

Improving Care and Saving Money with Disposable Tourniquets

Dr. Rodric Vian Francis, FY1, Nottingham University Hospital NHS Trust

Introduction

Venepuncture and cannulation are basic procedures carried out in all hospitals either on patients admitted as an inpatient or those visiting as an outpatient. Application of tourniquet is required for this procedure and the types available can be split into reusable and disposable.

Several studies^{1,2,3,4,5} have shown the use of reusable tourniquets are a potential vector for transferring bacteria.

C.Fellowes et al in 2006² showed 25% of tourniquets carried MRSA and in a separate study³ 38% of the reusable tourniquets were blood stained.

The Nottingham University Hospitals (NUH) Trust utilizes a variety of tourniquets as shown below in *Table 1*.

Aims

- Assess current tourniquet usage in the Trust
- Evaluate patients' preference to tourniquets available
- Evaluate which tourniquet is most user friendly
- Identify which tourniquet reduces risk of infection, is comfortable for patients, easy to use and also cost effective.

Methods

The survey was carried out in Nottingham University Hospital outpatient phlebotomy department and on inpatients during February 2015. The users who reviewed tourniquets included phlebotomists, doctors and nurses.

Three questionnaires were used–

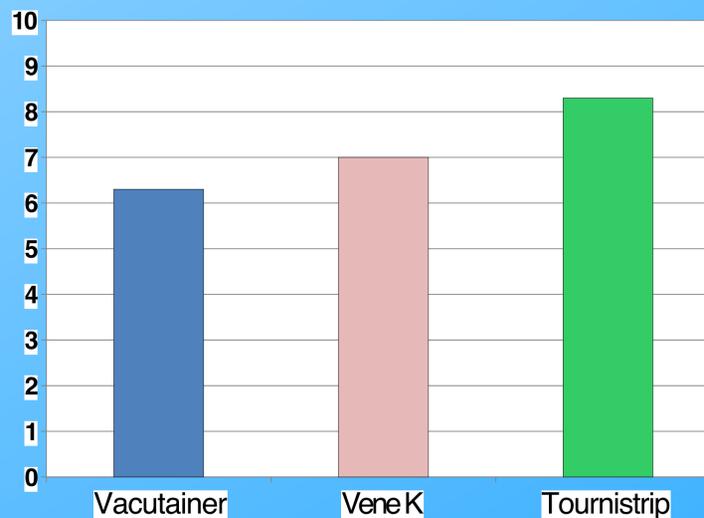
- Current tourniquet usage in Trust
- Patients' preference of tourniquet – short and detailed version questionnaires
- User feedback on all tourniquets

Brand	Number of Units Ordered	Price per tourniquet	Total Number of Tourniquets	Total Spent
Vacutainer 	5085	£0.11	127,125	£13,780
Vacurette 	170	£0.09	4250	£403
Vene K 	864	£0.38	86,400	£32,953
Whenzou 	2710	£0.45	2710	£1219
Tournistrip 	121	£0.22	24,200	£5274

Results

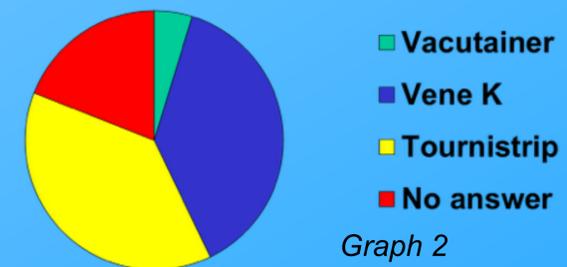
- 29 out of 47 staff members used reusable tourniquets. 43 out of 47 felt reusable Whenzou is easier to use.
- The mean comfort score given by patients for disposable tourniquets is shown in *Graph 1*.
- 121 out of 155 patients felt Tournistrip was equal to, good or better than a reusable tourniquet.
- *Graph 2* shows that equal number of staff members prefer Vene K and Tournistrip. Some staff members did not pick an answer as they preferred a reusable tourniquet.

Mean Comfort Scoring By Patients



Graph 1

Overall Tourniquet preference of staff



Graph 2

Discussion

Majority of staff members still use reusable tourniquets in NUH despite several studies confirming risk of infection. Tournistrip is the preferred disposable tourniquet by patients. Equal number of staff members have a preference for Tournistrip and Vene K. By switching to Tournistrip and cutting down orders on the Whenzou and Vene K tourniquets–

- better patient care can be provided
- tourniquets will be easier to use for staff
- substantial money can be saved for the Trust- almost **£14,000**
- risk of infection can be reduced

References

1. Kerstein RL, Fellowes C., Novel fit for purpose single use tourniquet: best of both worlds, J Med Eng Technol, 2009, 33(6): 475-480
2. Fellowes C, Kerstein R, Clark J, Azadian BS, MRSA on tourniquets and keyboards, J Hosp Infect. 2006 Sep;64(1):86-8. Epub 2006 Jul 7.
3. Rourke C, Bates C, Read RC, Poor hospital infection control practice in venepuncture and use of tourniquets, J Hosp Infect, 2001 Sept, 49(1):59-61
4. Leithch A, McCormick I, Gunn I, Gillespie T, Reducing the potential for phlebotomy tourniquets to act as a reservoir for methicillin-resistant Staphylococcus aureus, J Hosp Infect, 2006 Aug, 63(4): 428-31
5. Elhassan HA, Dixon T, MRSA contaminated venepuncture tourniquets in clinical practice, Postgrad Med J, 2012 April, 88(1038):194-7

Table 1