



Reducing inappropriate use of intravenous and urinary catheters by a de-implementation strategy

Multicentre, prospective, interrupted time-series and before and after study

WHAT WAS INVESTIGATED?

This study investigated the ability of introducing a de-implementation strategy to reduce inappropriate use of peripheral intravenous and urinary catheters and therefore to reduce healthcare-associated infections (HAIs).

The de-implementation strategy was a tailored multifaceted intervention consisting of

- educational meetings
- feedback reports
- posters
- pocket cards
- individual possibilities of teaching in every institution.

WHAT WAS THE RESULT?

Inappropriate use of **peripheral intravenous catheters (PVCs)** could be reduced by **6.65 %** (absolute reduction).

Inappropriate use of **urinary catheters** showed an absolute reduction of **6.34 %**.

These findings correspond to a **relative reduction** of PVCs of **35 %** and of urinary catheters of **26 %**.

Optimising processes by special strategies for de-implementation of peripheral intravenous catheters and urinary catheters can reduce inappropriate catheter use and can support the reduction of healthcare-associated infections.

BACKGROUND

Invasive treatments, such as peripheral venous or urinary catheters, are often associated with a higher risk of HAIs. They can cause catheter-associated bloodstream infections and urinary tract infections. The guidelines agree that avoiding unnecessary use of catheters is one of the most effective ways to reduce catheter-associated infections.

GOAL

The goal of this study was to reduce the inappropriate use of catheters by introducing a de-implementation strategy with the aim to eventually reduce HAIs.

DESIGN AND METHODS

The study was conducted in internal medicine and non-surgical wards in seven hospitals in the Netherlands (three university hospitals and four general hospitals).

The study included 5,696 patients and was divided in three phases:

- Baseline period (7 months)
- Transition period (5 months): introduction of de-implementation strategy without patients included
- Intervention period (7 months): introduction of de-implementation strategy (education, feedback, poster, pocket cards, individual possibilities of teaching)

Adult patients admitted to internal medicine, gastroenterology, geriatric, oncology, or pulmonology wards as well as non-surgical acute admission units were enrolled in the study. Only patients with a (central or peripheral) venous or urinary catheter were included.

Primary endpoint was inappropriate use of peripheral intravenous or urinary catheters on the day of data collection. Indications for catheter use were based on international guidelines.

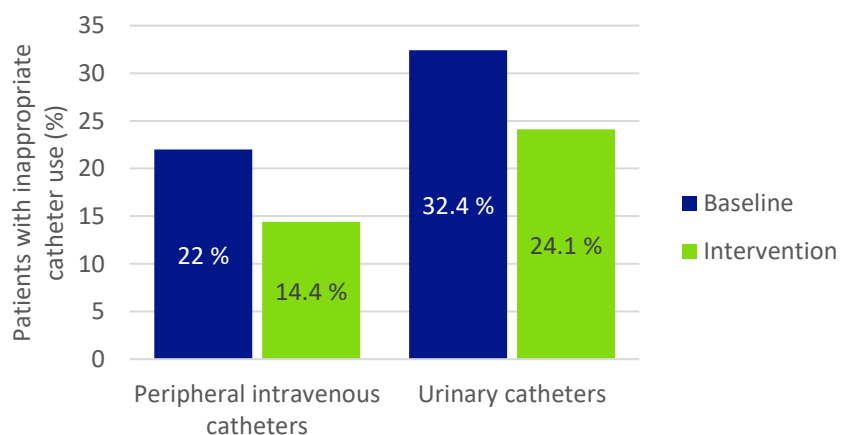
RESULTS

Inappropriately used PVCs were reduced by 6.65 %, from 22 % in the baseline period (366 of 1,665 patients) to 14.4 % in the intervention period (275 of 1,912 patients).

For urinary catheters, the reduction was 6.34 %. In the baseline period, 105 of 324 patients had an inappropriately used urinary catheter (32.4 %), whereas in the intervention period, only 96 of 398 patients had such a catheter (24.1 %).

The de-implementation strategy was associated with a 35 % relative reduction in inappropriate use of PVCs and 26 % of urinary catheters.

Effect of intervention on inappropriate catheter use



CONCLUSION

The de-implementation strategy was successful to reduce inappropriate use of PVCs and urinary catheters and appears to be well suited for a reduction of HAIs.