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Estimates of cancer burden in Basilicata and Calabria

Rocco Galasso[1], Riccardo Capocaccia[2], Luciana Del Riccio[1], Lorena Viviano[3], Rosa Matera[1], and Silvia Rossi[2]

[1]Unit of Clinical Epidemiology, Biostatistics and Cancer Registry, IRCCS CROB (Istituto di Ricovero e Cura a Carattere Scientifico, Centro di Riferimento Oncologico di Basilicata), Rionero in Vulture (PZ); [2]National Center of Epidemiology, Italian National Institute of Health, Rome; [3]Evaluative Epidemiology Unit, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy

ABSTRACT

Aims and background. Basilicata and Calabria are two neighboring, low income regions of southern peninsular Italy with an overall population of about 2.5 million in 2010. Cancer registration has covered the entire Basilicata population since 2005 and the province of Catanzaro (18.3% of the Calabria population) since 2003. This paper will provide estimates and projections for the period 1970-2015 of the basic epidemiological indicators – incidence, prevalence and mortality – in the Basilicata and Calabria regions for the major cancers (lung, colon and rectum, stomach, skin melanoma, breast, cervix and prostate).

Methods. The indicators were estimated by applying the MIAMOD statistical back-calculation method to the 1970-2002 official mortality data, and to the 1985-2002 relative survival data collected by population-based registries of the southern regions of Italy.

Results. The incidence rates were estimated to be still rising for breast, prostate and colorectal cancer, and for skin melanoma in men. By contrast, they were estimated to be declining for cervix and stomach cancer. The incidence increased, reaching a peak, and subsequently decreased for lung cancer in men and for skin melanoma in women. The age-standardized mortality rates were estimated to decrease for all considered cancers except prostate cancer in men and lung cancer in women, which presented quite stable mortality rates from the mid 2000s onwards. Except for cervix cancer, prevalence was increasing for all considered cancers, particularly those of the breast and prostate.

Conclusion. These data support the need for health policies focused on primary and secondary prevention, which is the main way to reduce the overall impact of cancer and to preserve health care resources, as well as on actions aimed at ensuring equal access to cancer care and at transferring innovation into clinical practice.

Key words: cancer, incidence, Basilicata, Calabria, prevalence, mortality, registries, estimates.

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Correspondence to: Rocco Galasso, Unit of Clinical Epidemiology, Biostatistics and Cancer Registry, IRCCS CROB (Istituto di Ricovero e Cura a Carattere Scientifico, Centro di Riferimento Oncologico di Basilicata), via Padre Pio 1, 85028 Rionero in Vulture, Potenza, Italy.
Tel +039 0972 726720;
fax +039 0972 726349;
email r.galasso@alice.it

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Introduction

Basilicata and Calabria are two neighboring regions of southern peninsular Italy with an overall population of just over 2.5 million in 2010. Basilicata (588,879 inhabitants[1], 288,274 males and 300,605 females) had a negative demographic balance[2] of -2.3% (natural balance -1.8 and migration balance -0.5). Calabria (2,009,330 inhabitants[1], 979,003 males and 1,030,327 females) had instead a positive total balance of 0.1% consisting of a natural balance of -1.1 and net migration of 1.2[2]. In Italy in the same period, the total balance was positive (4.7) and completely due to a net migration balance of 5.2[2].

They are 2 "poor" regions, which together in 2009 accounted for 2.9% of the Italian gross domestic product (GDP) (2.1% and 0.7% respectively for Calabria and Basilicata)[3]. Calabria in 2011 occupied the last place among the Italian regions by per capita GDP. Both regions ranked below the national per capita GDP average of 23,740 euros,

with levels of 16,311 euros in Basilicata and 14,814 euros in Calabria, the lowest among the Italian regions[4]. Health expenditure (per capita out of GDP) is quite similar between the two regions: 1,782 euros in Calabria *vs* 1,855 in Basilicata, against a national value of 1,853 in 2010[5].

The 2 regions are very different with regard to the relationship between the public and private sectors in the delivery of hospital services. In 2007, 10 public hospitals (1,875 beds) and 1 private hospital (56 beds) were operating in Basilicata compared to 37 public hospitals (4,414 beds) and 39 accredited private hospitals (3,140 beds) in Calabria[6]. In Italy, the ratio between private beds and total number of beds is 21%[6]. A research-oriented comprehensive cancer institute (IRCCS) is located in Basilicata, which is a strong attractor of patients from neighboring regions. In the 2 regions there are also 12 hospitals with medical oncology departments (11 in Calabria) e 7 radiotherapy centers (6 in Calabria)[7]. The distribution of imaging facilities (PET scan, CT and MRI) per capita is similar between the 2 regions and equal to that in Italy as a whole[8].

A regional screening program for female breast and cervical cancer has been active in Basilicata since 1999, while colorectal cancer screening in both sexes started in 2005. All screening programs have a theoretical coverage of 100% of the target population. In Calabria, 100% theoretical coverage screening started on a regional basis in 2005, although screening for colorectal cancer has a coverage of 25%[9].

In Basilicata a cancer registry has been collecting regional data since 2005[10] while in Calabria the cancer registry of the province of Catanzaro covers 18.3% of the regional population and has been active since 2003[11].

Cancer is the second leading cause of death in both regions after diseases of the circulatory system. In 2008, considering the 2 sexes, cancer mortality was 22 per 100,000 in Basilicata and 21.4 per 100,000 in Calabria. These rates were lower than the national average (26.2); however, compared to 2003 they showed a decrease of -0.1% in Basilicata and -0.7% in Calabria, which was less than in Italy (-1.9%)[12].

This paper will provide the basic epidemiological indicators – incidence, prevalence and mortality – in the Basilicata and Calabria regions for the major cancers (lung, breast, prostate, colon-rectum, stomach, cervix uteri and skin melanoma), in the period 1970-2015.

Material and methods

Incidence, mortality and prevalence were estimated by applying the MIAMOD statistical back-calculation method to survival and mortality data. Mortality data for all cancers, general mortality and population data by sex, age, calendar year and geographical region for the period 1970-2002 were obtained from the Italian National Institute of Statistics (ISTAT)[13]. Relative survival data for the considered cancers and for the period of diagnosis 1985-2002 were obtained from the EUROCARE-4 study[14]. They refer to the populations covered by 21 cancer registries in Italy, jointly covering about 25% of the national population.

The MIAMOD method[15-17] relies on the mathematical relationships between mortality, prevalence, incidence and survival. The model's estimation is based on mortality data from ISTAT for the period 1970-2002, with cause of death coded according to the ninth revision of the International Classification of Diseases (ICD-9)[18]. The subsequent years, i.e. 2003, 2006 and 2007 (data for 2004-2005 were not yet published by ISTAT), were used to validate the expected mortality projections. The relative survival of cancer patients was estimated from observed cancer registry data by means of parametric cure models of the Weibull type at the macro-area level. The geographical area and the age of patients were considered as categorical covariates in the survival model. The covariate year of diagnosis was modeled for each site and sex as continuous or categorical, and as unique for all areas or variable by area, according to the pattern of observed survival data[17]. The survival estimates for the south of Italy were assigned to Basilicata and Calabria. The survival time trend after 2002 was assumed to have the same tendency as that estimated over the observation period 1985-2002 for all cancers except prostate cancer, where survival was assumed to be constant from 2005 onwards.

All incidence, mortality and prevalence estimates were carried out up to age 99. For cervical cancer, prostate cancer and skin melanoma, additional procedures were applied to account for specific problems related to these sites. The estimates for cervix cancer were performed after having estimated the regional cervical cancer mortality with a specific methodology[19,20] allowing to correct the observed mortality data, which were largely incomplete due to misclassification with cancer of the uterus not otherwise specified (NOS). The methodology could be applied from 1980 onwards because before that year the ICD-8 classification, which did not distinguish uterus NOS, has been adopted in the ISTAT statistics. The corrected mortality data were used as input data for incidence and prevalence estimates by the MIAMOD method. Estimates for this site were carried out up to age 94 years because the distinction of uterus NOS cancer deaths into cervix and corpus uteri cancer deaths in women over 94 years old is not very reliable. Furthermore, for cervical cancer only limited-duration prevalence at 15 years was reported. Indeed, complete prevalence is highly sensitive to the past trends. For cervical cancer, incidence estimates before 1980 are scarcely reliable due to the subsequent spread of non-organized early diagnosis and to the fact that neither mortality nor cancer registry data exist to support reliable modeling assumptions. Simple backward linear extrapolation of the decreasing trend estimated

during the 1980s and 1990s may inflate the past incidence level and consequently (due to the high survival) the estimated prevalence of women with a diagnosis of cervical cancer.

For prostate cancer, because of the rapid changes in the recent time trends, more up-to-date mortality data were used in order to capture recent variations that could not be modeled with data up to 2002. Since mortality data for 2004-2005 were missing, mortality estimates with projections up to 2010 were preliminarily performed by means of the PIAMOD method[21]. The modeled mortality was then used as input for the MIAMOD method.

The projections of age-specific incidence and mortality for melanoma were obtained by linearly projecting the age-specific annual percent change of the incidence and mortality rates estimated in the period 2001-2002. The total rates were obtained by age-specific rates. The age-standardized rates were based on the standard European population.

Results

The number of cases and the crude and age-standardized incidence and mortality rates and prevalence proportions estimated in Basilicata and Calabria for the year 2012 are presented in Tables 1A (men) and 1B (women). In the male population, prostate cancer was the most frequent cancer, with about 1,416 estimated new diagnoses. The incidence of the other cancers was substantially lower, ranging between 1,205 (colon-rectum) and 125 (melanoma) estimated new cases. During the same year, 2,146 new cases of breast cancer were expected to be diagnosed in the female population. For the other cancers, the number of estimated new cases was considerably lower and ranged between 902 (colon-rectum) and 49 (melanoma). Prevalence was 9 times higher in breast cancer, while it was just over twice the incidence in lung cancer. For skin melanoma, prevalence was 15 times higher than incidence in women and only 8 times in men. The highest crude mortality rates were observed for lung cancer in men (59.8 per 100,000) and breast cancer in women (28.2 per 100,000). The lowest rates were those of skin melanoma in both sexes and uterine cervix cancer in women.

For colorectal, lung and stomach cancer and skin melanoma, all the indicators were higher in men than women. The highest male:female ratios were reported for lung cancer (standard mortality 8.2, standard incidence 8, crude prevalence 5.1) while the lowest were for melanoma (standard mortality 1.8, standard incidence 1.8, crude prevalence 1.2). The time trends of the 3 indicators over the period 1970-2015 are shown in Figures 1 to 6. They present the age-standardized incidence in men (Figure 1) and women (Figure 2), the age-standardized mortality in men (Figure 3) and women (Figure 4), and the crude prevalence in men (Figure 5) and women (Figure 6). The results will be described below, grouped by cancer site.

Stomach

The incidence and mortality trends for stomach cancer were estimated to decrease markedly during the whole period 1970-2015. In men, incidence and mortality decreased from 29.2 to 18.5 and from 25.8 to 12.2 per 100,000/year, respectively. In women the rates were lower than in men; trends were similar but with a more pronounced rate of decrease: incidence dropped from 16.0 to 7.8 and mortality from 13.6 to 5.5 per 100,000/year.

Colon and rectum

For colorectal cancer the male incidence rates were estimated to rise from 13.2 per 100,000 in 1970 to 64.2 per 100,000 in 2015, amounting to an about 5-fold increase, while the male mortality rates were estimated to rise until the end of the 2000s (from 9.9 per 100,000 in 1970 to 23.1 per 100,000 in 2008) and slightly decline thereafter (22.5 per 100,000 in 2015). The incidence rates in women were lower than those in men, increasing from 11.9 to 35.7 per 100,000 during the period 1970-2015. The female mortality trend was similar to the male trend, but the peak level occurred 8 years earlier: the age-standardized mortality rose from 8.7 to 13.9 in 2000 and then declined to 12.3 in 2015.

Lung

The lung cancer incidence rate in men reached its peak during the late 1990s (56.6 per 100,000 in 1998) and slightly decreased thereafter (48.4 in 2015). In women, it increased from 4.3 per 100,000 in 1970 to 6.4 per 100,000 in 2003 and is expected to remain around the level of 6.0 per 100,000 until 2015. Due to the very poor prognosis of this cancer, the mortality trends were very close to the estimated incidence trends.

Skin melanoma

The melanoma incidence rates were estimated to rise uniformly for men with a more than 10-fold increase (from 0.7 to 9.0 per 100,000) during the period 1970-2015. The corresponding values in women were 0.7 in 1970, a peak of 3.3 in 2000, and a slow decline to 3.0 in 2015. The mortality rates were low due to the high survival of melanoma patients. They reached a peak in both genders during the 1990s and subsequently decreased. The estimated value in 2015 is 10 times lower than the incidence rate.

Breast

The breast cancer incidence in women was estimated to increase rapidly from 20.9 per 100,000 in 1970 to about 80 in the early 2000s. Subsequent projections showed a continuous exponential increase up to 139.3

in 2015. Projections for breast cancer incidence are to be taken with caution because this indicator may reflect more the impact of screening activities than the natural evolution of risk factors. Mortality rates reached a peak in 1995 (19.6 per 100,000) and then dropped to a foreseen level of 17.2 in 2015.

Cervix uteri

During the study period the incidence and mortality rates of uterine cervix cancer declined markedly, reaching the lowest figures among the considered malignancies, except for the melanoma mortality. The projected age-standardized incidence and mortality rates for 2015 are 2.9 and 1.3 per 100,000, respectively.

Prostate

The incidence of prostate cancer was estimated to increase throughout the study period, with a particularly steep rise from 1985 (18.7 per 100,000) to 2005 (64.7 per 100,000) and a slighter increase in the projection period, reaching 68.4 per 100,000 by 2015. Mortality for prostate cancer was also increasing from 9.4 in 1970 to 16.3 in 2002, but was then expected to remain relatively stable up to 2015.

Prevalence

Prevalence increased for all considered cancers except cervix cancer. The rise was striking for breast and prostate cancer and less pronounced for stomach cancer due to the impressive reduction of its incidence, and lung cancer due to its high lethality. It is interesting to note the opposite behavior of mortality, which decreased for all considered cancers with the exception of lung cancer in women.

Discussion

This paper provides an updated description of the burden of the major cancers in the Basilicata and Calabria regions in terms of time trends through 2015 and point estimates in 2012.

Comparison between the estimated incidence in Basilicata and Calabria and the corresponding available data of the 2 local cancer registries[10,11] shows a good match, at least over the year 2005 covered by cancer registration (Table 2). Only for breast cancer a major overestimation of estimated cases was seen: +30% with respect to the Catanzaro cancer registry data and +14% with respect to those of the Basilicata registry. Since the mortality rates were the same, the difference can be attributed to overestimation of survival in our MIAMOD analysis, particularly for the Catanzaro population, possibly due to the delay in the activation of breast cancer screening in these 2 regions with respect to other southern Italian areas covered by cancer registries.

The difference in net migration related to the migration balance, constituted mostly by young people, has contributed to a slight difference in population structure between the 2 regions. In fact, the Basilicata population is older for both sexes. In 2009, men aged ≥65 represented 17.8% of the male population in Basilicata *versus* 16.7% in Calabria. The corresponding proportions in women were 22.3% and 20.6%, respectively. The aging index (% ratio between population aged ≥65 years and overall residents) for men was 123.9 in Basilicata and 109.7 in Calabria, and for women it was 172.7 *versus* 150.2. It was higher in Basilicata for both sexes with respect to the Italian population (117.5 in men and 171.5 in women)[2]. This difference in the structure of the 2 populations does, however, not affect the estimates, which in all phases were carried out on the basis of age-specific quantities.

The population of Basilicata is widely spread over the area, with a density in 2011 of 58.7 inhabitants per km^2, *versus* 133.1 in Calabria. In both regions the population is concentrated mostly in large urban centers. About one third of the population (34% in Basilicata and 33% in Calabria) lives in small towns (with less than 5,000 inhabitants), which represent 76% of all the municipalities in Basilicata and 80% in Calabria[22]. The majority of municipalities in Basilicata and Calabria are small nonurban towns (located outside of urban and metropolitan areas)[23] with poor access to the motorway and railway network[22]. This logistic condition, along with transport difficulties due to the mountainous territory, probably restricts the access to specialized centers for the treatment of cancer.

The incidence rates are still rising for breast, prostate and colorectal cancer, and for skin melanoma in men. By contrast, the rates have been declining for cervix and stomach cancer. The rates increased, reaching a peak, and subsequently decreased for lung cancer and female skin melanoma. Individually modifiable risk factors such as tobacco smoking, diet and physical inactivity have been identified as major factors that may explain the growing trend better than more general environmental factors.

The major risk factor affecting the observed trends is smoke. Tobacco smoke is related to lung, stomach and cervix cancer[24] and also has a potential role in breast cancer[25]; the attributable risk for tobacco is highest for lung cancer and less strong for stomach, cervix and breast cancer. The smoking prevalence in Basilicata in 2011 was higher than that in Italy (23.3% *vs* 22.3%), while in Calabria it was lower (18.8%)[26]. There was a decrease in the male smoking prevalence and an increase in the female prevalence, although the female prevalence was still about half the male rate[26]. However, the female lung cancer incidence seems to be no longer increasing in Basilicata and Calabria, differently from most Italian regions.

For stomach, colorectal, breast, and prostate cancer, diet is an important risk factor[27]. Changes in eating habits have been impressive, with a progressive and inexorable increase in caloric intake and the gradual

disappearance of the Mediterranean diet in favor of a "Western" diet. There has been a reduction in individual consumption frequency of fruit and vegetables not offset by the increase in the number of people who use it, a decrease in the consumption of legumes and whole grains, and an increase in the consumption of red meat, refined sugar and dairy products. An increase in the consumption of alcohol in all age groups has also been reported[28]. This westernization or "Americanization" of food consumption due to nontraditional cultural models and/or induced by the food industry with a transformation to the US eating behavior of the 1980s and 1990s is much more evident in the south of Italy than in central and northern regions. No reduction of the colorectal cancer incidence has been observed in Basilicata and Calabria, probably due to this worsening of the pattern of risk factors and to the failure to spread knowledge of the risk factors among the population.

An indirect measure of unhealthy nutritional habits is the proportion of the population that was overweight or obese (BMI >25%). In 2010 the proportion of overweight and obese persons was 53.7% and 50.3%, respectively, in Basilicata and Calabria. These values are much higher than the national average (46%)[29]. Also, a significantly higher proportion of people with a sedentary lifestyle was reported in Basilicata (48.4%) and Calabria (51%) than in Italy (39.8%) in 2011[30].

Probably we are dealing with a complex social phenomenon that must be investigated. The "nutrition paradox"[31] is a situation where underweight and obesity coexist in countries of intermediate development, where the neo-upper classes tend to exit the condition of hunger, directly passing to a dietary lifestyle at high risk of obesity. In rich countries, on the other hand, obesity is strongly linked to poverty, since the most vulnerable social classes are those with low income levels, who are less aware of the problems caused by obesity including diabetes, cardiovascular disease and cancer.

The increase in the prostate cancer incidence was largely due to the spread of PSA testing and to opportunistic screening. We cannot say how much of the prostate cancer incidence rise is due to risk factors or to early diagnosed lesions including overdiagnosis[32]. In our opinion overdiagnosis may be the major determinant of this increase because it is not accompanied by a corresponding increase in mortality, which has been quite stable up to 2000, and survival continues to be lower in the south of Italy[33].

In Italy, as in many Western countries, the incidence of melanoma of the skin is on the rise[34], also caused by increased exposure to UV radiation and to greater attention to early lesions.

Since 2000 the mortality rates for all considered cancers have been declining in Basilicata and Calabria. This finding is consistent with what has been reported in other Western countries[35], where reduced incidence and improved treatment strategies, together with awareness of the early signs and symptoms of cancer, play a key role in the cancer mortality reduction. In lung cancer, mortality reduction is strongly related to the reduction of its incidence; lung cancer is a very low survival disease with few therapeutic options and the mortality rates are very close to the incidence rates. In general, we observed a smaller decrease in Basilicata and Calabria compared with the Italian trend. These figures call for stronger efforts in primary care, i.e. diagnosis and treatment. Given that Basilicata's and Calabria's health expenditure, modern equipment, specialized oncology departments and screening programs are quantitatively similar to those of other Italian regions[7], the findings may be indicative of a more difficult access to appropriate clinical care pathways.

Mortality is also related to early diagnosis for those cancers that benefit from effective therapy given to patients with localized disease. Also screening programs may have a strong impact on the mortality trends of breast, cervical and, to some extent, colorectal cancer[9]. According to the ISTAT multipurpose survey[36] the access to Pap smears for 25- to 64-year-old women (at least 1 test in the last 3 years) was quite low: 47.6% in Calabria, the last of the Italian regions, and 63.7% in Basilicata (against 70.9% Italy) in the period 2004-2005.

The access to mammography for women 50-69 years of age has spread late in Basilicata and particularly Calabria with respect to the rest of Italy. The proportion of women who underwent mammography as a preventive measure, whether or not within an organized screening program, was reported by the ISTAT multipurpose survey to be 31.8% in 1999-2000[37] and 48.8% in 2004-2005[36] in Calabria. The corresponding percentages were 37.8 and 68.9, respectively, in Basilicata and 58.1 and 71.0 in Italy. The beginning of the reduction of the mortality from breast cancer, in contrast to the continuous, epidemic increase in its incidence, could coincide with the more widespread availability of more effective therapeutic tools for patients selected on the basis of prognostic factors. Also screening contributed to the reduction of the mortality from breast cancer, even if, without individual data, it is impossible to completely separate the effects of improved treatment and health service organization from those of screening. In countries with more than a decade of experience in organized breast cancer screening programs, the reduction of the mortality from breast cancer was significant.

In 2006 the Italian Ministry of Health included colorectal cancer in the recommendation for screening[38]. The estimated adherence to screening tests in the sample of healthy people 50-69 years of age, as reported by the PASSI study, shows that only 12.8% of people declared to have undergone testing (fecal occult blood test or endoscopy) in the last 2 years in Calabria. The figure was higher for Italy (30.9%) and Basilicata (29.6%)[39]. The

mortality from colorectal cancer in both sexes is slowly decreasing, mainly due to improved treatment. However, it does not show the same progress as the breast cancer trend and there is certainly no effect of screening, which started recently and has a low adherence.

Prevalence is important for the organization of health services. Tables 1A and 1B show that most of the prevalent cases come from breast cancer, prostate cancer and colorectal cancer. These data support the need for health policies focused on primary and secondary prevention, which is the only way to save further lives and to preserve health resources, as well as for actions aimed at increasing awareness of the need to maintain healthy habits.

Regional health systems have to establish effective cancer control programs to accelerate the translation of cancer control knowledge into actions according to capacity and economic development. These include raising awareness of the increasing burden of cancer, reducing the prevalence of major risk factors, applying low-technology and cost-effective approaches to prevention and early detection of cancer, and improving the availability of palliative care. In this process it will be crucial to ensure that all citizens have equal access to cancer care, to implement shared clinical pathways for specific cancer diseases, and to support the centers of excellence in order to guarantee the transfer of innovation to clinical practice.

Table 1A – Estimated incidence, mortality and prevalence by cancer site for the year 2012 in Basilicata and Calabria. Number of cases and deaths, crude and European age-standardized (age-std) rates per 100,000 person-years and crude prevalence proportion per 100,000 persons. Age 0-99 years, men

Cancer site	Incidence			Mortality			Prevalence	
	Number of cases	Crude rate	Age-std rate	Number of deaths	Crude rate	Age-std rate	Number of cases	Crude proportion
Prostate	1,416	112.0	67.7	364	28.8	15.2	8,976	710.0
Stomach	353	27.8	19.1	246	19.4	12.9	1,355	106.7
Colon-rectum	1,205	94.9	61.2	471	37.1	22.9	6,008	473.4
Lung	935	73.6	50.8	759	59.8	40.2	1,988	156.5
Melanoma	125	9.8	8.1	19	1.5	1.1	1,032	81.3

Table 1B - Estimated incidence, mortality and prevalence by cancer site for the year 2012 in Basilicata and Calabria. Number of cases and deaths, crude and European age-standardized (age-std) rates per 100,000 person-years and crude prevalence proportion per 100,000 persons. Age 0-99 years, women

Cancer site	Incidence			Mortality			Prevalence	
	Number of cases	Crude rate	Age-std rate	Number of deaths	Crude rate	Age-std rate	Number of cases	Crude proportion
Breast	2,146	162.3	123.0	374	28.2	17.7	18,818	1,423.1
Stomach	201	15.2	8.2	150	11.3	5.8	790	59.8
Colon-rectum	902	68.2	34.9	357	27.0	12.8	5,059	382.7
Lung	150	11.3	6.2	125	9.4	5.0	406	30.7
Melanoma	49	3.7	3.2	9	0.7	0.5	759	57.4
Cervix	57	4.3	3.3	31	2.4	1.5	556*	42.1*

*limited-duration prevalence at 15 years.

Table 2 – Incidence by cancer site in 2005: age-standardized rates (European population) per 100,000 person-years

Cancer site	Men			Women		
	MIAMOD	Basilicata CR	Catanzaro CR	MIAMOD	Basilicata CR	Catanzaro CR
Lung	54.9	50.0	50.4	6.4	6.6	9.6
Colon-rectum	52.9	56.9	52.2	32.0	37.0	37.6
Breast	-	-	-	91.9	80.4	70.7
Prostate	64.7	62.1	68.1	-	-	-
Cervix	-	-	-	4.5	8.0	6.3
Stomach	20.5	20.0	31.4	9.1	11.0	10.0
Melanoma	6.0	8.3	5.9	3.3	7.8	8.4

CR, cancer registry.

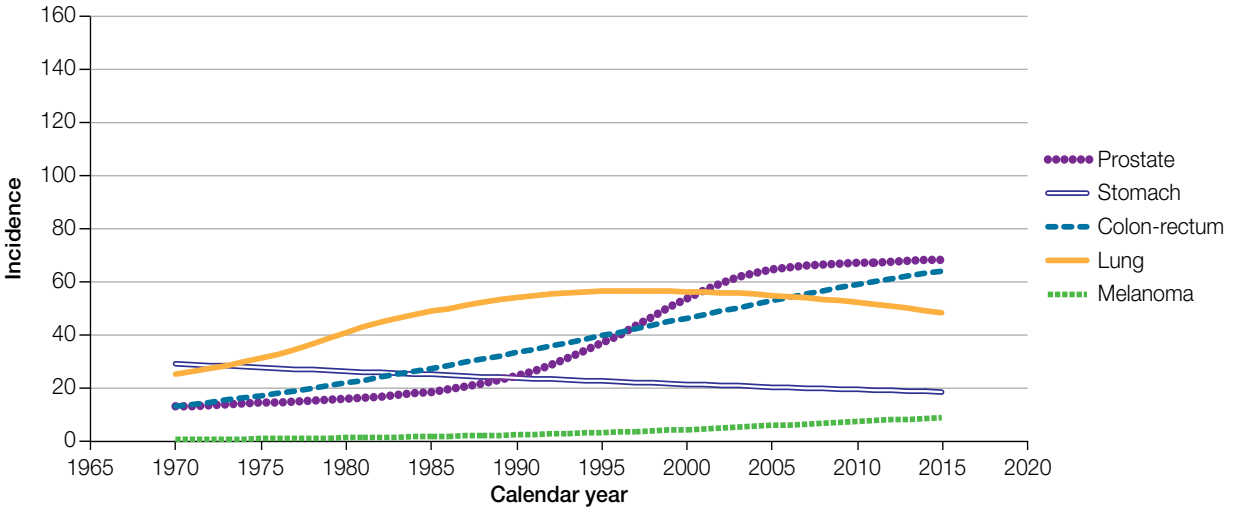


Figure 1 - Incidence estimates by cancer site in Basilicata and Calabria in the period 1970-2015. Age-standardized rates (European population) per 100,000 person-years. Age 0-99 years, men.

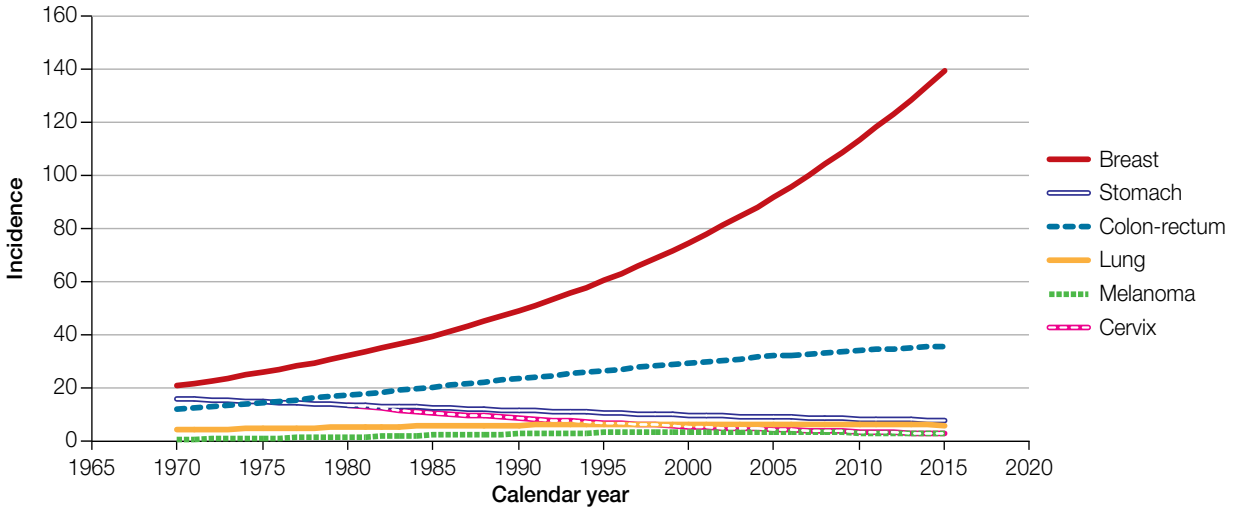


Figure 2 - Incidence estimates by cancer site in Basilicata and Calabria in the period 1970-2015. Age-standardized rates (European population) per 100,000 person-years. Age 0-99 years, women.

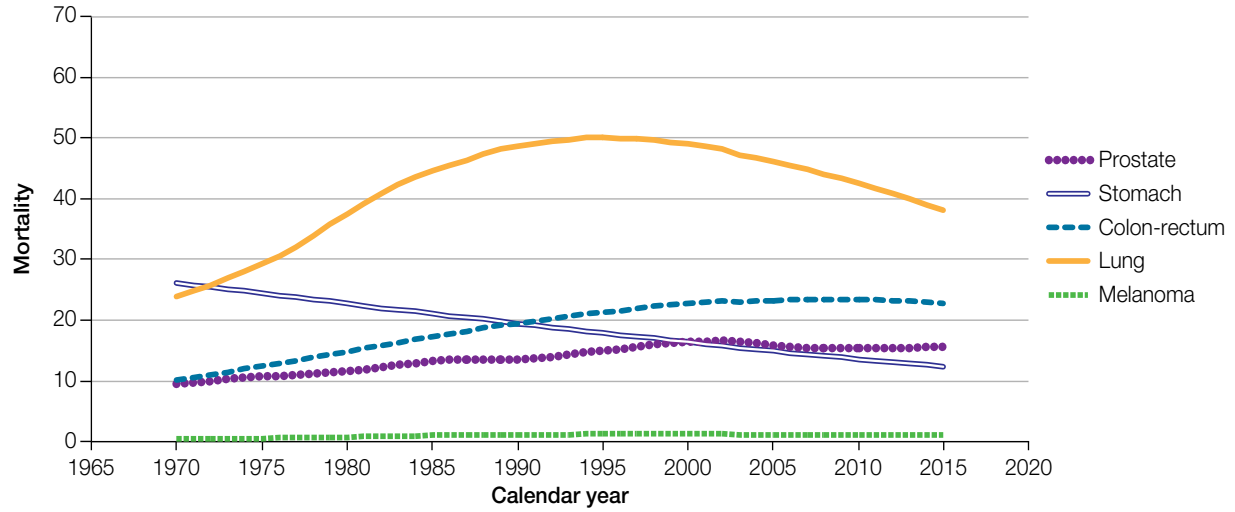


Figure 3 - Mortality estimates by cancer site in Basilicata and Calabria in the period 1970-2015. Age-standardized rates (European population) per 100,000 person-years. Age 0-99 years, men.

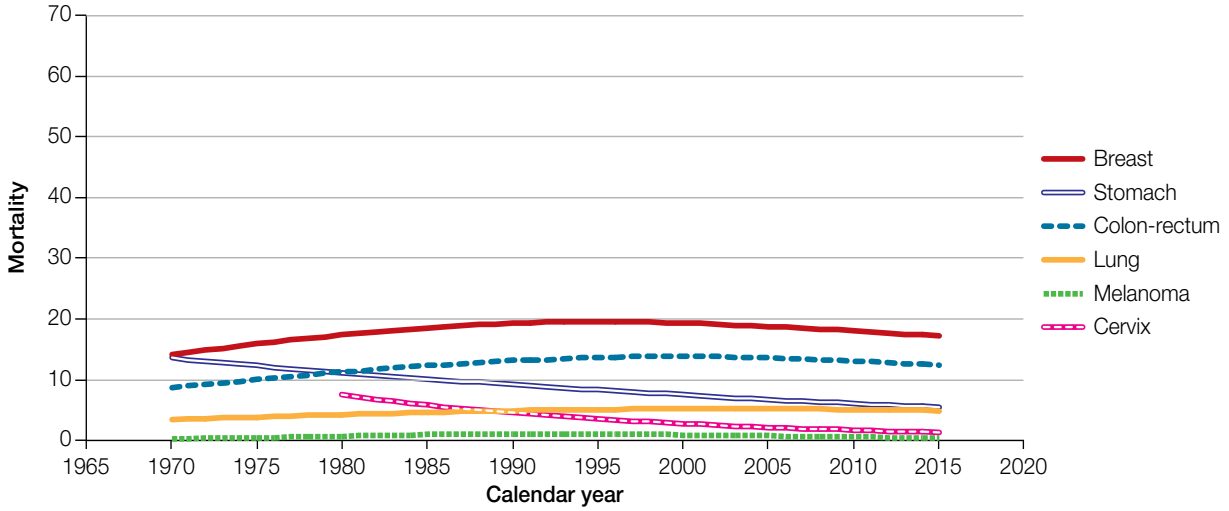


Figure 4 - Mortality estimates by cancer site in Basilicata and Calabria in the period 1970-2015. Age-standardized rates (European population) per 100,000 person-years. Age 0-99 years, women.

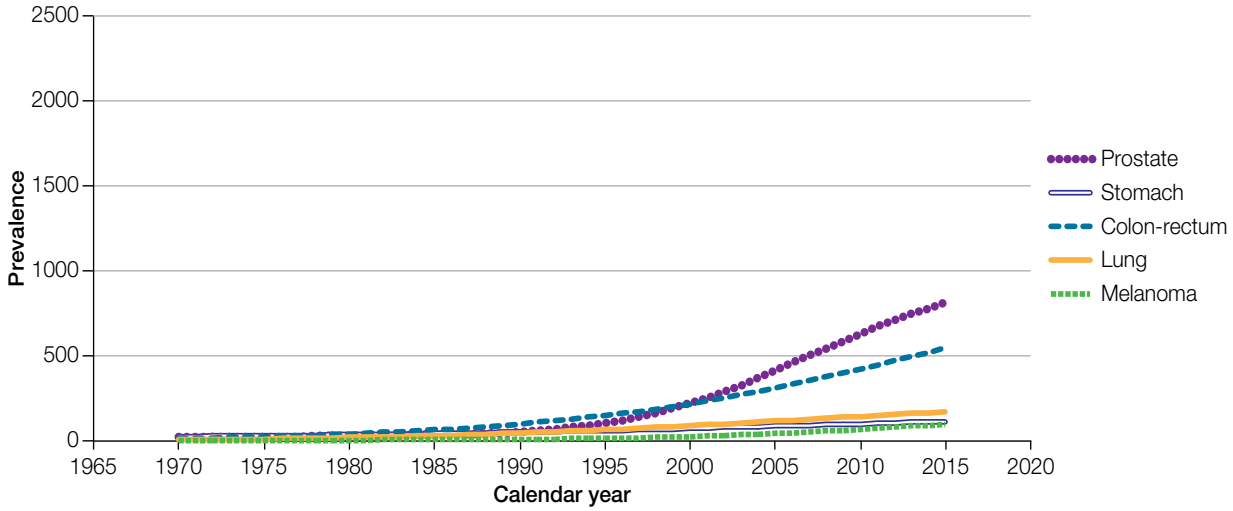
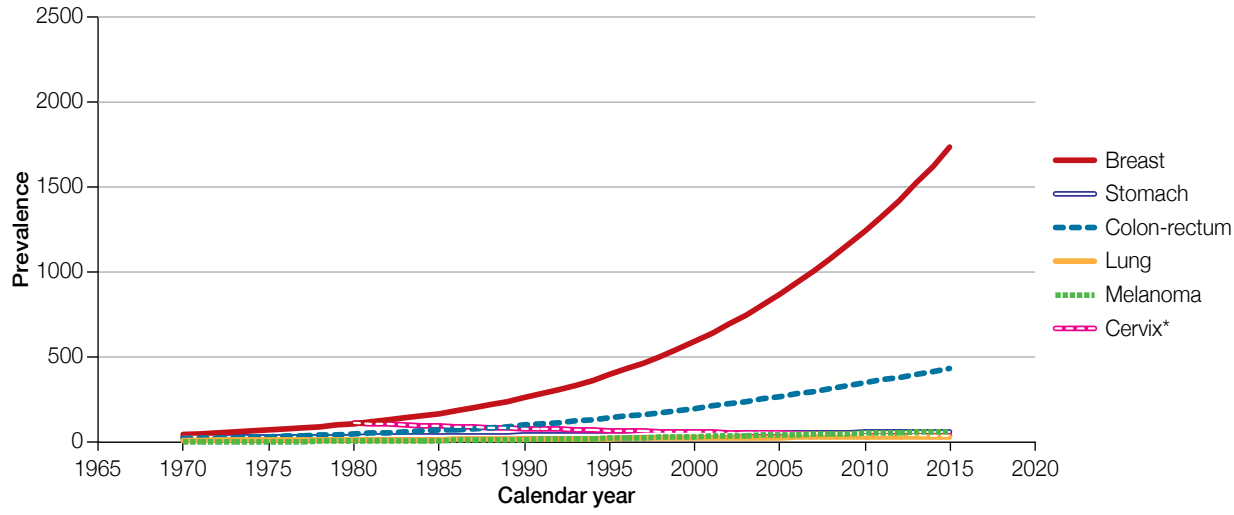


Figure 5 - Prevalence estimates by cancer site in Basilicata and Calabria in the period 1970-2015. Crude proportion per 100,000 persons. Age 0-99 years, men.



limited-duration prevalence at 15 years

Figure 6 - Prevalence estimates by cancer site in Basilicata and Calabria in the period 1970-2015. Crude proportion per 100,000 persons. Age 0-99 years, women.

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