

## Cancer Statistics in I.R. Iran in 2020

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Iran exhibited about 85,000,000 population in 2020. Based on the estimation provided by the global cancer observatory, the incidence of all cancer types in Iran was 70,704 among men and 60,484 among women, summing up to 131,191 cancer in both sexes (1). Also, 79,139 patients, including 46,436 men and 32,700 women, died of cancer in the same year. The 5-year prevalence for both sexes was 319,740, including 161,810 men and 157,790 women (Table 1). The age-standardized incidence rate (ASR) of all the cancer types, excluding non-melanoma cancer, was 165.0 per 100,000 for men and 139.0 per 100,000 for women.

The most common prevalent cancers were breast, prostate, colorectum, stomach, and leukemia (Figure 1). The five-year prevalence of breast cancer was about 56,000 patients in 2020. Given that about 16,000 breast cancers occur annually in Iran, about 40,000 would be breast cancer survivors who required additional supports than essential treatment services.

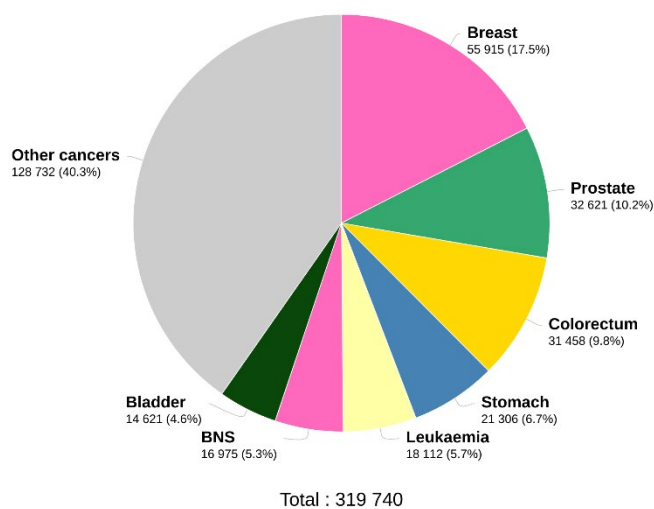
Figures 2 and 3 illustrate the age-standardized incidence (ASR) and mortality (ASMR) rates per 100,000 for top 10 cancers. We also reported crude and age-adjusted incidence and mortality rates for a more extensive list of cancer types in Tables 2 and 3.

**Table 1. Summary statistic 2020**

	Males	Females	Both sexes
Population	42 408 406	41 584 547	83 992 953
Number of new cancer cases	70 704	60 487	131 191
Age-standardized incidence rate (World)	165.0	139.0	152.7
Risk of developing cancer before the age of 75 years (%)	16.1	13.4	14.7
5-year prevalent cases	161 810	157 930	319 740

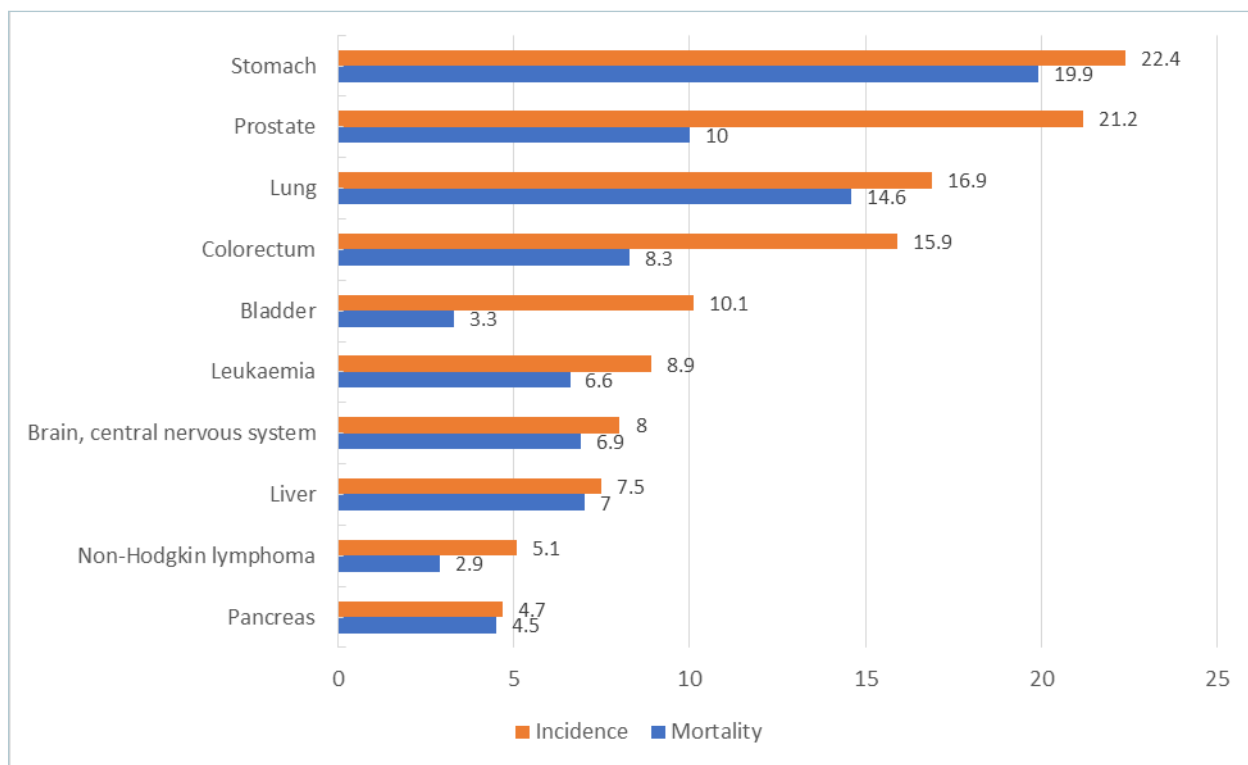
Source: Global Cancer Observatory, <https://gco.iarc.fr/today>





**Figure 1.** The most common prevalent cancers in Iran (both sexes)

Source: Global Cancer Observatory, <https://gco.iarc.fr/today>



**Figure 2.** Age-standarized Incidence Rate (ASR) and Mortality Rate (ASMR) per 100,000 for difference cancer types in Iranian Male, 2020.

Source: Global Cancer Observatory, <https://gco.iarc.fr/today>

Among men, the highest incidence rates per 100,000 were observed for stomach (ASR=22.4), prostate (ASR=21.2), and lung (ASR=16.9) cancers, but the

highest mortality rates were observed for stomach (ASMR=19.9), lung (ASMR=14.6), and prostate (ASMR 10.0) cancers (**Figure 2, Table 2**). The mor-

**Table 2. Estimated number, incidence, mortality rates per 100,000 for different cancer types in 2020 among Iranian Men.**

Incidence				Mortality			
Cancer	Number	Crude IR*	ASR**	Cancer	Number	Crude MR <sup>#</sup>	ASMR <sup>##</sup>
All Cancers	70704	166.7	165	All Cancers	46436	109.5	107.9
Stomach	9599	22.6	22.4	Stomach	8534	20.1	19.9
Prostate	8937	21.1	21.2	Lung	6229	14.7	14.6
Lung	7184	16.9	16.9	Prostate	4292	10.1	10
Colorectum	6874	16.2	15.9	Colorectum	3627	8.6	8.3
Bladder	4282	10.1	10.1	Liver	3004	7.1	7
Leukemia	3711	8.8	8.9	Brain	3000	7.1	6.9
Brain	3485	8.2	8	Leukemia	2848	6.7	6.6
Liver	3210	7.6	7.5	Pancreas	1900	4.5	4.5
Non-Hodgkin L	2226	5.2	5.1	Esophagus	1790	4.2	4.2
Pancreas	2003	4.7	4.7	Bladder	1398	3.3	3.3
Esophagus	1981	4.7	4.6	Larynx	1292	3	3
Larynx	1920	4.5	4.5	Non-Hodgkin L.	1264	3	2.9
Kidney	1026	2.4	2.4	Multiple myeloma	555	1.3	1.3
Thyroid	942	2.2	2	Kidney	510	1.2	1.2
Hodgkin L.	892	2.1	2	Hodgkin L.	341	0.8	0.77
Multiple myeloma	652	1.5	1.5	Lip & Oral Cavity	230	0.54	0.53
Lip & Oral Cavity	607	1.4	1.4	Gallbladder	175	0.41	0.4
Testis	542	1.3	1.1	Skin Melanoma	160	0.38	0.37
Skin Melanoma	319	0.75	0.72	Thyroid	149	0.35	0.35

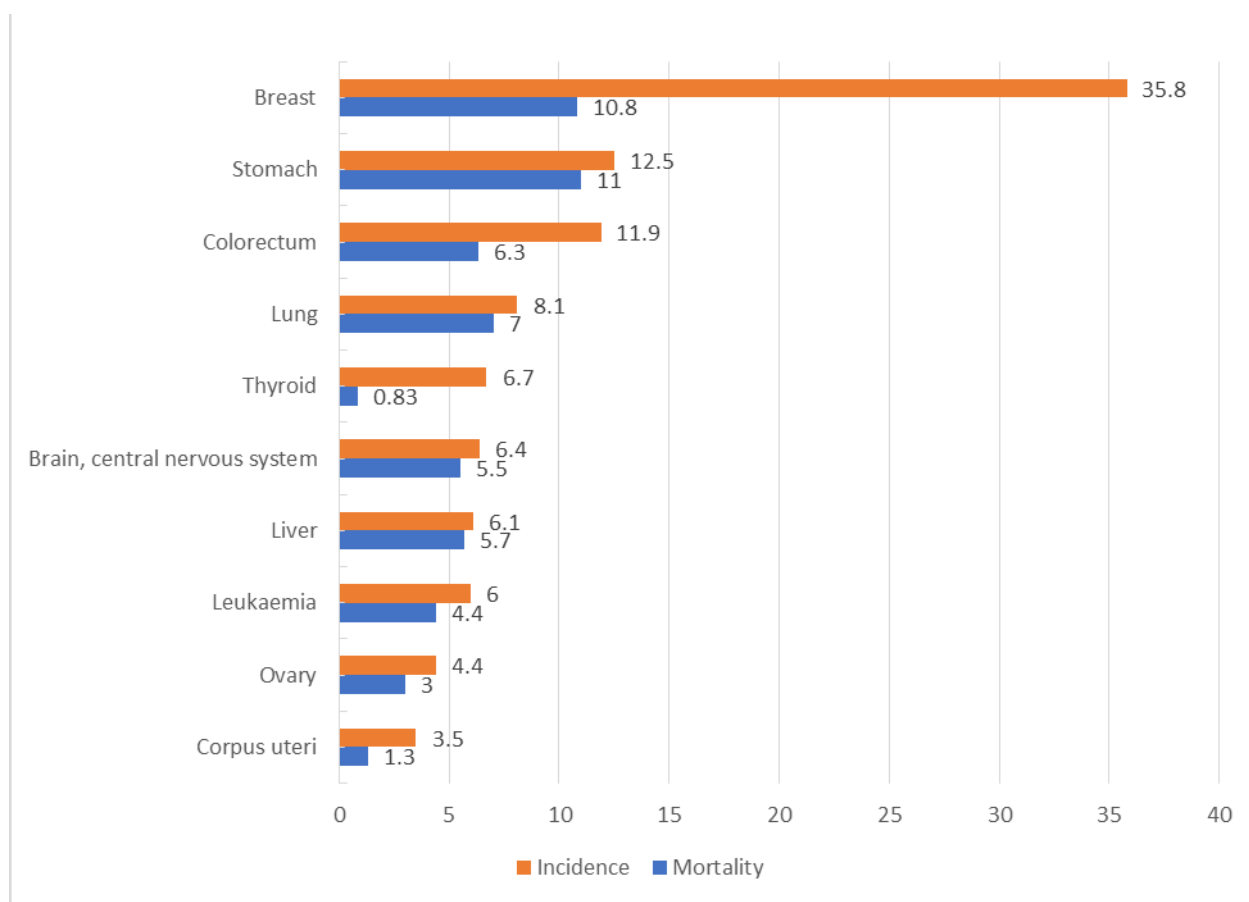
Source: Global Cancer Observatory: <https://gco.iarc.fr/today>

\*IR: Incidence Rate \*\*Age-standardized Incidence Rate (ASR)

<sup>#</sup>MR: Mortality Rate <sup>##</sup>Age-standardized Mortality Rate (ASMR)

tality to incidence ratio was low in stomach and lung cancers usually diagnosed in the advanced stages, but the ratio was higher in prostate and colorectal cancers. Among females, the highest incidence rates per 100,000 were observed for breast (ASR=35.8), stomach (ASR=12.5), and colorectal (ASR=11.9) cancers and the highest mortality rates were observed for stomach (ASMR=11.0), breast (ASMR=10.8), and lung (ASMR 7.0) cancers (**Figure 3, Table 3**). Likewise, the mortality to incidence ratio was low in stomach and lung cancers usually diagnosed in the

advanced stages. Still, the ratio was higher in breast and colorectal cancers, indicating a better prognosis. The incidence and mortality rates of cancer in Iran have increased slightly during the last decades (2,3). The ASR of all cancer sites, excluding non-melanoma skin cancer increased from 107.3 in 2008 to 152.7 per 100,000 in 2020. However, part of these differences could be due to the underreporting of cancer registries in previous years (4) and the improvement of population-based cancer registry (PBCR) in Iran in recent years (5). Cancer incidence and mortality rates are in-



**Figure 3.** Age-standardized Incidence Rate (ASR) and Mortality Rate (ASMR) per 100,000 for difference cancer types in Iranian Female, 2020:  
 Source: Global Cancer Observatory, <https://gco.iarc.fr/today>

**Table 3. Estimated number, incidence, mortality rates per 100,000 for different cancer types in 2020 among Iranian women.**

Incidence				Mortality			
Cancer	Number	Crude IR*	ASR**	Cancer	Number	Crude MR#	ASMR##
All Cancers	60487	145.5	139	All Cancers	32700	78.6	78.9
Breast	16967	40.8	35.8	Breast	4810	11.6	10.8
Colorectum	5068	12.2	11.9	Stomach	4460	10.7	11
Stomach	5057	12.2	12.5	Lung	2842	6.8	7
Lung	3281	7.9	8.1	Colorectum	2593	6.2	6.3
Thyroid	3172	7.6	6.7	Liver	2320	5.6	5.7
Brain	2695	6.5	6.4	Brain	2302	5.5	5.5
Liver	2491	6	6.1	Leukemia	1786	4.3	4.4
Leukemia	2389	5.7	6	Esophagus	1310	3.2	3.3
Ovary	1966	4.7	4.4	Ovary	1269	3.1	3
Corpus Uteri	1535	3.7	3.5	Pancreas	1159	2.8	2.9
Esophagus	1438	3.5	3.5	Non-Hodgkin L.	775	1.9	1.9
Non-Hodgkin L.	1390	3.3	3.2	Cervix Uteri	644	1.5	1.5
Pancreas	1164	2.8	2.9	Corpus Uteri	537	1.3	1.3
Cervix Uteri	1056	2.5	2.3	Multiple myeloma	375	0.9	0.92
Bladder	783	1.9	1.9	Larynx	370	0.89	0.92
Kidney	593	1.4	1.4	Bladder	362	0.87	0.93
Lip, Oral Cavity	532	1.3	1.3	Thyroid	336	0.81	0.83
Hodgkin Lym.	514	1.2	1.2	Kidney	292	0.7	0.71
Larynx	495	1.2	1.2	Gallbladder	224	0.54	0.55

Source: Global Cancer Observatory: <https://gco.iarc.fr/today>  
\*IR: Incidence Rate    \*\*Age-standardized Incidence Rate (ASR)  
#MR: Mortality Rate    ##Age-standardized Mortality Rate (ASMR)

creasing rapidly in low and middle-income countries, including Iran.

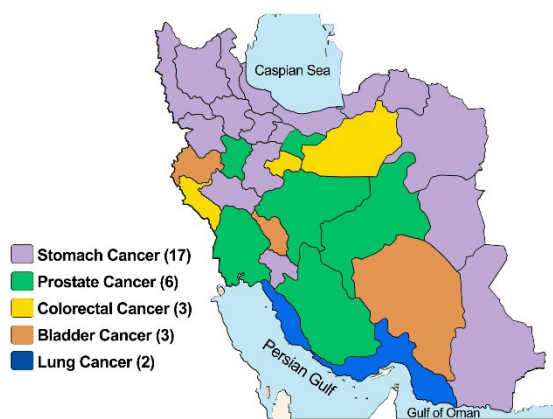
However, Iran has a total population of approximately 80 million, and ethnicity and lifestyle vary in different parts of the country. This variation leads to a variable cancer statistics profile across countries. **Figure 5** illustrates the results of the national PBCR program in Iran and shows the variation of the most common cancers in different parts of Iran in men in 2014-2016 (6). Stomach cancer was the most common cancer in the northwestern part of Iran, but prostate cancer was the most common cancer in the central and southern parts of Iran. Bladder cancer ranked first in two provinces, including Kerman and Bushehr provinces, where opium and water-pipe consumption are high. Besides, lung cancer ranked first among men in Hormozgan province in the southern part of Iran, where the water-pipe use is high both in men and women. Among women, breast cancer is the most common type of cancer in all provinces, except Ardabil province, where gastric cancer is the most common cancer

type both in men and women (6).

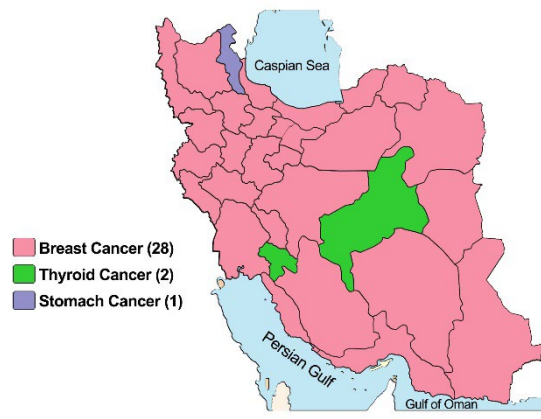
Besides, risk factor profile varies in different parts of Iran; while cigarette smoking is high in the north and northwestern part of Iran, men and women who live in the southern part of Iran smoke water-pipe (7). Likewise, stomach cancer risk factors are variable and somewhat correlate with cancer incidence in Iran. The prevalence of *H. pylori* infection, the most important risk factor of stomach cancer, is higher in the northwestern part of Iran than in the southern part of Iran. As illustrated in **Figure 5**, stomach cancer is the most common cancer incidence among women in Ardabil province, where more than 90% of the population are infected with *H. pylori* (8). We also demonstrated that bladder cancer was the most common cancer among males living in Kerman, and Bushehr provinces, where the prevalence of opium consumption and the water-pipe is high, respectively (9).

**CONCLUSION:**

Although the quality of PBCR in Iran is generally high, some provinces still require improvement in



**Figure 4.** Most Common Cancer (Rank 1) among Iranian Men in 2016



**Figure 5.** Most Common Cancer (Rank 1) among Iranian Women in 2016

their PBCR program. In addition to the observed variation in the risk factors of cancers in different provinces, the difference in cancer incidence rate across Iran could be due to differences in the completeness of cancer registries. The pattern of cancer statistics provides important clues for cancer research priorities. It is crucial to apply the results of PBCR and investigate the role of different risk factors of common cancer types in men and women. Follow-up of the cancer patients and the estimation of the five-year survival and prevalence rate would provide an essential basis for the planning and monitoring of cancer control programs.

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