**13-15 Aprile 2016**
**Reggio Children c/o Centro Internazionale Loris Malaguzzi – REGGIO EMILIA**

XX
RIUNIONE
SCIENTIFICA
ANNUALE

AIRTUM

REGGIO EMILIA
2016

# I dati dei Registri Tumori a supporto della ricerca

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# I dati dei Registri Tumori a supporto della ricerca:
## Esempi positivi e potenzialità

1. Epidemiologia descrittiva

2. Epidemiologia valutativa

3. Epidemiologia analitica

4. Altri contributi alla ricerca

# AIRTUM:
## storia e attività istituzionali



Associazione Italiana
Registri Tumori

L'Associazione italiana registri tumori
è nata nel 1996 con l'intento di coordinare
le attività dei Registri tumori già presenti in Italia.

AIRTUM svolge un'attività di raccordo metodologico
tra i registri, **sostiene direttamente la ricerca** e la
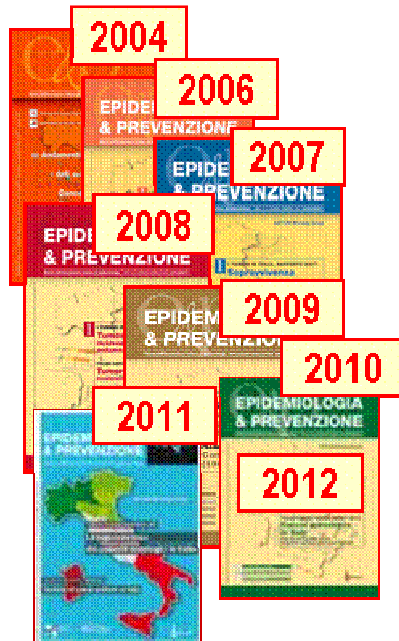produzione editoriale.

E' collegata alle corrispondenti associazioni di altri
Paesi Europei e continenti.

# 1) Epidemiologia descrittiva: esempi

## uso dei dati AIRTUM (monografie):

1992
1997

2004
2006
2007
2008
2009
2010
2011
2012

2013
TUMORI
MULTIPLI

2014
PREVALENZA
E GUARIGIONE

2015
TUMORI RARI

# 1) Epidemiologia descrittiva: esempi

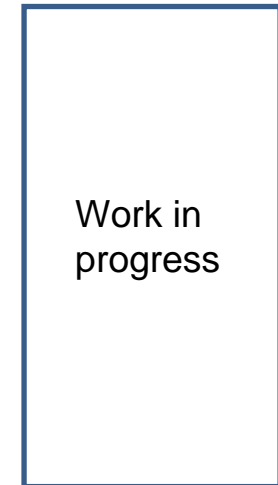## AIOM-AIRTUM: i numeri del cancro in Italia

2011    2012    2013    2014    2015    2016

# 1) Epidemiologia descrittiva: esempi

## Uso dei dati dei singoli registri



Surgical Oncology 22 (2013) e31–e38

Contents lists available at SciVerse ScienceDirect

**Surgical Oncology**

journal homepage: www.elsevier.com/locate/suronc

Review

Incidence and mortality trends for four major cancers in the elderly and middle-aged adults: An international comparison
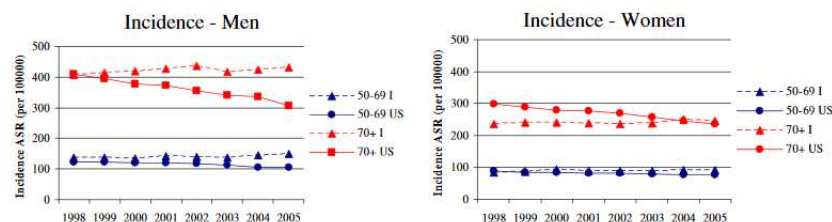
Alberto Quaglia [a,*], Roberto Lillini [a,b], Emanuele Crocetti [c], Carlotta Buzzoni [d], Marina Vercelli [a,e], AIRTUM Working Group [1]

A. Quaglia et al. / Surgical Oncology 22 (2013) e31–e38



ASR: age standardised rates (per 100,000) of the period 1998-2005
I = Italy, US = United States

| Countries | Age group | APC1 (95% CI) | APC2 (95% CI) | JP | ASR |
|---|---|---|---|---|---|
| | | **INCIDENCE MEN** | | | |
| Italy | 50-69 yrs | 1.0* (0.2; 1.8) | | | 140.2 |
| | 70+ yrs | 0.6* (0.0; 1.3) | | | 422.2 |
| United States | 50-69 yrs | -1.2 (-3.6; 1.2) | -4.0* (-7.5; -0.4) | 2002 | 116.1 |
| | 70+ yrs | -3.3* (-4.2; -2.4) | -5.1* (-9.0; -0.7) | 2003 | 361.8 |
| | | **INCIDENCE WOMEN** | | | |
| Italy | 50-69 yrs | 0.9 (-0.2; 2) | | | 89.5 |
| | 70+ yrs | 0.5 (-0.2; 1.2) | | | 240.5 |
| United States | 50-69 yrs | -2.0* (-2.5; -1.5) | | | 110.1 |
| | 70+ yrs | -2.4* (-3.4; -1.5) | -4.3* (-5.9; -2.7) | 2002 | 287.8 |

**Figure 1.** Incidence trends for colorectal cancer, by sex, age group (50–69 and 70 or more years) and geographical area.

Human Epidermal Growth Factor Receptor 2 Status and Interval Breast Cancer in a Population-Based Cancer Registry Study

Antonino Musolino, Maria Michiara, Giovanni Maria Conti, Daniela Boggiani, Marella Zatelli, Dario Palleschi, Maria Angela Bella, Paolo Sgargi, Beatrice Di Blasio, and Andrea Ardizzoni

**J Clin Oncol 30:2362-2368. © 2012**

**Purpose**
To determine whether human epidermal growth factor receptor 2 (HER2) –positive status is associated with risk of breast cancer diagnosis in the interval between mammographic screening, we estimated the distribution of features of aggressive tumor behavior in a general population with newly diagnosed breast cancer and known screening status.

**Patients and Methods**
We evaluated all invasive breast cancers (N = 641) that were systematically collected by the Parma Province Cancer Registry and diagnosed in women age 50 to 69 years from 2004 to 2007. From this population, 292 screen-detected cancers and 48 interval cases with negative screening mammograms on expert rereading (true interval cancers) were selected for study purposes. Unconditional logistic regression adjusted for age and tumor size was used to determine whether interval cancers were associated with selected clinicobiologic characteristics.

**Results**
Tumors with a high histologic grade (odds ratio [OR], 1.8; 95% CI, 1.2 to 3.8), high proliferative rate (OR, 2.4; 95% CI, 1.2 to 4.5), negative estrogen receptor status (OR, 1.6; 95% CI, 1.1 to 3.1), or HER2-positive status (OR, 3.4; 95% CI, 1.7 to 7.1) were more likely to be diagnosed in the interval between screening. Women age less than 60 years with HER2-positive breast cancer were four times more likely to be diagnosed in the interval between screening compared with only a two-fold increased risk for older women.

**Conclusion**
This population-based cancer registry study demonstrated that HER2-positive tumors account for a substantial proportion of mammographic screening failure. The distribution of biologic characteristics in screen-detected cancers differs from that observed in interval cancers and may account in part for the more aggressive behavior of interval-detected cases.

# 1) Epidemiologia descrittiva: esempi

## EUROCARE (147 publications)

**Survival of cancer patients in Europe: the EUROCARE Study**
Berrino F.; Sant M.; Verdecchia V.; Capocaccia R.; Hakulinen T.; Estéve J.(editors)
IARC Scientific Publication 1995,132.

**Survival of Adult Cancer Patients in Europe Diagnosed from 1978-1989:**
**The EUROCARE II Study**
Coebergh J.W.W.; Sant M.; Berrino F.; Verdecchia A.
European Journal of Cancer 1998,34:2137-2138.

**EUROCARE-3: survival of cancer patients diagnosed 1990–94—results and commentary**
Sant M.; Aareleid T.; Berrino F.; *et al.*  Annals of Oncology 2003,14:v61-v118.

**Recent cancer survival in Europe: a 2000-02 period analysis of EUROCARE-4 data**
Verdecchia A.; Francisci S.; Brenner H.; Gatta G.; Micheli A.; Mangone L.; *et al.*
Lancet Oncology 2007,8:784-796

# 1) Epidemiologia descrittiva: esempi

## EUROCARE (147 publications)

**Cancer survival in Europe 1999-2007 by country and age: results of EUROCARE-5-a population-based study**
De Angelis R.; Sant M.; Coleman M.P.; *et al.*
Lancet Oncology 2014,15:23-34.

**Childhood cancer survival in Europe 1999-2007: results of EUROCARE-5-a population-based study**
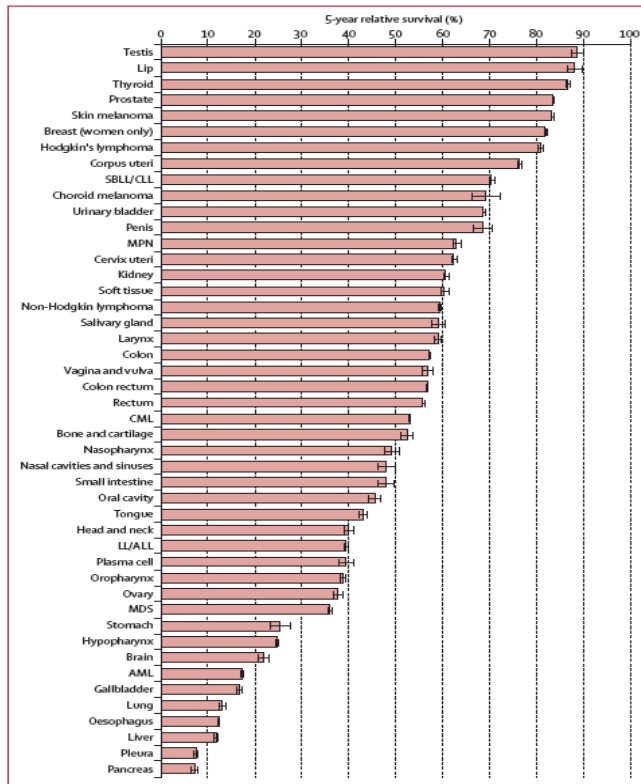Gatta G.; Botta L.; Rossi S.; *et al.*
Lancet Oncology 2014,15:35:47.



Figure 1: European mean age-standardised 5-year relative survival for adult patients with cancer diagnosed in 2000–2007
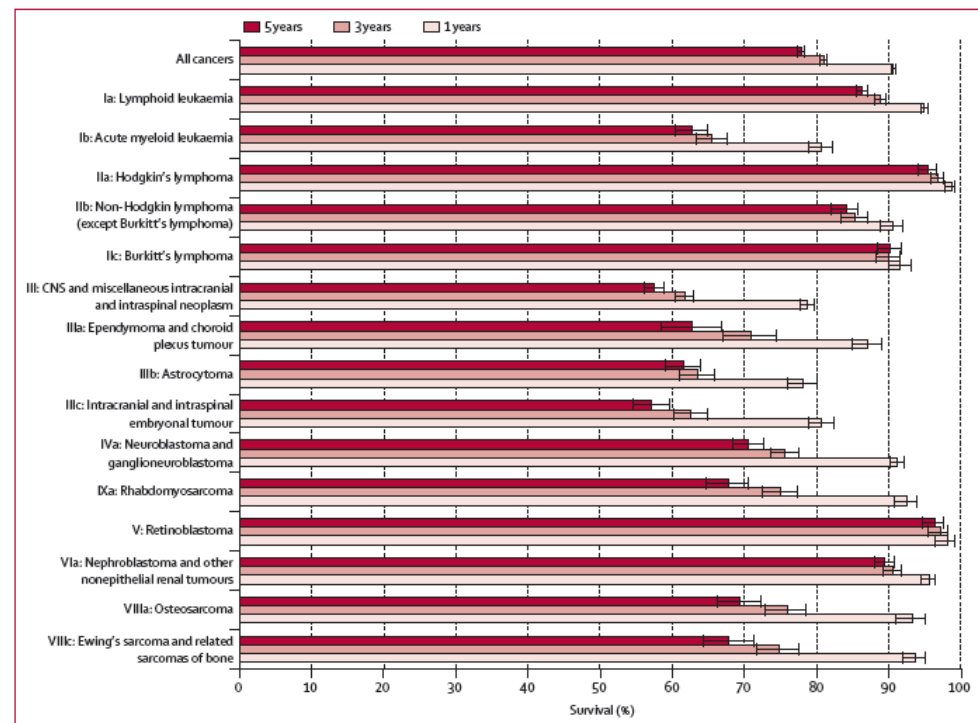


Figure 1: Country-weighted survival by ICCC diagnostic category for European children diagnosed with cancer 2000–07
Includes data for 57 956 cases. Error bars are 95% CIs. ICCC=International Classification of Childhood Cancers.

# 1) Epidemiologia descrittiva: esempi

## CONCORD

**CONCORD**
Global surveillance
of cancer survival

## Cancer survival in five continents: a worldwide population-based study (CONCORD)

Michel P Coleman, Manuela Quaresma, Franco Berrino, Jean-Michel Lutz, Roberta De Angelis, Riccardo Capocaccia, Paolo Baili, Bernard Rachet,
Gemma Gatta, Timo Hakulinen, Andrea Micheli, Milena Sant, Hannah K Weir, J Mark Elwood, Hideaki Tsukuma, Sergio Koifman, Gulnar Azevedo e Silva,
Silvia Francisci, Mariano Santaquilani, Arduino Verdecchia, Hans H Storm, John L Young, and the CONCORD Working Group*

### Summary

**Background** Cancer survival varies widely between countries. The CONCORD study provides survival estimates for
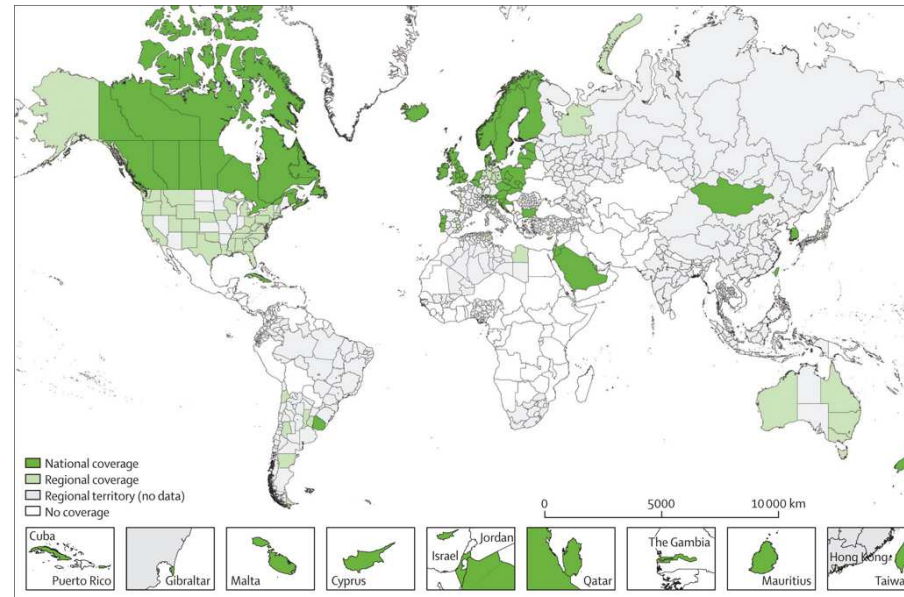
# 1) Epidemiologia descrittiva: esempi

## CONCORD-2



Breast cancer (women)
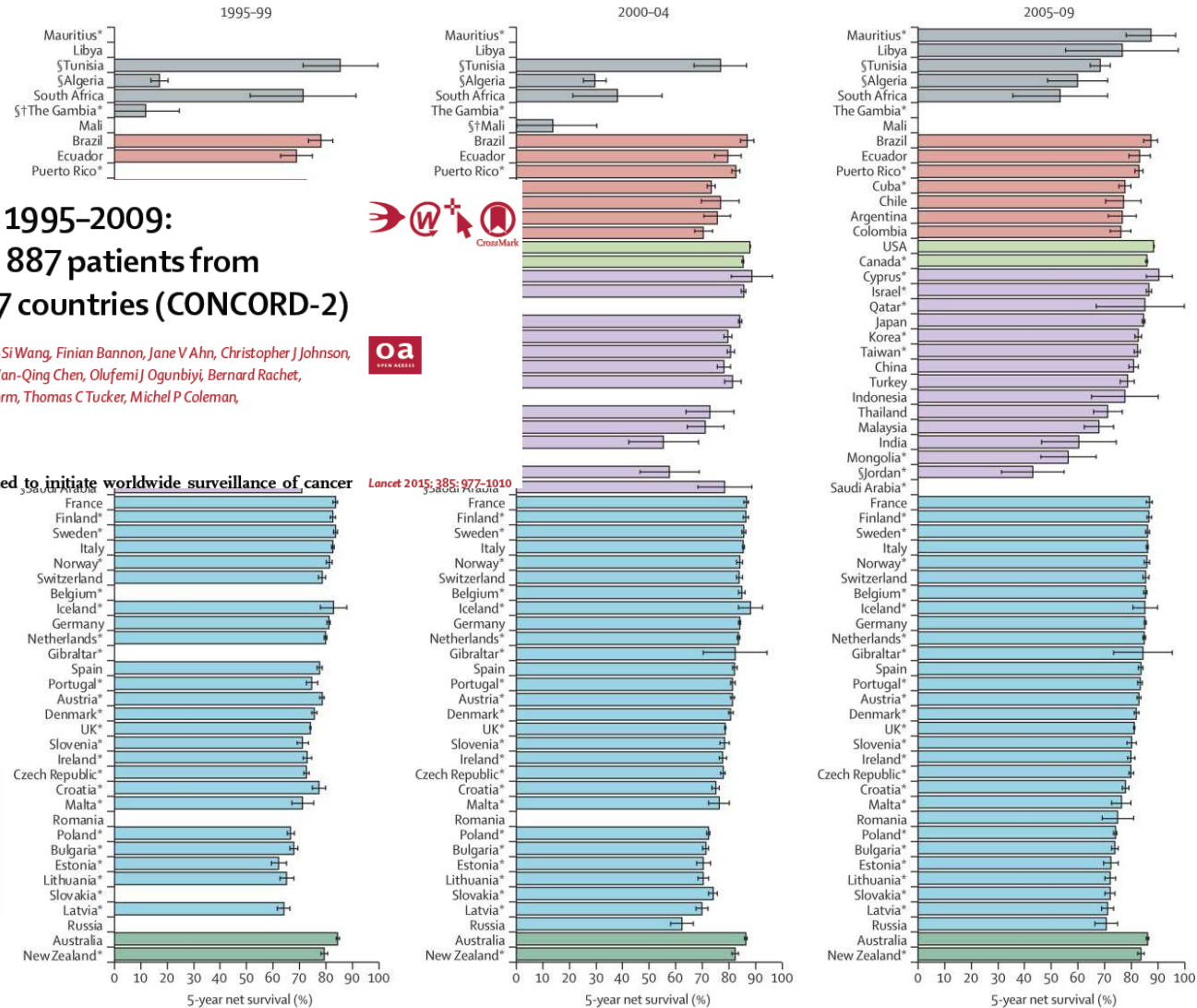
**Global surveillance of cancer survival 1995–2009: analysis of individual data for 25 676 887 patients from 279 population-based registries in 67 countries (CONCORD-2)**

Claudia Allemani, Hannah K Weir, Helena Carreira, Rhea Harewood, Devon Spika, Xiao-Si Wang, Finian Bannon, Jane V Ahn, Christopher J Johnson, Audrey Bonaventure, Rafael Marcos-Gragera, Charles Stiller, Gulnar Azevedo e Silva, Wan-Qing Chen, Olufemi J Ogunbiyi, Bernard Rachet, Matthew J Soeberg, Hui You, Tomohiro Matsuda, Magdalena Bielska-Lasota, Hans Storm, Thomas C Tucker, Michel P Coleman, and the CONCORD Working Group*

**Summary**
**Background** Worldwide data for cancer survival are scarce. We aimed to initiate worldwide surveillance of cancer

*Lancet 2015; 385: 977–1010*

CONCORD
Global surveillance
of cancer survival

# 1) Epidemiologia descrittiva: potenzialità (uso dei dati ITACAN)

**http://www.registri-tumori.it/cms/**

**http://itacan.ispo.toscana.it/italian/itacan.htm**



**Ultimo mese, 30-40 visite al giorno**

# 1) Epidemiologia descrittiva: potenzialità (uso dei dati GLOBOCAN)

# I dati dei Registri Tumori a supporto della ricerca:
## Esempi positivi e potenzialità

2. Epidemiologia valutativa

# 2) Epidemiologia valutativa: esempi IMPATTO Mammella

OSSERVATORIO NAZIONALE SCREENING

ccm

Come cambia l'epidemiologia del tumore della mammella in Italia

I risultati del progetto IMPATTO dei programmi di screening mammografico

**An estimate of overdiagnosis 15 years after the start of mammographic screening in Florence**

*Puliti Donella, Zappa Marco, Miccinesi Guido, Falini Patrizia, Crocetti Emanuele, Paci Eugenio**

*Conclusion:* Overdiagnosis of breast cancer in Florentine service screening can be estimated only for women aged 60–69 years at the start of service screening, for it is only for this group that a sufficient follow-up period is available after the last screening. Although the estimate of overdiagnosis is very sensitive to pre-screening trend estimates, our data show that 15 years after the introduction of mammographic service screening the degree of over-diagnosis was nearly zero and more than likely lower than 13% in this age group.

Table 1 – Incidence excess and estimate of overdiagnosis by birth cohorts.

| Age at the start of service screening | Years of screening | Incidence excess (95%CI) in the last year of screening | Years after screening stopped | Estimate of overdiagnosis (95%CI) | Cumulative-incidence rates (per 10.000) at 15 years | |
|---|---|---|---|---|---|---|
| | | | | | Observed | Expected |
| 50–54 | 15 | 1.14 (1.04–1.23) | 0 | n.e. | 359 | 316 |
| 55–59 | 15 | 1.15 (1.06–1.25) | 0 | n.e. | 401 | 348 |
| 60–64 | 10 | 1.15 (1.04–1.27) | 5 | 1.00 (0.92–1.08) | 377 | 378 |
| 65–69 | 5 | 1.36 (1.17–1.57) | 10 | 1.02 (0.94–1.10) | 412 | 405 |

# 2) Epidemiologia valutativa: esempi IMPATTO Cervice

Screening patterns within organized programs and survival of Italian women with invasive cervical cancer

Antonella Zucchetto [a,b,*], Guglielmo Ronco [c], Paolo Giorgi Rossi [d], Marco Zappa [e], Stefano Ferretti [f], Antonella Franzo [g], Fabio Falcini [h], Carmen Beatriz Visioli [e], Roberto Zanetti [c], Patrizia Biavati [i], Francesco La Rosa [j], Susanna Baracco [k], Massimo Federico [l], Cinzia Campari [d], Aldo De Togni [f], Silvano Piffer [m], Fabio Pannozzo [n], Mario Fusco [o], Maria Michiara [p], Marine Castaing [q], Pietro Seghini [r], Francesco Tisano [s], Diego Serraino [a], IMPATTO CERVICE Working Group

**Survival curves of 2911 women with invasive cervical cancer (ICC), according to screening history within organized cervical screening programs (OCSPs) . Italy 1995–2008.**
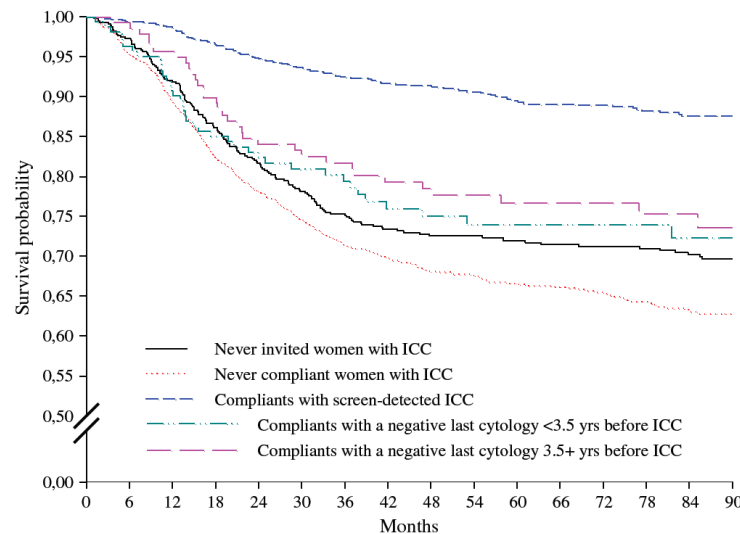
Changes in cervical cancer incidence following the introduction of organized screening in Italy

Diego Serraino [a], Andrea Gini [a], Martina Taborelli [a], Guglielmo Ronco [b], Paolo Giorgi-Rossi [c,d], Marco Zappa [e], Emanuele Crocetti [e], Antonella Franzo [f], Fabio Falcini [g], Carmen Beatriz Visioli [e], Fabrizio Stracci [h], Manuel Zorzi [i], Massimo Federico [j], Maria Michiara [k], Mario Fusco [l], Stefano Ferretti [m], Fabio Pannozzo [n], Francesco Tisano [o], Roberto Zanetti [b], Antonella Zucchetto [a,*], the IMPATTO-CERVICE Working Group
Members of 'IMPATTO-CERVICE' working group

**Incidence rates of invasive cervical cancer per women's age at diagnosis, in periods before and after full-activation of organized cervical screening programs  (OCSP) per tumor stage. Women aged 25–64 years, 1995–2008.**
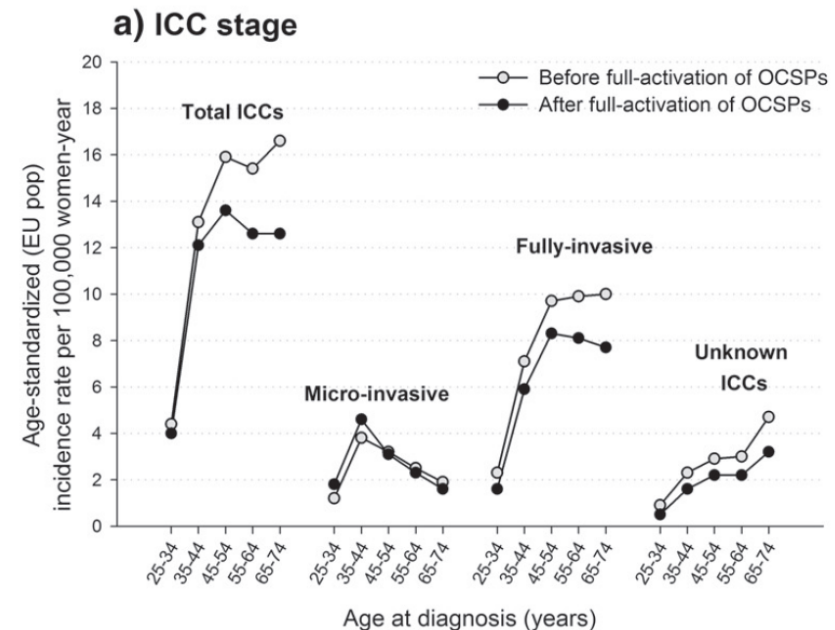
# 2) Epidemiologia valutativa: esempi IMPATTO Colon-retto

## Screening for colorectal cancer in Italy: 2011-2012 survey

Screening del cancro colorettale in Italia: survey 2011-2012

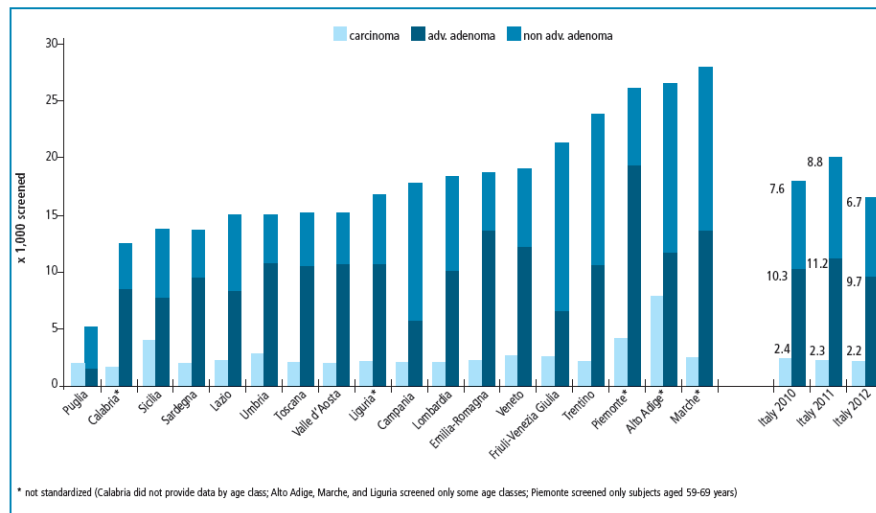Manuel Zorzi,[1] Filippo Da Re,[2] Paola Mantellini,[3] Carlo Naldoni,[4] Priscilla Sassoli de' Bianchi,[4] Carlo Senore,[5] Anna Turrin,[6] Carmen Beatriz Visioli,[3] Marco Zappa[3] and the Italian colorectal cancer screening survey group

**Tassi di identificazione di carcinoma, adenoma avanzato e adenoma iniziale ai primi esami per regione. Anni 2011-2012.**

## Impact of Screening Program on Incidence of Colorectal Cancer: A Cohort Study in Italy

Paolo Giorgi Rossi, PhD[1,2], Massimo Vicentini, MSc[1,2], Claudio Sacchettini, MSc[1,2], Enza Di Felice, MSc[1,2], Stefania Caroli, MSc[1,2], Francesca Ferrari, MSc[1,2], Lucia Mangone, MD[1,2], Annamaria Pezzarossi, MSc[1,2], Francesca Roncaglia, PhD[1,2], Cinzia Campari, MSc[2,3], Romano Sassatelli, MD[4], Roberto Sacchero, MD[5], Giuliana Sereni, MD[4], Luisa Paterlini, MD[3] and Marco Zappa, MD[6]

RESULTS: A total of 171,785 people have been invited, and approximately 70% have undergone FIT at least once (272,197 tests). The rate of colonoscopy participation has been about 90%, and 2896 cancers have been recorded (1237 in the screening period). The age-adjusted and sex-adjusted incidence rate ratios as compared with pre-screening were 1.60 (95% confidence interval (CI), 1.43–1.79), 0.86 (95% CI, 0.78–0.94), and 0.59 (95% CI, 0.50–0.69) for the first round, subsequent rounds, and post screening, respectively. Cumulative incidence and incidence-based mortality decreased by 10% (95% CI, 3–17%) and 27% (95% CI, 15–37%), respectively.

CONCLUSIONS: **FIT screening leads to a decrease in the incidence of CRC and in its mortality.**

# 2) Epidemiologia valutativa: esempi PSA & ca Prostata

## Screening and prostate cancer mortality: results of the European Randomised Study of Screening for Prostate Cancer (ERSPC) at 13 years of follow-up

Fritz H Schröder, Jonas Hugosson, Monique J Roobol, Teuvo L J Tammela, Marco Zappa, Vera Nelen, Maciej Kwiatkowski, Marcos Lujan, Liisa Määttänen, Hans Lilja, Louis J Denis, Franz Recker, Alvaro Paez, Chris H Bangma, Sigrid Carlsson, Donella Puliti, Arnauld Villers, Xavier Rebillard, Matti Hakama, Ulf-Hakan Stenman, Paula Kujala, Kimmo Taari, Gunnar Aus, Andreas Huber, Theo H van der Kwast, Ron H N van Schaik, Harry J de Koning, Sue M Moss, Anssi Auvinen, for the ERSPC Investigators*



prostate cancer mortality
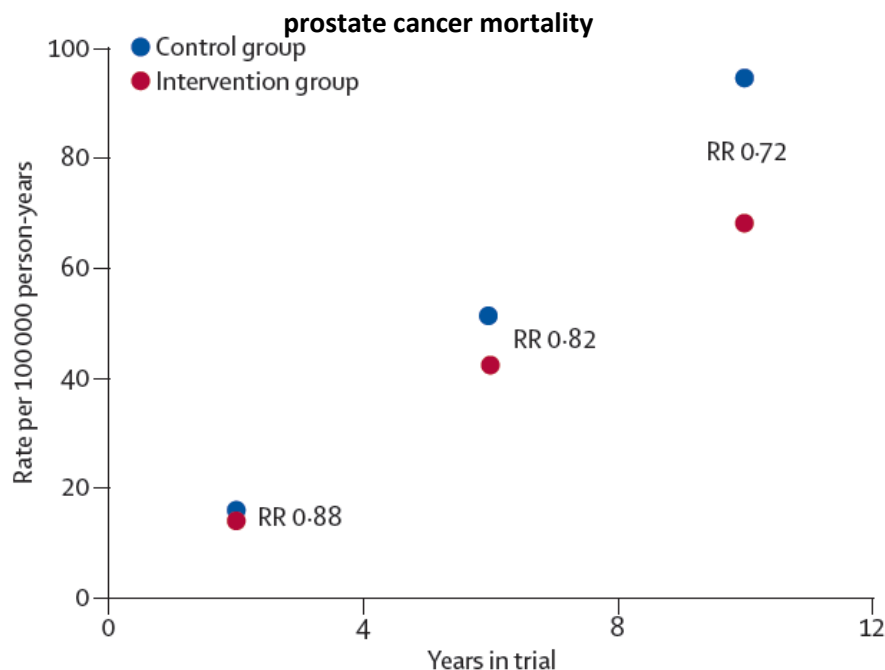
The absolute risk reduction of death from prostate cancer at 13 years was 0.11 per 1000 person-years or 1.28 per 1000 men randomised, which is equivalent to one prostate cancer death averted per 781 men invited for screening or one per 27 additional prostate cancer detected.

**Interpretation**
Our data show a significant relative reduction in prostate cancer mortality when comparing the screening group and control group...
The main weakness of screening is a high rate of overdiagnosis and overtreatment.
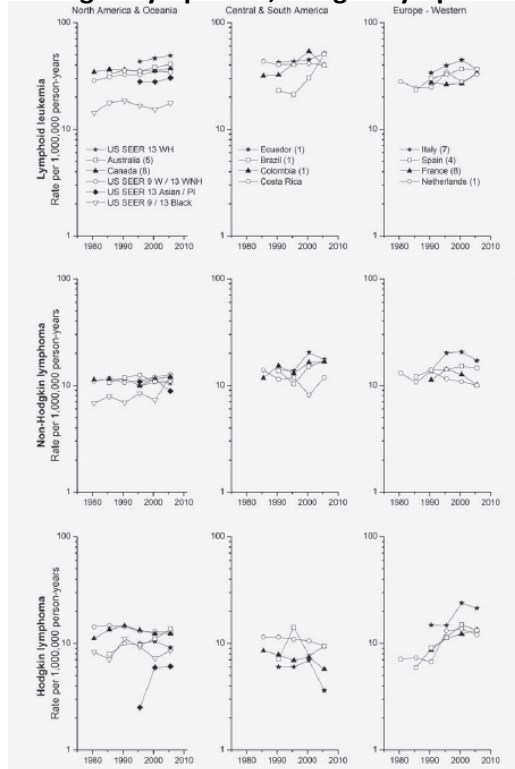
# 2) Epidemiologia valutativa: potenzialità (accesso dati Cancer Incidence, IARC)

## International long-term trends and recent patterns in the incidence of leukemias and lymphomas among children and adolescents ages 0–19 years

Martha S. Linet[1], Linda M. Brown[2], Sam M. Mbulaiteye[1], David Check[1], Evgenia Ostroumova[1], Annelie Landgren[1] and Susan S. Devesa[1]

The Impact of Diagnostic Changes on the Rise in Thyroid Cancer Incidence: A Population-Based Study in Selected High-Resource Countries

Salvatore Vaccarella,[1] Luigino Dal Maso,[2] Mathieu Laversanne,[1] Freddie Bray,[1] Martyn Plummer,[1] and Silvia Franceschi[1]

**Temporal trends in international childhood lymphoid leukemia, non-Hodgkin lymphoma, Hodgkin lymphoma**

**Observed (solid lines) and expected (dashed lines) ASRs of thyroid cancer in 2003-2007. Europe**
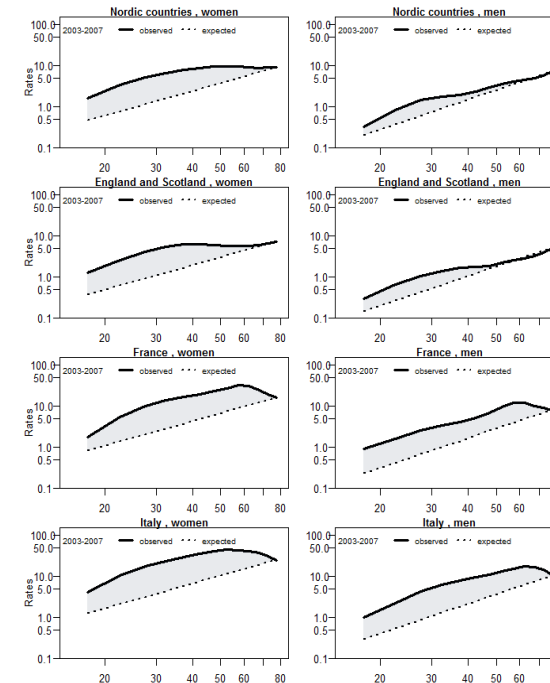
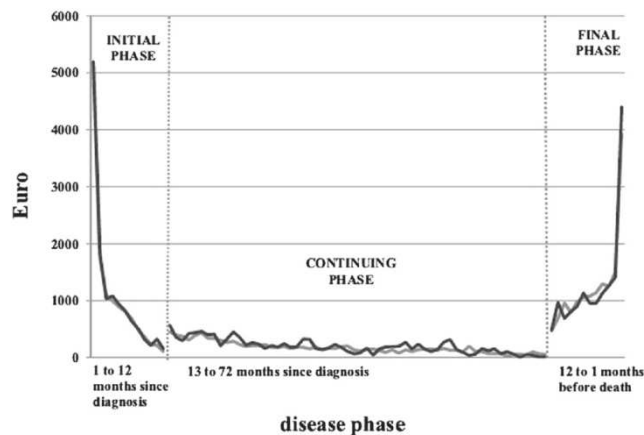# 2) Epidemiologia valutativa: potenzialità Studi di economia sanitaria

## Cost profiles of colorectal cancer patients in Italy based on individual patterns of care

Silvia Francisci[1], Stefano Guzzinati[2], Maura Mezzetti[3], Emanuele Crocetti[4], Francesco Giusti[4], Guido Miccinesi[4], Eugenio Paci[4], Catia Angiolini[5] and Anna Gigli[6*]

**Average costs (€) per month of colorectal cancer patients**



**MONOGRAPHS**

Comparing Cancer Care and Economic Outcomes Across Health Systems: Challenges and Opportunities

2013 Number 46

## Out-of-pocket costs for cancer survivors between 5 and 10 years from diagnosis: an Italian population-based study

Paolo Baili[1] · Francesca Di Salvo[1] · Francesco de Lorenzo[2] · Francesco Maietta[3] · Carmine Pinto[4,5] · Vera Rizzotto[3] · Massimo Vicentini[6,7] · Paolo Giorgi Rossi[6,7] · Rosario Tumino[8] · Patrizia Concetta Rollo[8] · Giovanna Tagliabue[9] · Paolo Contiero[9] · Pina Candela[10] · Tiziana Scuderi[10] · Elisabetta Iannelli[2] · Stefano Cascinu[5] · Fulvio Aurora[11] · Roberto Agresti[12] · Alberto Turco[1] · Milena Sant[1] · Elisabetta Meneghini[1] · Andrea Micheli[1,13]

**Table 3** Patient OOP costs in the month before the interview, by type of cost and area

| Type of cost | Patients (No.) | No cost[a] (%) | No service[b] (%) | All four CR Mean cost (€) |
|---|---|---|---|---|
| Doctor's appointments | 261 | 55.6 | 8.8 | 9.2 |
| Medical examinations | 252 | 77.4 | 9.1 | 3.3 |
| Rehabilitation services, reconstructive surgery and supports[d] | 279 | 7.9 | 83.9 | 4.5 |
| Drugs | 229 | 25.3 | 6.1 | 35.3 |
| Private/in-home nurse/domestic help | 248 | 1.6 | 88.7 | 42.0 |
| Transport, room, and board (TRB)[e] | 249 | 0.8 | 85.1 | 61.7 |
| Total[f] | 248 | 14.5 | – | 160.2 |

# I dati dei Registri Tumori a supporto della ricerca:
## Esempi positivi e potenzialità

3. Epidemiologia analitica

# 3) Epidemiologia analitica: esempi linkage individuali anonimi AIDS-tumori

## Classic Kaposi's sarcoma in Italy, 1985–1998

L Dal Maso*,[1], J Polesel[1], V Ascoli[2], P Zambon[3], M Budroni[4], S Ferretti[5], R Tumino[6], G Tagliabue[7], S Patriarca[8], M Federico[9], M Vercelli[10], A Giacomin[11], G Vicario[1,12], F Bellù[13], F Falcini[14], E Crocetti[15], V De Lisi[16], S Vitarelli[17], S Piffer[18], F Stracci[19], D Serraino[20], G Rezza[21] and S Franceschi[22] for the Cancer and AIDS Registry Linkage (CARL) Study[23]

**Incidence rates of classic and AIDS-related Kaposi's sarcoma (KS). Italian Cancer Registries, 1985–1998.**
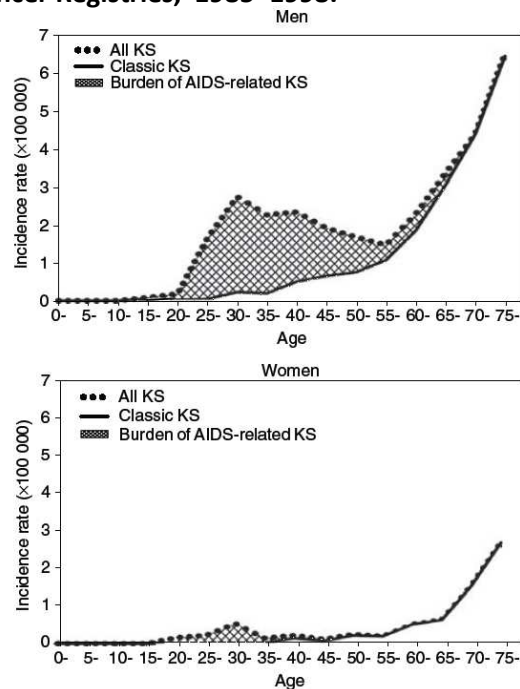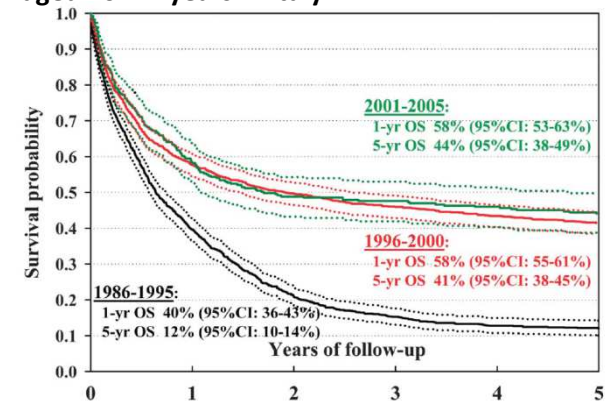
## Survival After Cancer in Italian Persons With AIDS, 1986–2005: A Population-Based Estimation

*Luigino Dal Maso, PhD,* Barbara Suligoi, MD,† Silvia Franceschi, MD,‡ Claudia Braga, ScD,* Carlotta Buzzoni, ScD,§‖ Jerry Polesel, ScD,* Antonella Zucchetto, ScD,*¶ Pierluca Piselli, ScD,# Fabio Falcini, MD,** Adele Caldarella, MD,‖ Roberto Zanetti, MD,†† Marina Vercelli, MD,‡‡ Stefano Guzzinati, ScD,§§ Antonio Russo, PhD,‖‖ Giovanna Tagliabue, MD,¶¶ Francesco Iachetta, MD,## Stefano Ferretti, MD,*** Rosa M. Limina, MD,††† Lucia Mangone, MD,‡‡‡ Maria Michiara, MD,§§§ Fabrizio Stracci, MD,‖‖‖‖ Daniela R. Pirino, MD,¶¶¶ Silvano Piffer, MD,### Adriano Giacomin, MD,**** Susanna Vitarelli, MD,†††† Guido Mazzoleni, MD,‡‡‡‡ Arturo Iannelli, BSc,§§§§ Maria L. Contrino, MD,‖‖‖‖‖ Mario Fusco, MD,¶¶¶¶ Rosario Tumino, MD,#### Anna C. Fanetti, PhD,***** Paolo De Paoli, MD,††††† Adriano Decarli, PhD,¶ Diego Serraino, MD,*‡‡‡‡‡ and the Cancer and AIDS Registries Linkage Study*

**Observed survival (OS) after cancer in persons with AIDS aged 16–74 years in Italy**

# 3) Epidemiologia analitica: esempi studi prognostici, es. diabete e tumori

The Impact of Diabetes and Other Metabolic Disorders on Prostate Cancer Prognosis

Jerry Polesel [a,*], Andrea Gini [a], Luigino Dal Maso [a], Carmen Stocco [b], Silvia Birri [a], Martina Taborelli [a], Diego Serraino [a], Antonella Zucchetto [a]

Cancer among patients with type 2 diabetes mellitus: A population-based cohort study in northeastern Italy

Andrea Gini [a,*], Ettore Bidoli [a], Loris Zanier [b], Elena Clagnan [b], Giorgio Zanette [c], Michele Gobbato [b], Paolo De Paoli [d], Diego Serraino [a]

**Overall survival curves following cancer diagnosis among patients with and without type 2 diabetes.**
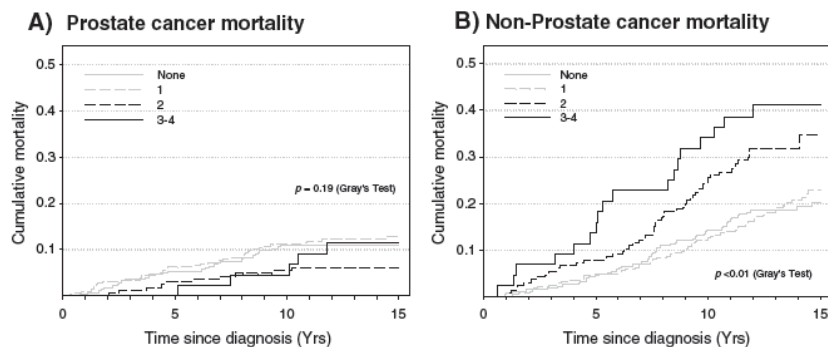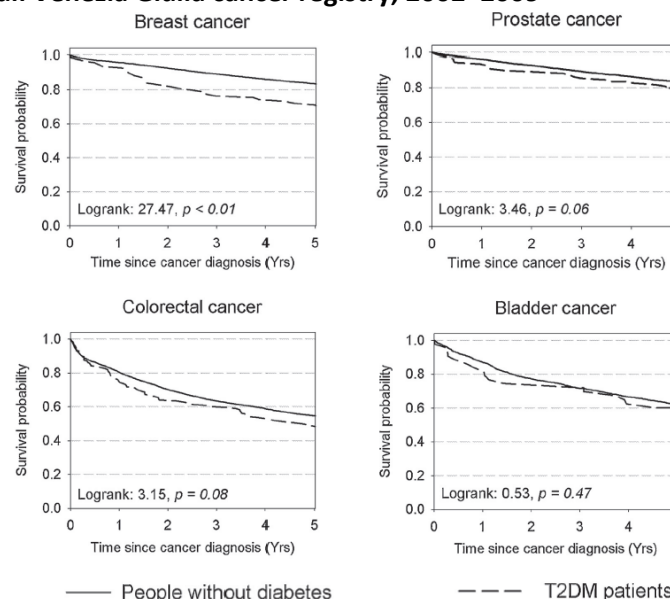**Friuli Venezia Giulia cancer registry, 2002–2009**

# 3) Epidemiologia analitica: esempi studio di popolazione HCV-HBV, ex ASL NA4

## Epidemiology of viral hepatitis infections in an area of southern Italy with high incidence rates of liver cancer

Mario Fusco[a], Enrico Girardi[b], Pierluca Piselli[b], Raffaele Palombino[c], Jerry Polesel[d], Carmela Maione[a], Paola Scognamiglio[b], Francesco Aurelio Pisanti[e], Mariacarmela Solmone[f], Pietro Di Cicco[g], Giuseppe Ippolito[b], Silvia Franceschi[h], Diego Serraino[d,*], for the Collaborating Study Group [i]

Prevalence of HCV and/or HBV infections (a) and incidence rates (/100,000) of liver cancer (b) by age and sex in Naples cancer registry area
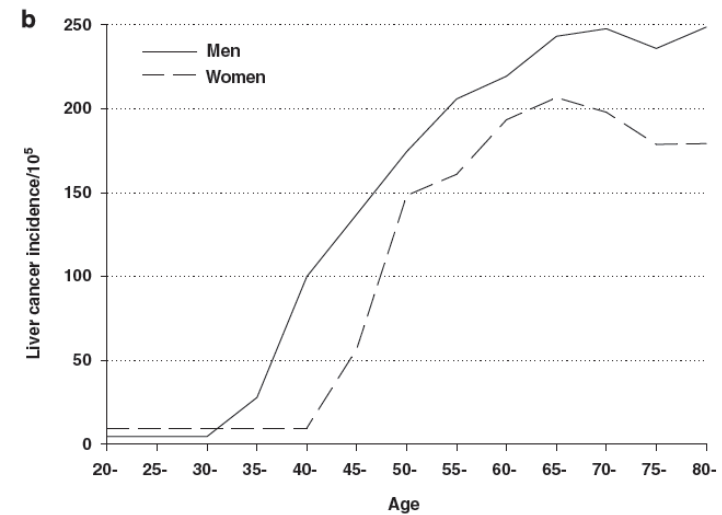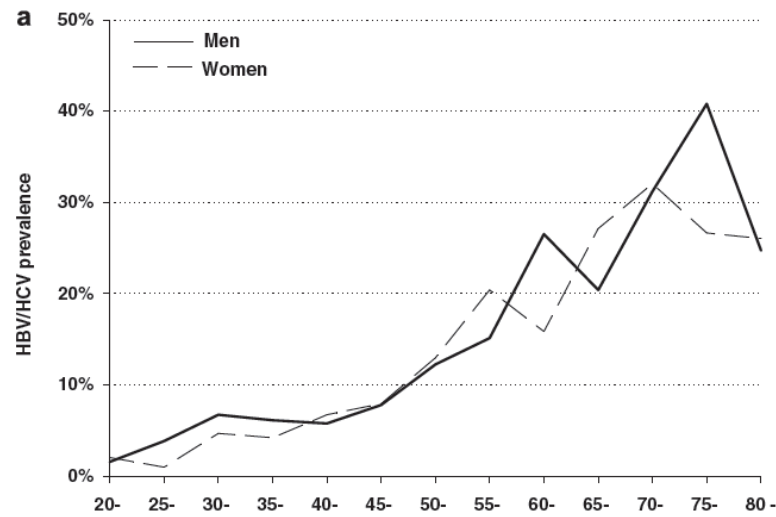
# 3) Epidemiologia analitica: esempi studi di coorte internazionali

International Agency for Research on Cancer

World Health Organization

**EPIC study** **(435 pubblicazioni)**

## Risk of second primary malignancies in women with breast cancer: Results from the European prospective investigation into cancer and nutrition (EPIC)

Fulvio Ricceri[1,2], Francesca Fasanelli[1], Maria Teresa Giraudo[2], Sabina Sieri[3], Rosario Tumino[4], Amalia Mattiello[5], Liliana Vagliano[6], Giovanna Masala[7], J. Ramón Quirós[8], Noemie Travier[9], María-José Sánchez[10,11], Nerea Larranaga[12], María-Dolores Chirlaque[11,13], Eva Ardanaz[11,14], Anne Tjonneland[15], Anja Olsen[15], Kim Overvad[16], Jenny Chang-Claude[17], Rudolf Kaaks[17], Heiner Boeing[18], Françoise Clavel-Chapelon[19,20,21], Marina Kvaskoff[19,20,21], Laure Dossus[19,20,21], Antonia Trichopoulou[22,23], Vassiliki Benetou[22], George Adarakis[23], H. B(as) Bueno-de-Mesquita[24,25,26,27], Petra H. Peeters[28], Malin Sund[29], Anne Andersson[30], Signe Borgquist[31], Salma Butt[32], Elisabete Weiderpass[33,34,35,36], Guri Skeie[33], Kay-Tee Khaw[37], Ruth C. Travis[38], Sabina Rinaldi[39], Isabelle Romieu[39], Marc Gunter[40], Mai Kadi[40], Elio Riboli[40], Paolo Vineis[40,41] and Carlotta Sacerdote[1]

**What's new?**
For the first time, researchers have used cohort data to show that people who survive breast cancer have a higher risk of developing another cancer later. By collecting data on 10,000 breast cancer patients over 11 years, these authors calculated a 30% boost in the patients' risk of developing a second primary malignancy, particularly colorectal cancer, lymphoma, melanoma, endometrial cancer, and kidney cancer. These findings, plus the data they collected on risk factors such as age, smoking, body mass index, and others, will help guide clinicians in screening procedures and follow up care for breast cancer patients.

# I dati dei Registri Tumori a supporto della ricerca:
## Esempi positivi e potenzialità

4. Altri contributi alla ricerca

# 4. Altri contributi alla ricerca: Epidemiologia ambientale

## Cancer incidence in Italian contaminated sites

**Pietro Comba**[a], **Paolo Ricci**[b, c], **Ivano Iavarone**[a], **Roberta Pirastu**[d], **Carlotta Buzzoni**[c, e], **Mario Fusco**[c, f], **Stefano Ferretti**[c, g], **Lucia Fazzo**[a], **Roberto Pasetto**[a], **Amerigo Zona**[a], **Emanuele Crocetti**[c, e], for ISS-AIRTUM Working Group for the study of cancer incidence in contaminated sites\*

## Confronto fra registri specializzati e registri tumori di popolazione: i risultati del progetto ReNaM-AIRTUM

## A comparative analysis between regional mesothelioma registries and cancer registries: results of the ReNaM-AIRTUM project

Carmela Nicita,[1] Carlotta Buzzoni,[2] Elisabetta Chellini,[3] Stefano Ferretti,[4] Alessandro Marinaccio,[5] Carolina Mensi,[6] AIRTUM Working Group,\* ReNaM Working Group,\*\* Progetto ReNaM-AIRTUM Working Group\*\*\*

Associazione Italiana
Registri Tumori

# 4. Altri contributi alla ricerca: metodologici

**CheckAIRTUM**

### Ecco il nuovo software CheckAIRTUM

È disponibile la nuova versione di CheckAIRTUM, il software per l'analisi e la valutazione dei dati dei Registri tumori.

**Cos'è CheckAIRTUM?**

CheckAIRTUM è un software per l'analisi e la valutazione dei dati dei Registri tumori italiani.

**A cosa serve?**

Può essere utilizzato sia ai fini dell'accreditamento presso l'Associazione italiana dei registri tumori (AIRTUM) sia per l'auto-valutazione dei dati dei Registri Tumori già accreditati.

**Associazione Italiana Registri Tumori**

**Adherence to international recommendations for pathologic reports**

Cancer Epidemiology 39 (2015) 424–429

Population-based method for investigating adherence to international recommendations for pathology reporting of primary cutaneous melanoma: Results of a EUROCARE-5 high resolution study

Rosario Tumino [a,b], Pamela Minicozzi [c,*], Graziella Frasca [a], Claudia Allemani [c,1], Emanuele Crocetti [d], Stefano Ferretti [e], Adriano Giacomin [f], Maurilio Natali [g], Lucia Mangone [h,2], Fabio Falcini [i], Riccardo Capocaccia [j,3], Milena Sant [c]

**New indicators of cancer cure**

Annals of Oncology 25: 2251–2260, 2014

Long-term survival, prevalence, and cure of cancer: a population-based estimation for 818 902 Italian patients and 26 cancer types

L. Dal Maso[1*], S. Guzzinati[2], C. Buzzoni[3,4], R. Capocaccia[5], D. Serraino[1], A. Caldarella[4], A. P. Dei Tos[2,6], F. Falcini[7], M. Autelitano[8], G. Masanotti[9], S. Ferretti[10], F. Tisano[11], U. Tirelli[12], E. Crocetti[4], R. De Angelis[5] & the AIRTUM Working group[†]

I dati dei Registri Tumori a supporto della ricerca

**L'epidemiologia dei tumori nel XXI secolo:**

**Big Data**

**Precision medicine**

**Population-based data**

## Commentary

# Planning for the Future of Epidemiology in the Era of Big Data and Precision Medicine

Muin J. Khoury*

**Commentary**

**Planning for the Future of Epidemiology in the Era of Big Data and Precision Medicine**

Muin J. Khoury*

**Table 1.** Thematic Areas, Recommendations, and Selected Issues for Discussion in Planning for the Future of Epidemiology

Transform the practice and extend the reach of epidemiology beyond initial discovery to include more translation, evaluation, and implementation.