

Abstract

What interplay of factors influences the place of death in cancer patients? An innovative probabilistic approach to shed light on a well-known question

Summary:

Most terminally ill cancer patients would prefer to die at home, but a majority die in institutional settings. Despite longstanding research for the improvement and implementation of policies favoring end-of-life home care, questions about the discrepancy between the preferred and actual place of death are not yet fully answered. By means of advanced statistical techniques, the study explores in detail the complicated network of factors and its cause-effect relationships affecting the place of death. Analyzing the complexity and causality contribute to providing a better understanding of interventions by health care professionals to facilitate dying at home.

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Background

For many cancer patients, the last months of life are characterized by severe symptoms, which don't allow to spend a peaceful end-of-life time at their home, embedded in their social network, as suggested by the palliative concept of dying at home. An increasing availability of effective anticancer drugs has generated the possibility to use active treatments even in an advanced stage of the disease, with the goal to palliate symptoms and to prolong life. As a consequence, conversations about the end of life occur late in the disease trajectory, often too late to have a serious impact on the choice for the last place of care and the place of death. Successful end-of-life home care, by contrast, requires advance care planning and needs to be prepared timely.

Objectives

The aim of the project is to explore a wide range of factors and processes influencing the place of death. An identification of predictors for a home death can contribute to empowering and preparing the care network early, to enable preferences for the place of death to be turned into reality.

Method

A data mining algorithm (classifier) and a causal probabilistic model for data analysis (credal network) were developed. Both research tools have a predictive capacity. The credal network allows moreover to quantify the cause-effect relationship between numerous variables, aimed to design policies. Information for the construction of the research tools was extracted from an empirical data set with small amounts of data. Lacking evidence from the data set was compensated with expert knowledge. Test results obtained from the tools are compared with the literature.

Results

Treatment-related processes have an inference of 12.6 % on the place of death. The family's preference for the place of care at the end of life at 48.1 % shows the overall most important impact, while the influence of the patient's preference at 8.3 % is low. Many patients don't have the autonomy to select the place of death, due to a higher preference for hospital care among family caregivers. About one-third of the family systems with favorable preconditions for home care can be empowered by timely initiated interventions by health care professionals. An early family assessment seems key. Unassessed preferences don't allow to realize death at home, 87 % of these patients died in a hospital. An interdisciplinary home care network, including a specialized palliative home care team, can increase the home death rate significantly when the family's preference agrees with the patient's wish for home care. As a result of the study, family-centered cancer care/palliative care can be suggested.