

## Background

- Vascular Access Devices (VADs) are a source for healthcare-acquired infections occurring at a high prevalence of ~10–20% per year leading to increased morbidity and mortality.
- The baseline CVAD-related monthly infection rate for midline and central venous catheters was 2% and the rate for occlusions was 10% over a 3-month period.
- A site audit revealed that home health nurses at the project site were inconsistently performing VAD care as outlined in the Infusion Nurses Society (INS) guidelines for midline and central line dressing changes.

## Purpose

**Setting:** A home health care agency in northeastern United States that provides home infusion therapy and other home health services.

**Population:** All adult patients with CVAD and midline receiving home infusion therapy.

The purpose of this quality improvement project was to implement a standardized evidence-based protocol for the care of midline and central venous access devices for home infusion patients.

The goals of this quality improvement project were to:

- Improve nurse adherence to guidelines for care of midline and central catheters to 100% by December 1, 2020
- Reduce CVAD-related infection rate to zero by December 1, 2020
- Reduce CVAD occlusion rate by 50% by December 1, 2020

## Methods

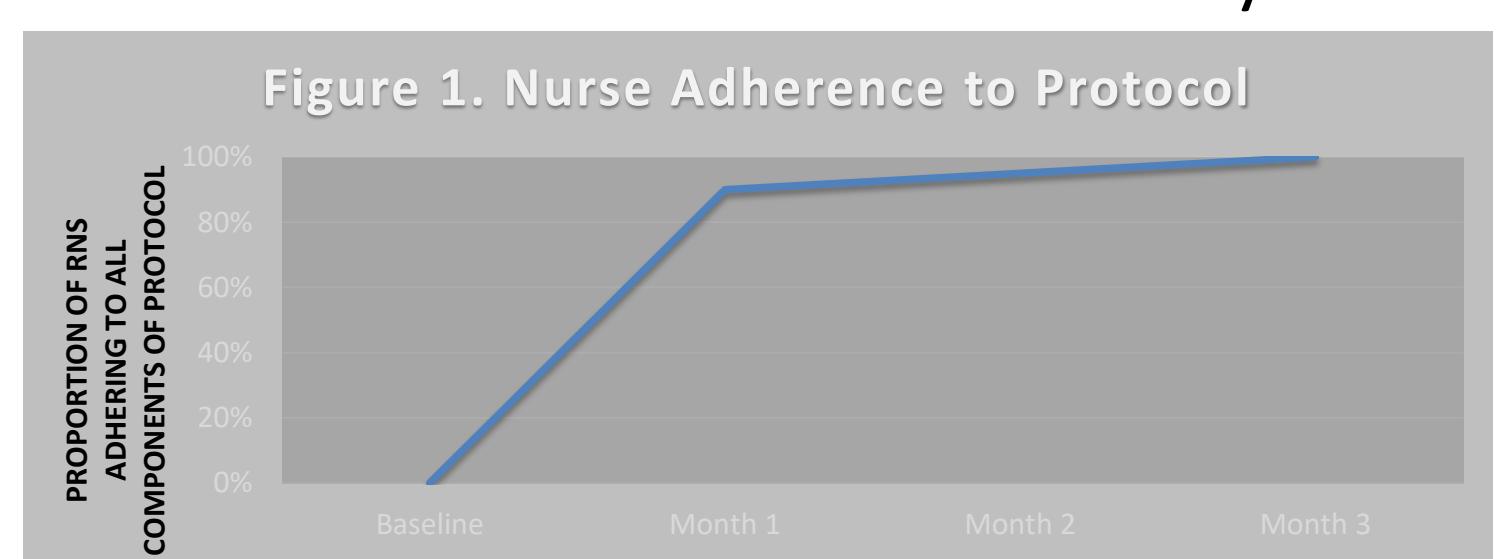
### Development of an administratively approved CVAD policy based on INS Guidelines

#### Implementation of New Policy

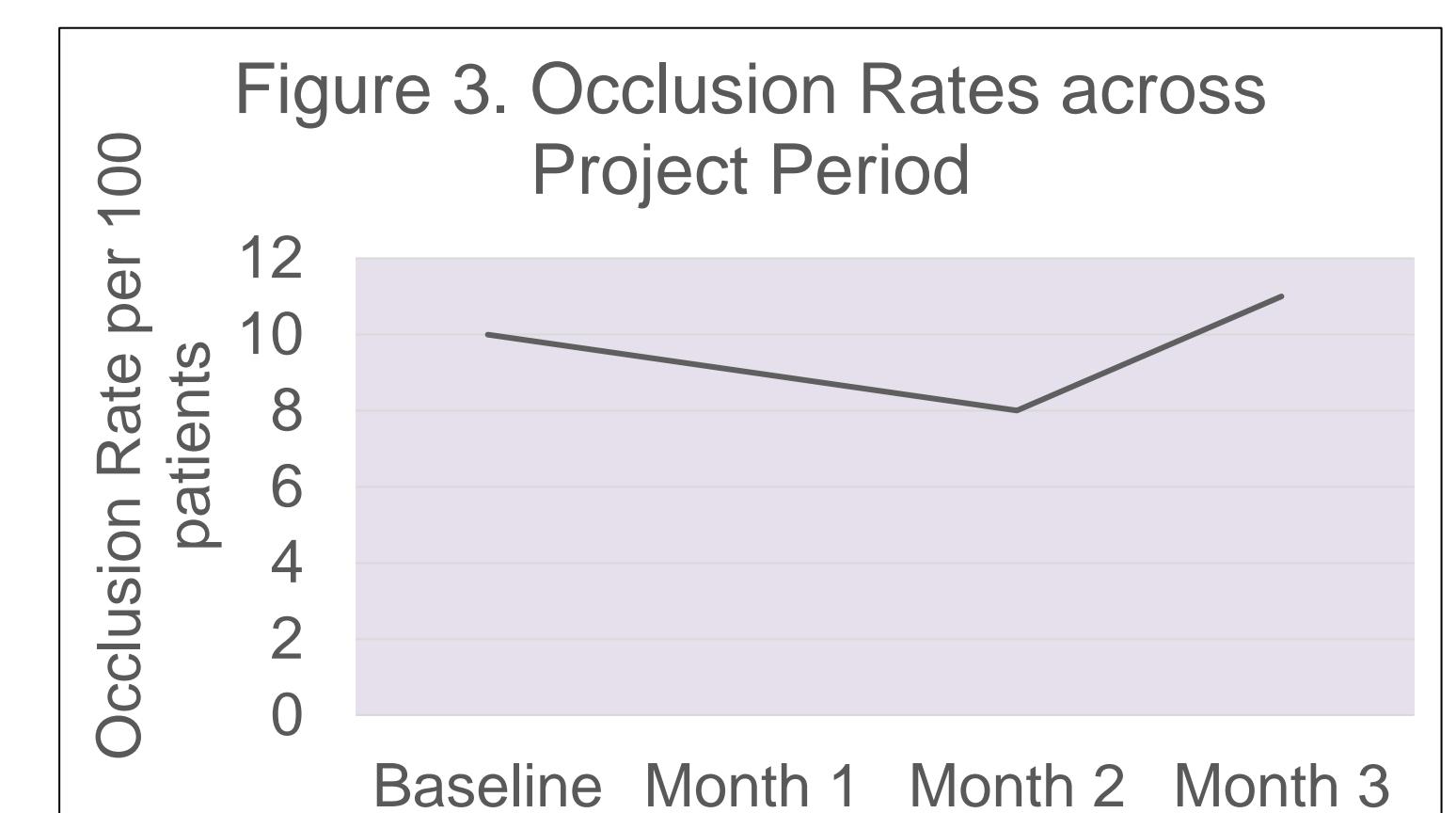
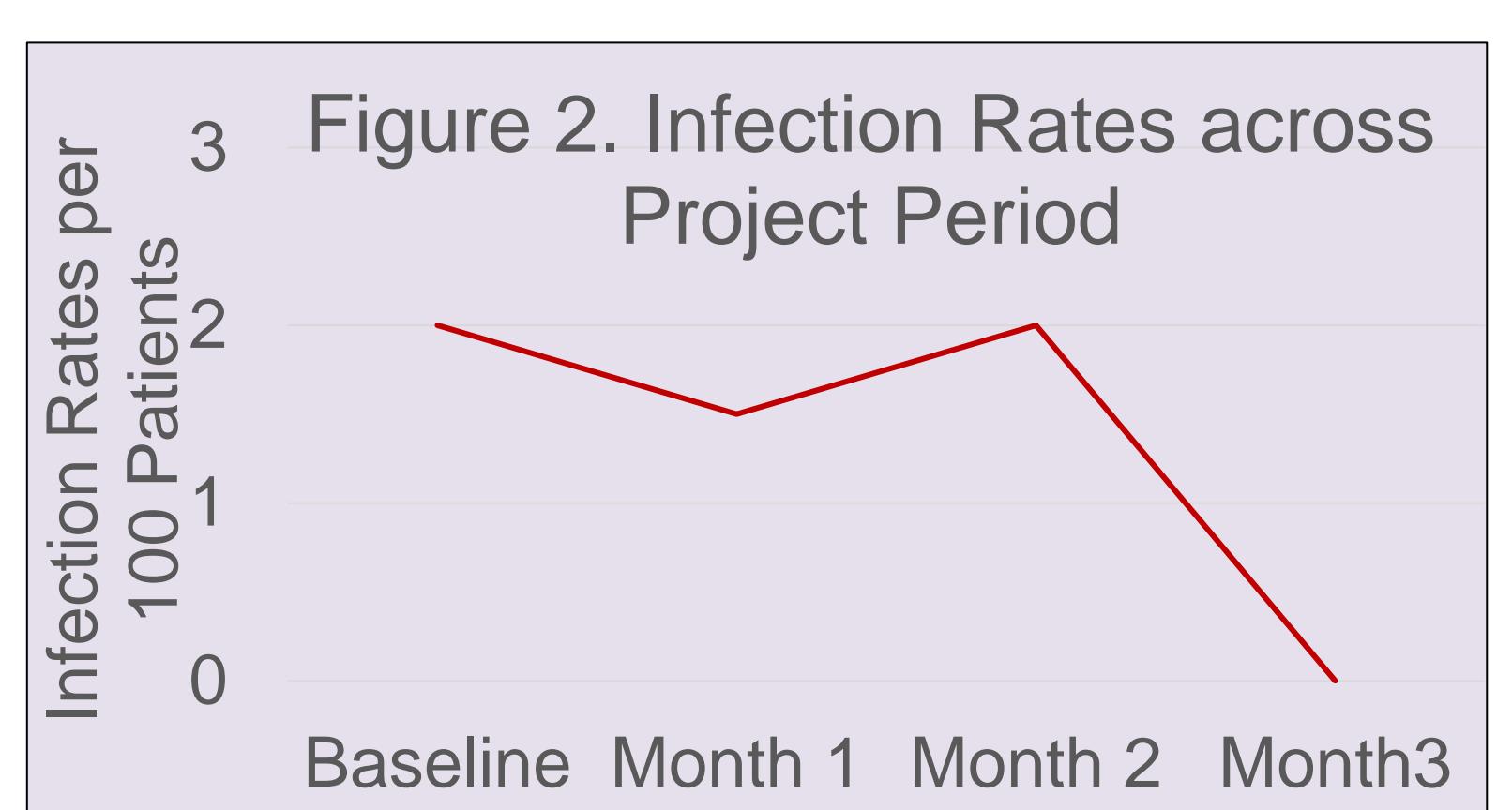
- RNs were trained to use the most current Infusion Nurses Society (INS) protocol for midline and central line dressing changes. Training included:
  - Simulation, Demonstrations and Print Materials
- RNs applied the new protocol
  - Support from management facilitate project incorporation into overall infusion organizational culture
    - Inclusion of project champions facilitate the integration of the protocol during admissions and weekly visits
    - Patients were informed and educated on how they should anticipate their dressings to be done
    - Nurses were observed weekly during supervisory visits when performing midline and central venous access device care.
    - Weekly staff meetings used for reinforcing new protocol..
  - Data regarding project goals was collected monthly for 3 months

## Results

All RNs were trained by the end of the second week of the project. RN adherence to all components of the dressing change protocol increased from zero to 100% by the end of the project (Fig 1).



From baseline (September) to the end of the fourth quarter (December) midline and central line related infections decreased 100% from 2 per 100 to zero as shown in Figure 2. Occlusions trended downward for two months, then spiked during the last month (Fig 3).



## Discussion

- Implementing a new standardized protocol for CVAD care, a written policy, and tactics to change CVAD care led to a reduced number of midline and central line infections in home infusion patients and markedly improved guideline adherence by RNs.
- Outcomes were consistent with evidence that supports line-related infection prevention in literature.
- The project was limited by staff size and duration.
- The agency will sustain this practice change by requiring all home infusion nurses to be trained in the protocol at onboarding and will monitor adherence during quarterly reviews.

## Conclusions

- This is a feasible evidence-based practice change to improve safety outcomes and quality of care
- Future QI projects in the target agency could seek to develop interventions to reduce rates of line occlusions.
- A long-term analysis will determine if the standardized protocol will continue to decrease the per-patient cost of care related to infections

## Selected References

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