



BISP8

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BAYESIAN INFERENCE IN STOCHASTIC PROCESSES**

Bayesian analysis of home health care longitudinal count data

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Home Care (HC) providers are complex structures which include medical, paramedical and social services delivered to patients at their domicile. High randomness affects the service delivery, mainly in terms of unplanned changes in patient's conditions, which make the amount of required visits highly uncertain. Hence, each reliable resource planning has to include the estimation of the future demand for visits of the assisted patients.

In this paper, we propose a Bayesian model able to represent the patient's demand evolution over time and to predict the demand in future periods as well. Indeed, we obtain the posterior density of the model parameters through MCMC simulation and we predict the weekly nurse's number of visits to patients.

In the literature, the prediction of patient's demands in the HC context is only marginally addressed and no Bayesian approaches can be found in this field.

Results from the application to a relevant real case show the applicability of the proposed model in the practice and validate the approach, since low prediction errors are found.

Keywords:

Home Care; Bayesian Approach;
MCMC algorithms; Random effect.

**ABSTRACT
TYPE**

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