

# Needleless for dialysis central vein catheter treatment for patient and staff safety

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## Introduction:

Central line related blood stream infection (CLABSI) is one of the most common fatal complications among hemodialysis patients, especially when central venous catheters (CVCs) are used as vascular access in older patients. Previously, in our hospital-based unit, lock solution was injected through the catheter caps. We wished to prevent the possibility of needle sticks injury and also the possibility of blood stream infection.

After several trials, we decided to use the split septum Luer lock (BD Q-syte).

This device enables :

- blood flow at least 300 ml/min
- prevention of venous pressure or collapse
- avoiding of catheter occlusion.

Before:



After:



## Aims:

To investigate bacterial-safety in addition to advantage of needle sticks prevention.

## Methods:

CLABSI among chronic hemodialysis patients with cuffed CVCs was evaluated 24 months before (1st period) and 24 months after (2nd period) needleless was introduced into our hemodialysis unit.



## Results:

61% of our patients are treated with cuffed CVCs

Average age 65.4 (17-91).

During 1<sup>st</sup> period - prior needleless:

- 16 CLABSI events: 9 gram(+)and 7 gram(-) in 101 patients (0.77/1,000 catheter days);

During 2<sup>nd</sup> period - with needleless:

- 10 CLABSI events: 5 gram(+)and 5 gram(-) in 151 patients (0.44/1,000 catheter days).

Since needleless lock device was introduced, **no staff needle sticks were reported.**

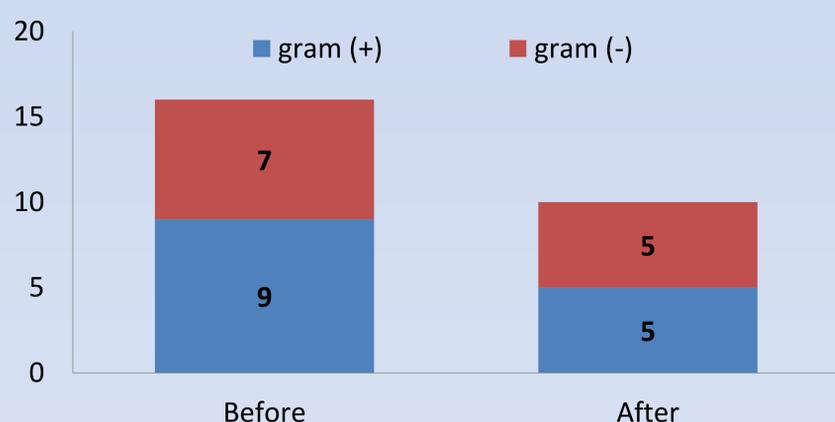


Figure 1: gram stain in CLABSI before and after needleless lock

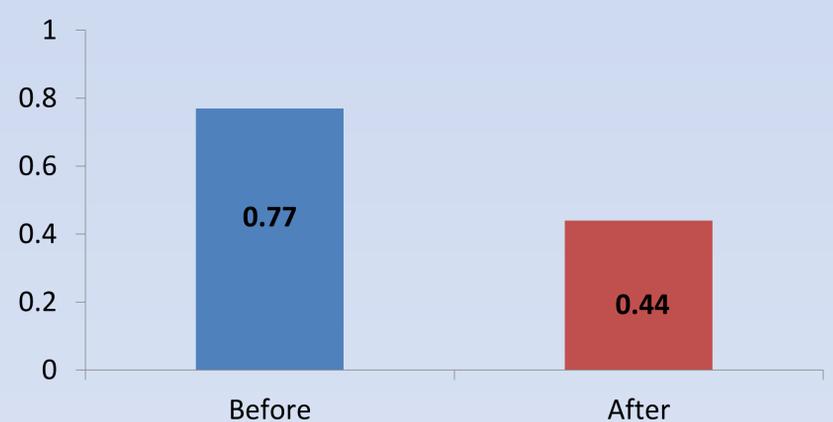


Figure 2: CLABSI events per 1,000 catheter days during periods before and after needleless lock

**Conclusions:** The change in practice has resulted in a reduction of accidents of the CLABSI and needle-stick injuries to the staff.