

# Let's Get to the Bottom of This: Reducing Hemolysis in Blood Bank Specimens for Transfusion Patients

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## Purpose

To investigate the best practice for preventing hemolysis of blood bank specimens obtained during intravenous (IV) catheter insertion in the Outpatient Infusion Clinic (OPIC) for patients having blood transfusions.

## Background

- The Outpatient Infusion Center (OPIC) is a ten bed unit for outpatients who require infusion therapy.
- Early 2015, an increase in the number of hemolyzed blood bank specimens obtained during IV catheter insertions was identified
  - June – October 2015 revealed a rate of 27%
  - Best practice rate is 2 % (American Society for Clinical Pathology)
- The increased rate of hemolysis often resulted in treatment delays, patient discomfort, and decreased patient and staff satisfaction.
- Based on a review of the literature and evidence based practices (EBP), as well as recommendations from the blood bank supervisor, a nurse-led, nurse-driven protocol was developed.

## Methodology/Process

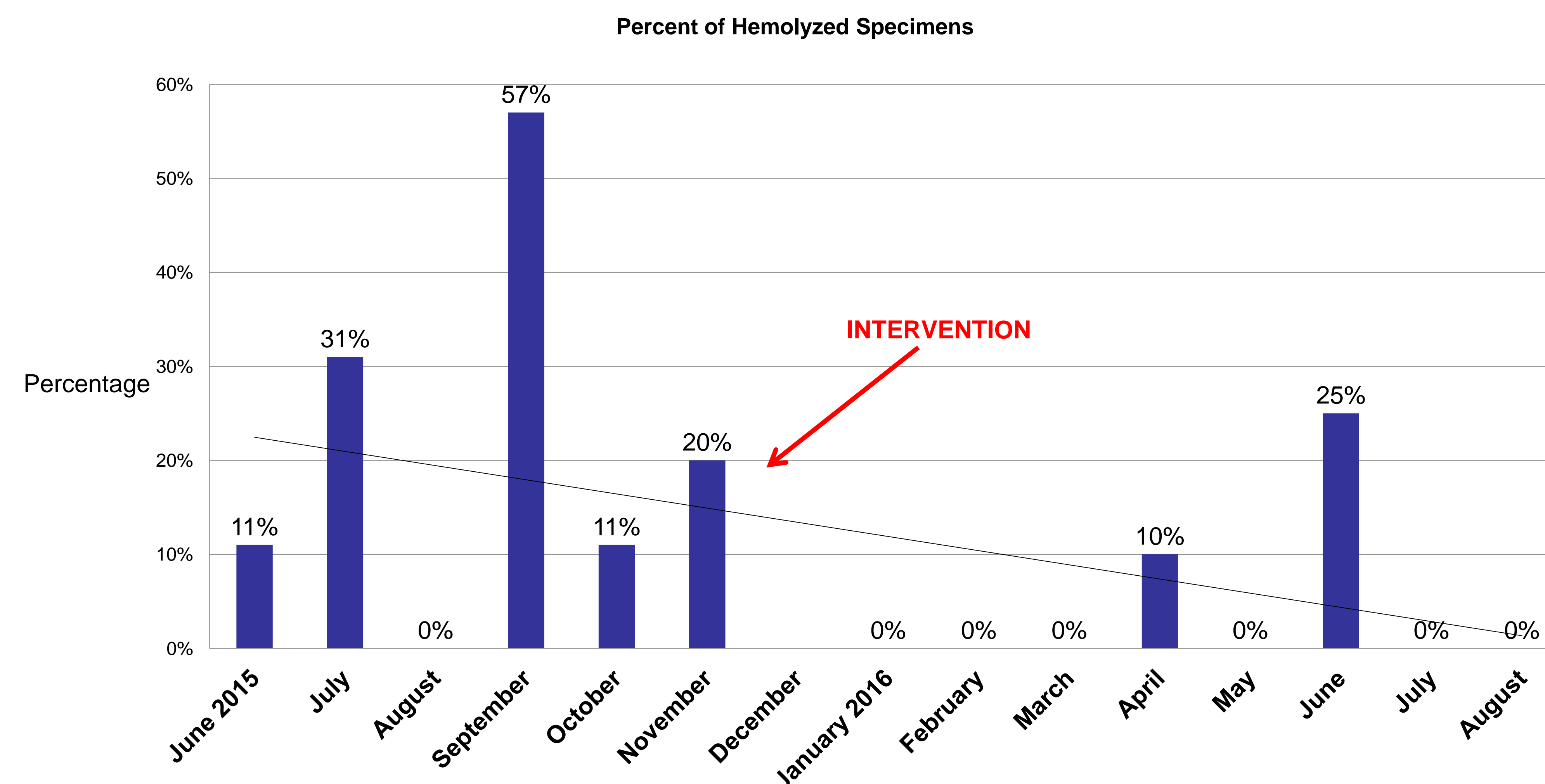
### Nurse-led, Nurse-driven Protocol to Prevent Hemolysis of Blood Bank Specimens

- Correct choice of venipuncture site is important to prevent hemolysis
  - Use the largest veins possible
  - Avoid small veins in the hand
- It is important to control the force of the blood flow into the collection tube. Suggested method:
  - Pull back on the tube from the vacutainer, which helps to control the force of the blood flow
  - Make sure there are no loose connections of component parts (needle to holder or blood collection set to luer adapter)
- Method of transport to the lab for processing may impact rate of hemolysis
  - Avoid use of a pneumatic tube system
  - Note: OPIC was unable to operationalize this recommendation
- When applying a tourniquet, it should be on the patient for less than one minute
- Follow the 'Order of Draw' for multiple tube collections

## Results

- Intervention:** During November 2015, EBP recommendations were implemented (except avoiding transport by pneumatic tube)
- Results:** Rate of hemolyzed specimens was monitored post-intervention from January through August 2016
  - Rate of hemolysis decreased from a high of 57% to a low of 25% in one month; overall, 6 of 8 months had no hemolyzed specimens (see Table 1)
- September 2016 – March 2017
  - No reports of hemolyzed specimens

## Results: Table 1



## Implications

- Use of EBP recommendations for blood draw of blood bank specimens has:
  - decreased the rate of hemolyzed specimens
  - eliminated treatment delays and repeat blood draws for patients receiving blood transfusions
  - increased patient and staff satisfaction
- Next Steps:** A nurse led, nurse driven protocol is being developed for dissemination to the other clinical practice areas.