

## SE9EO

Using the required empirical outcomes (EO) presentation format, provide an example, of an improved patient outcome associated with knowledge gained from a nurse's(s') participation in a professional development activity.

### Example: Evidence-based Professional Development Activity Improves Hematoma Complication Rate

#### Problem

WakeMed Raleigh and Cary Campuses had an increase in the complication rate of radial and femoral hematomas after invasive cardiology procedures.

#### Pre-Intervention

Eleanor Rawls, MSN, APRN, ACCNS-AG, CCRN, Quality Programs Manager, Heart and Vascular Services, noted that the rate of radial and femoral hematoma complications was 2.6 for March-May 2021 at WakeMed Raleigh and Cary Campuses. The complication rate is calculated by dividing the number of hematomas by the number of invasive cardiology procedures and multiplying by 100. These procedures include cardiac catheterizations, hemodynamic support device insertions, Mitraclips, transcatheter aortic valve replacements, Watchman procedures, peripheral vascular diagnostic and interventions, thoracic endovascular aortic repairs, ablations, lead revisions, permanent pacemaker insertions, and automatic implantable cardioverter defibrillator implantations.

#### Goal Statement

Decrease the radial and femoral hematoma complication rate at WakeMed Raleigh and Cary Campuses.

#### Participants

Hematoma Education Champions			
Name/Credentials	Discipline	Title/Role	Department
Eleanor Rawls, MSN, APRN, ACCNS-AG, CCRN	Nursing	Quality Programs Manager	Heart & Vascular Services
Erica Cook, MSN, APRN, AGCNS-BC, PCCN	Nursing	Clinical Nurse Specialist	Clinical Nursing Resource Services
Angie Hechanova, BSN, RN, PCCN	Nursing	Clinical Nurse IV	3A Cardiac Intermediate Care Unit
Kemoy Holiday, BSN, RN-BC	Nursing	Clinical Educator/Supervisor	3A Cardiac Intermediate Care Unit
Ramila KC, BSN, RN	Nursing	Clinical Nurse IV	3A Cardiac Intermediate Care Unit

Teresa McLean, BSN, RN, PCCN	Nursing	Clinical Nurse IV	Heart Center Pre/Post Procedure Unit
Angela Page, BSN, RN-BC	Nursing	Clinical Nurse IV	3B Cardiovascular Surgery Intermediate Care Unit
Patricia Jones, BSN, RN	Nursing	Clinical Educator/Supervisor	3B Cardiovascular Surgery Intermediate Care Unit
Kim Page, BSN, RN, RN-BC	Nursing	Clinical Nurse IV	3E Cardiac Intermediate Care Unit
Nikki Joyner, BSN, RN-BC	Nursing	Clinical Nurse IV	3E Cardiac Intermediate Care Unit
Shannon Johnson, BSN, RN	Nursing	Clinical Nurse	6A Cardiac Intermediate Care Unit
Melissa Tant, BSN, RN-BC	Nursing	Clinical Nurse IV	6A Cardiac Intermediate Care Unit

## **Description of the Intervention**

### *June 2021*

- Erica Cook, MSN, APRN, AGCNS-BC, PCCN, Clinical Nurse Specialist, Clinical Nursing Resource Services, used current literature to develop an evidence-based educational program identifying risk factors for site complications such as bleeding and hematoma post-cardiac catheterization, as well as post-sheath care.

### *July-August 2021*

- Clinical nurses completed professional development sessions using the updated resources; this included an educational packet, hands-on practice with a 3D model set-up of femoral sheath, and care of a mock hematoma. The following nurses from across the system used the educational program developed by Cook to educate clinical nurses on preventing hematomas, identifying high-risk patients, and the early identification of hematomas:
  - Angie Heckanova, BSN, RN, PCCN, Clinical Nurse IV, 3A
  - Kemoy Holiday, BSN, RN-BC, Clinical Supervisor/Educator, 3A
  - Ramila KC, BSN, RN, Clinical Nurse IV, 3A
  - Teresa McLean, BSN, RN, PCCN, Clinical Nurse IV, Heart Center Pre/Post Procedure Unit
  - Angelia Page, BSN, RN-BC, Clinical Nurse IV, 3B
  - Patricia Jones, BSN, RN, Clinical Supervisor/Educator, 3B
  - Kim Page, BSN, RN, RN-BC, Clinical Nurse IV, 3E
  - Nikki Joyner, BSN, RN-BC, Clinical Nurse IV, 3E
  - Shannon Johnson, BSN, RN, Clinical Nurse, 6A
  - Melissa Tant, BSN, RN-BC, Clinical Nurse IV, 6A
- This comprehensive educational activity included the following topics:
  - Risk factors

- Nursing assessment
- Patient education
- Peripheral vascular assessments
- Patient activity restrictions
- Frequent vital signs
- Site assessment
- The expert nurses (listed above) conducted the in-services in conference rooms on the units. Didactic content was followed by hands-on practice with the cardiac sheaths. A total of 110 nurses received education and training through this initiative.
- A post-education survey showed that clinical nurses felt more comfortable caring for patients with femoral sheaths and more confident in identifying patients at risk.
- As adult learners gain knowledge through different methods, Cook provided visual, auditory, and kinesthetic styles of learning. Cook validated the nursing care and assessment of femoral sheaths and the assessment of hematomas.

Evidence-based knowledge gained from nurses' participation in a professional development activity related to completing timely risk assessments and being aware of risk factors was intended to decrease the radial and femoral hematoma complication rate post-invasive cardiac procedures at Raleigh and Cary Campuses.

The interventions were fully implemented by the end of August 2021.

#### **References:**

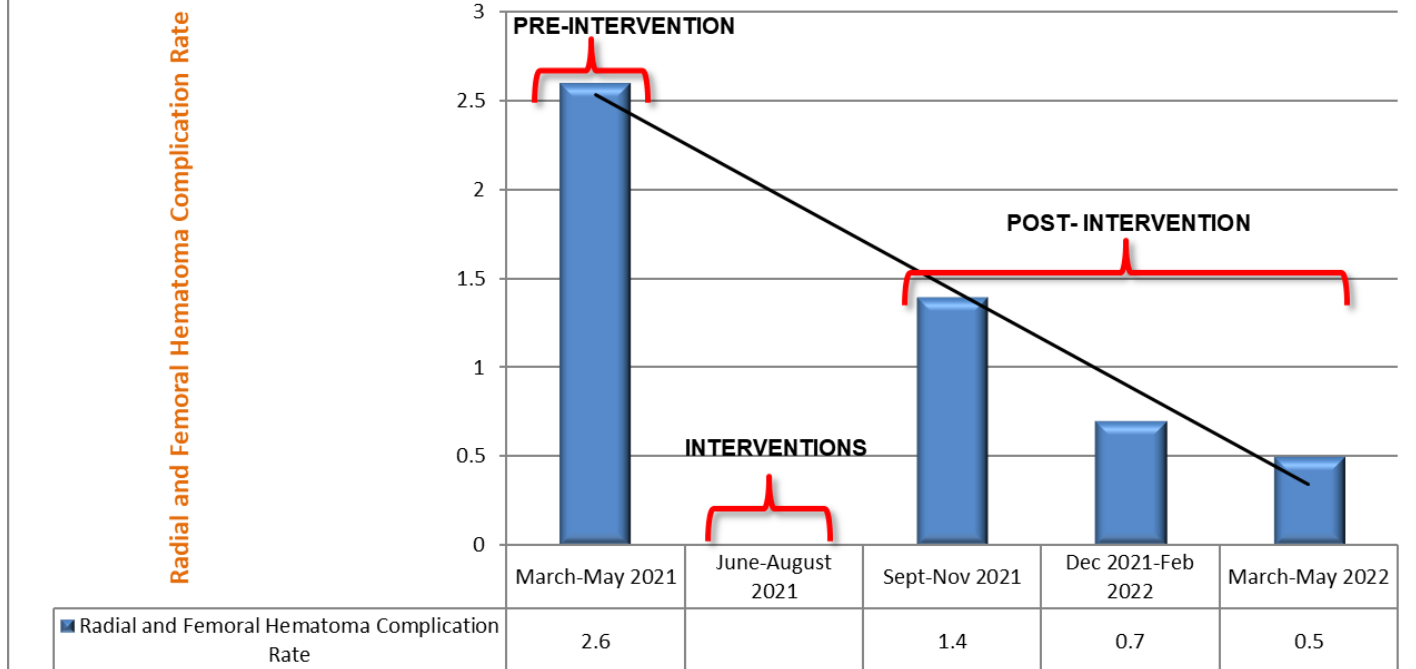
Lippincott Procedures. (2020). Arterial and venous sheath removal.  
<https://procedures.lww.com/lnp/view.do?pld=440062&s=p>

Mall, A. (2019). Management of patients with femoral arterial sheaths following percutaneous coronary intervention. *Critical Care Nurse*, 39(6), 75-77. <https://doi.org/10.4037/ccn2019587>

Merriweather, N., & Sulzbach-Hoke, L. M. (2012). Managing risk of complications at femoral vascular access sites in percutaneous coronary intervention. *Critical care nurse*, 32(5), 16–29. <https://doi-org.ahcproxy.ncahec.net/10.4037/ccn2012123>

#### **Outcome**

**SE9EO-1**  
**Radial and Femoral Hematoma Complication Rate**  
**WakeMed Health & Hospitals, Raleigh and Cary Campuses**



(Evidence SE9EO-1, Radial and Femoral Hematoma Complication Rate, WakeMed Health and Hospitals, Raleigh and Cary Campuses)