

Guideline compliance related to indwelling urinary catheters in 34 Norwegian nursing homes: findings and implications

Laila Aarnes¹, Karin Harris¹, Åse Skare¹, John Roger Andersen^{1,2}

¹ Førde Central Hospital. 6807 Førde, Norway

² Sogn og Fjordane University College. 6803 Førde, Norway.

Correspondence: laila.aarnes@helse-forde.no

Key findings

- It was documented that 11.1% (n = 92 of 830) of those living in the 43 nursing homes included in the study, had an indwelling urinary catheter.
- Guideline compliance related to indwelling urinary catheters was not satisfactory in 10 out of the 11 areas studied.
- There is a dire need for intervention to improve guideline compliance related to indwelling urinary catheters in order to prevent unnecessary urinary tract infections in Norwegian nursing homes.

This study was presented at Fjordkonferansen 2015 (The Fjord Conference 2015; <http://fjordkonferansen.no>), as an oral presentation.

Background

For patients in health institutions urinary tract infections often have significant negative health consequences (Hooton et al. 2010). Indwelling urinary catheters and inappropriate practice related to this is a strong risk factor for urinary tract infections (Lo et al. 2014). Thus, a national guideline promotes best practice for handling indwelling urinary catheters (Fagernes et al. 2013). The aim of this study was to assess the prevalence of patients with indwelling urinary catheters in 34 Norwegian nursing homes. Furthermore, we wanted to study whether health professionals followed the national guidelines related to indwelling urinary catheters. If the study reveals room for improvements, it may indicate interventions can contribute to improvements in the health care institutions.

Methods

We conducted a quantitative survey in health care professionals who worked in nursing homes in from Sogn og Fjordane county (Norway), and asked them how to which extent guidelines related to indwelling urinary catheters were used in at their work place. The study also included data on the prevalence of indwelling urinary catheters in 830 patients (565 women and 265 men) in the 34 nursing homes. We also conducted a clinical audit in these nursing homes in order to study the how the guidelines were implemented. An overall assessment was made (satisfactory or not satisfactory) on whether 11 dimensions of the guidelines were followed (Table 2). When $\geq 80\%$ of the nursing homes had a score = yes/usually to the items above it was considered satisfactory. The evaluations from the clinical audits were based on an overall judgment of the finding at the nursing homes. The study was approved by the Western Norway Hospital Trust as part of a quality assessment strategy. An approval from the regional ethical committee was not needed as the study was a quality assessment project and did not include any individual patient data.

Results

Our findings shows that 92 of 830 patients had a indwelling urinary catheter the day of prevalence assessment, and significantly more men (21.1%) than women (6.7%) had a indwelling urinary catheter (Fisher's exact test; $P < 0.001$). Overall, the survey showed that compliance with the guidelines was unsatisfactory with one exception; the doctor prescribed the posting of indwelling urinary catheters (Table 2 and 3).

Conclusions

In conclusion, most areas we investigated need improvements. The survey itself may be a key to change the nursing staff's attitudes and culture and to gain increased competence. In addition, it seems necessary to have good data solutions as well as leadership anchoring in further work on implementing best practice in handling indwelling urinary catheters.

Literature

Fagernes M, Sorknes NK, Lingaas E, and Nasjonalt f. 2013. Forebygging av kateterassosierte urinveisinfeksjoner : nasjonal veileder. Oslo: Nasjonalt folkehelseinstitutt.

Hooton TM, Bradley SF, Cardenas DD, Colgan R, Geerlings SE, Rice JC, Saint S, Schaeffer AJ, Tambayh PA, Tenke P, and Nicolle LE. 2010. Diagnosis, prevention, and treatment of catheter-associated urinary tract infection in adults: 2009 International Clinical Practice Guidelines from the Infectious Diseases Society of America. *Clin Infect Dis* 50:625-663.

Lo E, Nicolle LE, Coffin SE, Gould C, Maragakis LL, Meddings J, Pegues DA, Pettis AM, Saint S, and Yokoe DS. 2014. Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2014 update. *Infect Control Hosp Epidemiol* 35 Suppl 2:S32-47.

Table 1. Data on guideline compliance related to indwelling urinary catheters according to self-reported survey data from leaders at 34 Norwegian nursing homes and conclusions from the clinical audit.

Items	Yes/usually	No/seldom	Unknown
1. Is the guidelines for handling indwelling urinary catheters well known?	79.1%	2.3%	18.6%
2. Is there systematic training on handling indwelling urinary catheters?	16.3%	79.1%	4.6%
3. Is the indwelling urinary catheters decreed by a medical doctor?	97.7%	0.0%	2.3%
4. Is there clear indications on decreeing indwelling urinary catheters?	75.6%	22.0%	2.4%
5. Is the cause of decreeing indwelling urinary catheters documented?	90.5%	7.1%	2.4
6. Is closed drainage applied related to the indwelling urinary catheters?	7.1%	81.1%	11.9%
7. Is there set discontinuation times for the indwelling urinary catheters?	14.7%	82.9%	2.4%
8. Are the indwelling urinary catheters discontinued of there are no written documentation?	73.8	11.9%	14.3%
9. Is a urine strip test conducted after discontinuation of indwelling urinary catheters?	22.5%	70.0%0	7.5%
10. Is a urine strip test conducted prior to a bacteriological test?	95.3%	4.7%	0.0%
11. Is a urine culture test conducted before antibiotic treatment is started?	90.7%	7.0%	2.3%

Table 2. Guideline compliance (satisfactory versus not satisfactory) related to indwelling urinary catheters based on data from a self-reported survey clinical audits in 34 Norwegian nursing homes.

Items	Survey	Clinical audit
1. Is the guidelines for handling indwelling urinary catheters well known?	Not satisfactory	Not satisfactory
2. Is there systematic training on handling indwelling urinary catheters?	Not satisfactory	Not satisfactory
3. Is the indwelling urinary catheters decreed by a medical doctor?	Satisfactory	Satisfactory
4. Is there clear indications on decreeing indwelling urinary catheters?	Not satisfactory	Not satisfactory
5. Is the cause of decreeing indwelling urinary catheters documented?	Satisfactory	Not satisfactory
6. Is closed drainage applied related to the indwelling urinary catheters?	Not satisfactory	Not satisfactory
7. Is there set discontinuation times for the indwelling urinary catheters?	Not satisfactory	Not satisfactory
8. Are the indwelling urinary catheters discontinued of there are no written documentation?	Not satisfactory	Not satisfactory
9. Is a urine strip test conducted after discontinuation of indwelling urinary catheters?	Not satisfactory	Not satisfactory
10. Is a urine strip test conducted prior to a bacteriological test?	Satisfactory	Not satisfactory
11. Is a urine culture test conducted before antibiotic treatment is started?	Satisfactory	Not satisfactory

Note: When $\geq 80\%$ of the nursing homes had a score = yes/usually to the items above it was considered satisfactory. The evaluations from the clinical audits were based on an overall judgment of the finding at the nursing homes.