Nurses’ Practices with Blood Transfusions in Medical-Surgical Acute Care - U.S.

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**ABSTRACT**

Nurses’ practices with blood transfusions in medical-surgical patient care units of acute care U.S. hospitals were described using a valid and reliable web-based survey. One survey was completed per hospital with 148 hospitals responding. Nurses’ blood transfusion practices are similar in the U.S. The hospital’s transfusion policy was the most influential source of information because it specified nurses’ transfusion practices. Limitations in surveillance of the medical-surgical patient were due to the lack of current information on transfusion reaction symptoms included in the education programs, delegation of transfusion vital signs to non-licensed staff that were not educated on symptoms of a transfusion reaction, and transportation of patients with blood infusing to tests and procedures. Hospitals were in the process of adopting electronic technologies to reduce or eliminate wrong-blood-in-tube errors or wrong blood administered (mistransfusion) errors. This descriptive study is a foundation for future research of nurses with blood transfusions.

**METHODS**

- Web-based survey administered via PsychData
- Survey Instrument - Nurses’ Practices with Blood Transfusions: Medical-Surgical Acute Care. Content validity S-CVI = 0.963 and Cohen’s kappa reliability = 0.797.
- **Sample:** Random selection of U.S. hospitals with a nurse executive member of the American Organization of Nurse Executives (AONE) (n = 807)
- One survey per hospital, 148 responded (18.3% response rate).
- Demographics: 148 hospitals from 41 U.S. states located in urban and rural communities. Inpatient bed size varied from 25 to >500. Magnet Recognition was 31.1% and teaching hospital classification was 41.9%.

**KEY FINDINGS**

**Blood Transfusion Practices**

- **Informed consent for transfusion:** Nurses obtained signatures - all or most of the time
  - n = 106 76.2%
- **Transfusion order:** Nurses completed indications for transfusion when physician did not specify.
  - 29 20%
- **Type & screen specimen collection:** by RN
  - 117 79.1%
  - by non-nursing phlebotomists
  - 127 85.8%
- **Transfusion vital signs:**
  - Temperature, pulse, BP, and RR – standardized
  - 142-148 96-100%
  - Oxygen saturation during transfusions
  - 71 48%
  - VS Pre-transfusion and at 15 minutes
  - 147-148 99-100%
  - VS at End of transfusion
  - 127 85.8%
  - **VS Delegated to non-licensed staff**
  - 107 72.3%
- **Infusion rates for first 15 minutes:**
  - Rate in policy: 50-75 or 100-120 mL/hr
  - 52 36.9%
  - RN primarily determines rate after 15 minutes
  - 72 49%
- **Administration set replacement at 4 hours**
  - 126 85.1%
- **Hospital policy as RN source of practice info**
  - 136 92.5%
- **Surveillance:** Staff stayed at the bedside for the first 15 minutes - all of the time
  - 91 61.5%
- **Patient transport during transfusion:**
  - RN observation during transportation
  - 103 69.6%
  - Non-licensed or transport staff observation
  - 72 48.6%
  - 25 16.9%

**Innovations in Technology and Processes**

- Computerized provider order entry (CPOE) for n = 78 52.7% blood orders (>75% implementation)
- **Patient identification:**
  - Second wristband (blood band)
  - 84 56.8%
  - Electronic ID for specimen collection
  - 30 20%
  - Electronic ID for pretransfusion verification
  - 37 25%
- **Equipment innovations:**
  - Pneumatic tubes
  - 49 33.1%
  - Non-invasive BP (NIBP) - all or most of time
  - 136 91.9%
  - Infusion pumps - all or most of time
  - 140 95.9%
  - Pulse oximetry - all or most of time
  - 88 59.5%
  - Nurse on transfusion committee
  - 83 57.2%
  - Transfusion nurse or blood utilization nurse
  - 18 12.4%

**CONCLUSIONS**

- Nurses have a high level of responsibility for patient safety during blood transfusions. RNs function as blood couriers and patient transporters. RNs are critical participants in completing accountability measures for blood transfusions, informed consent or indications for transfusion, as well as adverse event reporting.
- Similar transfusion practices have been adopted throughout the U.S., yet these practices are not evidence-based, e.g. transfusion vital sign frequencies, measures, and administration set changes. Oxygen saturation measures are being adopted.
- Patient surveillance is challenged in medical-surgical areas due to lack of observation during the first 15 minutes, delegation of transfusion VS and therefore patient observation, and by non-licensed staff who transport the patient to tests and procedures with blood infusing.
- Electronic technologies for blood transfusion are being adopted.