

# A multicentric retrospective study to evaluate the economic impact of the prescribing models for Trastuzumab in the Piedmont Region (Italy)

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## Purpose and Objectives

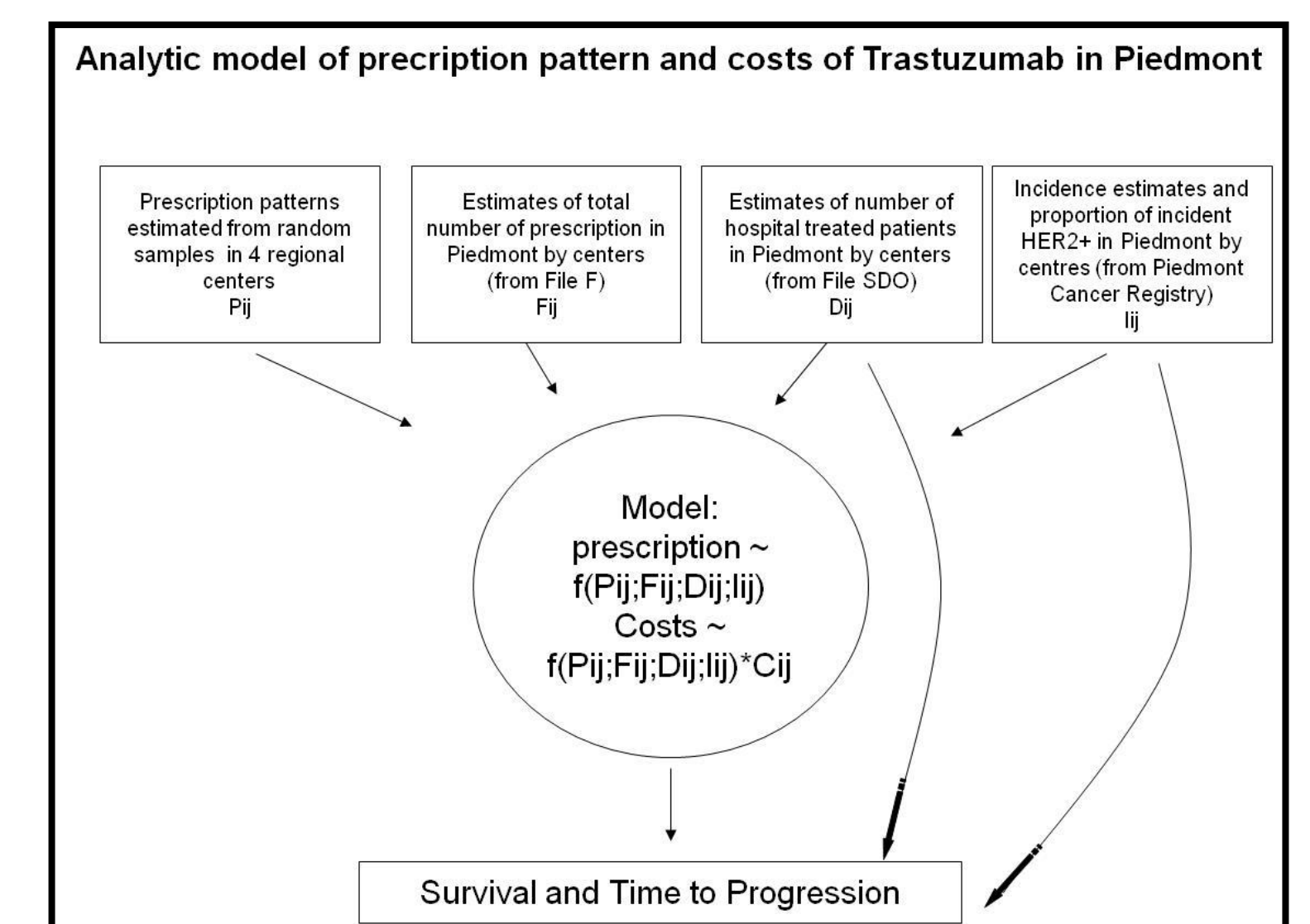
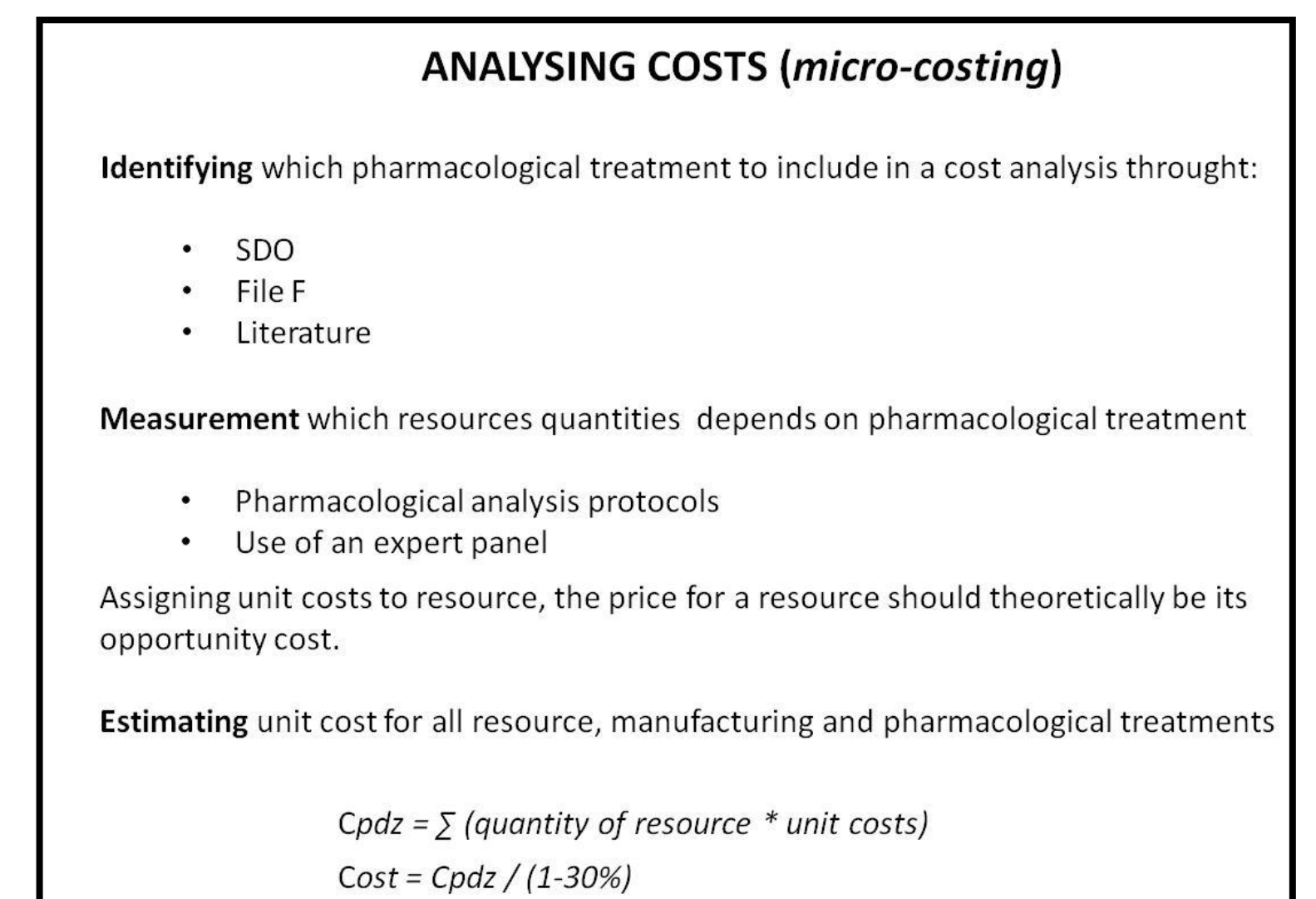
In the recent years, there has been a rapid and constant increase of the cancer treatment costs. With limited health care resources, it is essential to consider the economic implications of different health interventions. The aim of this study was to evaluate the economic impact of the different prescribing patterns for Trastuzumab on overall costs for breast cancer treatments in the Piedmont Region. We presented a preliminary analysis of the accuracy of the information system on which estimates are based and a literature analysis of available evidence.

## Materials and Methods

To identify the prescribing patterns, we systematically reviewed the MEDLINE-indexed (English-language) literature to identify published, peer-reviewed economic analyses of Trastuzumab in HER2+/- treatment of breast cancer. We rated study quality with the Drummond criteria, which consider a well-defined study question and perspective, comprehensive description of treatment alternatives, evidence of effectiveness, inclusion of all relevant costs and consequences, appropriate units for costs and consequences, credible valuation of costs and consequences, temporal adjustment, incremental analysis and uncertainty analysis<sup>1</sup>.

Direct medical and unit costs were calculated with a micro-costing analysis of the Regional health system expenditures. We extracted patients' data recorded in the Regional administrative databases ("File F": prescriptions of Trastuzumab; "File SDO": Hospital Admission Records; "File C": specialist treatments) for the year 2010.

Prescribing patterns were obtained from a random sample of patients treated in 4 centers across Piedmont. Projection of the combined results from prescribing patterns and micro-costing for the whole region was obtained applying the incidence and prevalence figures from the Piedmont Cancer Registry that delivered also an estimate of incidence of HER2+ cases for this study. All estimates were then combined in an empirical Bayesian model to evaluate the precision and variability of the estimated parameters.



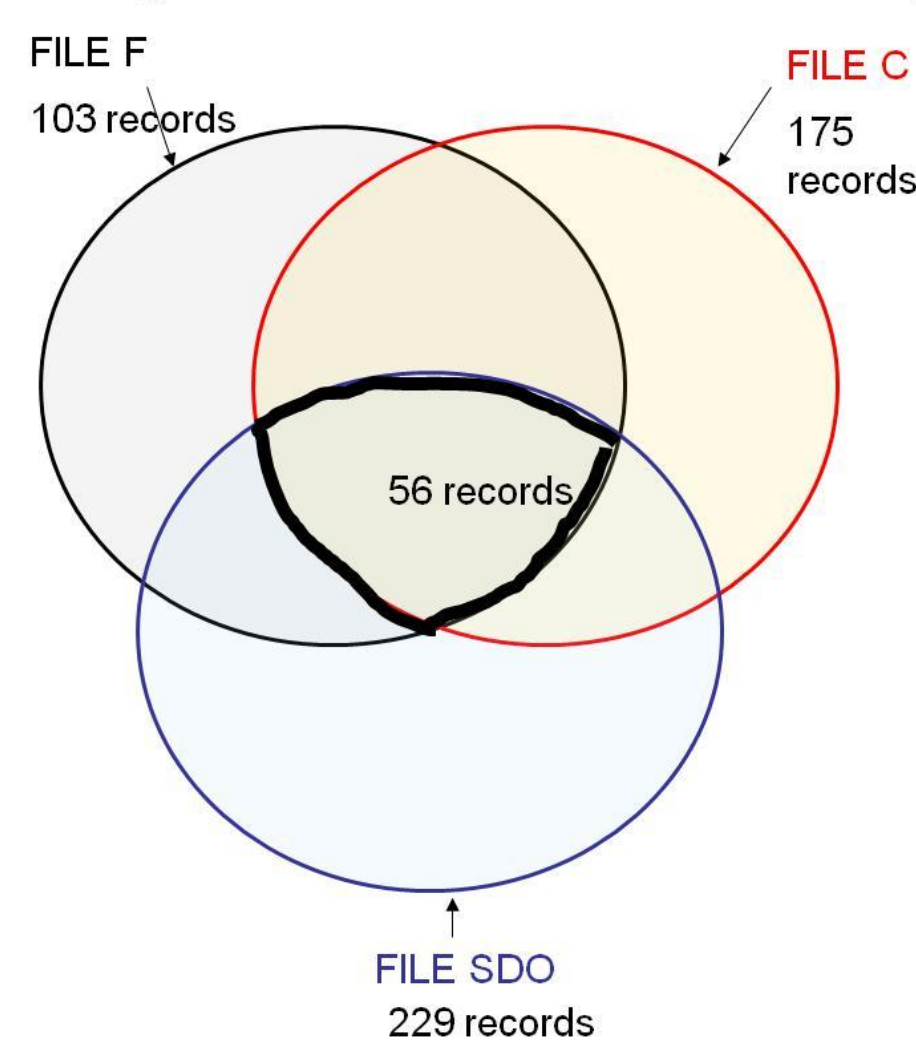
ECONOMICS EVALUATION	STUDY DESIGN	DATA COLLECTION	ANALYSIS AND INTERPRETATION OF RESULTS	FINAL SCORE	TOTAL RELATIVE SCORE%
T IN ADJUVANT					
Blank	24/26	27/45	35/48	86	72,3%
Chen	23/26	30/45	37/48	90	75,6%
Dedes	24/26	31/45	35/48	90	75,6%
Essers	24/26	30/45	35/48	89	74,8%
Garrison	24/26	31/45	36/48	91	76,5%
Kurian	25/26	31/45	37/48	93	78,1%
Liberato	26/26	33/45	39/48	98	82,3%
Lidgren	26/26	34/45	38/48	98	82,3%
Millar	25/26	32/45	35/48	92	77,3%
Neyt	25/26	31/45	34/48	90	75,6%
NICE	26/26	42/45	40/48	108	90,7%
Norum	25/26	28/45	34/48	87	73,1%
Shiroiwa	26/26	31/45	38/48	95	79,8%
Skedgel	25/26	27/45	37/48	89	74,8%
Van Vlaenderen	24/26	31/45	36/48	91	76,5%
T in MBC					
Poncet	24/26	32/45	31/48	87	73,1%
Norum J	25/26	33/45	35/48	93	78,1%
Elkin	26/26	37/45	40/48	103	86,5%
Lidgren	26/26	36/45	38/48	100	84%
NICE (2002)	26/26	42/45	40/48	108	90,7%

✓ Disegno dello studio  
✗ Raccolta dati e Analisi ed interpretazione risultati

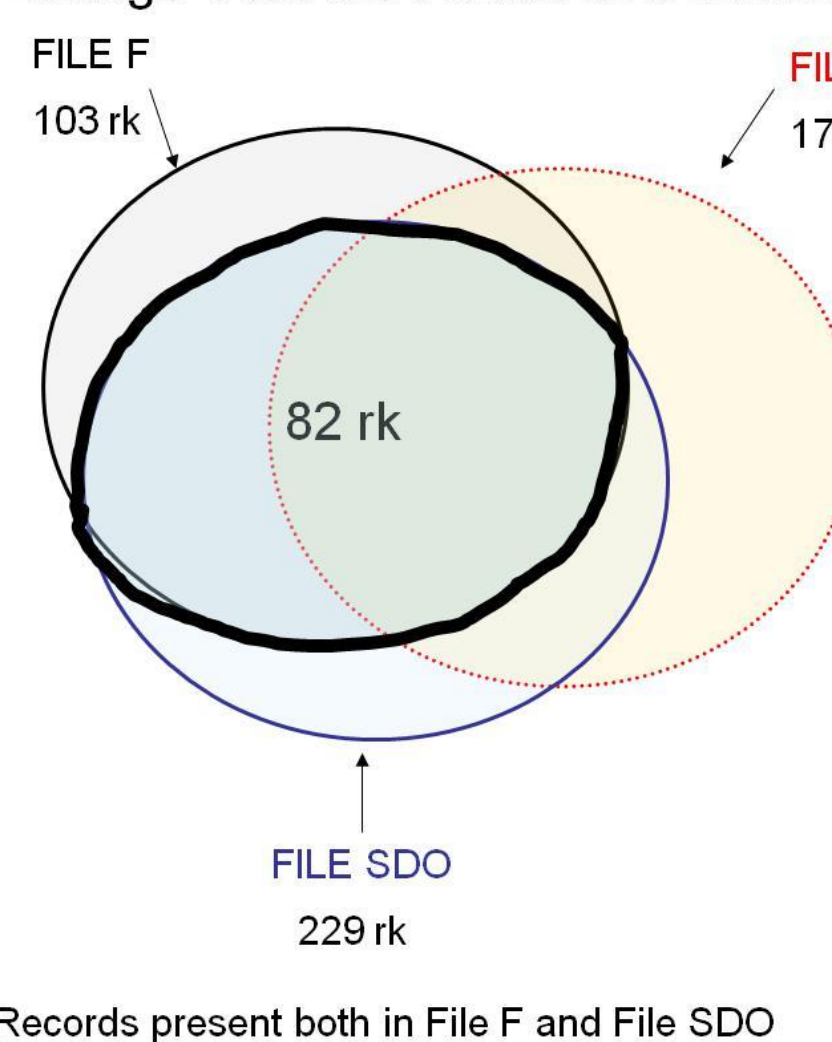
## Results and discussion

The search strategy identified 948 articles, of which 340 were citations. From the 608 remaining, 23 articles were considered suitable for full review based on the inclusion criteria. Of these, 15 considered adjuvant Trastuzumab therapy only, seven examined metastatic breast cancer therapy and one considered therapy with Trastuzumab beyond progression. A preliminary analysis of the completeness of the information systems showed us that there was only 54% correspondence between drug prescription database File F, and the other databases within one of the sampled centers. The percentage improved to 80% when considering overlap with Hospital Admission Records, but where expected should be near 100%.

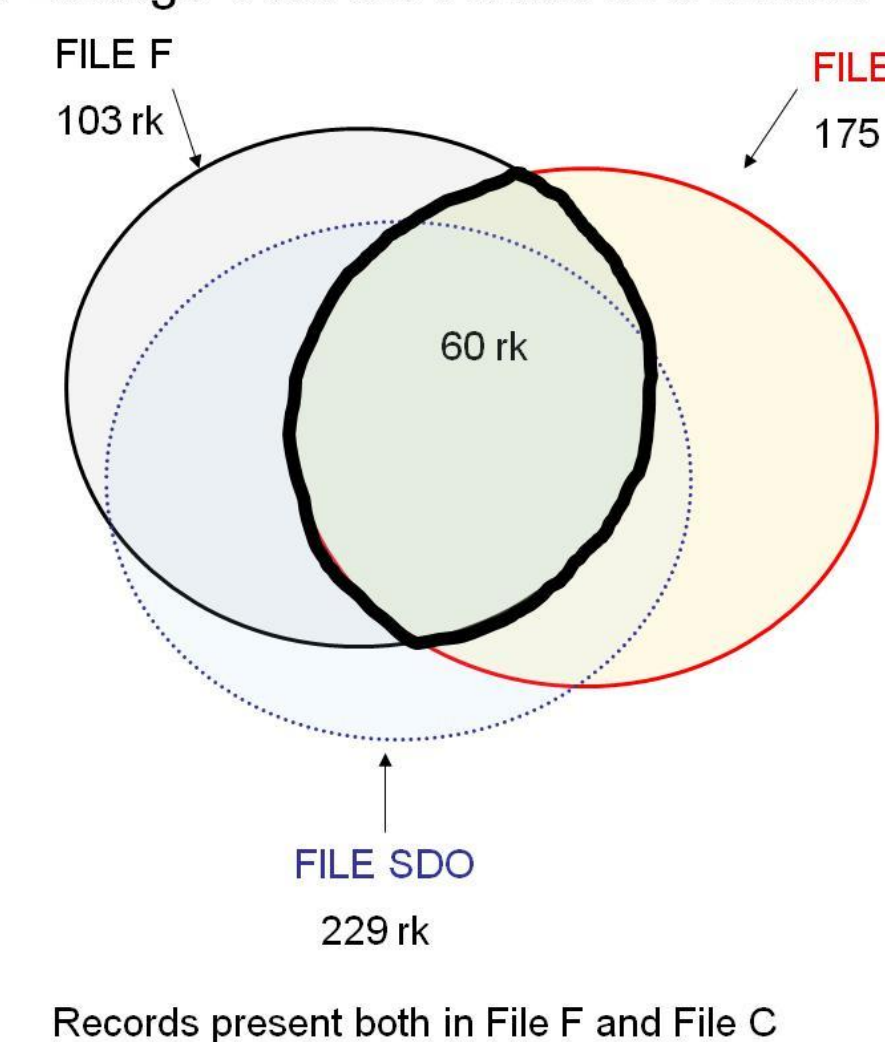
Record Linkage from the Health Information System



Record Linkage from the Health Information System



Record Linkage from the Health Information System



## Conclusions

Preliminary results confirm the low accuracy and completeness of data from the administrative systems. We will obtain precise data on Trastuzumab prescribing patterns from samples, and thus offer complementary information to cost-effectiveness analysis before the launching of a generic drug.

## References

Drummond, MF.; Sculpher, MJ.; Torrance, GW.; O'Brian, BJ.; Stoddart, GL. Methods for the Economic Evaluation of Health Care Programmes. Oxford, UK: Oxford University Press; 2005.