

# Needle dislodgement management in dialysis – causes and consequences

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## Introduction

Needle Dislodgement (ND) is a life threatening incident that is more frequent than desirable, with several potential levels of harm, like catastrophic blood loss and even death.

In fact, the incidence of this event can be as high as 6.1% of all haemodialysis incidents, but published reports are probably just the tip of the iceberg, as this kind of event is usually managed locally.

## Methods

Prospective, descriptive, observational study. 4,700 patients from 37 HD units during 2017.

Previous nursing training was performed involving an e-learning training course.

All event descriptions and corrective actions are recorded in a central database, including level of harm to the patient.

Small blood loss (SBL) was considered < 100 mL, serious bleeding event (SBE) ≥ 100 mL or when blood sample was taken for blood count.

## Objectives

- To assess the incidence of ND in a large scale.
- To identify the causes and consequences using a systematic approach.



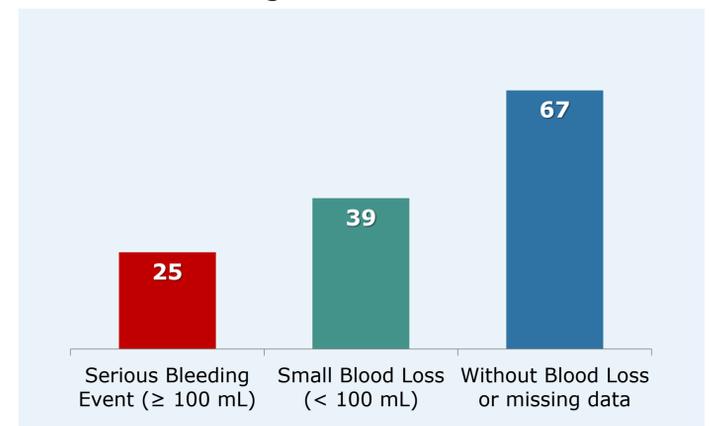
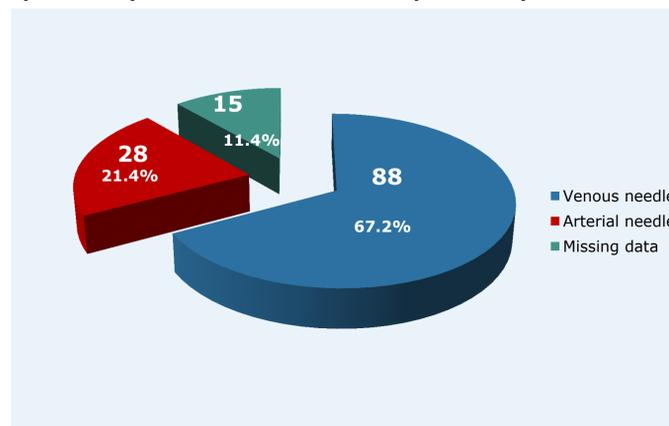
Figure 1: Pictures from the e-learning training course

## Results

136 ND events were recorded from 732,941 treatments involving 118 patients. Out of this 136 events, 5 were not considered because they were related to partial dislodgment. 58% were male, mean age 69.81 SD 14.52 years.

Out of 131 ND events, 88 (67.2%) involved venous ND, 28 (21.4%) arterial ND, and in 15 it was not specified to which needle it was referred. 39 (28.8%) with SBL, 25 (19.1%) with SBE and 67 (51.1%) without blood loss or missing data.

Study data	
Study period	2017
No. of clinics	37
No. of patients	4,700
No. of treatments	732,941
No. of ND events	136



From a total number of events, 29 incurred in the same 12 patients. 82 events required a new cannulation, 29 early treatment disconnections.

The main causes for ND were related to restless/non-compliant patients (25) and mental confusion/disorientation (10). Of note, 2 patients inadvertently moved the vascular access limb and in 2 other cases, the adhesive stripes glued themselves to the sheets. In all other events, the cause is not explicit. There were no fatal consequences, and only one patient was referred to hospital. We observed 3.41/100,000 SBE events.

## Conclusion

Restless/non-compliant and confused/disorientated patients are often associated to more frequent ND events. Venous ND was more frequent than arterial, without fatal consequences. Thanks to careful monitoring of nurses and careful patient training more favourable outcomes were achieved. This assessment was only possible due to the use of a variance report centralised database.

## References

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