Aseptic Practice for Peripheral Cannulation- Overcoming Human Factors

Glynis Bennet[1] and Dawn Cooper PhD[1]
1 The Queen Elizabeth Hospital Kings Lynn 2 Sheffield Hallam University

Introduction

Intravenous catheter use is common and not without risk. Aseptic practice has been widely introduced, however the nature of human factors, not all process are instinctive and fully followed. We wanted to observe compliance to cannulation policy in the trust before and after the implementation of a new cannulation procedure pack and a process of offering ongoing and tailored training to our healthcare workers. We wanted to see if the combination of pack which contain all primary equipment required for cannulation and training would address many of the human factors and improve practice in the Trust.

Methods

Cannulation practice was observed in some of the busiest areas within the trust: Accident and Emergency and the Medical Assessment Unit whilst using a standard dressing pack (Syngeryhealth) containing: Aseptic field/drape, gauze and dressing and separately staff would collect a pre filled syringe or draw up a saline syringe, cannula, tourniquet and skin cleaning wipe. Compliance with trust protocol and aseptic practices were scored as yes/no for: handwashing, use of aseptic field, flush preparation, PPE use, use of drape, vein re palpation, skin cleaning and drying times and ability to see insertion site.

A

B

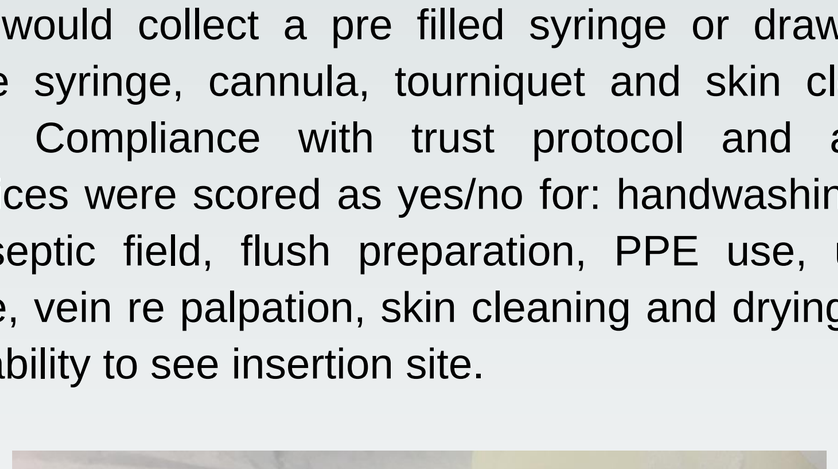

Figure 1 Contents of (a) original pack and (b) the new peripheral cannulation procedure pack

Tailored training was devised based on results of the initial audit in June 2017 and performed by the clinical educators provided by the manufacturer during the implementation of the B Braun peripheral cannulation procedure pack. The new cannulation procedure pack contains: cannula, general aseptic field, skin cleaning, gauze, waste bag, underarm drape, traceability label, dressing, tourniquet and prefilled saline syringe. The audit was repeated 6 months later.

Results

In June 2017, n=68 cannulations were observed and in January 2018, n=60 cannulations were observed for the audit. After dedicated tailored training and the introduction of the full peripheral cannulation procedure pack resulted in an increase in compliance with aseptic practice.

There was an increase in compliance with the following:

- ↑ Use of the general aseptic field **(+43%)**
- ↑ Use of aseptically filled syringe **(+150%)**
- ↑ Use of under arm drape **(+45%)**
- ↑ Use of disposable tourniquet **(+10%)**

The associated additional training had a positive impact on human factors involved in the cannulation process.

- ↑ Hand cleaning before **(+6%)** and after **(+38%)**
- ↑ Use of a disposable drape **(+93%)**
- ↑ Mean skin cleaning time increased **(+66%)**
- ↑ Disposable apron use **(+92%)**
- ↓ Vein re palpation **(-42%)**

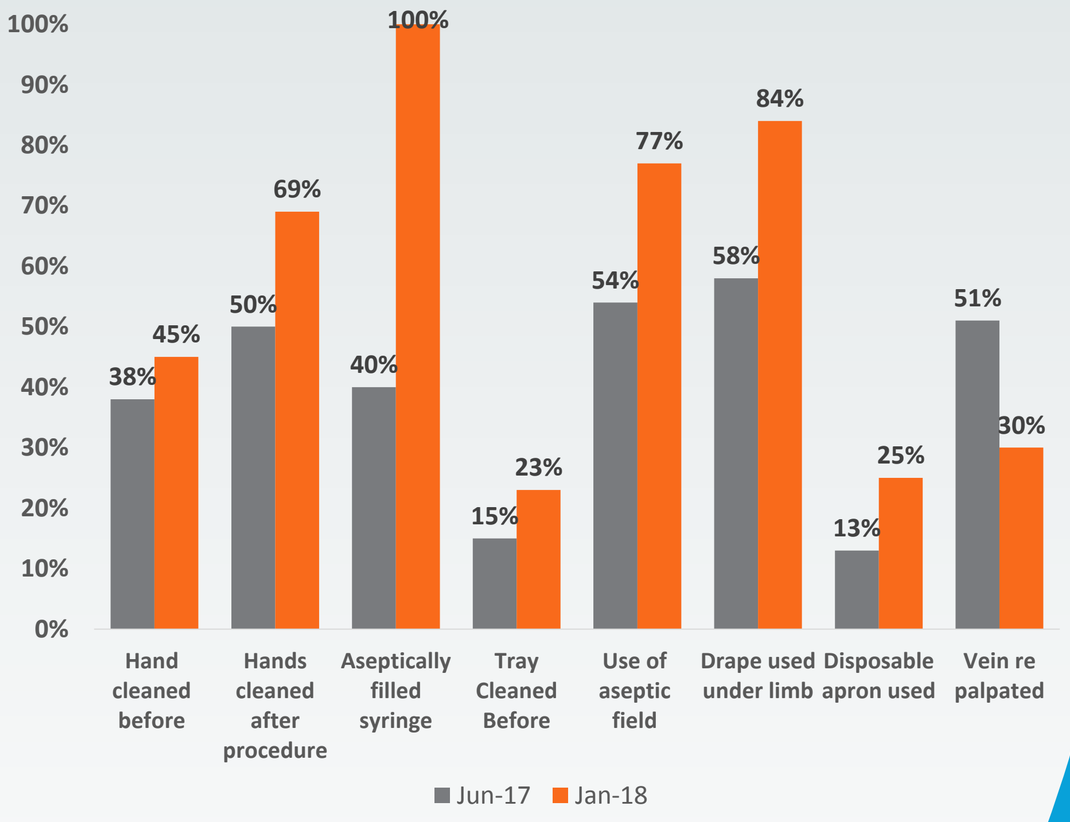

Figure 2 Audit results as a percentage of observations (n= 68 Jun and 60 July)

Conclusion

The introduction of a full cannulation procedure pack has resulted in compliance with use of all items within the pack and improved aseptic practice compared to using a basic dressing pack. The associated tailored training has also had a positive impact on improving issues associated by human factors after an initial 6 month period. Based on these positive results a process of audit and training will be a continual and annual process, supported by the manufacturer, to further build on the positive observations seen here. Our results demonstrate that equipment alone is limited in improving compliance to practice and that specific education is required to impact positive changes in behaviour.

Conflicts of Interest
D Cooper is employed by B Braun and is a Visiting Research Fellow at Sheffield Hallam University. All other authors have no conflicts to declare