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ANNUAL EUPHA MEETING 2001

**HEALTH INFORMATION SYSTEMS
THROUGHOUT EUROPE AND THEIR
INTERACTION WITH PUBLIC HEALTH
POLICY DEVELOPMENT AND ACTIONS**

ABSTRACT BOOK

BRUSSELS, Belgium

6-8 December 2001



Analysis of the determinants of hospital patients mobility; a prediction model

Messina G G, Al Farraj O, Ngoyi Ngongo K, Cicchetti A, Addari P, Nante N

° University of Siena - Institute of Hygiene, Sienna, Italy

Introduction

Patients' mobility, as expression of the liberty to choose, for the patient and/or his physician-agent, is a fundamental tool for the financing mechanism of the Italian National Health Service, for planning, control and monitoring of hospital activities.

The aim of the study is to propose a model able to explain and predict the choice of the hospital by the patient (or physician), evaluate the reason for the migration and the quality of healthcare judgement using an utility index.

Methods

Our hypothesis was that the patient and the physician, in choosing the hospital, take into account the following attributes: hospital reputation, waiting time, distance from residence and, for physicians alone, and collaboration with hospital staff members. Therefore a sample of 103 patient hospitalised at Sienna and 30 General Practitioners within the territory covered by our hospital, answered to a questionnaire regarding the attributes indicated above. A Discrete Choice model was used, a technique of the multivariate analysis which consent the evaluation of patient's or physician's in charge of the decision preferences regarding some characteristics of the healthcare facility. A dummy variable was created " Y_i ", as dependent variable in the multiple regression models, which represent the two possible alternatives for the patient: 1 in case of migration out of the territory of origin, 0 if the patient is hospitalised within his own territory.

$$Y_i = \begin{cases} 1 & \text{if } U_{1i} \geq U_{0i} \\ 0 & \text{if } U_{0i} > U_{1i} \end{cases}$$

Where:

i = the person (patient or physician) who decides

U_{1i} = utility for the alternative 1

U_{0i} = utility for the alternative 0

In order to predict the choice that will be made by users, an economic type model of utility was applied; using the attributes mentioned above as factors that can influence the choice between two alternatives (1 or 0). In this case the economic utility is the difference (X_i) between the values attributed to each alternative by the user.

$X_i = (\text{attribute in alternative "1"}) - (\text{attribute in alternative "0"})$

If $X_i > 0$, the decision to migrate will be influenced by this attribute

If $X_i = 0$, then this attribute will not be influenced by this attribute

Results

The preliminary results, with both logit and probit models, show that patients consider by far "reputation" as the most important factor in choosing the hospital ($r=1.733$, $p=0.0021$ with probit and $r=3.109$, $p=0.011$ with logit). Waiting list were not significantly related to the decision process.

Conclusions

Our model, based on the economic concept of maximisation of utility, was able to describe analytically the phenomenon of healthcare mobility. The analysis of the questionnaire given to the General Practitioners should help the further definition and provide information about the predictive capabilities of the model.

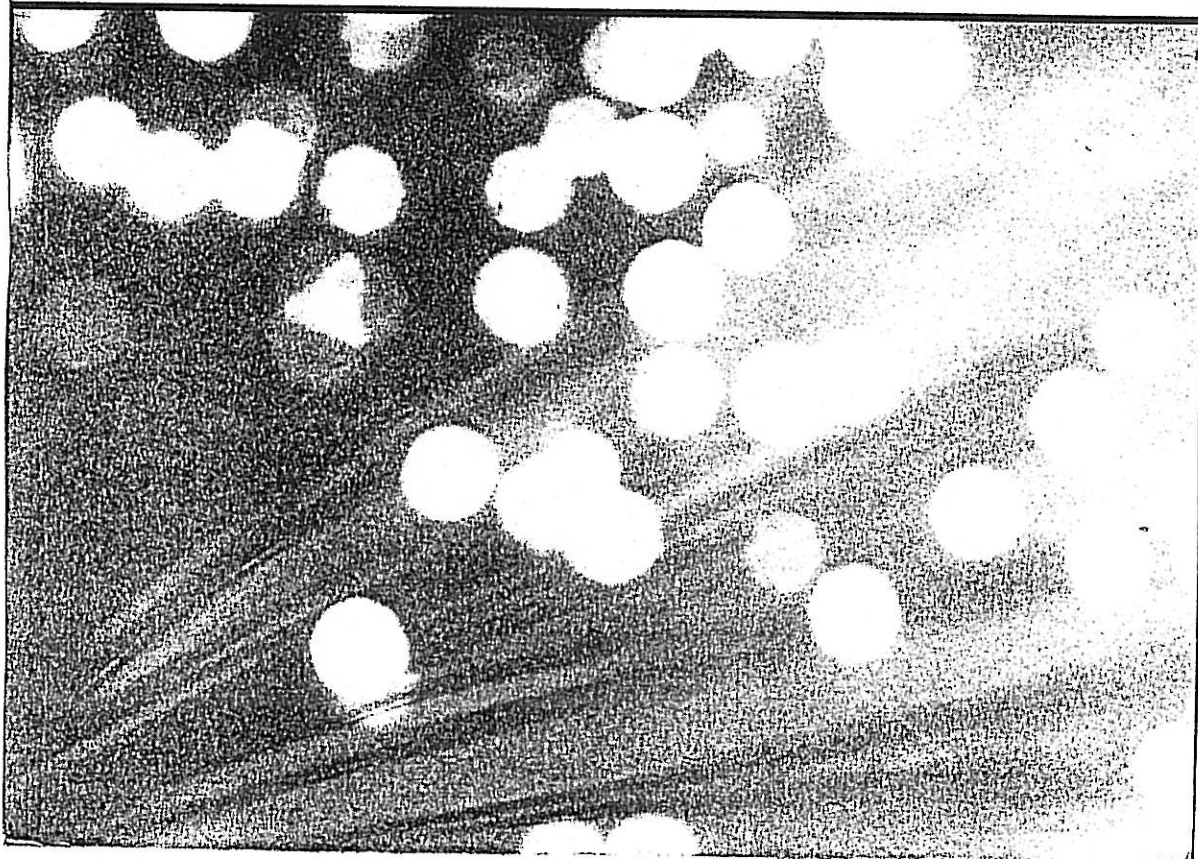
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