

Paediatric palliative care planning: organization of a new service based on simulation

Giada Aspergh¹, Paola Facchin¹, Anna Ferrante¹, Giorgio Romanin Jacur², Laura Visonà Dalla Pozza¹

¹ Epidemiology and Community Medicine Unit, Department of Paediatrics University of Padova, Via Donà 11, 35129 Padova, Italy. Email: epi@pediatria.unipd.it,

² Department of Management and Engineering, University of Padova, Stradella San Nicola 3, 36100 Vicenza, Italy. Email: romjac@dei.unipd.it

Key words: paediatric palliative patients, decision support, discrete stochastic simulation.

Paediatric palliative patients are children suffering for incurable pathologies, which cause them a lot of problems and require special assistance. They have been recently accepted as specific patients needing qualified care. The assistance which may be supplied includes non specific cares, like admission in an acute hospital department and simple home care, and specific cares, like hospice admission and integrated home care. The best suggested health care plan includes integrated home care, interrupted by short admissions in an acute hospital department and/or in a hospice whenever necessary. Here we built a discrete stochastic simulation model which reports in detail the existing (and/or planned) assistance network, reports all the structures required by paediatric palliative patients and describes patients state and movements. Paediatric palliative patients arise at random and even their life duration is random and distributed over a long interval; they compete with ordinary patients to enter the existing structures. The simulation results include the amount of patients admitted in every structure and of unsatisfied or partially satisfied admission requests; they evidence possible assistance network insufficiencies and suggest suitable adaptations to plan a better care network; the effects on patient movements may be tested after changing the interested parameters.