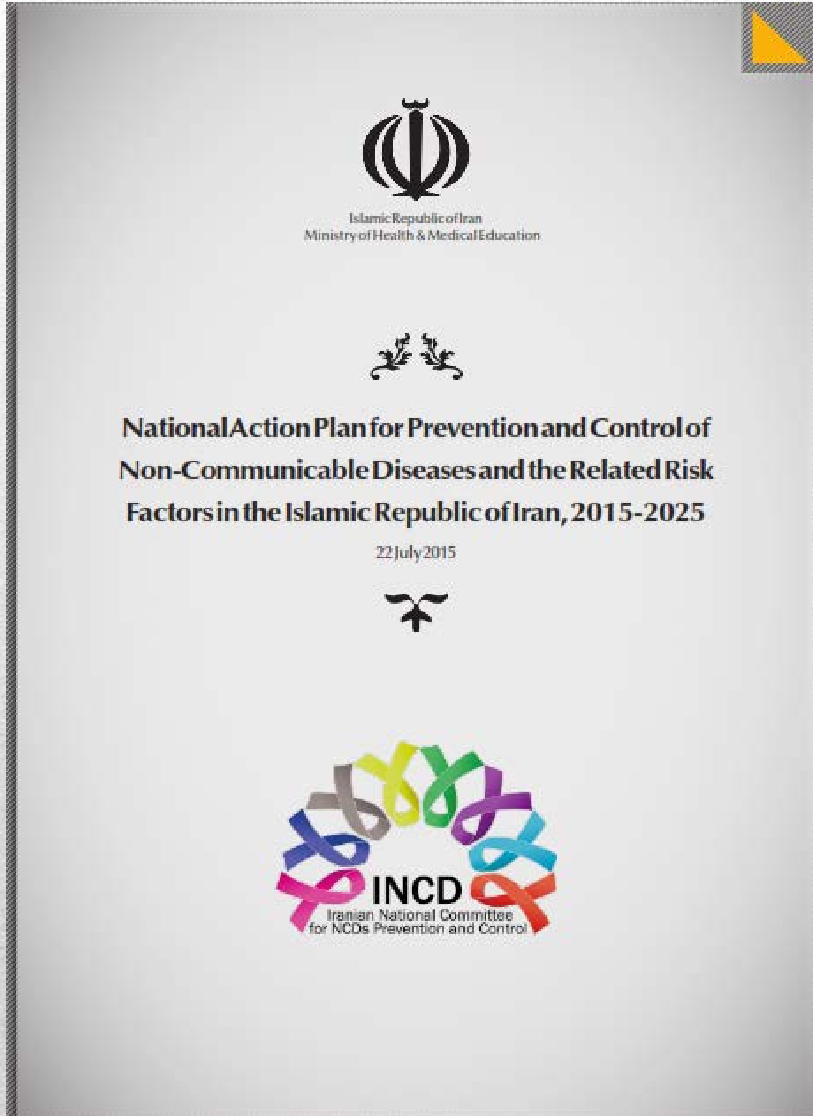
B. The corresponding ministry

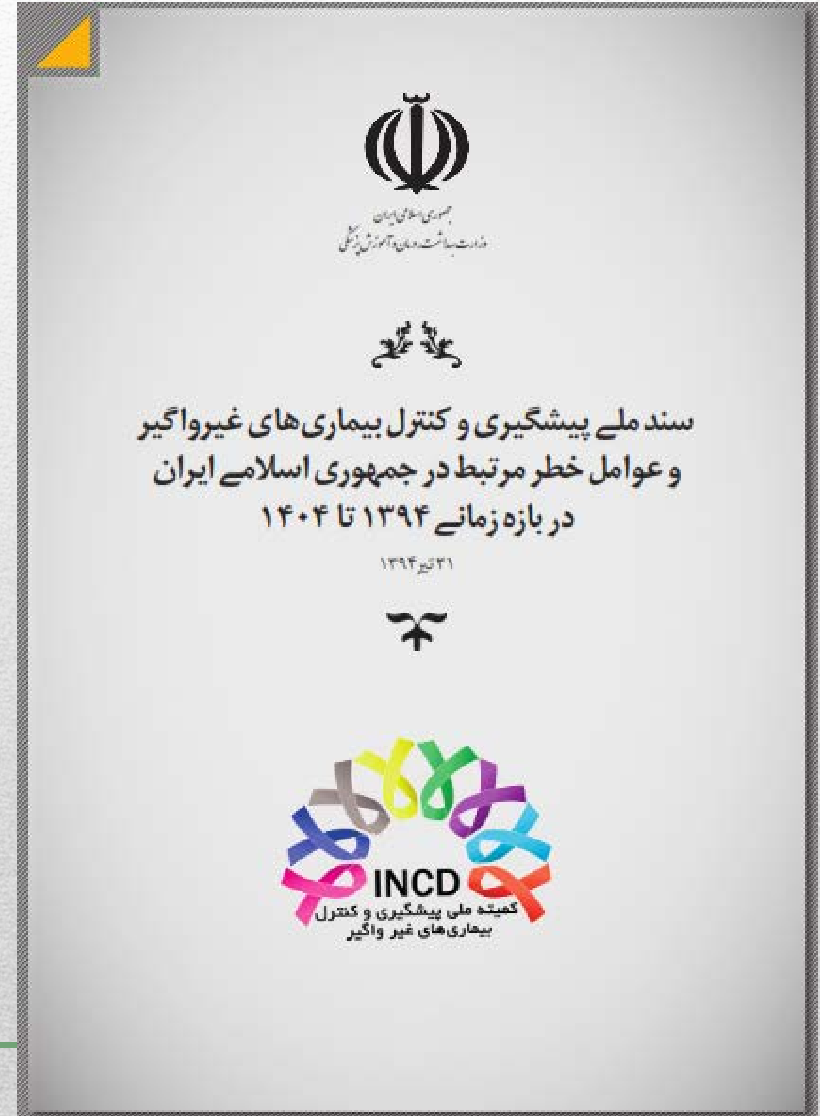
The obligations in this part may differ depending on the corresponding ministry.

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.

NCDs' Action Plan of Iran





Chapters of NCDs' Action Plan of Iran

فصل یک

فصل دو

فصل سه

فصل چهار

فصل پنج

فصل شش

فصل هفت

مداخلات
درون‌بخشی
وبرون‌بخشی
کمیته‌ملی
پیشگیری‌و
کنترل‌بیماری‌های
غیرواگیر

Opportunities for prevention and control of non-communicable diseases

1- Primary health care system in the form of Health care networks in the country

- *The presence of primary health care system in the form of health care networks in the country*
- *Establishing a comprehensive primary health care system in the country and taking advantage of skilled health workers (Behvarz) in the most peripheral areas of service delivery can provide an appropriate environment for the implementation of programs related to the prevention and control of non-communicable diseases and related risk factors.*

2- Family physician program

- *The presence of a doctor, along with health workers (Behvarz), can lead to a much stronger impact.*
- *It not only facilitated the prevention and control of non-communicable diseases through preventive and treatment activities, but also improves the health care system across the country.*
- *Expanding family physician program from rural to urban areas should be seen as another opportunity to achieve the objectives of the National Committee on prevention and control of non-communicable diseases.*

Opportunities for prevention and control of non-communicable diseases

3- Integration of medical education and health in the Ministry of Health and Medical Education

- *Integration of medical education and health in the Ministry of Health and Medical Education*
- *Focusing on appropriate training courses (based on the current challenges in the country) in order to train professional manpower as well as creating the perfect atmosphere for research to find evidence based solutions are among the parameters that demonstrate the effectiveness of the integration for strengthening the health care system in Iran. Thus it can lead to prevention and control of non-communicable diseases which is currently one of the most important health problems in the country.*

4- The transformation of the health system reform plan

- *The aim of this project is to provide Iranian people with appropriate services in the field of health and medicine. The implementation of this plan provides a ground for more investment in health and facilitates the achievement of its objectives including the prevention and control of non-communicable diseases. Given the high prevalence and high burden of non-communicable diseases in the country, the health system reform plan could pave the way for improving the management of non-communicable diseases.*

The stages of implementation of *national comprehensive plan on prevention and control of non-communicable diseases and related risk factors*

1. Intra- sectoral

a) National Level

1. *Designing sub-activities in collaboration with the deputies of the MoHME*
2. *Developing action plan and required resources*
3. *Implementing the plan*
4. *providing the reports every three months to the committee*
5. *Supervising (monitoring and evaluation)*

b) Provincial Level

Developing provincial document for 31 provinces and paving the necessary stages same as the national level

The stages of implementation of *national comprehensive plan on prevention and control of non-communicable diseases and related risk factors*

2. Inter-sectoral

1. *Signing a memorandum*
2. *Establishing common groups with every ministry/ organization*
3. *Developing common activities*
4. *Developing action plan for every ministry/ organization*
5. *Supplying resources*
6. *Implementing the plans*
7. *providing the reports every three months to the committee*
8. *Providing the report on the progress of the national document to the cabinet with defined frequency*
9. *Supervision (monitoring and evaluation)*

EMRI

Conclusion

In today's world, non-communicable diseases are the main cause of death and disability in all countries of the world, including Iran. To deal with these diseases and related risk factors, there is a need for collective attempt of health authorities and officials of other organizations who are directly and indirectly involved in public health related demands. ***This document is aimed to determine the relationships and tasks within and outside of the health sector****, so that to utilize* ***the collaboration of all related organizations*** *in order to facilitate the control and management of non-communicable diseases in the Islamic Republic of Iran.*

Thank you