

Meeting abstract

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Clinical pathways at Norwegian hospitals 2003–2007. A general overview and special focus on cerebral infarction

Stein Østerlund Petersen* and Ola Kindseth

Address: SINTEF Health Research & The Norwegian Directorate of Health, Abelsgt. 1, Trondheim, N-7465, Norway

Email: Stein Østerlund Petersen* - stein.petersen@sintef.no

* Corresponding author

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Introduction

Clinical pathways have been analyzed for all patients at all Norwegian somatic hospitals during the period 2003–2007. A clinical pathway is defined as the number of contacts, and what kind of contact (outpatient visit, daycare, admission), that a patient had at the same hospital in a year. The paper will focus on changes during the five years, differences between university hospitals and others, and differences between three age groups – children (age 0–17), adults (age 18–67) and elderly (age 68+). Special focus will be on clinical pathways for patients where the principal diagnosis (ICD-10) for the first registered admission was I61, I62 or I64 (cerebral infarction).

Methods

All individual patient data (admissions, daycare and outpatient visits) are linked using a unique patient identification number. The same patient has a different identification number at different hospitals, and the number changes from year to year. It is only possible to identify clinical pathways within the same hospital and year. Patients who were not discharged alive are excluded, and patients discharged during the month of December also are excluded. Readmissions within 30 days are of special interest in this study, and we do not know if a patient discharged in December is readmitted in January the next year.

Results

The number of contacts per patient increased from 2.57 in 2003 to 2.70 in 2007. Some differences between men and women were observed. In 2003, the number of contacts per patient was 2.53 for men compared to 2.60 for women. In 2007, the figures were 2.66 and 2.72 respectively. Patients aged 70 and above had more contacts per patient than those below 70. In 2007, the figures were 3.14 (age 70+) and 2.59 (age below 70). From 2003 to 2007, the number of patient contacts at Norwegian hospitals increased by 14.9%, of which 9.4% was due to an increase in the number of patients, and 5.5% to an increase in the number of contacts per patient. The percentage of patients with only one contact with a hospital is decreasing, from 49.7% in 2003 to 48.6% in 2007. In 2003, a total of 11.8% of the patients had 5 contacts and more. In 2007, this percentage had increased to 13.0%.

The most common clinical pathways were (2007):

- 1 outpatient visit and no other contact
- 2 outpatient visits and no other contact
- 1 admission and no other contact
- 1 admission and 1 outpatient visit
- 3 outpatient visits and no other contact

- 1 admission and 2 outpatient visits

These six pathways covered about 70% of all patients both in 2003 and 2007.

There were only minor differences between university hospitals and other types. The difference is most visible for patients who had only one contact with the hospital. This contact is more often an outpatient visit at a university than at a less specialized hospital.

There were large differences between the various age groups. Of patients belonging to the age group 0–17 years, 53.4% had either 1 outpatient visit or 1 admission and no other contact with the hospital. Among patients 68 years or more, this percentage was 40.2%. A variety of different combinations of the number of admissions, outpatient visits and daycare treatments were found in both 2003 and 2007. The number of different combinations was 5006 in 2003 and 6063 in 2007.

Younger patients admitted to a hospital due to cerebral infarction and discharged alive were more often followed up at an outpatient department than elderly patients. For all Norwegian hospitals, the percentages in 2007 were 46 (age below 50) and 32 (age 75 and above). The variations between hospitals were considerable. At two of the largest university hospitals, the percentages were 73 and 41 (age below 50) and 56 and 21 (age 75 and above). At university hospitals, the risk of readmission for cerebral-infarction patients was reduced if the patient was examined at an outpatient department during the first 30 days after discharge. For patients aged 65 and above, the readmission rate was 8.8 for patients with 1 or 2 outpatient visits compared to 12.4 if there was no such visit. This was not the situation for patients aged 64 and below. This group had readmission rates of 4.5 (no outpatient visit) and 8.9 (1 or 2 visits).

Conclusion

Elderly patients seem to have less standardized clinical pathways than younger patients. The number of combinations of admissions, outpatient visits and daycare treatments is increasing. There were minor differences between university hospitals and others.

For elderly patients, outpatient visits subsequent to a discharge for cerebral infarction are very important. At most university hospitals, this is done on a routine basis, and the effect on the readmission rate is obvious. This was not the situation at other hospitals and for younger patients.

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