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ORIGINAL RESEARCH

Patients with cancer who will be cured and projections of complete prevalence in Italy from 2018 to 2030

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Background: The number and projections of cancer survivors are necessary to meet the healthcare needs of patients, while data on cure prevalence, that is, the percentage of patients who will not die of cancer by time since diagnosis, are lacking.

Materials and methods: Data from Italian cancer registries (duration of registration ranged from 9 to 40 years, with a median of 22 years) covering 47% of the population were used to calculate the limited-duration prevalence, the complete prevalence in 2018, projections to 2030, and cure prevalence, by cancer type, sex, age, and time since diagnosis.

Results: A total of 3 347 809 people were alive in Italy in 2018 after a cancer diagnosis, corresponding to 5.6% of the resident population. They will increase by 1.5% per year to 4 012 376 in 2030, corresponding to 6.9% of the resident

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population, 7.6% of women and ∼22% after age 75 years. In 2030, more than one-half of all prevalent cases (2 million) will have been diagnosed by ≥10 years. Those with breast (1.05 million), prostate (0.56 million), or colorectal cancers (0.47 million) will be 52% of all prevalent patients. Cure prevalence was 86% for all patients alive in 2018 (87% for patients with breast cancer and 99% for patients with thyroid or testicular cancer), increasing with time since diagnosis to 93% for patients alive after 5 years and 96% after 10 years. Among patients who survived at least 5 years, the excess risk of death (1 − cure prevalence) was <5% for patients with most cancer types except for those with cancers of the breast (8.3%), lung (11.1%), kidney (13.2%), and bladder (15.5%).

Conclusions: Study findings encourage the implementation of evidence-based policies aimed at improving long-term clinical follow-up and rehabilitation of people living after cancer diagnosis throughout the course of the disease. Updated estimates of complete prevalence are important to enhance data-driven cancer control planning.

Key words: cancer survivors, complete prevalence, cancer cure, projections, Italy

INTRODUCTION

Updated and detailed data on the number and characteristics of people living after a cancer diagnosis (i.e. cancer prevalence) are fundamental for healthcare planning, resource allocation, or cost estimation.[1-4] Cancer survivors are generally classified according to the length of survival time[1,5] and the outcome of the disease.[6,7] They have complex and heterogeneous health needs concerning medical care, psychosocial support, practical assistance, and rehabilitation.[8,9]

A growing number of epidemiological studies have focused on quantifying the long-term impact on the healthcare system of people living after a cancer diagnosis, that is, survivors measured by complete prevalence (Table 1), which cannot be directly measured by cancer registry data due to limited follow-up periods.[10,11]

This article aimed to estimate the complete prevalence in Italy from 2018 to 2030 for the most frequent cancer types by sex, age, and time since diagnosis. In addition, the study aimed to define the residual excess risk of death of cancer survivors by computing the cure prevalence (CurePrev; i.e. the number and proportion of prevalent cases who will not die of cancer) and how this indicator changed with time since diagnosis. This information is lacking in Italy and elsewhere.

Table 1. Glossary of terms used in the study.

Term	Definition
Complete prevalence	All people living after a cancer diagnosis (i.e. cancer survivors, or any individual diagnosed with cancer who is living). It was calculated as absolute numbers and proportions.
Limited-duration prevalence	Includes cancer survivors since less than a certain number of years.
Cure prevalence	The proportion of survivors (complete prevalence) who will not die of cancer.
Cure fraction	The proportion of incident patients who experience, at diagnosis, the same life expectancy (mortality rates) as their peers in the general population.
Net survival	The probability that patients with cancer survive their cancer up to a given time since diagnosis, after controlling for competing causes of death.
Population-based cancer registries	They record all new cancer cases and their life status in a defined population (most frequently a geographical area).

MATERIALS AND METHODS

A detailed description of the study population and statistical methods used has been recently published.[10] In brief, we included observed incidence data collected until 2017, with follow-up of vital status as of 31 December 2018, by 31 population-based Italian cancer registries (i.e. 47% of the Italian population, 43% of the population in North Central Italy and 55% in South Islands), with a registration ranging from 9 to 40 years, with a median of 22 years (Supplementary Table S1, available at https://doi.org/10.1016/j.esmoop.2024.103635).

The limited-duration prevalence on 1 January 2018 (i.e. the index date) was computed from incidence and follow-up data for each registry and all malignant tumours [10th revision of the International Statistical Classification of Diseases and Related Health Problems codes (ICD-10): C00-C43 and C45-C96], including urinary bladder cancers with benign, *in situ,* or uncertain behaviour (ICD-10: D09.0, D30.3, D41.4). Limited-duration prevalence was calculated by year since diagnosis and, for the period before the start of registration, we have estimated the unobserved fraction of prevalence using the completeness index method.[10]

The number of prevalent cases in Italy was obtained as the sum of prevalence proportions (age-, sex-, and cancer type-specific, pooled from registries in the North Central and the South Islands areas included) multiplied by the corresponding Italian population in the same areas at the index date.[12] The complete prevalence was presented for all cancer types that affected at least 10 per 100 000 individuals in Italy.

The proportion of prevalent cases (by area, cancer type, sex, and age) was projected after 2018 using a linear regression model based on the last three calendar years available (i.e. 2016, 2017, and 2018; for registries with missing incidence data in 2016 or 2017, earlier years were used).[10] The assumption of a linear and constant trend of prevalence was shown to be reliable in the medium term for common cancer types.[1,11] The projected proportions of prevalence from registries in the North Central and the South Islands areas included in this study were multiplied by the corresponding Italian population in the same areas at the index date by sex and age (Supplementary Table S1, available at https://doi.org/10.1016/j.esmoop.2024.103635). The Italian population is observed until 2021 and forecasted for subsequent years.[12]

The CurePrev is the proportion (or number) of prevalent patients who will not die of cancer, including people with the same life expectancy as the corresponding group in the general population. It was calculated for all prevalent patients and for those who already survived at least 5, 10, and 15 years. CurePrev at attained age x and follow-up time t (years since diagnosis) was estimated as of 1 January 2018, as follows:

$$\text{as CurePrev}_t(x) = \frac{CF_{x-t} \times \text{Prev}_t(x)}{[NS_{x-t}(t) + NS_{x-t}(t-1)]/2} \quad (1)$$

where CF_{x-t} is the cure fraction (i.e. the proportion of cured patients diagnosed at age $x-t$ in 2010), $\text{Prev}_t(x)$ is the number of prevalent cases at t years from diagnosis, and $NS_{x-t}(t)$ is the net survival of patients diagnosed at age $x-t$ and follow-up time t. For each cancer type and sex, the overall CurePrev was calculated by summing up estimates over all ages at prevalence and time since diagnosis, divided by the overall complete prevalence for all age groups. The remaining proportion of prevalent cases (1 − CurePrev) included those who are expected to die from cancer[10] and can be interpreted as the excess risk of death of prevalent patients.

Statistical analyses were carried out with the SEER*Stat software (National Cancer Institute, Bethesda, MD), SAS NLIN (SAS Institute, Cary, NC), and the ComPrev software (National Cancer Institute).[10]

RESULTS

In Italy, 3 347 809 people were alive in 2018 after a cancer diagnosis, corresponding to 5.6% of the Italian population (Supplementary Table S2, available at https://doi.org/10.1016/j.esmoop.2024.103635). Of these, 1.5 million were men (5.2% of Italian men) and 1.8 million were women (6.0% of women). More than 2.2 million people (i.e. 3.7% of all Italians) have been alive for ≥5 years since diagnosis and 1.4 million (2.4% of Italians) since ≥10 years. Prevalence proportions increased with age: 0.1% of children below age 15 years (9071 or 113 per 100 000 children), 1.0% at age 15-44 years (208 854), 3.5% at 45-54 years (336 759), 6.9% at 55-64 years (550 730), 13.3% at 65-74 years (883 341), and ∼20% after age 75 years (1 359 054). The age distribution of prevalent cases in 2018 for the most frequent cancer types is shown in Supplementary Table S3, available at https://doi.org/10.1016/j.esmoop.2024.103635. Overall, 50% have been diagnosed with breast, prostate, and colorectal cancers (Supplementary Table S4, available at https://doi.org/10.1016/j.esmoop.2024.103635) and the percentage of prevalent cases diagnosed since ≥10 years was 50% for patients with cancer of corpus uteri, 48% for those with breast cancer, 46% for those with non-Hodgkin's lymphoma, and 45% for those with skin melanoma (Supplementary Table S5, available at https://doi.org/10.1016/j.esmoop.2024.103635).

In 2030, 4 012 376 people are expected to live in Italy after a cancer diagnosis, corresponding to 6.9% of the population (6923 per 100 000; Table 2). In particular, 1 053 633 women will live after a breast cancer diagnosis (3564 per 100 000 women), 559 903 men after prostate cancer (1972 per 100 000 men), and 469 257 people after colorectal cancer diagnosis (238 751 men and 230 506 women, 841 per 100 000 men and 780 per 100 000 women). For all cancer types combined, an annual increase of 1.5% was estimated (1.6% in women and 1.3% in men) in the period 2018-2030. In terms of the proportion of prevalent cases, the increase will be more marked, 1.8% per year, given the expected decline in the Italian population. Large annual increases are foreseen for the absolute number of prevalent patients with thyroid cancer (+3.1%) and skin melanoma (+3.6%), which will be, in terms of prevalent cases, third and fifth in women (727 and 467 per 100 000, respectively). Conversely, a stable number of prevalent cases is expected for patients with ovarian cancer (180 per 100 000), leukaemia (153 per 100 000), and central nervous system cancers. A decrease is expected for prevalent patients with stomach (−1.8%), cervix uteri (−1.1%), larynx (−2.3% overall, +0.4% in women, not shown), and liver (−0.9%) cancers.

From 2018 to 2030, prevalent cases in Italy will increase by ∼665 000 (Table 3), 247 000 for women living after breast cancer, 133 000 for men with prostate cancer, 97 000 after skin melanoma, and 90 000 after thyroid cancer. Prevalent cases in 2030 are estimated to be ∼7% of men and 10% of women between ages 45 and 74 years (Supplementary Table S6, available at https://doi.org/10.1016/j.esmoop.2024.103635) and 26% in men and 19% in women aged ≥75 years. More than one-half of prevalent cases in 2030 (i.e. 2 million or 3.5% of the overall population) will be diagnosed ≥10 years before (Figure 1 and Table 3) and this group will increase by 42% between 2018 and 2030 explaining almost all (i.e. 90%) of the increase in prevalent cases. In particular (Table 3), in the considered period, an increase of those living ≥10 years since diagnosis was expected after prostate cancer (+121%), thyroid cancer (+81%), and skin melanoma (+62%), while limited variation is expected for those diagnosed with corpus uteri (+29%), bladder (+22%), and lung (+21%) cancers.

The distribution of all prevalent cases and of those who will not die of cancer (i.e. CurePrev, in green area) by single year since diagnosis are shown in Figure 2. CurePrev was obtained by adding up all the vertical bars (i.e. years since diagnosis) and represents 85.6% of all prevalent cases, accounting for 2 865 749 people (Table 4). CurePrev became 93.0% for those who survived ≥5 years, 95.7% for those who survived ≥10 years, and 97.7% for those who survived ≥15 years, with limited differences between men and women (Supplementary Figure S1, available at https://doi.org/10.1016/j.esmoop.2024.103635). Marked variations of CurePrev emerged according to the attained age (Supplementary Figure S2, available at https://doi.org/10.

Table 2. Complete cancer prevalence (cases, proportion per 100 000, percentage of all prevalent cases, and annual variation) by cancer type[a] and sex in Italy, 2030

Cancer type	Cases			Proportion per 100 000			Percentage of all prevalent cases			Annual variation 2018-2030 (%)	
	All	Men	Women	All	Men	Women	All	Men	Women	Cases	Proportions
All types but skin non-melanoma	**4 012 376**	**1 759 260**	**2 253 116**	**6923**	**6196**	**7621**	**100**	**100**	**100**	**1.5**	**1.8**
Breast	1 053 633		1 053 633	3564		3564	26.3		46.8	2.2	2.6
Prostate	559 903	559 903		1972	1972		14.0	31.8	0.0	2.3	2.5
Colon–rectum	469 257	238 751	230 506	810	841	780	11.7	13.6	10.2	0.9	1.2
Bladder	320 458	249 892	70 566	553	880	239	8.0	14.2	3.1	1.0	1.3
Thyroid	280 787	65 961	214 826	484	232	727	7.0	3.7	9.5	3.1	3.4
Skin melanoma	270 175	132 158	138 017	466	465	467	6.7	7.5	6.1	3.6	3.9
Non-Hodgkin's lymphoma	189 876	98 269	91 607	328	346	310	4.7	5.6	4.1	2.2	2.5
Kidney	174 689	114 706	59 983	301	404	203	4.4	6.5	2.7	2.0	2.3
Corpus uteri	147 560		147 560	499		499	3.7		6.5	1.6	2.0
Lung	117 956	61 765	56 191	204	218	190	2.9	3.5	2.5	1.2	1.5
Leukaemia	88 769	49 149	39 620	153	173	134	2.2	2.8	1.8	0.1	0.4
Testis	69 043	69 043		243	243		1.7	3.9	0.0	2.0	2.2
Hodgkin's lymphoma	67 900	33 561	34 339	117	118	116	1.7	1.9	1.5	1.5	1.8
Oral cavity	66 946	40 682	26 264	116	143	89	1.7	2.3	1.2	1.9	2.2
Stomach	65 004	36 277	28 727	112	128	97	1.6	2.1	1.3	−1.8	−1.5
Soft-tissue sarcoma	55 174	23 263	31 911	95	82	108	1.4	1.3	1.4	0.7	1.0
Ovary	53 075		53 075	180		180	1.3		2.4	0.1	0.4
Cervix uteri	46 332		46 332	157		157	1.2		2.1	−1.1	−0.8
Larynx	36 908	31 178	5730	64	110	19	0.9	1.8	0.3	−2.3	−2.1
Multiple myeloma	36 817	19 303	17 514	64	68	59	0.9	1.1	0.8	1.2	1.5
Brain and central nervous system	35 995	21 813	14 182	62	77	48	0.9	1.2	0.6	−0.3	0.0
Pancreas	29 164	14 778	14 386	50	52	49	0.7	0.8	0.6	3.7	4.0
Liver	28 699	21 535	7164	50	76	24	0.7	1.2	0.3	−0.9	−0.6
Bone	16 088	8216	7872	28	29	27	0.4	0.5	0.3	1.4	1.7
Small intestine	13 528	7676	5852	23	27	20	0.3	0.4	0.3	3.1	3.4
Vagina and vulva	12 587		12 587	43		43	0.3		0.6	0.7	1.1
Gallbladder	11 469	6052	5417	20	21	18	0.3	0.3	0.2	0.7	1.0
Oesophagus	7836	6084	1752	14	21	6	0.2	0.3	0.1	2.6	2.9

[a]Cancer types with a prevalence of ≥10 per 100 000 are presented, sorted by the number of prevalent cases. The definition of the cancer entities is reported in Toffolutti et al.[10]

1016/j.esmoop.2024.103635): 94.0% in patients <15 years of age, 92.1% at 15-44 years of age, 82.6% at 65-74 years of age, and 86.0% at ≥75 years of age (older adult groups included patients diagnosed at younger age many years earlier and now cured). Among prevalent cases alive ≥5 years since diagnosis, CurePrev became 98.6% for patients aged <15 years, 96.5% at attained age 15-44 years, 95.8% at 45-54 years, 94.0% at 55-64 years, and ∼92% at age ≥65 years.

Almost all (99.3%) patients who lived after thyroid or testicular cancer are expected to be cured (Table 4), with proportions >90% for patients with skin melanoma (95.5%), Hodgkin's lymphoma (94.8%), prostate cancer (94.1%), cervix uteri cancer (93.1%), non-Hodgkin's lymphoma (92.0%), leukaemia (91.7%), corpus uteri (91.3%), and colorectal cancer (90.3%). For patients having cancer types with more severe prognosis, CurePrev was 55.3% for lung cancer survivors, with even lower proportions estimated for patients with cancer of the pancreas (48.6%), multiple myeloma (47.2%), and liver (28.0%). Among patients who survived ≥5 years, the excess risk of death (1 − CurePrev) was <5% for most cancer types except for patients with breast cancer (8.3%) and patients with cancers of the lung (11.1%), kidney (13.2%), bladder (15.5%), vagina/vulva (16.7%), larynx (17.8%), oral cavity (21.2%), multiple myeloma (33.4%), and liver (44.9%). At 10 years after diagnosis, an excess risk of death >5% remained only for patients with cancers of the breast (5.3%), kidney and vulva/vagina (9.9%), bladder (11.8%), larynx (12.7%), oral cavity (13.6%), multiple myeloma (21.3%), and liver (27.8%; Table 4).

DISCUSSION

The vast majority (86%) of people living in Italy after a cancer diagnosis in 2018 have the same life expectancy (i.e. mortality rates) as the general population. This proportion (i.e. CurePrev) rises to 93% and 96% for those living ≥5 and ≥10 years after diagnosis, respectively.

CurePrev was previously estimated for all Italian patients aged 15-74 years (it was 73% in 2006)[13] and for those with colorectal cancer (71% in the early 1990s versus 90% in the present study).[14] CurePrev adds additional evidence related to the concept of 'cancer cure' and, when estimated by time since diagnosis, to 'residual excess risk of death' for patients with cancer. Knowing how the probability of cancer death changes with time since diagnosis can promote comprehensive rehabilitation initiatives at the national and European levels. This evidence may support actions and legislative initiatives to harmonise the regulatory framework among the European Countries to avoid discrimination (financial, but not only)[3,8] among citizens being cured of cancer.[15]

Table 3. Complete cancer prevalence (cases) in 2018 and 2030 by cancer type[a] and years since diagnosis in Italy

Cancer type	Years since diagnosis						Complete prevalence	
	<5		5 to <10		≥10			
	2018	2030	2018	2030	2018	2030	2018	2030
All types but skin non-melanoma	**1 136 535**	**1 092 624**	**776 609**	**889 645**	**1 434 665**	**2 030 107**	**3 347 809**	**4 012 376**
Breast	233 971	256 460	183 860	237 447	388 580	559 726	806 411	1 053 633
Prostate	155 815	115 948	132 506	136 565	138 998	307 389	427 319	559 903
Colon—rectum	143 661	112 306	104 532	89 702	174 213	267 248	422 406	469 257
Bladder	102 797	108 199	68 993	73 489	113 377	138 770	285 167	320 458
Thyroid	55 563	53 698	49 709	72 121	85 508	154 969	190 780	280 787
Skin melanoma	56 935	85 389	38 911	59 432	77 368	125 354	173 214	270 175
Non-Hodgkin's lymphoma	45 606	46 758	33 039	40 433	67 575	102 684	146 220	189 876
Kidney	46 281	53 384	31 628	38 096	59 596	83 210	137 505	174 689
Corpus uteri	34 109	34 666	26 814	34 554	60 782	78 340	121 705	147 560
Lung	56 461	58 571	19 487	28 132	25 911	31 252	101 859	117 956
Testis	11 079	11 743	9808	12 065	32 721	45 234	53 608	69 043

[a]Cancer types with a prevalence of >200 per 100 000 in 2030 are presented, sorted by the number of prevalent cases.

Our present results confirm that Italy had one of the highest reported complete cancer prevalence in Europe (5.9% of the total population in 2020),[4] with proportions ranging from 4.2% in the UK—Ireland to 5.9% in Germany,[4,16-18] similar to what is reported in other high-income countries (4.4%-5.2%).[4,15-20]

The expected increase in prevalent patients is also noteworthy since >4 million or 7% of Italians will live after a cancer diagnosis in 2030. However, the increase of prevalence, in the present study estimated using observed data for the late 2010s, is 1.5% per year overall, less marked than the 3% per year projected using observed data in the late 2000s and early 2010s in Italy[1] or the European pool of registries.[4] This pattern of a less pronounced increase than in the past is consistent with the slower growth in the number of incident cases in recent years in Italy (i.e. fewer smoking-related tumours in men,[21] stable screening adherence,[22] and decreasing diagnostic pressure on frequent cancer types such as prostate[23] and thyroid,[24] often overdiagnosed in the previous decade). In addition, the decrease in the Italian population should be highlighted, from 59.2 million in 2021 (the last year of the observed population) to 57.9 million in 2030.[12] However, the projected increase in prevalence through 2030 is massive, particularly for patients living ≥10 years after diagnosis. In 2018 they were 2.5% of all Italians (1.4 million), and by 2030 they will be 3.5% of Italians (2 million). The consequences for public health organisations and spending will be significant, necessitating new models of care to meet the needs of these patients,[9,25] many of whom can be considered cured.[26-32]

Strengths and limitations

This study is the first to estimate the CurePrev by time since diagnosis for a large number of cancer types. The completeness and accuracy of the Italian Cancer Registries' incidence and survival data were deemed satisfactory[10] and represent a major strength of the study, particularly for the estimation of long-term survival, cure, and

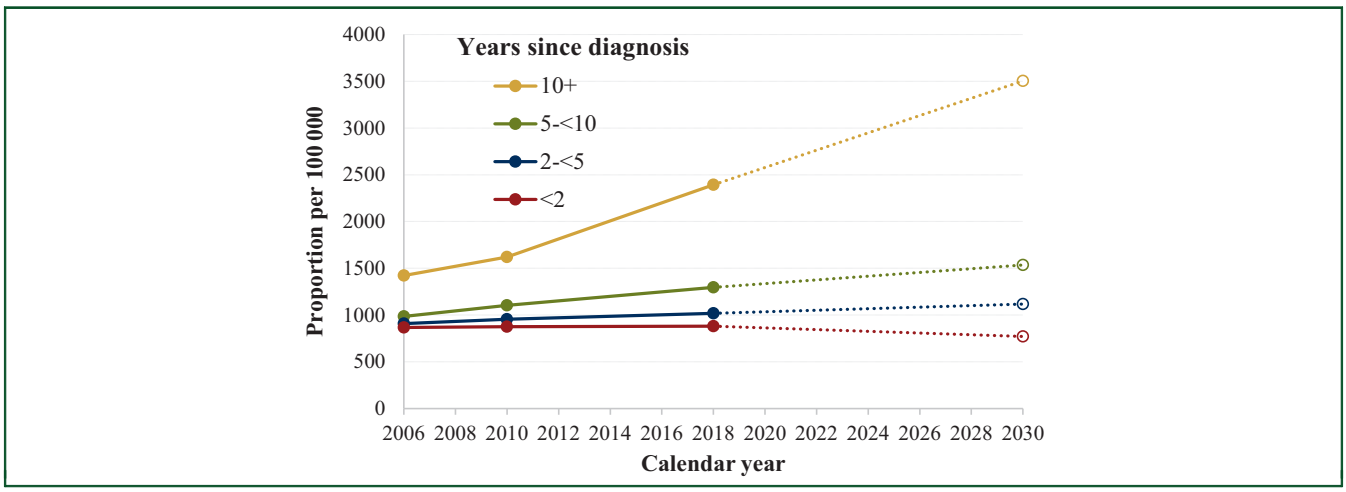

Figure 1. Complete cancer prevalence (proportions) in Italy from 2006[a] to 2030 by years since diagnosis.
[a]Data for 2006 and 2010 were obtained from Guzzinati et al.[1] Filled symbols (closed circles) and solid lines represent estimated observed values, while empty symbols (open circles) and dotted lines represent projected values.

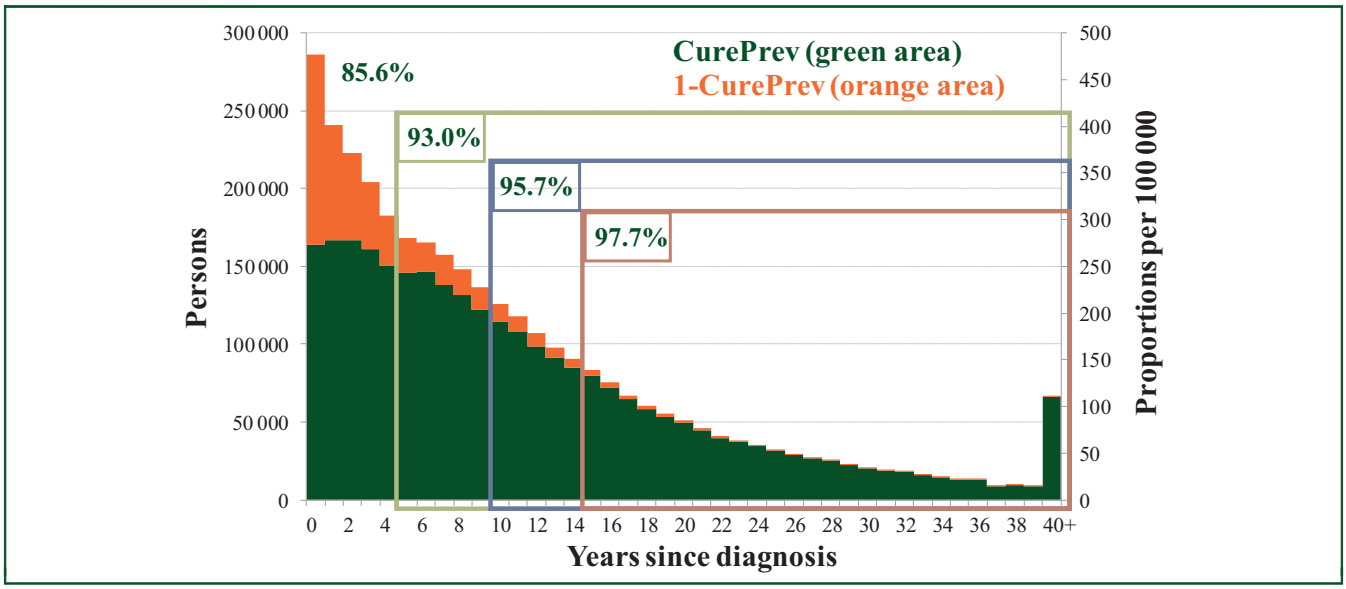

Figure 2. Complete cancer prevalence and cure prevalence (CurePrev; green area)[a] by years since diagnosis in Italy, 2018.
[a]CurePrev for cases alive after *N* years can be interpreted as the 'residual' proportion of patients who will not die of their disease. Squares include people alive at least 5 years after diagnosis (olive), at least 10 years (blue), and at least 15 years after diagnosis (red). Corresponding proportions include patients who will not die from the disease in each group.

prevalence. In addition, the size of the study population and the follow-up length (≥15 years for all registries used in the modelisation) also contributed to the reliability of the estimates of complete prevalence and indicators of cure.[10] Notably, we present more up-to-date data, and by including 47% of the Italian population, we can provide a greater representation of Italian patients than previous studies (coverage of 33% in previous Italian reports[1] and

Table 4. Cure Prevalence (number and percentage of the complete prevalence) by cancer type[a] and years since diagnosis in Italy, 2018

Cancer types	Cure Prevalence among patients alive since					
	≥0 years		≥5 years		≥10 years	
	Cure prevalence, *n* (%)	1 − cure prevalence (%)	Cure prevalence, *n* (%)	1 − cure prevalence (%)	Cure prevalence, *n* (%)	1 − cure prevalence (%)
All types but skin non-melanoma	**2 865 749 (85.6)**	**14.4**	**2 057 316 (93.0)**	**7.0**	**1 372 262 (95.7)**	**4.3**
Breast	705 481 (87.5)	12.5	525 209 (91.7)	8.3	367 879 (94.7)	5.3
Prostate	402 245 (94.1)	5.9	262 341 (96.6)	3.4	136 218 (98.0)	2.0
Colon—rectum	381 496 (90.3)	9.7	271 288 (97.3)	2.7	172 444 (99.0)	1.0
Bladder	222 412 (78.0)	22.0	154 114 (84.5)	15.5	99 985 (88.2)	11.8
Thyroid	189 407 (99.3)	0.7	134 826 (99.7)	0.3	85 339 (99.8)	0.2
Skin melanoma	165 450 (95.5)	4.5	114 985 (98.9)	1.1	77 119 (99.7)	0.3
Non-Hodgkin's lymphoma	134 581 (92.0)	8.0	98 833 (98.2)	1.8	67 140 (99.4)	0.6
Corpus uteri	111 099 (91.3)	8.7	83 999 (95.9)	4.1	59 319 (97.6)	2.4
Kidney	110 558 (80.4)	19.6	79 226 (86.8)	13.2	53 704 (90.1)	9.9
Lung	56 342 (55.3)	44.7	40 365 (88.9)	11.1	24 975 (96.4)	3.6
Leukaemia	79 708 (91.7)	8.3	63 464 (98.9)	1.1	47 912 (99.8)	0.2
Stomach	67 903 (84.7)	15.3	53 604 (97.9)	2.1	40 040 (99.5)	0.5
Hodgkin's lymphoma	53 667 (94.8)	5.2	45 274 (97.3)	2.7	36 920 (98.4)	1.6
Testis	53 248 (99.3)	0.7	42 460 (99.8)	0.2	32 703 (99.9)	0.1
Oral cavity	34 232 (64.5)	35.5	26 064 (78.8)	21.2	17 827 (86.4)	13.6
Cervix uteri	48 911 (93.1)	6.9	42 406 (97.5)	2.5	34 983 (98.6)	1.4
Ovary	43 484 (83.4)	16.6	35 532 (96.2)	3.8	28 186 (99.1)	0.9
Soft-tissue sarcoma	44 278 (88.0)	12.0	35 790 (95.0)	5.0	28 033 (97.5)	2.5
Larynx	36 059 (74.4)	25.6	28 296 (82.2)	17.8	20 769 (87.3)	12.7
Brain and central nervous system	30 508 (82.1)	17.9	26 943 (96.2)	3.8	23 697 (98.4)	1.6
Multiple myeloma	14 999 (47.2)	52.8	10 641 (66.6)	33.4	6298 (78.7)	21.3
Liver	8886 (28.0)	72.0	6277 (55.1)	44.9	3551 (72.2)	27.8
Pancreas	9082 (48.6)	51.4	5535 (96.9)	3.1	2911 (99.8)	0.2
Bone	12 088 (89.4)	10.6	10 412 (95.7)	4.3	8861 (98.0)	2.0
Vagina and vulva	8067 (69.9)	30.1	6067 (83.3)	16.7	4353 (90.1)	9.9
Gallbladder	6484 (61.1)	38.9	4691 (91.9)	8.1	3013 (97.5)	2.5
Small intestine	8131 (87.0)	13.0	5117 (97.4)	2.6	2818 (99.4)	0.6
Oesophagus	3221 (56.0)	44.0	2362 (92.1)	7.9	1556 (97.5)	2.5

[a]Cancer types with a prevalence of ≥10 per 100 000 are presented, sorted by the number of prevalent cases.

20% in international comparisons[4]). Methods of estimation of complete prevalence are validated[10] and comparable with international studies.[4]

Among the limitations of the study, it should be mentioned that we are not able to categorise the complete prevalence or to use CurePrev to distinguish chronic patients, those with long-term side-effects, those with disease recurrence or progression, and those completely cured or in complete remission and health status comparable to peers never diagnosed with cancer. The most restrictive hypothesis in our models is that the same risk of death is assumed for the cured as for the general population and the excess risk is attributed to all fatal cases. The lack of standardised and widely accepted methods for estimating cancer cure indicators also suggests the need for caution in the international comparisons and interpretation of results for cancer cure indicators.[6,7,33,34]

The coronavirus disease 2019 (COVID-19) epidemic may have an impact on projections of prevalent cases after 2020. The stable trend in cancer prevalence after 2018 was possibly altered by cancer incidence changes resulting from a reduction in routine diagnostic activities, poor outcomes due to delays in treatment, and changes in the population age structure due to high mortality among older adults, particularly in the 2020s.[4] However, complete prevalence is a rather smooth indicator over time[1] and the increased risk of death related to COVID-19 appears to be temporary for patients with cancer.[35] Only more updated data will allow us to properly quantify the impact of COVID-19 on cancer prevalence.

Conclusions

In 2030, 6.9% of the Italian population will live after a cancer diagnosis, yet 7 out of 8 (86%) have the same life expectancy as the general population. These results strongly encourage evidence-based policies aimed at improving long-term clinical follow-up, quality of life, and rehabilitation of people with cancer throughout the course of the disease. Prevalence estimates are essential to enhance data-driven, consistent cancer control planning and, as such, these data should be part of the national cancer registration.

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DISCLOSURE

The authors have declared no conflicts of interest.

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