

EVALUATION OF CLINICALLY INDICATED REMOVAL VERSUS ROUTINE REPLACEMENT OF PERIPHERAL VENOUS CATHETERS

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Introduction

Latest clinical guidelines recommend that peripheral venous catheters (PIVC) should be removed when clinically indicated and not routinely (Loveday et al. 2014). In 2017, King's College Hospital implemented clinically indicated removal/re-site (CIR) of PIVCs. This was evaluated in 2019 across two sites to assess the impact.

Method

Between March and July 2019, elements of care (Box 1) for 500 PIVCs were audited across different specialties with the focus on duration, Visual Infusion Phlebitis (VIP) score and need for the device. The aim was to capture a sufficient quantity of PIVCs to represent dwell-time range for better comparison and assess the efficacy of changing from routine to CIR.

Results

Of the 500 PIVCs audited, 31% ($n = 155$) were in-situ >3 days (range 4–22 days) (Figure 1). 92% ($n = 460$) had a VIP score of 0 on visual assessment (Figure 2), 72% ($n = 360$) a documented VIP score of 0, and 84% ($n = 420$) were needed (Figure 3). The combined data showed prevalence of phlebitis at 8% (Table 1) with variation in trends for each site for dwell-time >7 days (Figure 4). Despite the variation, prevalence was similar at 7% and 9% respectively.

Box 1. Elements of care considered in the audit

- Date of insertion
- Dressing dated
- Dressing (clean, dry and intact)
- Duration
- Observed Visual Infusion Phlebitis (VIP) score
- Documented VIP score
- Need for device

Figure 1. Duration of PIVCs

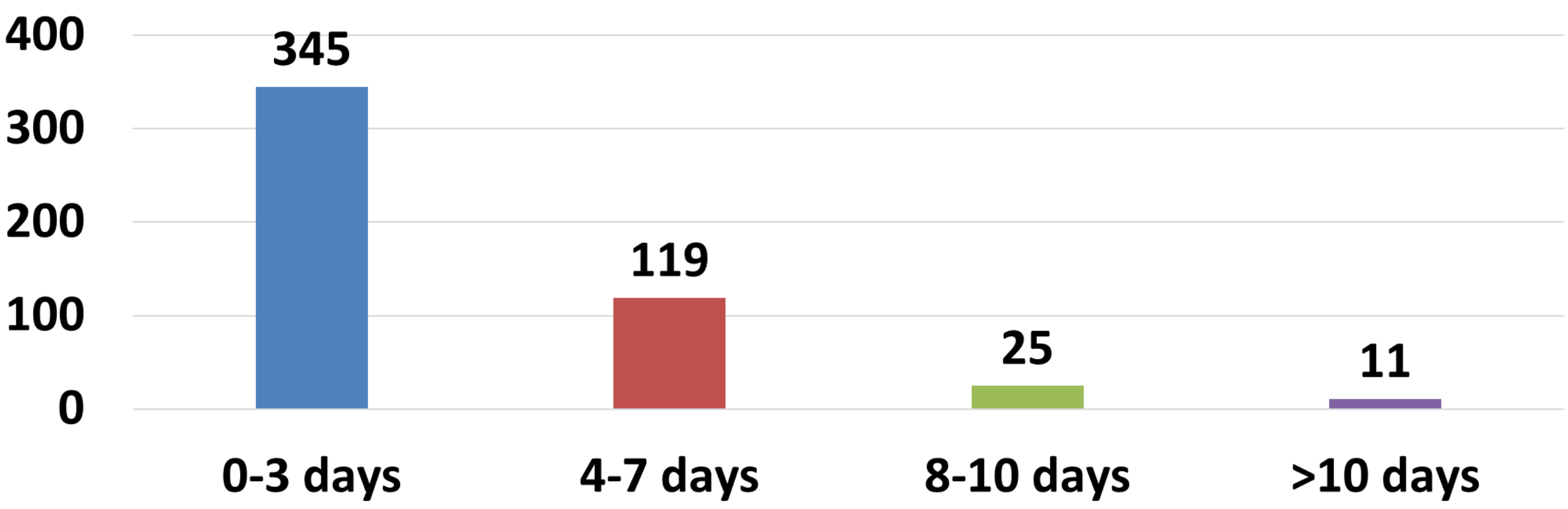


Figure 2. VIP scores by duration of PIVCs

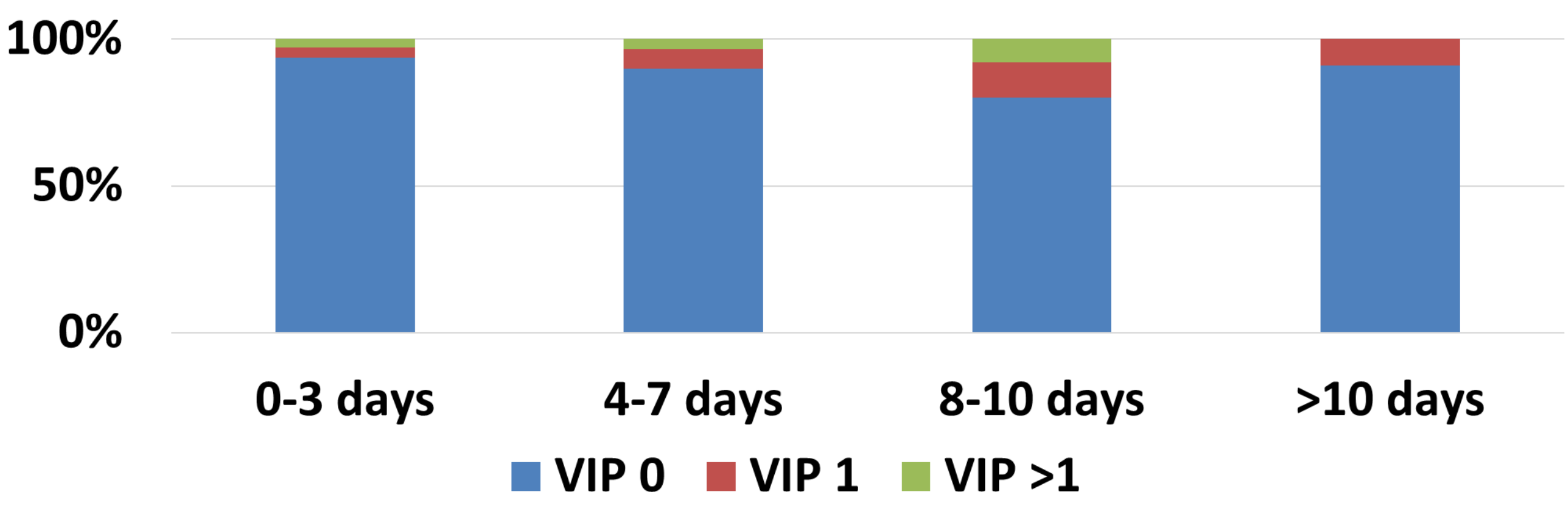


Figure 3. Need for PIVCs

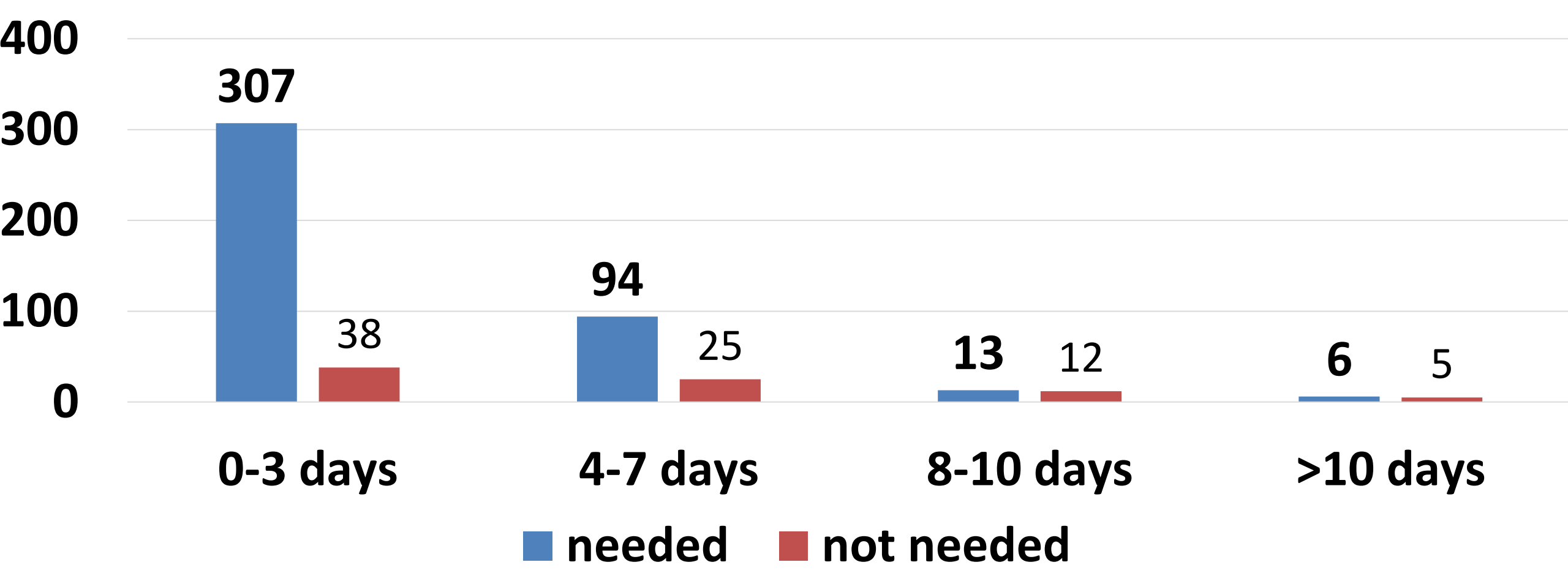
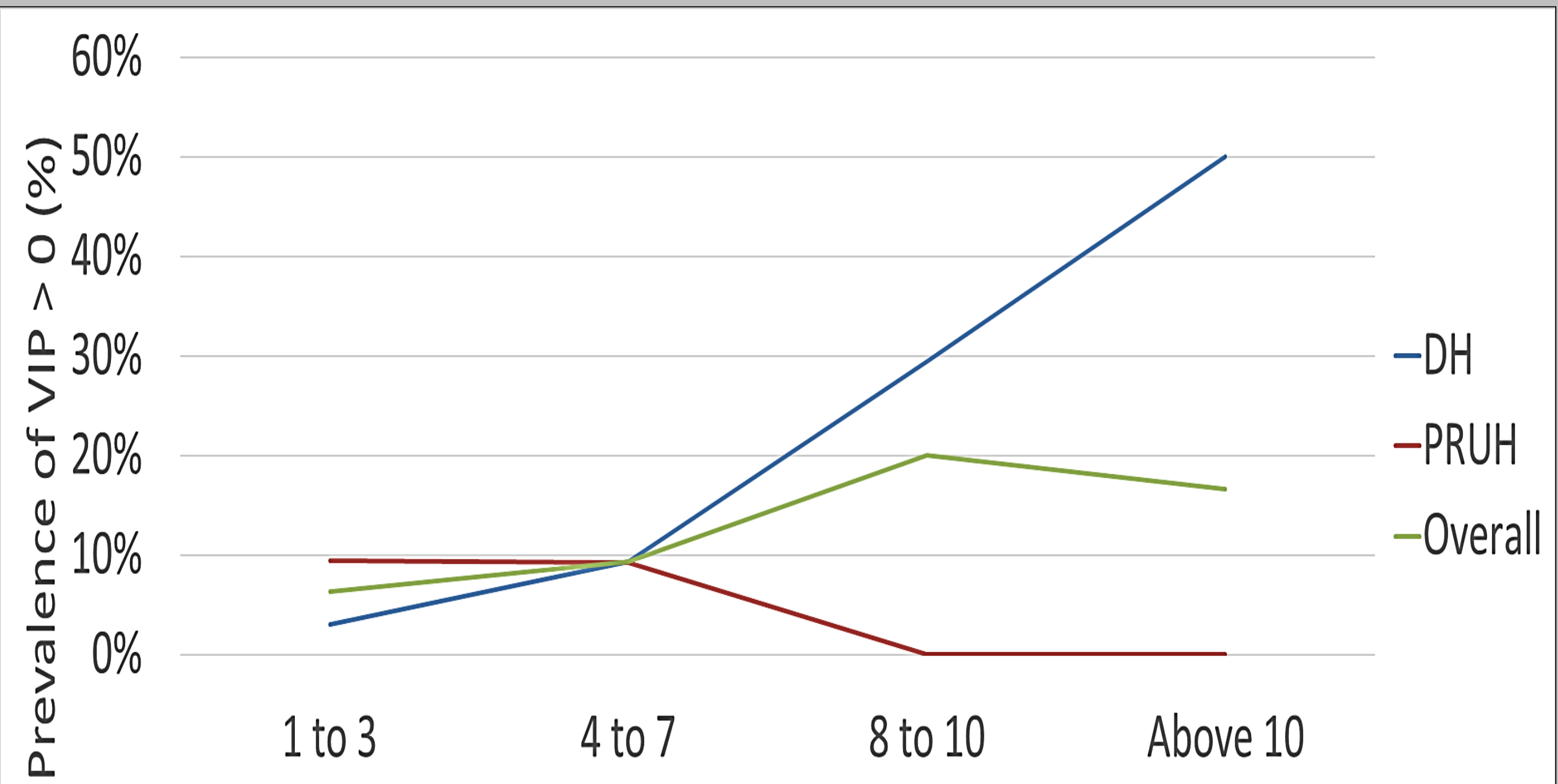


Table 1. Prevalence of phlebitis over dwell time of PIVCs

Overall	VIP>0	VIP 0	%
1 to 3	22	323	6%
4 to 7	12	107	10%
8 to 10	5	20	20%
Above 10	1	10	9%
Total	40	460	8%

Figure 4. Prevalence of phlebitis over dwell time of PIVCs



Conclusion

Implementing CIR resulted in better patient experience and reduced cost with fewer PIVCs used. In 2017, 67,373 was recorded and 49,809 for the same period in 2018, a reduction of 17 564 (26%). This indicates an approximate cost saving of £70000 based on equipment cost of around £4 per insertion assuming only one attempt.

References

- Loveday HP, Wilson JA, Pratt RJ et al. epic3: national evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England. J Hosp Infect. 2014;86(Suppl 1):S1-70. [https://doi.org/10.1016/S0195-6701\(13\)60012-2](https://doi.org/10.1016/S0195-6701(13)60012-2)
- Webster J, Osborne S, Rickard CM, Marsh N. Clinically-indicated versus routine replacement of peripheral venous catheters. Cochrane Database Syst Rev. 2019;1:CD007798. <https://doi.org/10.1002/14651858.CD007798.pubs5>

Discussion

It is estimated that annually more than a billion PIVCs are used globally. Although it is difficult to fully understand the impact of negative patient experiences and cost, steps must be taken to minimize both. Implementing CIR would allow 1:2 patients to complete a course of treatment with one PIVC, as opposed to 1:5 with routine replacement (Loveday et al. 2014). A systematic review of CIR versus routine replacement found no clear difference in complication rates (Webster et al. 2019).