

Ultrasound-Guided Intravenous Catheter Placement in the Emergency Department: Adherence to Implementation

Megan Farace, BSN, RN
Mary Renfrow, DNP, MS, FNP-C

Problem Statement

- Difficult intravenous access (DIVA) patients experience delays in care due to excessive attempts to gain peripheral intravenous access (PIV)
- Literature supports the use of ultrasound guidance for peripheral intravenous access (USGPIV) versus visualization and palpation in DIVA patients

Purpose of Project & Goals

Identify DIVA patients using validated tool, measure ED nurse attempts of USGPIV catheter placement, and decrease delays in care for DIVA patients

Process goals: 100% of DIVA patients will be accurately identified with A-DIVA tool & have PIV placed with ultrasound guidance

Outcome goals: 100% of patients requiring USGPIV catheter placement will have < 2 IV insertion attempts

Methods

Problem analysis

- Patients screened via Adult-Difficult Intravenous Access (A-DIVA) tool
- A-DIVA score of 2-to-5 indicates patient requires ultrasound guided PIV

Education

- Hands-on training
- Competency-based observation of ultrasound guided PIV technique

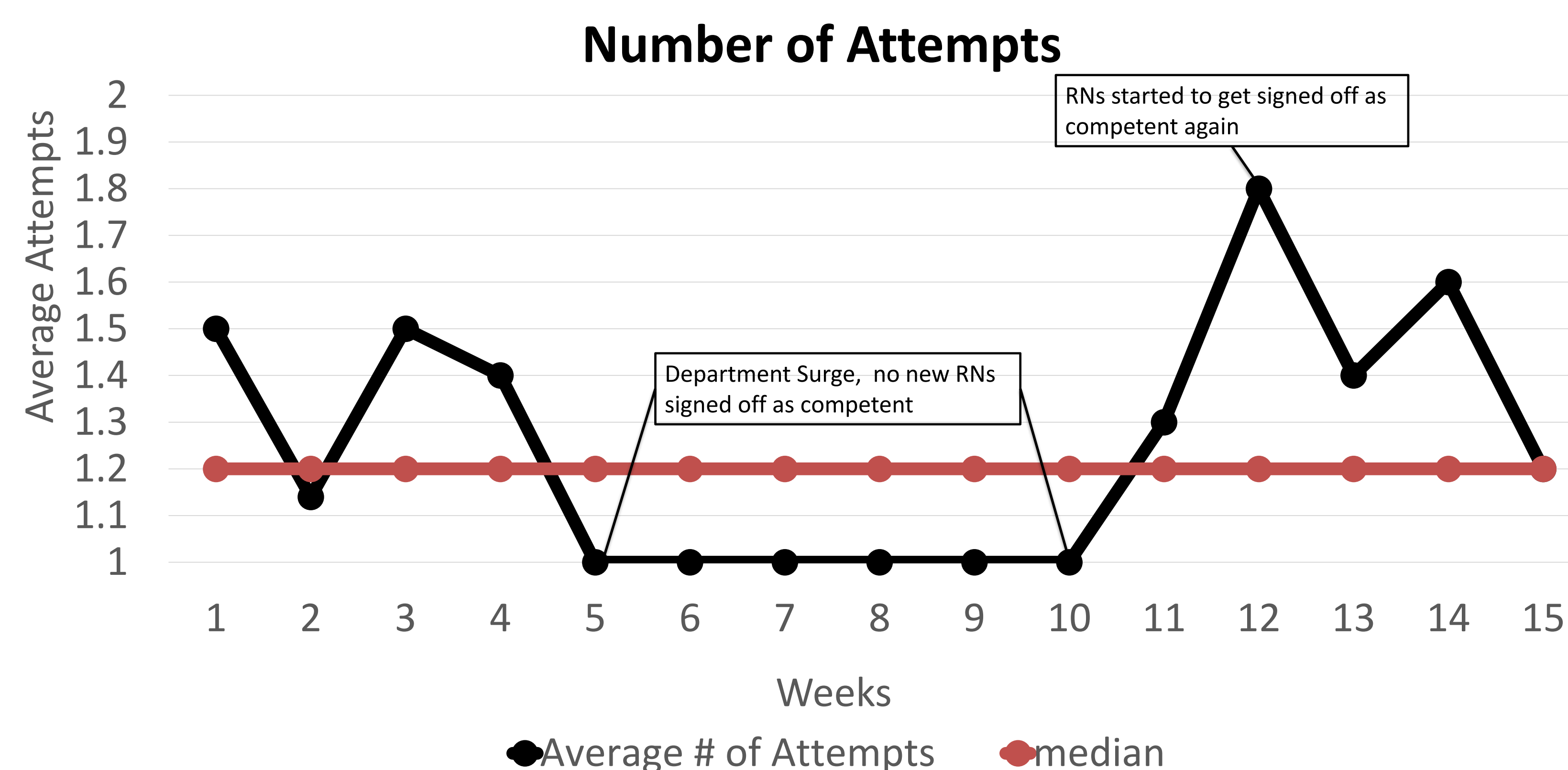
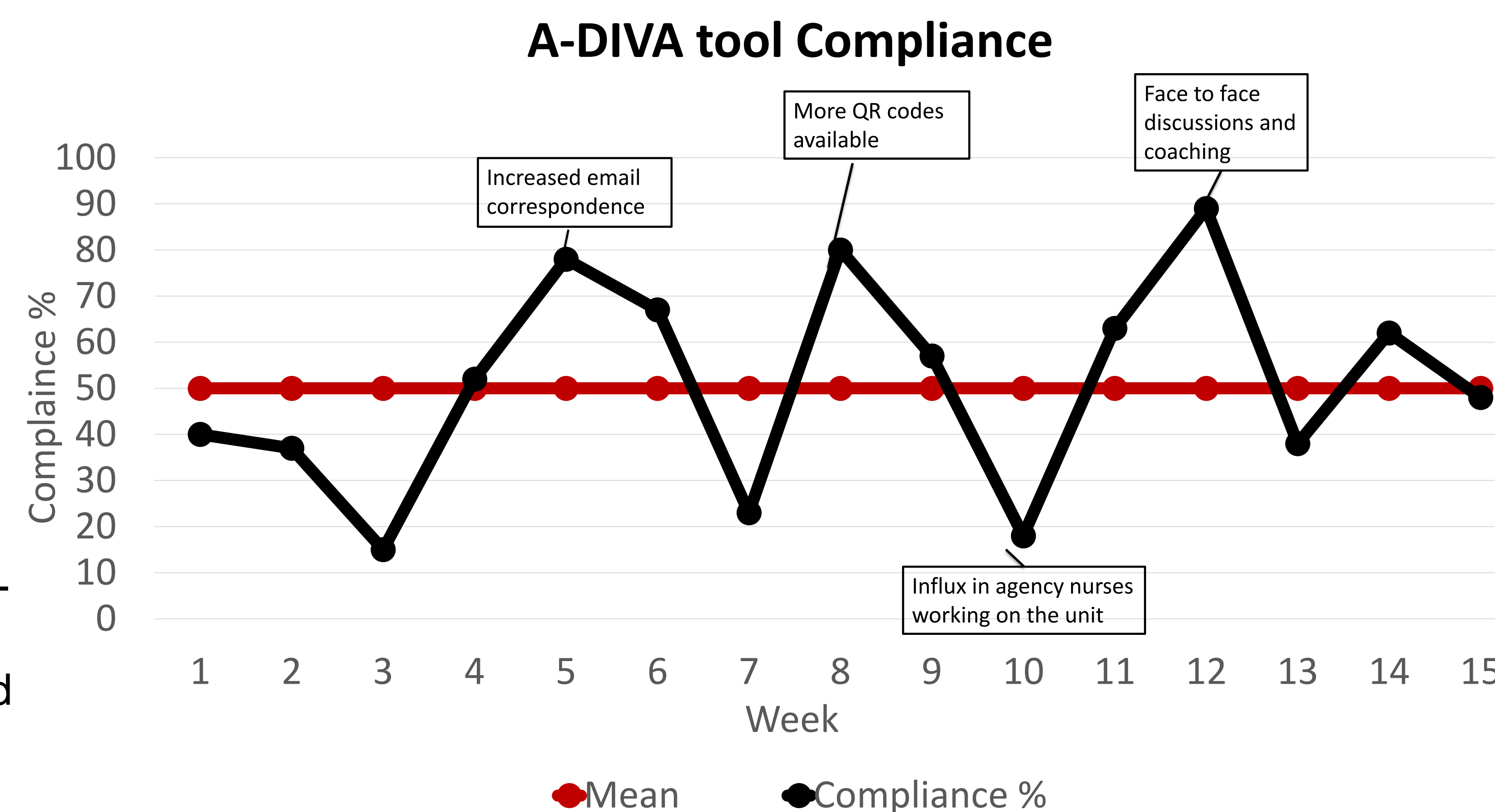
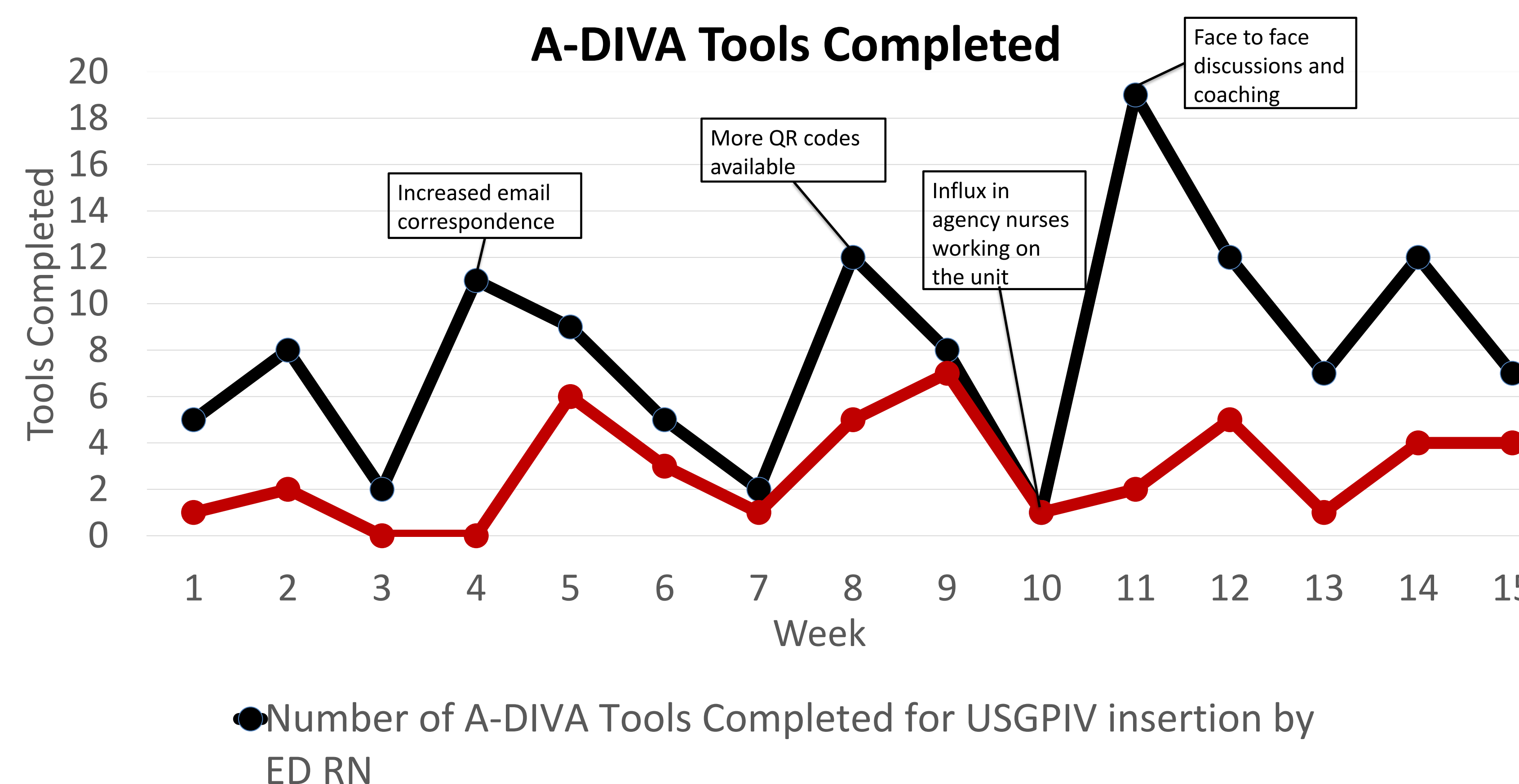
Implementation

- QR code for data tracking
- Weekly site visits

Collection & dissemination of data

- **Process measure:** PIVs placed via ultrasound technique
- **Outcome measure:** Attempts to obtain PIV access via ultrasound technique

Results



Discussion

Process and outcome goals were met:

- 56% of patients identified with DIVA had USGPIV placed by an ED nurse, averaging 1.2 attempts
- Compliance with the A-DIVA scoring tool reached 89%

Clinical Impact:

- Fewer PIV attempts for patients with DIVA

Limitations:

- High staff turn-over rates (6 trained nurses left unit)
- High agency nurse staffing rates

Conclusions

The use of ultrasound technique in obtaining PIV access on patients with DIVA yields higher first-attempt success rates.

Sustainability:

- Continued training and education for ED nursing staff

Implications for Practice/ROI:

- USGPIV insertion decreases the number of attempts to PIV access

Next Steps:

- Implementation of USGPIV insertion in other critical care areas

References

