A METHOD TO INTEGRATE INFORMATION FROM DIFFERENT DATABASES TO MONITOR EQUITY IN BREAST CANCER CARE PATHWAY. THE EXPERIENCE OF THE EMILIA-ROMAGNA REGION

B. Pacelli[1], L. Cisbani[1], N. Caranci[1], E. Di Felice[2], S. Cavuto[2], S. Candela[2], E. Carretta[3] R. De Palma[1]

1 Agenzia sanitaria e sociale regionale, Emilia-Romagna
2 Unità di Epidemiologia, Azienda USL Reggio Emilia
3 Dipartimento di Medicina e Sanità Pubblica, Università di Bologna

INTRODUCTION

Equity in health is a relevant Public Health issue, but up to now current health databases (DB) hardly provide information about individual socioeconomic status (SES), with the exception of few particular cases. Moreover, breast cancer care is a well documented subject, for which important SES related inequalities have been reported.

OBJECTIVES

To describe methods to integrate information from different DB making possible the monitoring of equity in breast cancer care and survival.

METHODS

Starting from a cohort of breast cancer in women residing in Emilia-Romagna, a multistep procedure of deterministic record-linkage with different data sources has been performed (figure 1).
In compliance with the privacy law requirements, an anonymous identifier code (IC) has been attributed to incident cases 1997-2005 registered by the regional breast cancer registry (BCR) (figure 2).
BCR data have been linked with the Hospital Discharge register (HDR), Mortality register (MR), Specialist access register (SR) and Census of Population obtaining respectively: comorbidity, 5-year survival status and cause of death, a set of quality of care indicators (e.g. radiant therapy one year post diagnosis) and individual SES information.
Linkage between BCR, HDR, SR and MR has been performed using the IC, while the Census DB have been merged using birth' date and municipality, plus residence, as linkage key.
The link percentage has been analysed according to the socio-demographic and health condition in order to assess selection bias in the sub-cohort with SES information.

RESULTS

Out of 30.398 incidence cases, 62.8% are linked with the Census data. Young (<45yo) and residents in big municipalities are less likely to be linked with Census data (Graphs 1 and 2). No difference between linked and not linked subjects is observed according to the stage at diagnosis and survival (table 1).

CONCLUSIONS

An integrated information system is a very useful tool allowing to investigate health outcomes, such as care pathway and survival according to individual SES. This work can be also extended to other diseases of interest.
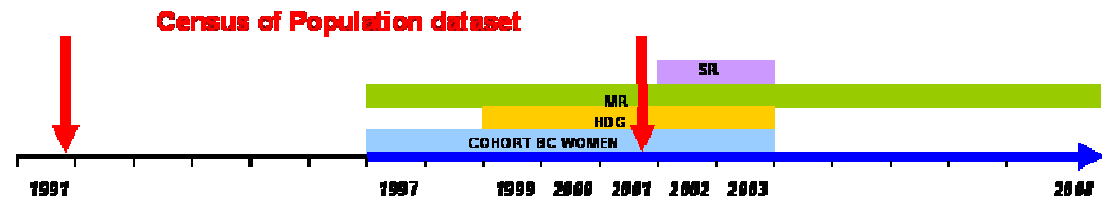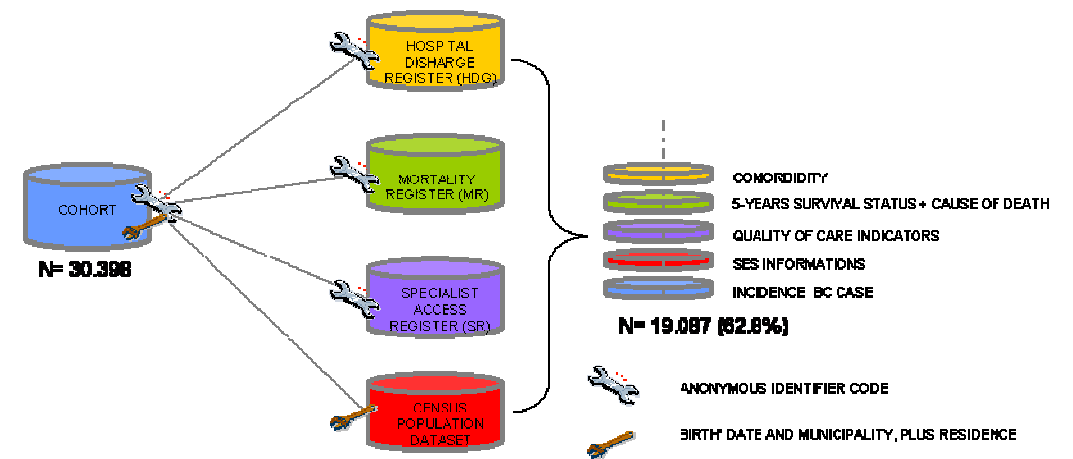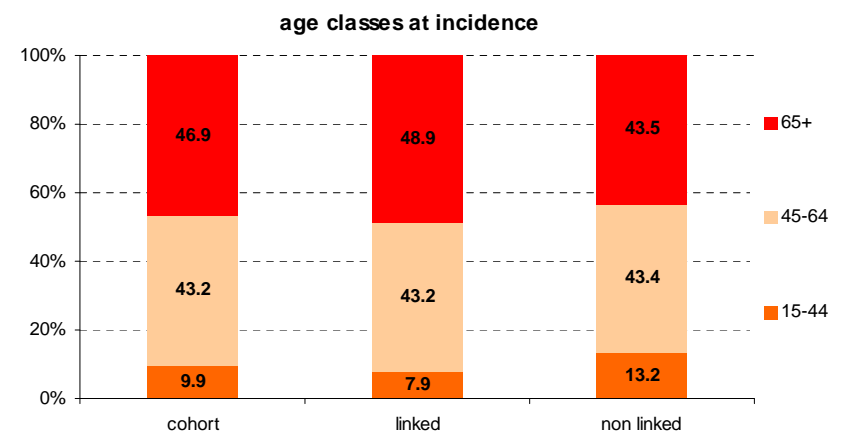

Figure 1: Follow-up with integrated databases
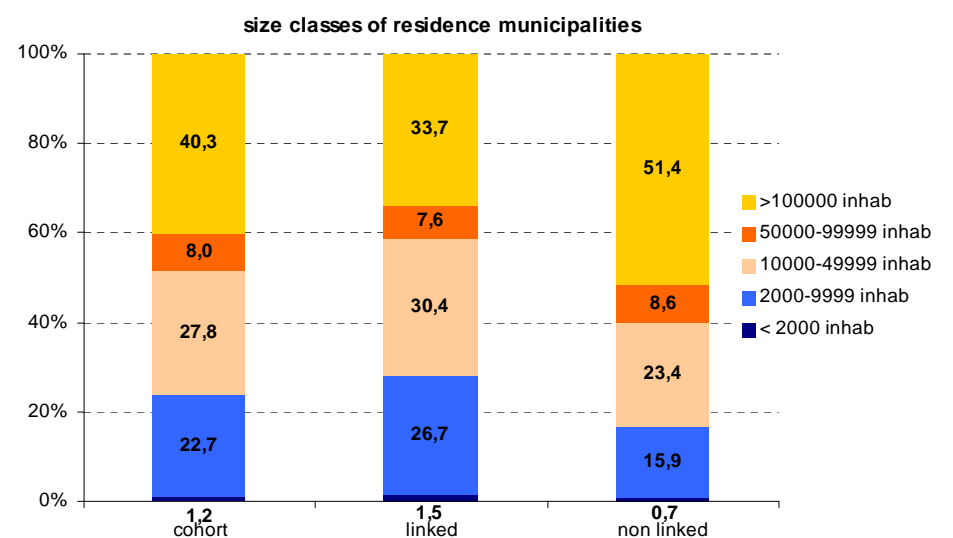

Figure 2: Linkage of different databases and description of variables linked to the cohort cases

Graph 1: Age classes at incidence: comparison between full cohort, linked and non linked to Census

Graph 2: Size classes of residence municipalities: comparison between full cohort, linked and not linked to Census

age classes	Linked to Census data	5y Surv.	p-value
30-49	no	0.90	0.11
	yes	0.92	
50-69	no	0.91	0.91
	yes	0.91	
70-89	no	0.80	0.09
	yes	0.81	

Table 1: Kaplan-Meier 5-year survival stratified by age classes: comparison between linked and non linked to Census (calculated on 22.678 cohort incident cases during 1997-2003, excluded cases of prior tumour)