6. CANCER INCIDENCE TRENDS IN POLAND

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In Poland, the source of knowledge about cancer incidence is the data collected in the National Cancer Registry (Krajowy Rejestr Nowotworów, KRN), whose foundations were established in 1952. The KRN operates on the basis of a regulation issued by the Minister of Health (Journal of Laws of 2018, item 1197). Data on cancer incidence has been available since the mid-1960s[1]. Annual reports devoted to the epidemiological situation regarding cancer have been published since 1979, and since 1999, incidence data have also been made available by the National Cancer Registry on its website[2].

Neoplastic diseases have continuously accompanied the human population – the first mentions of cancer cases in humans date back more than 3,000 years BCE, with descriptions of breast tumours found in the Code of Hammurabi (1950 BCE) and in the Ebers Papyrus (circa 1660 BCE)[3]. Today, cancer is a global health, social, and economic challenge, regardless of a country's level of wealth.

The number of malignant neoplasm cases worldwide in 2022 was estimated by an international team of experts at nearly 20 million, with over one-fifth occurring in Europe.[4] The most frequently diagnosed cancer among men in Europe is prostate cancer (20%), and among women, breast cancer (26%)[4].

[1] Koszarowski T., Gadomska H., Wronkowski Z., Romejko M.: Nowotwory złośliwe w Polsce w latach 1952-1982 [Malignant neoplasms in Poland between 1952 and 1982]. Centre of Oncology - Maria Skłodowska-Curie Institute, Warsaw 1987

[2] http://onkologia.org.pl/

[3] Berner J. Breast cancer from antiquity to the present day [Rak piersi od starożytności do współczesności]. CANCERS [NOWOTWORY] Journal of Oncology 2012, 62 (1), 42-48.

[4] Ferlay J, Ervik M, Lam F, Laversanne M, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2024). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available at https://gco.iarc.who.int/today, accessed 12/02/2025.

In the 20th century, Poland underwent a so-called demographic transition, characterised by a gradual change in the age structure of the population resulting from a decline in the female fertility rate, postponement of the age at first and subsequent childbirths, a decrease in natural population growth, and an increase in average life expectancy. In the 21st century, these trends accelerated, leading to a growth in the number of older people (aged 65 and over) in the population (7.5 million in 2023) and an increase in their share in the general population (20.1% in 2023). Demographic and health processes in Poland occurred with a certain delay compared to those observed in developed countries of Western Europe, but now chronic diseases, including cancers, have also become the predominant health issue in Poland.

Over the last half-century, the epidemiology of cancer among men in Poland has been shaped by three primary sites: stomach cancer, which was dominant until the early 1970s; lung cancer, whose incidence increased until the mid-1990s; and prostate cancer, which since 2016 has been the most common cancer among men (Table 6.1). Among women, cervical cancer was the most common until the early 1970s; however, a decrease in its incidence and a rapid increase in breast cancer cases led to a shift. The most common cancers among women became breast, colorectal, and lung cancers (Table 6.1).

Table 6.1. The most common cancer cases in Poland in 1980 and 2022

MEN	1980				2022			
	Number	%	crude rate	age-standardised rate (ESP2013)	Number	%	crude rate	age-standardised rate (ESP2013)
Total	34,074		196.6	380.4	89,794	100.0	491.2	579.2
stomach	4,847	15.8	28.0	58.4	3,008	3.3	16.5	19.7
large intestine	2,288	7.4	13.2	26.9	10,474	11.7	57.3	68.6
lung	9,041	29.4	52.2	49.3	12,286	13.7	67.2	78.3
melanoma	265	0.9	1.5	2.5	1,925	2.1	10.5	12.2
prostate	1,731	5.6	10.0	26.5	20,961	23.3	114.7	134.8
kidney	713	2.3	2.5	3.5	3,298	3.7	18.0	20.0
bladder	268	0.9	8.1	17.4	5,154	5.7	28.2	34.9

WOMEN	1980				2022			
	Number	%	crude rate	age-standardised rate (ESP2013)	Number	%	crude rate	age-standardised rate (ESP2013)
Total	30,746		168.5	242.2	91,506	100.0	468.2	437.2
stomach	2,723	8.9	14.9	23.5	1,908	2.1	9.8	9.1
large intestine	2,432	7.9	13.3	20.4	8,774	9.6	44.9	41.5
lung	1503	4.9	8.2	6.0	8,453	9.2	43.2	39.2
melanoma	346	1.1	1.9	2.5	2,103	2.3	10.8	10.1
breast	5,144	16.7	28.2	38.3	21,554	23.6	110.3	103.9
endometrium	1,827	5.9	10.0	14.1	5,995	6.6	30.7	28.6
cervix	3,532	11.5	19.4	25.3	2,267	2.5	11.6	11.0
ovary	1,728	5.6	9.5	12.4	3,559	3.9	18.2	17.3

Over the last half-century (1980–2022), the number of cancer cases among men increased by more than 55,000 (34,074 vs. 89,794), and among women by nearly 61,000 (30,746 vs. 91,506). This increase affected both crude and age-standardised incidence rates. The rise in malignant neoplasm incidence in the early period, up to the early 1980s, is primarily attributed to improved completeness of cancer registration. In the male population, a rising trend in incidence measured by the crude rate has persisted since the early 1980s, reaching 491/105 in 2022. The standardised5 incidence rates for men rose rapidly between 1980 and 1995. After 1995, the rate of increase slowed significantly, and between 1995 and 2022, the standardised rate rose from 548/105 to 579/105. In the female population, both crude and standardised rates show an upward trend which accelerated significantly since the early 1990s (Fig. 6.1). The noticeable incidence drop in 2020 is a result of the COVID-19 pandemic (delayed diagnosis). Cancer incidence trends show different patterns depending on the age group of patients (Figs. 6.2, 6.3).

Malignant neoplasms in children (0–19 years) are relatively rare (in 2022, the incidence rate for both boys and girls was 15/10[5]). A slight upward trend is visible for both sexes. The structure of cancer incidence in this age group differs significantly from that in adults. Leukaemias, lymphomas and brain tumours were the most common among childhood cancers in Poland (together almost 60% of cases).

[5] The presented age-standardised rates were calculated using the European Standard Population, revision 2013 – ESP2013 https://ec.europa.eu/eurostat/documents/3859598/5926869/KS-RA-13-028-EN.PDF/e713fa79-1add-44e8-b23d-5e8fa09b3f8f

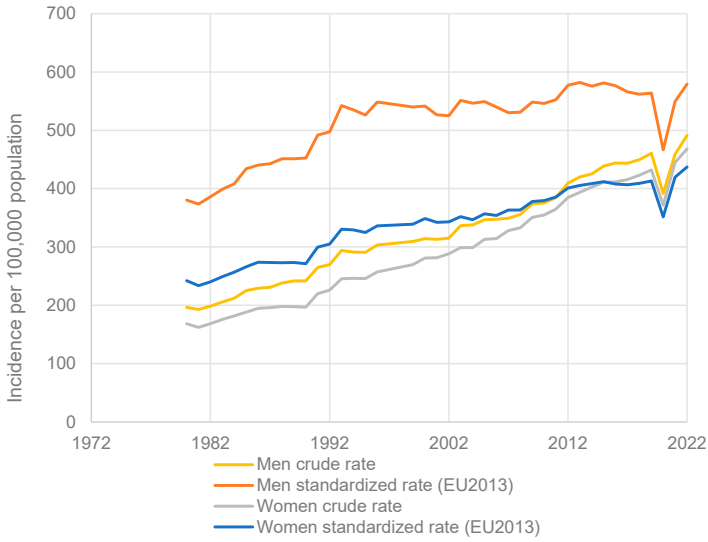

Fig. 6.1. Overall cancer incidence trends in Poland, 1980–2022

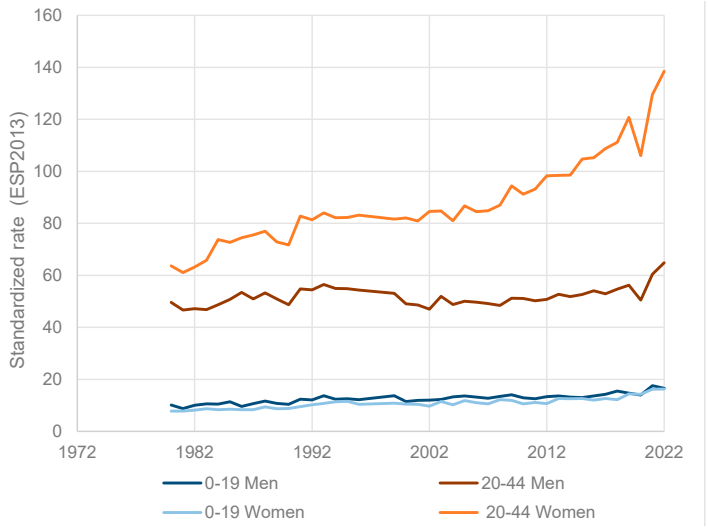

Fig. 6.2. Overall cancer incidence trends in Poland among children and young adults, 1980–2022

Among young adults (20–44 years), age-standardised incidence rates (ESP2013) for women are nearly twice as high as for men (139/105 vs. 65/105 in 2022), and this disparity has been increasing since the early 1980s. Among men, incidence has shown a slight increase over the past two decades. Among women,

incidence rose slightly until the end of the 20th century, but the growth accelerated in the 21st century – a 63% increase in the rate between 2001 and 2022. In 2022, the most common cancers in young men were testicular cancer (24%), colorectal cancer (7%), and melanoma (6%). In young women, the most frequent cancers were breast cancer (28%), cervical cancer (5%), ovarian cancer (4%), and colorectal cancer (4%).

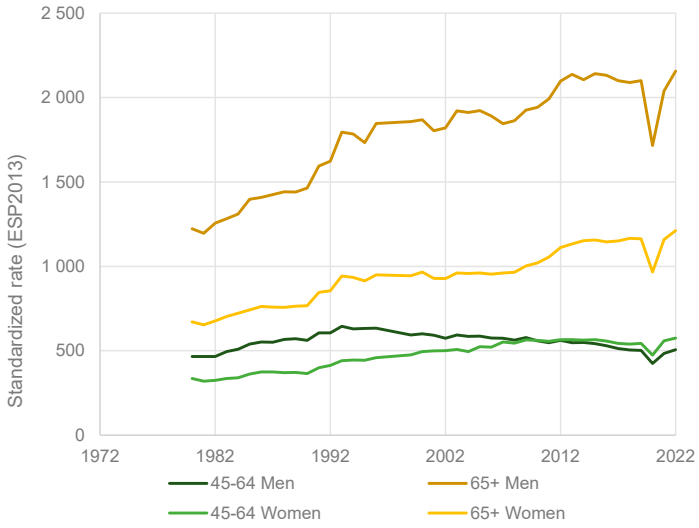

Fig. 6.3. Overall cancer incidence trends in Poland in persons over 45 years of age, 1980-2022

Cancer incidence among middle-aged men (45–64 years) rose rapidly until the early 1990s (629/105 in 1994), followed by a rapid decrease in incidence rates (to 506/105 in 2022). Among women, the early 1990s marked an acceleration in the incidence increase, which has slowed considerably in the last decade. Since the early 1990s, the gap in incidence between men and women has narrowed, and since 2010, middle-aged women have shown higher incidence than men. Among middle-aged men, prostate (20%), lung (13%), and colorectal (12%) cancers were the most common. In women, breast (31%), endometrial (8%), and lung (7%) cancers were the most frequent.

In the oldest age group (65+), incidence increased in both sexes, although the growth has slowed in the last decade. Prostate (27%), lung (15%), and colorectal cancers (12%) were the most frequent among elderly men in 2022. Breast (19%), colorectal (12%), and lung cancers (12%) were the most frequent among elderly women.

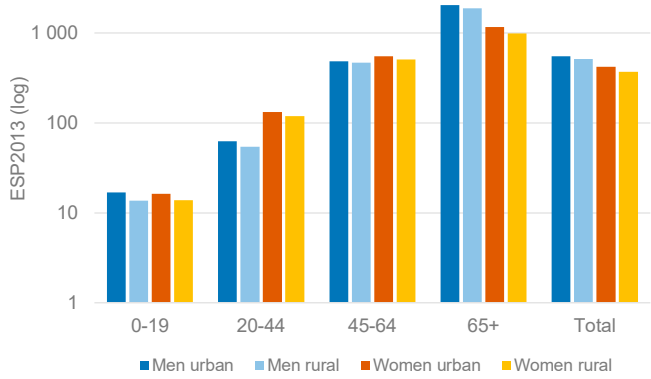

Fig. 6.4. Overall malignant neoplasm incidence by age and place of residence. Poland 2022

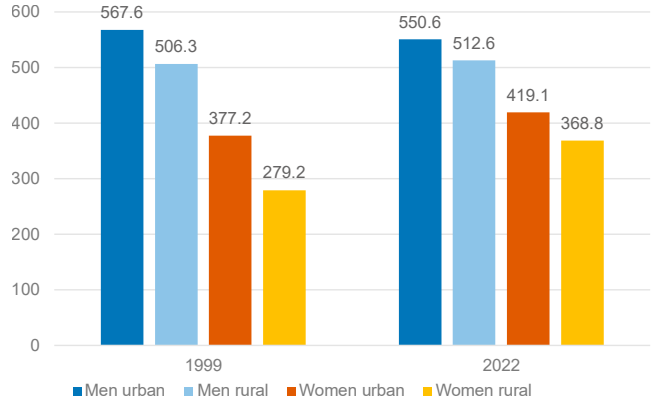

Fig. 6.5. Overall malignant neoplasm incidence by place of residence. Poland 1999 vs. 2022

Place of residence is a differentiating factor in cancer risk for both sexes and all age groups. Incidence among rural residents is lower than among urban residents (Fig. 6.4). The smallest urban-rural difference is observed in the middle-aged group (45–64 years). In both rural and urban areas, cancer risk among young women is higher than among young men. Between 1999 and 2022, incidence increased in both rural and urban populations, with the greatest rise among rural women – by nearly 100/105 (Fig. 6.5).

Cancer incidence trends in Poland from 1980 to 2022 showed different patterns for men and women, with the key distinction being tobacco-related cancers. Among men, incidence has declined (Fig. 6.6), while among women, it has risen significantly (Fig. 6.7).

In men, the largest increase was observed in prostate cancer and melanoma cases. Lung cancer, which was dominant until the end of the 20th century, shows a long-term downward trend in incidence (over 50% decline since 1995). Similarly, in the case of laryngeal cancer, the decline in smoking has contributed to a consistent downward trend in incidence. Another cancer with declining frequency is gastric cancer. The rise in colorectal cancer incidence has slowed significantly since 2016 (Fig. 6.6).

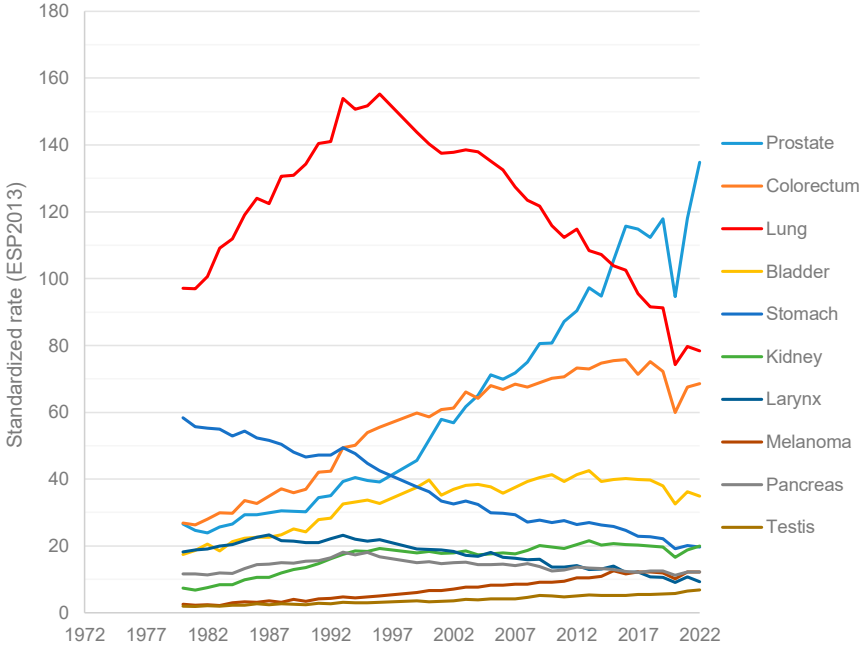

Fig. 6.6. The most common cancer incidence trends, men, Poland, 1980-2022

In the female population, a decreasing trend is observed only in the cases of stomach cancer and cervical cancer. The most significant increase in incidence is noted for breast, lung, endometrial, and thyroid cancers (Fig. 6.7).

The enactment of the Act on the National Oncology Strategy (NOS) has set priorities aimed at reversing epidemiological trends and providing more effective protection for the Polish society against the consequences of cancer. The authors of the strategy identified six cancers amenable to primary prevention (lung cancer, cervical cancer, melanoma), secondary prevention (breast cancer, cervical cancer, colorectal cancer), or representing a significant problem (prostate cancer).

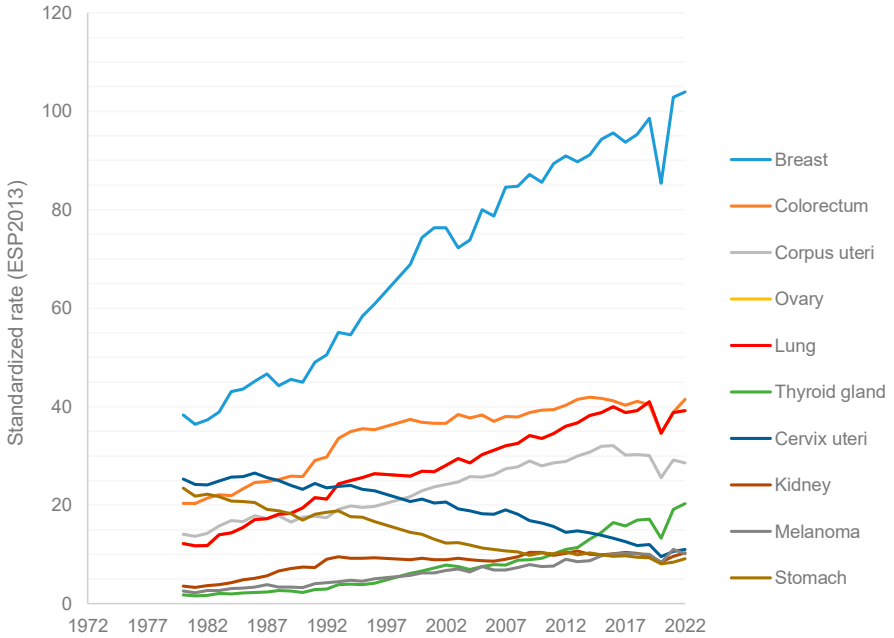

Fig. 6.7. The most common cancer incidence trends, women, Poland, 1980-2022

Colorectal cancers

Colorectal cancers are the third most common cancer among men and the second among women in Poland, occurring more frequently in men (in 2022, the age-standardised incidence rate was 67/105 for men and 42/105 for women). The incidence of colorectal cancer showed an increasing trend in both sexes when considering crude rates, and age-standardised rates increased in men until 2017 and in women until 2014 (Fig. 6.8).

The incidence of colorectal cancer among urban and rural residents remains at a similar level: overall, the difference is 0.3/105 for men and 2.4/105 for women (Fig. 6.9). Among young adults (20–44 years), incidence rates for men are similar to those for women. In other age groups, men have a higher risk. Between 1999 and 2022, the incidence increased primarily among rural residents: by nearly 30% in men and 20% in women. Among urban residents, incidence remained almost unchanged (Fig. 6.10).

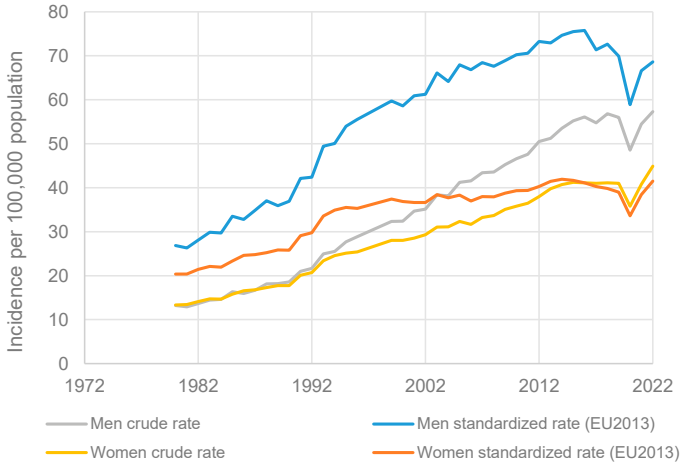

Fig. 6.8. Colorectal cancer incidence trends, Poland, 1980-2022

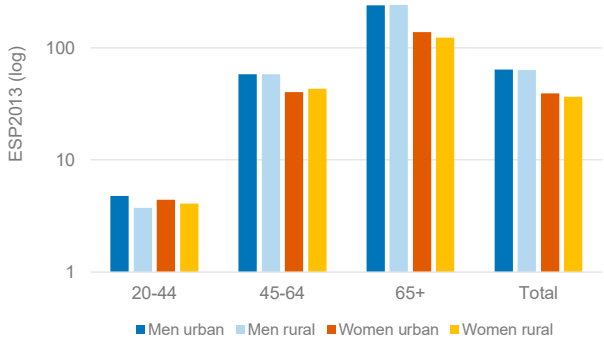

Fig. 6.9. Colorectal cancer incidence, Poland, 2022

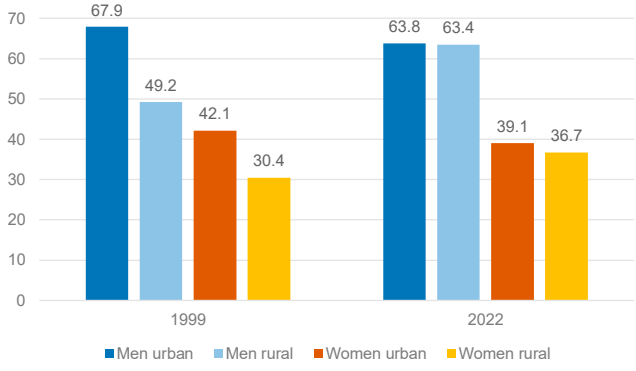

Fig. 6.10. Colorectal cancer incidence by place of residence, Poland, 1999 and 2022

Malignant lung cancer

Lung cancers are the second most common cancer among men and the third among women, but they are the leading cause of cancer-related deaths in both sexes (25.2% of cancer deaths in men and 17.9% in women). Male incidence, expressed in both crude and age-standardised rates, increased until the mid-1990s, followed by a decline. Crude rates decreased more slowly than age-standardised rates. Among women, there is a continuous increase in lung cancer incidence (Fig. 6.11). In 2022, male lung cancer incidence was slightly higher among rural residents, while female incidence was higher among urban residents, especially in the 65+ age group (147/105 vs. 113/105) (Fig. 6.12).

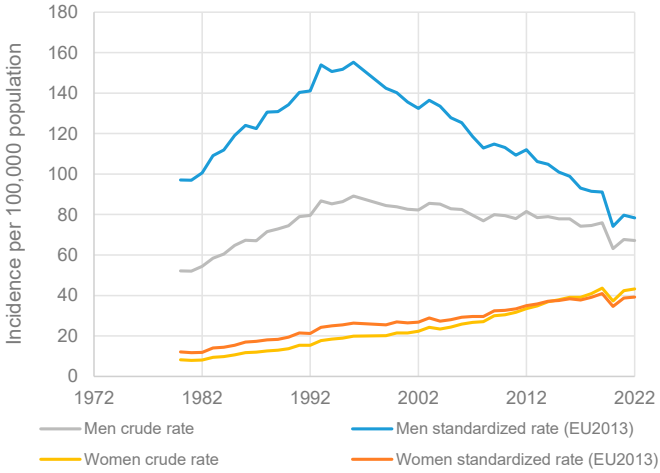

Fig. 6.11. Lung cancer incidence trends, Poland, 1980-2022

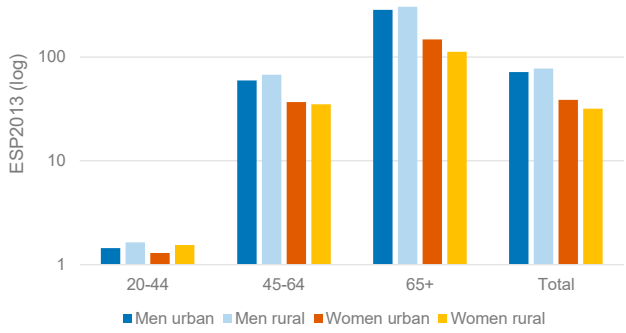

Fig. 6.12. Lung cancer incidence rate, Poland, 2022

Comparing urban and rural incidence in 1999 and 2022 reveals the same trend as in the general population. Male incidence decreased in both urban and rural areas, and the difference between age-standardised rates for both groups narrowed, although male incidence remains higher in rural areas than in urban areas (by 10/105). In the female population, rates were higher in urban areas at both time points and increased by 25% in urban areas and 86% in rural areas over the analysed period (Fig. 6.13).

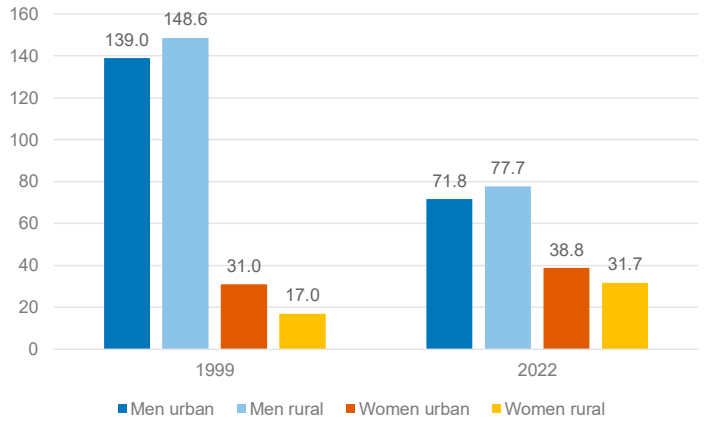

Fig. 6.13. Lung cancer incidence by place of residence, Poland, 1999 and 2022

Melanoma

Melanoma is a cancer whose incidence is rapidly increasing in the Polish population, as expressed in both crude and age-standardised rates. The acceleration of this trend has been evident since the mid-1990s (Fig. 6.14). Melanoma occurs most frequently after the age of 65, with a higher risk in men than in women (Fig. 6.15). Melanoma incidence is higher among urban residents of both sexes.

Over the past two decades, melanoma incidence has approximately doubled among both men and women, regardless of place of residence, with the greatest increase in age-standardised incidence observed among rural men (by 120%). In 2022, the highest age-standardised incidence rate was observed among urban men (13.2/105), and the lowest among rural women (8.4/105) (Fig. 6.16).

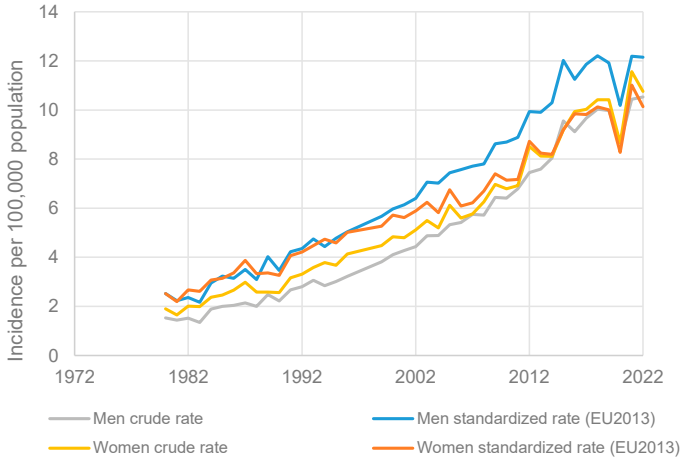

Fig. 6.14. Melanoma incidence trends, Poland, 1980-2022

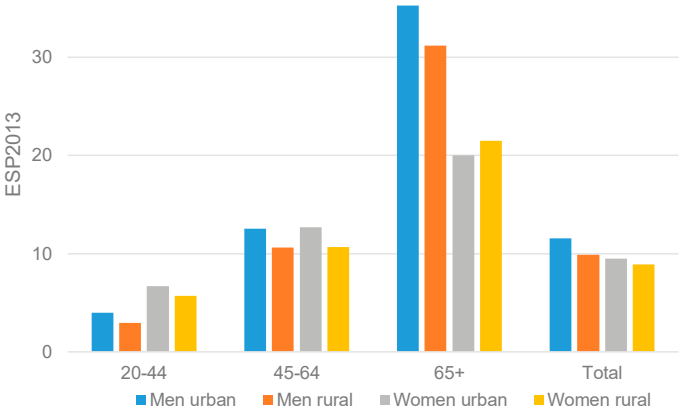

Fig. 6.15. Melanoma incidence, Poland, 2022

Malignant breast cancer

Breast cancer is the most common cancer among women in Poland. Incidence has been increasing since the mid-1960s. Over the past four decades, the age-standardised incidence rate has nearly tripled (from 36/105 to 104/105) (Fig. 6.17). Breast cancer is rare among young women (20–44 years), but the risk increases with age. Incidence is higher among urban women than rural women across all age groups (Fig. 6.18).

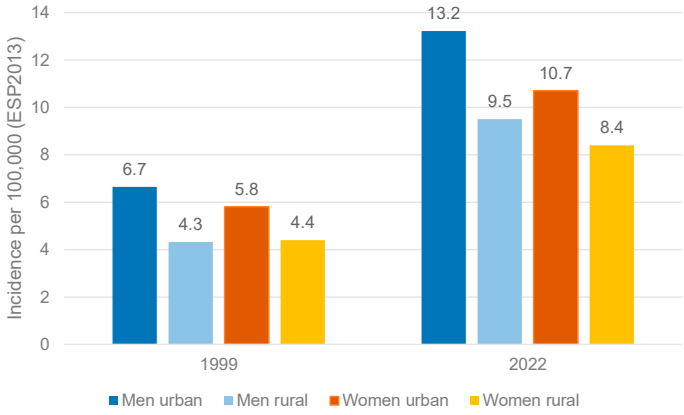

Fig. 6.16. Melanoma incidence by place of residence, Poland, 1999 and 2022

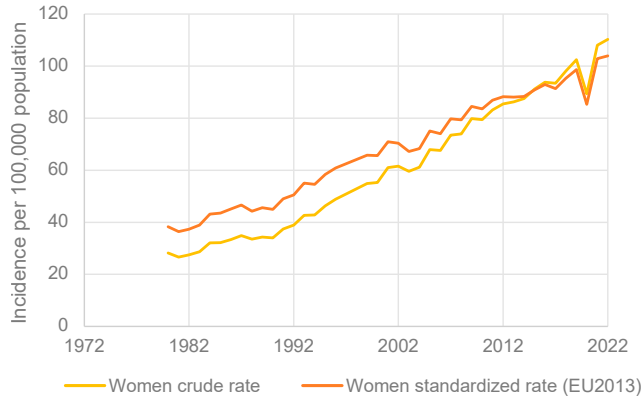

Fig. 6.17. Breast cancer incidence trends, Poland, 1980-2022

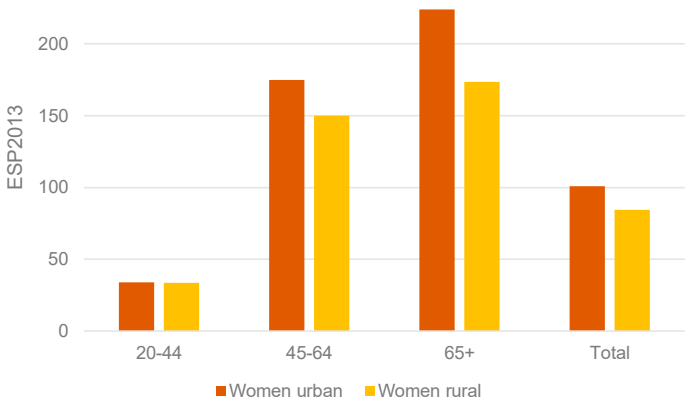

Fig. 6.18. Breast cancer incidence, Poland, 2022

Breast cancer incidence shows an upward trend among both urban and rural women. Between 1999 and 2019, the age-standardised incidence rate increased by approximately 30% among urban women and nearly 77% among rural women, indicating a convergence of risk between the two subpopulations.

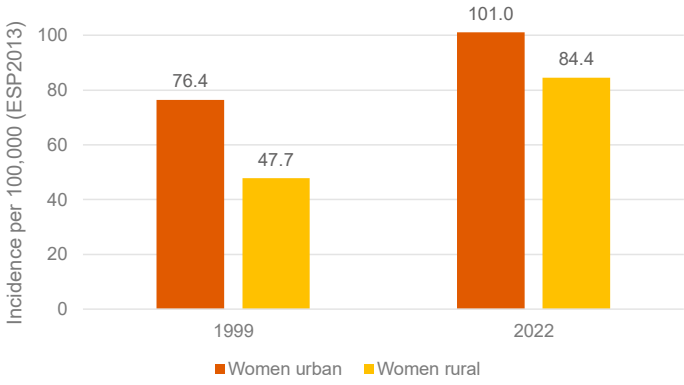

Fig. 6.19. Breast cancer incidence by place of residence, Poland, 1999 and 2022

Cervical cancer

In the 1960s, cervical cancer was the most common cancer among women. Over the past half-century, a decline in incidence, measured by both crude and age-standardised rates, has moved cervical cancer to the eighth position among the most common cancers in women (Fig. 6.20). Incidence is higher among urban women, particularly in the middle age group (45–64 years) (Fig. 6.21).

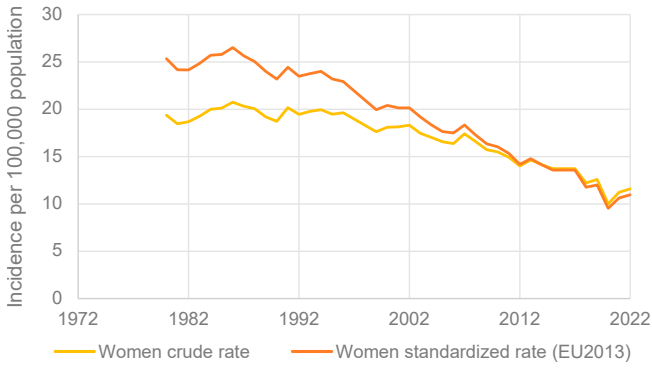

Fig. 6.20. Cervical cancer incidence trends, Poland, 1980-2022

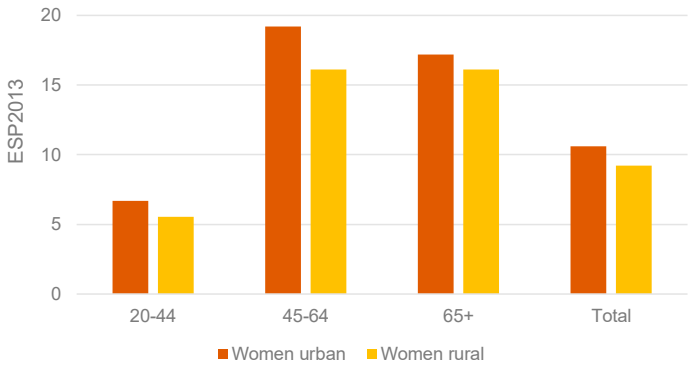

Fig. 6.21. Cervical cancer incidence, Poland, 2022

Between 1999 and 2022, a decline in cervical cancer incidence was observed among both urban women (by 48%) and rural women (by 53%).

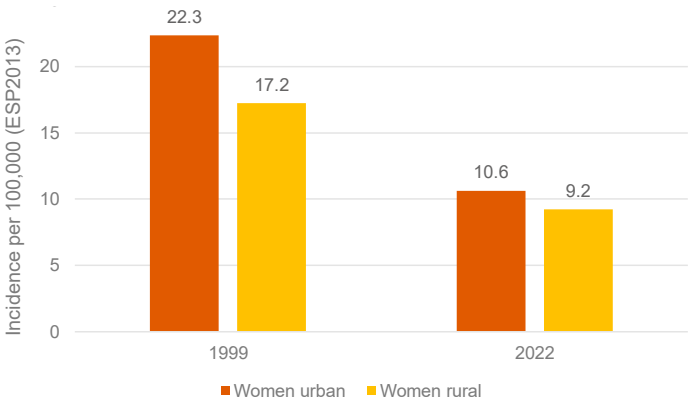

Fig. 6.22. Breast cancer incidence by place of residence, Poland, 1999 and 2022

Prostate cancer

Prostate cancer has been the most common cancer among men in Poland for the past seven years. Since the mid-1990s, there has been a sharp increase in incidence, measured by both crude and age-standardised rates (Fig. 6.23). Prostate cancer is very rare before the age of 45, with incidence not exceeding 0.2–0.3/105. After age 45, the risk increases significantly among both urban and rural men, although rural men have a slightly lower risk (Fig. 6.24).

Over the past two decades, incidence has more than doubled in both urban and rural populations (Fig. 6.25).

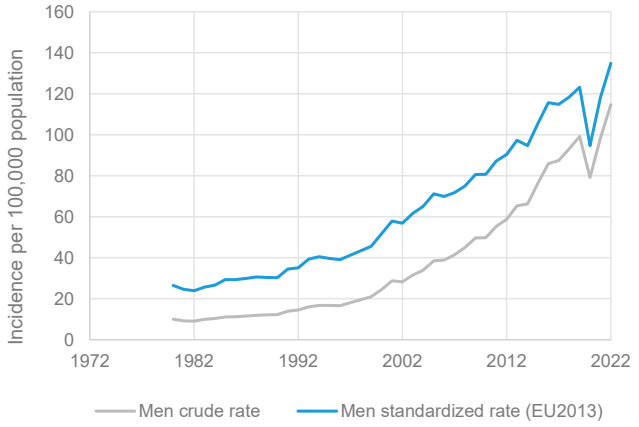

Fig. 6.23. Prostate cancer incidence trends, Poland, 1980-2022

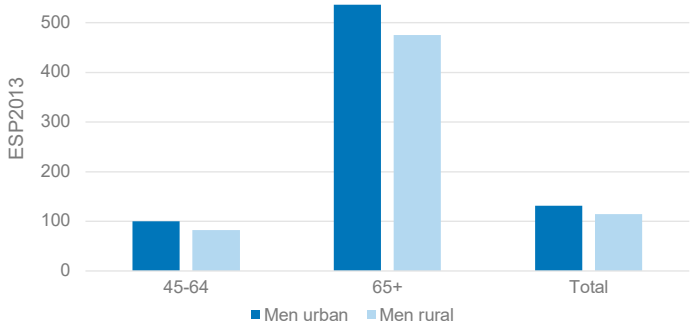

Fig. 6.24. Prostate cancer incidence, Poland, 2022

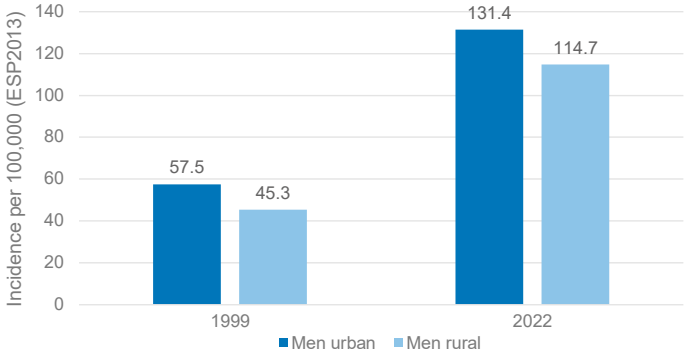

Fig. 6.25. Prostate cancer incidence by place of residence, Poland, 1999 and 2022