



BIOXIN Project and 'Land of fires'



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8thBioDetectors

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Land of Fires: The smoke kills

- «Land of Fires» to indicate a large area in Campania region wherein deliberate fires are ignited to burn the waste, predominantly hazardous, by eco-mafias.

there are approximately 5200 critical sites in Campania. They are legal or illegal landfills, countryside lands, abandoned farms





“Earth fires”: 5.8 million inhabitants in Regione Campania
30% of total Campania population is affected
by smokes from fires of illegal waste

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In a 2004, Lancet Oncology called this area the «Triangle of Death»:

- > death rate for liver cancer is close to 34.5% for males and to 20.8% for females, whereas the national average is 14%**
- > general increase of sarcomas in last five years (300%)**



2008: Mozzarella crisis

dioxin&pcb contamination in mozzarella and dairy products





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Estimates of cancer burden in Campania

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Key words: cancer, incidence, prevalence, mortality, Campania, estimates.

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ABSTRACT

Aims and background. In Campania two cancer registries have been operating since 1996, covering part of the province of Naples and the province of Salerno, and amounting to 29% of the regional population. The aim of this paper is to provide estimates of the incidence, mortality and prevalence of seven major cancers for the entire Campania region.

Methods. The estimates were obtained by applying the MIAMOD method, a statistical back-calculation approach to derive incidence and prevalence figures starting from mortality and relative survival data. Survival was modeled on the basis of published data from the Italian cancer registries.

Results. In 2012 the most frequent cancers were colorectal, breast and lung cancer with 3,969, 3,675 and 3,629 new diagnosed cases, respectively. The cancers with increasing incidence trends were breast cancer, lung cancer and skin melanoma in women, and colorectal cancer and skin melanoma in men. By contrast, the incidence rates of uterine cervix cancer and stomach cancer were decreasing. In men the lung and prostate cancer incidence rates increased, reaching a peak in different periods, and then

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Ecological studies of cancer incidence in an area interested by dumping waste sites in Campania (Italy)

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Summary. Cancer incidence was investigated in an area which has been affected by the illegal practices of dumping hazardous waste and setting fire to mismanaged waste. For the 35 municipalities of this area that are served by a Cancer Registry, municipal standardized incidence ratios (SIR) and hierarchical Bayesian estimators (BIR) were computed. Moreover, municipal spatial clustering and a Poisson regression by municipality index of waste-related exposure were performed for 10 cancer types. Increased municipality SIRs were found for some cancer types. The BIRs confirmed the increases for liver cancer in two municipalities. Statistically significant clusters were detected for liver, lung, leukaemia and soft tissue sarcomas. In the regression analysis, testis cancer showed significant trend with the index of waste-related exposure (RR = 1.18).

Key words: cancer incidence, waste dumping sites, testicular neoplasms, liver neoplasms.

Riassunto (*Studi ecologici dell'incidenza tumorale in un'area interessata da siti di smaltimento di rifiuti in Campania, Italia*). È stata investigata l'incidenza oncologica in un'area interessata da pratiche illegali di smaltimento e di combustione incontrollata di rifiuti. Per i 35 comuni di quest'area serviti da un Registro Tumori sono stati calcolati i rapporti standardizzati di incidenza (*standardized incidence ratios*, SIR) e gli stimatori bayesiani (BIR). Per 10 sedi tumorali sono state eseguite, inoltre, analisi di cluster spaziali e di regressione con un indice municipale di esposizione a rifiuti. SIR in eccesso sono stati osservati per diverse sedi tumorali; i BIR hanno confermato gli eccessi di tumore epatico in due comuni. I tumori epatici e polmonari, le leucemie e i sarcomi dei tessuti molli hanno mostrato cluster significativi. Nell'analisi di regressione il tumore del testicolo ha mostrato un trend in eccesso significativo (RR = 1,18).

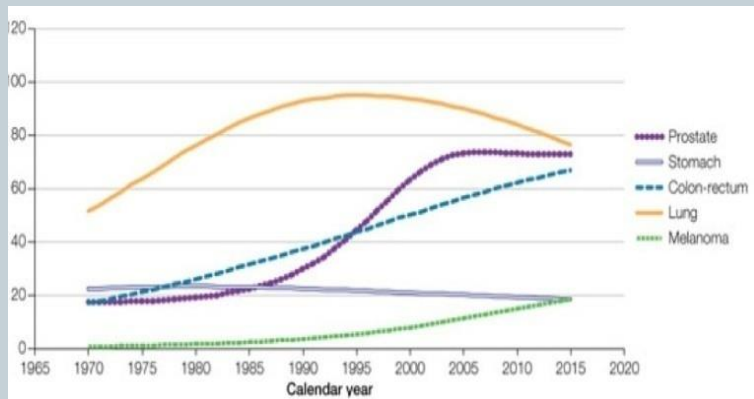
Campania

Fonte: *Estimates of cancer burden in Campania "Tumori" 2013, 99(3) – M. Fusco*

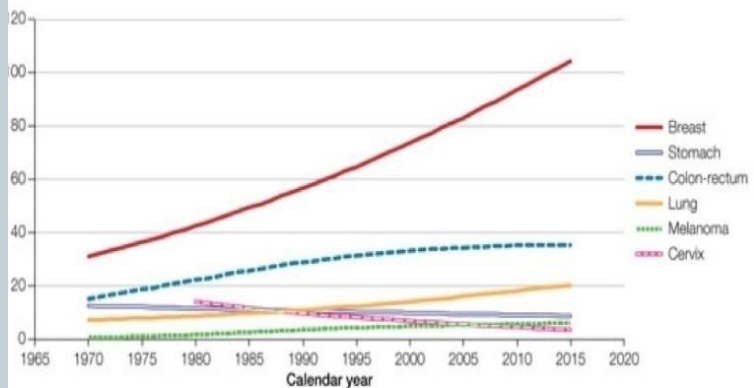


Area AIRTUM

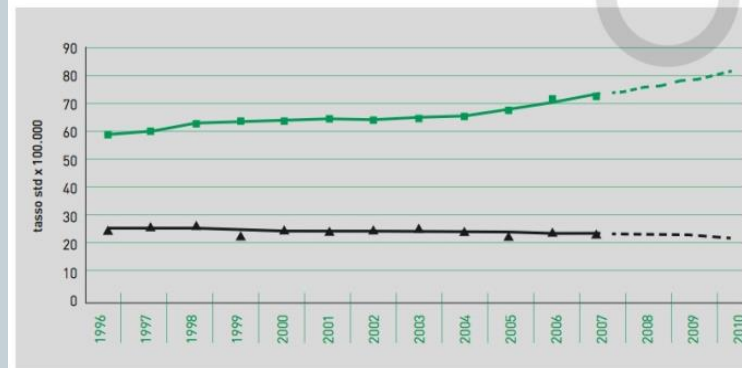
Fonte: *Airtum 2013*



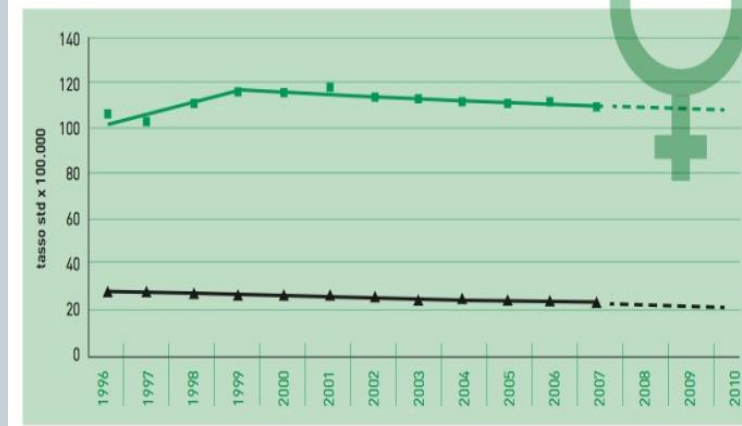
Incidence estimates by cancer site in Campania in the period 1970-2015. Age-standardized rates (European population) per 100,000 persons. Age 0-99 years, men.



TUMORE DEL COLON-RETTO



TUMORE DELLA MAMMELLA FEMMINILE





BANDO SPORTELLO DELL'INNOVAZIONE

-

PO FESR 2007-2013 - Obiettivo operativo 2.1 - BANDO SPORTELLO
DELL'INNOVAZIONE - Progetti CAMPANIA START-UP

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Mission



1. Labs engaged in biomonitoring in **a large scale with a cheap system (CALUX SYSTEM)** to analyze environment and biological human fluids and tissues.
2. Offering a **cross-disciplinary** perspective to biomonitoring environment and human requirements. (DATA BASE)
3. Help **to identify** each chemical, chemical group and toxic substances (pollutants) **by geographic area.**
4. **Service to bio-hazard safety measures**, in a large scale, and analytical procedures.
5. All with an eye focused on successful implementation, day in and day out.



The Challenge



- Create a real collaboration among local institutions (ARPA, IZS, ASL, Ministry of Health).
- Screening a very large number of sample in coordinated PROJECT between institutions
- Providing a new data base available for epidemiological studies: very likely the largest in Europe
- Help National surveillance institutions, for correlation studies between food/environment and clinical diseases
- Last but not least: extending this PROJECT to the other 56 SIN (National Contaminated Site) the same technical and scientific approach



Place	Sex	Age	Cancer	PCDD/F- BEQ	DI-PCB BEQ	SUM (pg BEQ/g fat)
Caserta	M	65	sarcomasG1	10	2.7	13
Casoria	F	44	sarcomasG3	LOQ (3.3)	LOQ (1.6)	LOQ (4.9)
Baronissi	F	70	sarcomasG3	18	4.1	22
Briatico	F	60	sarcomasG3	3.7	LOQ (1.9)	5.6
Ischia	F	34	Condro- sarcomasG3	4.5	3.2	7.7

Conclusions:

Results with GC/HRMS in this area with other cancer patients have been similar to the here presented data by DR CALUX.

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Thanks

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