BMC Health Services Research

Meeting abstract

Number of hospital beds in 2030: projection with national French case-mix data

Philippe Oberlin* and Marie-Claude Mouquet

Address: Ministère de la Santé, de la Jeunesse, des Sports et de la Vie Associative; Direction de la Recherche, des Études, de l'Évaluation et des Statistiques, 14 avenue Duquesne, Paris, 75007, France

Email: Philippe Oberlin* - philippe.oberlin@sante.gouv.fr

* Corresponding author

from 24th Patient Classification Systems International (PCSI) Working Conference
Lisbon, Portugal. 8–11 October 2008

Published: 27 November 2008

BMC Health Services Research 2008, **8**(Suppl 1):A6 doi:10.1186/1472-6963-8-S1-A6

This abstract is available from: http://www.biomedcentral.com/1472-6963/8/S1/A6

Introduction

If changes in healthcare practices are not made to decrease the need for hospitalization, the ageing of the population could create substantial challenges for healthcare in general, and seriously impede the ability and effectiveness of the hospital system. This study is a projection, using French case-mix data, of the number of acute care beds that will be needed in 2030.

Methods

At first, recent changes in hospitalization rates (HR), day-case ratios (DCR) and lengths of stay (LOS) were studied, comparing case-mix data in 1998 and 2004 for acute care patients. To accurately assess the effects of the changes, five age groups (<15, 15–64, 65–74, 75–84 and over 84) and 41 diagnoses groups were constructed. Then, three different projections, including population projections for 2030, were developed.

In the first one, 2004's HR, DCR and LOS were used without modification. The second one continued to 2030 the trend in HR, DCR and LOS observed between 1998 and 2004. The third one was developed after discussion with experts who made hypotheses on the evolution of diseases (incidence and prevalence), on improvement in treatment methods (better prevention, improvement of techniques, new pharmaceutical drugs), care organization and social demand. These changes were included in the projection.

It was assumed that financial possibilities, or number of health workers, would be adapted to the changes. Number of days for in-patient and day-case care was calculated using HR, DCR and LOS. Number of beds and places was then determined, taking into account bed occupancy rate and holiday period closings.

Results

From 1998 to 2004, the total number of hospitalization days (in-patient and day-case) decreased from 62 to 52.4 million. If 1998's HR, DCR and LOS were applied to 2004's population, this number would have been 66.7 million. The global increase observed in HR occurred with a decrease in LOS and an increase in DCR, proving the important role of changes in the practice of caregiving on the volume of hospital activity.

Using the first scenario, in 2030 the number of hospitalization days would be 79.4 million, with the effect of population ageing as the sole influence. In the second, it would be 64.7 million, including 11.4 million day-cases. In the third scenario, the number of hospitalization days would be 56.1 million: 45.7 million for in-patient and 10.4 million for day-case care. That means 157,000 acute care beds for in-patient (-20%, compared to 2004) and 30,600 places for day-cases (twice the 2004 figure). This analysis presupposes an optimal framework for each of the 41 diagnoses. For example, patients with dementia are supposed to be treated more and more on an out-patient basis, either at home or in specialized out-patient centers;

in spite of that evolution, the most severe patients will still need long hospitalization. Unlike for the majority of diagnoses, the number of hospitalization days for cardiac insufficiency increased between 1998 and 2004. Improving treatments could change patients from in-patient to day-case status and reduce LOS. That could limit the growth of the number of hospitalization days (2.6 million in 2030 with scenario 3 vs. 2.8 with scenario 1). This shows that the method of care delivery and improved medical practices could balance out the effects of population ageing. Nevertheless, strong public health measures are mandatory to make these changes possible.

Conclusion

Through retrospective and prospective analyses, this study demonstrates that there is important room for change in the field of medical care. Population ageing does not necessarily have to lead to an increase in the number of acute beds needed. But, the most fragile elderly patients will still need specialized care, with a high density of health workers in acute care units.

Although the primary focus of this exercise is on the long term, attention is drawn also to the short-term outlook. Methodology of the study makes new analyses available, comparing actual observed with projected evolution. Regional extensions of these results would be possible, with caution, knowing the variability in prevalence of the diseases and, moreover, in practices.