



Deaths: Leading Causes for 2011-2012

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Abstract

Introduction: This report presents 2011-2012 data on leading causes of death in the Islamic Republic of Iran by Province.

Methods: Data in this report are based on information from all death certificates filed in the 31 provinces in 2011-2012. Causes of death classified by the International Classification of Diseases, Tenth Revision (ICD-10) are ranked according to the number of deaths assigned to rank able causes

Results: In 2011-2012 the 5 leading causes of death were, in rank order: Diseases of the Circulatory System (including Heart Disease); Neoplasms; Accidents (Unintentional Injuries); Diseases of the Respiratory System; Diseases of the Nervous System. First cause of death in all over the country and in each province was Diseases of the Circulatory System (including Heart Disease).

Conclusion: Improving diagnostic methods to diagnose Diseases of the Circulatory System sooner and also improving level of access to advanced cardiac care in all over the country is highly recommended

Keywords: Mortality, Cause of Death, ICD-10

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1. Introduction

Ranking causes of death is a popular method of presenting mortality statistics. Leading cause-of-death data have been published in United States since 1952 (beginning with 1949 mortality data) when official tabulations ranking causes of death were first introduced [1]. Users of this method of presentation should be aware of its inherent limitations. Ranking causes of death is, to some extent, an arbitrary procedure. The rank order of any particular cause of death will depend on the list of causes from which the selection is made and on the rules applied in making the selection. Different cause lists and ranking rules will typically produce different leading causes of death. Recognizing the need for a consistent ranking procedure to be used by state health departments and the National Office of Vital Statistics, in 1951 the Public Health Conference on Records and Statistics recommended that state and federal agencies responsible for identifying diseases of public health importance adopt a uniform ranking procedure using a standard list of causes of death [2]. The procedures implemented in 1952 are essentially the same as those currently used by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS); however, the cause-of-death lists have been expanded and altered over time with each subsequent revision of the *International Classification of Diseases* (ICD). Cause-of-death data are based on the underlying cause of death.

Cause-of-death ranking is a useful tool for illustrating the relative burden of cause-specific mortality. However, it should be used with a clear understanding of what the rankings mean. Literally, the rankings denote the most

frequently occurring causes of death among those causes eligible to be ranked. Rankings do not illustrate cause-specific mortality risk as depicted by mortality rates. The rank of a specific cause may decline over time even if its mortality rate has not changed, or its rank may remain the same over time even if its mortality rate is on the decline.

It is also important to note that rankings do not necessarily denote the causes of death of greatest public health importance. Some causes of death of public health import are excluded from the ranking procedure. For example, Malignant neoplasms of the trachea, bronchus and lung (lung cancer) and Motor vehicle accidents are not rank able causes of death, although they can be identified using the standard mortality tabulation lists. If these causes were included in the current rankings, Motor vehicle accidents would be placed among the 5 leading causes of death. However, it is subsumed in broader rank able category, namely, Accidents (Unintentional Injuries). Although not perfectly suitable in all circumstances, the current framework provides a rank able list of causes of death that has broad appeal and acceptance in the general public health community.

This report presents 2011-2012 data on leading causes of death in the Islamic Republic of Iran by Province.

2. Methods

1. Data

Data in this report are based on information from all death certificates filed in the 31 provinces in 2011-2012 [3]. Death certificates are generally completed by funeral directors, attending physicians, medical examiners, and coroners.

Cause-of-death statistics for 2011-2012 presented in this report are classified in accordance with the 10th revision of the ICD (ICD-10) [4].

2. Procedures for ranking causes of death

The procedures used for ranking causes of death are consistent with the recommendations of the 1951 Public Health Conference on Records and Statistics [2]. Causes are ranked according to the number of deaths assigned to rank able causes. The number of deaths is used as the ranking criterion because it most accurately reflects the frequency of cause-specific mortality. Although crude death rates could technically be used as the ranking criterion because the

population denominator of each rate is constant across all cause-of-death categories, these rates are less than ideal. Crude death rates are typically expressed per 100,000 population and are often rounded to one decimal place, reducing the precision of the ranking criterion. This is especially problematic when ranking causes of death for small population subgroups or geographic areas, because it may be impossible to differentiate the ranks for several causes.

Developed for use with ICD-10, the "List of 358 Selected Causes of Death" [4] is used to select 20 rank able causes (denoted by Greek alphabetic letters) from which the leading cause presented in Table 1.

Table 1. List of 358 Selected Causes of Death

Number	Cause of Death
I	Certain Infectious and Parasitic Diseases
	Intestinal infectious diseases
	Cholera
	Other intestinal infectious diseases
	Typhoid fever
	Paratyphoid fevers and other salmonella
	Shigellosis
	Other bacterial food-borne intoxications
	Amebiasis
	Intestinal infections due to other specified organisms
	Diarrhea and gastroenteritis of infectious origin
	Tuberculosis
	Respiratory tuberculosis
	Other tuberculosis
	Zoonotic and other bacterial diseases
	Plague
	Brucellosis
	Tetanus
	Diphtheria
	Whooping cough
	Scarlet fever and erysipelas
	Meningococcal infection
	Septicemia
	Other zoonotic and bacterial diseases
	Infections with a predominately sexual mode of transmission
	Syphilis
	Cardiovascular syphilis
	Neurosyphilis
	Other and unspecified syphilis
	Gonococcal infection
	Other infections with a predominately sexual mode of transmission
	Other infections caused by spirochetes, chlamydia or rickettsia
	Lyme disease
	Typhus fever
	All other infections caused by spirochetes, chlamydia or rickettsia
	Viral
	Acute poliomyelitis
	Rabies
	Arthropod-borne viral encephalitis
	Yellow fever
	Other and unspecified arthropod-borne viral and hemorrhagic fevers
	Herpesviral (herpes simplex) infections
	Zoster (herpes zoster)
	Smallpox
	Measles
	Rubella (German measles)
	Viral hepatitis
	Human immunodeficiency virus (HIV) disease
	Human immunodeficiency virus (HIV) disease resulting in infectious and parasitic diseases
	Human immunodeficiency virus (HIV) disease resulting in malignant neoplasms
	Human immunodeficiency virus (HIV) disease resulting in other specified diseases

Number	Cause of Death
	Human immunodeficiency virus (HIV) disease resulting in other conditions Unspecified human immunodeficiency virus (HIV) disease All other and unspecified viral diseases Other and unspecified infectious and parasitic diseases and their sequelae Mycoses Protozoal diseases Malaria Leishmaniasis Trypanosomiasis Pneumocystosis Other and unspecified protozoal diseases Helminthiasis Schistosomiasis (bilharziasis) Other and unspecified helminthiasis Sequelae of tuberculosis Sequelae of poliomyelitis All other and unspecified infectious and parasitic diseases and their sequelae
II	Neoplasms
	Malignant neoplasms Malignant neoplasms of lip, oral cavity and pharynx Of lip Of tongue Of pharynx Of other and unspecified sites within the lip, oral cavity and pharynx Malignant neoplasms of digestive organs Of esophagus Of stomach Of small intestine Of colon, rectum and anus Colon Rectosigmoid junction and rectum Anus and anal canal Of liver and intrahepatic bile ducts Liver Intrahepatic bile duct carcinoma Of gallbladder and extrahepatic bile ducts Of pancreas Of other and ill-defined digestive organs Malignant neoplasms of respiratory and intrathoracic organs Of nasal cavity, middle ear and accessory sinuses Of larynx Of trachea, bronchus and lung Of thymus, heart, mediastinum and pleura Of other and ill-defined sites in respiratory system and intrathoracic organs Malignant neoplasms of bone and articular cartilage Melanoma and other malignant neoplasms of skin Malignant melanoma of skin Other malignant neoplasms of skin Malignant neoplasms of mesothelial and soft tissue Mesothelioma Kaposi's sarcoma Of other mesothelial and soft tissue Malignant neoplasm of breast Malignant neoplasms of female genital organs Of vulva and vagina Of cervix uteri Of corpus uteri and uterus, part unspecified Of ovary Of other and unspecified female genital organs Of placenta Malignant neoplasms of male genital organs Of prostate Of testis Of penis and other and unspecified male genital organs Malignant neoplasms of urinary tract Of kidney and renal pelvis

Number	Cause of Death
	Of bladder Of other and unspecified sites within the urinary tract Malignant neoplasm of eye and adnexa Malignant neoplasms of meninges, brain and other parts of central nervous system Of brain Of other parts of central nervous system Malignant neoplasms of thyroid and other endocrine glands Other malignant neoplasms of other and unspecified sites Malignant neoplasms of lymphoid, hematopoietic and related tissue Hodgkin's disease Of other lymphoid, hematopoietic and related tissue Non-Hodgkin's lymphoma Of other and unspecified lymphoid, hematopoietic and related tissue Malignant immunoproliferative diseases Multiple myeloma and malignant plasma cell neoplasms Leukemia Lymphoid leukemia Myeloid leukemia Monocytic leukemia Other and unspecified leukemia In situ neoplasms Carcinoma in situ of breast and genitourinary system Carcinoma in situ of other and unspecified sites Benign neoplasms Of female genital organs Of eye, brain and other parts of central nervous system Of other and unspecified sites Neoplasms of uncertain or unknown behavior of specified sites Neoplasm of uncertain or unknown behavior of unspecified sites
III	Diseases of the Blood and Blood-forming Organs and certain disorders involving the Immunemechanism Anemias Nutritional anemias Hemolytic anemias Aplastic anemias Acute posthemorrhagic and other anemias Coagulation defects, purpura and other hemorrhagic conditions Other diseases of blood and blood-forming organs Certain disorders involving the immune mechanism
IV	Endocrine, Nutritional and Metabolic Diseases Endocrine diseases Disorders of thyroid gland Diabetes mellitus Disorders of pituitary gland Disorders of adrenal glands Diseases of thymus Other endocrine diseases Nutritional diseases Malnutrition Nutritional marasmus Other and unspecified malnutrition Other nutritional deficiencies Obesity and other hyperalimentation Metabolic disorders Cystic fibrosis Volume depletion, disorders of fluid, electrolyte and acid-base balance Other metabolic disorders
V	Mental and Behavioral Disorders Organic dementia Other and unspecified organic mental disorders Mental and behavioral disorders due to psychoactive substance use Mental and behavioral disorders due to other psychoactive substance use Schizophrenia, schizotypal and delusional disorders Mood (affective) disorders Neurotic, stress-related and somatoform disorders Mental retardation Other and unspecified mental and behavioral disorders

Number	Cause of Death
VI	Diseases of the Nervous System
	Meningitis
	Other inflammatory diseases of central nervous system
	Parkinson's disease
	Alzheimer's disease
	Multiple sclerosis
	Epilepsy
	Transient cerebral ischemic attacks and related syndromes
	Infantile cerebral palsy
	All other diseases of nervous system
VII	Diseases of the Eye and Adnexa
VIII	Diseases of the Ear and Mastoid Process
IX	Diseases of the Circulatory System
	Acute rheumatic fever and chronic rheumatic heart diseases
	Acute rheumatic fever
	Chronic rheumatic heart diseases
	Rheumatic mitral valve diseases
	Rheumatic aortic valve diseases
	Disorders of both mitral and aortic valves
	Other chronic rheumatic heart diseases
	Hypertensive diseases
	Essential (primary) hypertension
	Hypertensive heart disease
	Hypertensive renal disease
	Hypertensive heart and renal disease
	Ischemic heart diseases
	Acute myocardial infarction
	Other acute ischemic heart diseases
	Other forms of chronic ischemic heart disease
	Atherosclerotic cardiovascular disease, so described
	All other forms of chronic ischemic heart disease
	Other heart diseases
	Pulmonary heart disease and diseases of pulmonary circulation
	Pulmonary embolism
	Other pulmonary heart disease and diseases of pulmonary circulation
	Other non-pulmonary forms of heart disease
	Acute and subacute endocarditis
	Diseases of pericardium and acute myocarditis
	Other diseases of endocardium
	Nonrheumatic mitral valve disorders
	Nonrheumatic aortic valve disorders
	All other diseases of endocardium
	Cardiomyopathy
	Conduction disorders and cardiac dysrhythmias
	Heart failure
	Congestive heart failure
	Other and unspecified heart failure
	Myocarditis, unspecified and myocardial degeneration
	All other and ill-defined forms of heart
	Cerebrovascular diseases
	Subarachnoid hemorrhage
	Intracerebral and other intracranial hemorrhage
	Cerebral infarction
	Stroke, not specified as hemorrhage or infarction
	Other cerebrovascular diseases and their sequelae
	Diseases of arteries, arterioles and capillaries
	Atherosclerosis
	Aortic aneurysm and dissection
	Other diseases of arteries, arterioles and capillaries
	Other disorders of circulatory system
	Phlebitis, thrombophlebitis, venous embolism and thrombosis
	All other and unspecified disorders of circulatory system
X	Diseases of the Respiratory System
	Acute upper respiratory infections
	Acute pharyngitis and tonsillitis
	Acute laryngitis and tracheitis

Number	Cause of Death
	Other and unspecified acute upper respiratory infections Other diseases of the respiratory system Influenza Pneumonia Viral pneumonia, not elsewhere classified Bacterial pneumonia Pneumonia due to other or unspecified organisms Other acute lower respiratory infections Acute bronchitis and bronchiolitis Unspecified acute lower respiratory infection Other diseases of upper respiratory tract Chronic lower respiratory diseases Bronchitis, not specified as acute or chronic Chronic bronchitis Emphysema Other chronic obstructive pulmonary disease Asthma Bronchiectasis Lung diseases due to external agents Pneumoconiosis and chemical effects Pneumonitis due to solids and liquids Pneumonitis due to food and vomit Other pneumonitis due to solids and liquids Other lung diseases due to external agents Suppurative and necrotic conditions of lower respiratory tract Pleural effusion and plaque All other diseases of respiratory system
XI	Diseases of the Digestive System
	Diseases of oral cavity, salivary glands and jaws Diseases of other parts of digestive system Diseases of esophagus Peptic ulcer Gastric ulcer Duodenal ulcer Peptic ulcer, site unspecified Gastrojejunal ulcer Gastritis and duodenitis Dyspepsia and other diseases of stomach and duodenum Diseases of appendix Hernia Crohn's disease and ulcerative colitis Vascular disorders and obstruction of intestine without hernia Diverticular disease of intestine Other diseases of intestines and peritoneum Diseases of peritoneum Diseases of liver Alcoholic liver disease Chronic hepatitis, not elsewhere classified Fibrosis and cirrhosis of liver Other diseases of liver Cholelithiasis and other disorders of gallbladder Disorders of biliary tract and pancreas Pancreatitis Other disorders of biliary tract and pancreas All other diseases of digestive system
XII	Diseases of the Skin and Subcutaneous Tissue
	Infections of skin and subcutaneous tissue Other and unspecified diseases of skin and subcutaneous tissue
XIII	Diseases of the Musculoskeletal System and Connective Tissue
	Rheumatoid arthritis and related inflammatory polyarthropathies Systemic lupus erythematosus Other arthropathies and related disorders Dorsopathies Soft tissue disorders Osteopathies, chondropathies and other disorders of musculoskeletal system and connective tissue Osteoporosis

Number	Cause of Death
	Other osteopathies, chondropathies and disorders of musculoskeletal system and connective tissue
XIV	Diseases of the Genitourinary System
	Diseases of urinary system Glomerular and renal tubulo-interstitial diseases Glomerular diseases Acute and rapidly progressive nephritic syndrome Nephrotic syndrome Other and unspecified glomerular diseases Renal tubulo-interstitial diseases Renal failure Urolithiasis Other and unspecified disorders of kidney Urinary tract infection, site not specified Other diseases of urinary system Diseases of male genital organs Hyperplasia of prostate Other diseases of male genital organs Disorders of breast Disorders of female genital organs Inflammatory diseases of female pelvic organs Noninflammatory disorders of female genital tract
XV	Pregnancy, Childbirth and The Puerperium
	Pregnancy with abortive outcome Ectopic pregnancy Spontaneous abortion Medical abortion Other abortion Other and unspecified pregnancy with abortive outcome Other direct obstetric deaths Eclampsia and pre-eclampsia Hemorrhage of pregnancy and childbirth and placenta previa Complications predominantly related to the puerperium Obstetric embolism Other complications predominantly related to the puerperium All other direct obstetric causes Obstetric death of unspecified cause Other deaths related to pregnancy, childbirth and the puerperium Indirect obstetric deaths
XVI	Certain Conditions Originating in the Perinatal Period
	Newborn affected by maternal factors and by complications of pregnancy, labor and delivery Disorders related to short gestation and low birth weight, not elsewhere classified Birth trauma Intrauterine hypoxia and birth asphyxia Respiratory distress of newborn Other respiratory conditions originating in the perinatal period Infections specific to the perinatal period Other and unspecified conditions originating in the perinatal period
XVII	Congenital Malformations, Deformations and Chromosomal Abnormalities
	Anencephaly and similar malformations Spina bifida All other congenital malformations of nervous system Congenital malformations of heart Other congenital malformations of circulatory system Congenital malformations of respiratory system Other congenital malformations and deformations Down syndrome All other chromosomal abnormalities, not elsewhere classified
XVIII	Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified
	Senility
XIX	Ill-defined and unknown causes of mortality
	Sudden infant death syndrome Other ill-defined and unknown causes of mortality All other symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified
XX	External causes of mortality
	Accidents (unintentional injuries)

Number	Cause of Death
	Transport accidents
	Railway accidents
	Motor vehicle accidents
	Pedestrian involved in collision with motor vehicle
	Pedalcyclist involved in collision with motor vehicle
	Motorcyclist involved in any accident except collision with railway train
	Motor vehicle accident involving collision with railway train
	Motorcyclist involved in collision with railway train
	Other motor vehicle accident involving collision with railway train
	Occupant of motor vehicle involved in collision with other (non-motorized) road vehicle, streetcar, animal or pedestrian
	Occupant of car, pickup truck or van involved in collision with other motor vehicle
	Occupant of heavy transport vehicle or bus involved in collision with other motor vehicle
	Occupant of motor vehicle involved in noncollision accident
	Occupant of special-use motor vehicle involved in any accident
	Other and unspecified motor vehicle accidents
	Streetcar accidents
	Other and unspecified land transport accidents
	Water transport accidents
	Air and space transport accidents
	Other and unspecified transport accidents and their sequelae
	Fall on same level
	Fall from one level to another
	Unspecified fall
	Accidental discharge of firearms
	Accidental explosion
	Accidental drowning and submersion
	Accidental inhalation and ingestion of food or other objects causing obstruction of respiratory tract
	Other accidental and unspecified threats to breathing
	Accidental exposure to electric current
	Accidental exposure to radiation
	Accidental exposure to smoke, fire and flames
	Accidental contact with heat and hot substances
	Lightning
	Earthquake, volcanic eruption, avalanche, landslide and other earth movements
	Cataclysmic storm and flood
	Accidental poisoning and exposure to noxious substances
	Accidental poisoning by and exposure to drugs and other biological substances
	Accidental poisoning by and exposure to other and unspecified solid or liquid substances
	Accidental poisoning by and exposure to other gases and vapors
	All other and unspecified accidents and their sequelae
	Intentional self-harm (suicide)
	Intentional self-poisoning (suicide) by and exposure to drugs and other biological substances
	Intentional self-poisoning (suicide) by and exposure to other and unspecified solid or liquid substances and their vapors
	Intentional self-poisoning (suicide) by and exposure to other gases and vapors
	Intentional self-harm (suicide) by hanging, strangulation and suffocation
	Intentional self-harm (suicide) by discharge of firearms
	Intentional self-harm (suicide) by jumping from a high place
	Intentional self-harm (suicide) by all other and unspecified means and their sequelae
	Assault (homicide)
	Assault (homicide) by drugs, biological substances and other and unspecified noxious substances
	Assault (homicide) by hanging, strangulation and suffocation
	Assault (homicide) by discharge of firearms
	Assault (homicide) by sharp object
	Assault (homicide) by blunt object
	Assault (homicide) by bodily force
	Sexual assault (homicide) by bodily force
	Neglect, abandonment and other maltreatment syndromes
	Assault (homicide) by all other and unspecified means and their sequelae
	Event of undetermined intent
	Poisoning by and exposure to drugs and biological substances, undetermined intent
	Poisoning by and exposure to other and unspecified solid or liquid substance, undetermined intent
	Poisoning by and exposure to other gases and vapors, undetermined intent
	Discharge of firearms, undetermined intent
	Falling, jumping or pushed from a high place, undetermined intent
	All other and unspecified events of undetermined intent and their sequelae
	Legal intervention

Number	Cause of Death
	Legal execution
	Other legal intervention and their sequelae
	Operations of war and their sequelae
	Complications of medical and surgical care
	Drugs, medicaments and biological substances causing adverse effects in therapeutic use, and their sequelae
	Misadventures to patients during medical and surgical care and their sequelae
	Other complications of medical and surgical care and their sequelae

3. Results

In 2011-2012, the 5 leading causes of death accounted for 65.29% of all deaths occurring in the Islamic Republic of Iran.

The top two causes, Diseases of the Circulatory System (including Heart Disease) and Neoplasms, accounted for 46.62% of all deaths in 2011-2012. Accidents (Unintentional Injuries) ranked third, Diseases of the Respiratory System

fourth and Diseases of the Nervous System fifth; together, these three causes accounted for 18.67% of all deaths in 2011-2012.

Diseases of the Circulatory System (including Heart Disease) were the first cause of death in all provinces. In some provinces, some other causes were among the 5 leading causes such as Certain Infectious and Parasitic Diseases. The detailed data is given in Table 2.

Table 2. Deaths and percentage of total deaths for the 5 leading causes of death, by province: Islamic Republic of Iran, 2011-2012

Province	All Causes	1 st Cause	2 nd Cause	3 rd Cause	4 th Cause	5 th Cause
		Number of deaths	Number of deaths	Number of deaths	Number of deaths	Number of deaths
		Percent of total deaths	Percent of total deaths	Percent of total deaths	Percent of total deaths	Percent of total deaths
Whole Country	340990	Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Diseases of the Nervous System
		130734	28238	26573	23517	13565
		38.34	8.28	7.79	6.9	3.98
Alborz	7381	Diseases of the Circulatory System	Diseases of the Nervous System	Neoplasms	Diseases of the Respiratory System	Accidents (Unintentional Injuries)
		2495	926	796	703	156
		33.8	12.55	10.87	9.52	2.11
Ardebil	6270	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System	Congenital Malformations, Deformations and Chromosomal Abnormalities
		2965	1045	492	338	199
		47.29	16.67	7.85	5.39	3.17
Azarbaijan Gharbi	13863	Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Diseases of the Nervous System
		4567	1369	1062	674	410
		32.94	9.88	7.66	4.86	2.96
Azarbaijan Sharghi	21585	Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Congenital Malformations, Deformations and Chromosomal Abnormalities
		7160	1876	1453	1399	960
		33.17	8.69	6.73	6.48	4.45
Booshehr	3805	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System	Certain Conditions Originating in the Perinatal Period
		1174	384	253	235	142
		30.8	10.09	6.65	6.18	3.73
Chaharmahal Va Bakhtiari	4166	Diseases of the Circulatory System	Diseases of the Respiratory System	Accidents (Unintentional Injuries)	Neoplasms	Pregnancy, Childbirth and the Puerperium
		1685	611	555	238	111
		40.45	14.67	13.32	5.71	2.66
Esfahan	22635	Diseases of the Circulatory System	Neoplasms	Diseases of the Respiratory System	Accidents (Unintentional Injuries)	Diseases of the Nervous System
		9558	1970	1552	1525	1473
		42.23	8.70	6.86	6.74	6.51

Fars	22800	Diseases of the Circulatory System	Congenital Malformations, Deformations and Chromosomal Abnormalities	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System
		9250	2460	2097	1659	1103
		40.57	10.79	9.20	7.28	4.84
Golestan	7814	Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Diseases of the Nervous System
		2588	759	738	373	173
		33.12	9.71	9.44	4.77	2.21
Guilan	15052	Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Diseases of the Nervous System
		6196	1444	1044	657	441
		41.16	9.59	6.94	4.36	2.93
Hamedan	10051	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System	Diseases of the Nervous System
		3719	763	670	514	283
		37.00	7.59	6.67	5.11	2.82
Hormozgan	6222	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Congenital Malformations, Deformations and Chromosomal Abnormalities	Diseases of the Respiratory System	Diseases of the Musculoskeletal System and Connective Tissue
		1864	770	386	314	314
		29.96	12.38	6.2	5.05	5.05
Ilam	2306	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System	Certain Conditions Originating in the Perinatal Period
		1090	296	207	65	47
		47.27	12.84	8.98	2.82	2.04
Kerman	9124	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Neoplasms	Diseases of the Nervous System
		3745	1163	1039	711	233
		41.05	12.75	11.39	7.79	2.55
Kermanshah	10614	Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Congenital Malformations, Deformations and Chromosomal Abnormalities	Diseases of the Respiratory System
		5293	1000	1000	682	563
		49.87	9.42	9.42	6.43	5.30
Khoozestan	18369	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Diseases of the Nervous System	Neoplasms	Diseases of the Respiratory System
		6936	1769	1495	1155	846
		37.76	9.63	8.14	6.29	4.61
Khorasan Jonoobi	3409	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System	Certain Infectious and Parasitic Diseases
		1024	283	259	225	130
		30.04	8.30	7.60	6.60	3.81
Khorasan Razavi	29082	Diseases of the Circulatory System	Diseases of the Respiratory System	Neoplasms	Accidents (Unintentional Injuries)	Certain Conditions Originating in the Perinatal Period
		9936	4159	2410	2257	1352
		34.17	14.30	8.29	7.76	4.65
Khorasan Shomali	4095	Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Congenital Malformations, Deformations and Chromosomal Abnormalities	Diseases of the Respiratory System

Kohgiluyeh Va Boyer-Ahmad	3158	1045	393	332	322	182
		25.52	9.60	8.12	7.86	4.45
		Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Congenital Malformations, Deformations and Chromosomal Abnormalities	Certain Conditions Originating in the Perinatal Period
Kurdestan	7065	859	314	220	189	89
		27.2	9.94	6.97	5.98	2.82
		Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Certain Conditions Originating in the Perinatal Period
Lorestan	7989	3207	685	609	429	145
		45.39	9.70	8.62	6.07	2.05
		Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System	Diseases of the Nervous System
Markazi	7287	3310	806	722	428	269
		41.43	10.09	9.04	5.36	3.37
		Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Neoplasms	Diseases of the Respiratory System	Diseases of the Nervous System
Mazandaran	14880	2683	546	532	356	352
		36.82	7.45	7.30	4.88	4.83
		Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Diseases of the Nervous System
Qazvin	5123	6843	1510	1240	5730	293
		45.99	10.15	8.33	3.85	1.97
		Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Diseases of the Nervous System
Qom	4864	1915	466	442	412	357
		37.38	9.10	8.63	8.04	6.97
		Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Certain Infectious and Parasitic Diseases
Semnan	2992	1675	461	383	152	111
		34.44	9.48	7.87	3.13	2.28
		Diseases of the Circulatory System	Diseases of the Respiratory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Nervous System
Sistan Va Baluchistan	11376	1650	237	223	212	80
		55.15	7.90	7.45	7.09	2.67
		Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Congenital Malformations, Deformations and Chromosomal Abnormalities	Certain Infectious and Parasitic Diseases
Tehran	48159	2870	1455	773	642	469
		25.23	12.79	6.80	5.64	4.12
		Diseases of the Circulatory System	Neoplasms	Diseases of the Respiratory System	Certain Infectious and Parasitic Diseases	Diseases of the Nervous System
Yazd	4748	20732	4328	3934	3284	3105
		43.05	8.99	8.17	6.82	6.45
		Diseases of the Circulatory System	Accidents (Unintentional Injuries)	Diseases of the Nervous System	Neoplasms	Diseases of the Respiratory System
Zanjan	4706	1775	408	393	383	379
		37.38	8.59	8.28	8.07	7.98
		Diseases of the Circulatory System	Neoplasms	Accidents (Unintentional Injuries)	Diseases of the Respiratory System	Certain Infectious and Parasitic Diseases
		1285	420	416	207	153
		27.31	9.09	8.84	4.40	3.25

4. Discussion

This report presents leading causes of death in the Islamic Republic of Iran by province. Cause-of-death ranking is a popular method of presenting mortality statistics and is a useful tool for illustrating the relative burden of cause-specific mortality, but it must be used cautiously with a clear understanding of the limitations underlying the method. Consideration should also be given to the effects of random variation on cause-of-death rankings. When the number of events is small (perhaps fewer than 100 deaths), estimates of mortality risk are subject to random fluctuations. Especially when comparing rankings based on small numbers of deaths between groups or over time, it is important to be aware that differences in relative rankings may be attributable to random variability.

Because the rank order of any particular cause of death will depend on the list of causes from which selection is made and on the rules applied in making the selection, a clearly defined, uniform method for ranking causes of death is vital to maintain consistency in the reporting of leading causes by federal and state agencies. The standard method and cause lists described in this and other publications [1, 2, 4] provide this needed structure.

5. Conclusion

Diseases of the Circulatory System (including Heart Disease) is the most cause of death in each province and all over the country, so it is highly recommended to have more attention to these problems, improving diagnostic methods to

diagnose sooner and also improving level of access to advanced cardiac care in all over the country. Although further study is needed to specify these statistics by age, sex and other variables those are important for society health.

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Authors' Contribution

All authors were involved in the study design and result interpretation. All authors confirmed the final draft before submission.

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