



SE8EO – Teaching and Role Development

SE8EO: Two examples are required (one example must be from ambulatory care setting, if applicable):

SE8EOb: Provide two examples, with supporting evidence of an improved patient outcome associated with a nursing continuing education assessment and a related implementation plan.

- *A copy of the assessment plan must be provided.*

Example SE8EOb: Implementation of A Nurse Arterio-Venous Vascular Access Ultrasound Program to Reduce Blood Stream Infections

Problem

Providing optimum hemodialysis is reliant on patients having a well-functioning arterio-venous fistula (AVF). AVF provides the lowest rates of morbidity and mortality although repeated cannulations can weaken the vessel wall increasing the risk of aneurysms. Nurses are in an ideal position to maximize the longevity of AVF through assessment of AVF using ultrasound technology which helps to visualize vessels.

The use of ultrasound scanning is valuable for assessing a new AVF as well as an existing AVF. When the AVF is tortuous and difficult to cannulate, an additional problem may occur which is Blood Stream Infection (BSI). For the Hemodialysis Unit (HDU), it was also noted that the BSI rate had increased to a rate of 1.5 per 1000-line days in April 2021. Nurses commented that there was an increase in the volume of patients, many of whom had difficult cannulation access issues.

Goal Statement

Reduce the BSI rate/1000-line days for all patients with AVF in HDU at KFSHRC-J.

Participants

Table SE8EOb.1 below presents the members of the Vascular Access Ultrasound AVF Scanning project.

Table SE8EOb.1: Participants involved in AVF Ultrasound Scanning Project

Name & Credentials	Job Title	Department
Joyalyn Barrios, MSN RN	Nurse Clinician Project Leader	HDU
Moira Abrahams, BSN RN	Head Nurse	HDU
Janis Bruyns BSN RN, MA	Program Director	Ambulatory Care Nursing
Fakreldiene Elamien, M.D.	Nephrologist	Internal Medicine
Radwan Daghmush, M.D.	Nephrologist	Internal Medicine
Noor Al Shareef	Ultrasound Radiologist	Radiology Department
John Sedgewick, PhD, RN, RMN, Dip.N, Renal Cert, Cert.ED, RNT, FETC, FFNM(RCSI), FInstLM	Program Director	Nursing Development Saudization
Reda Ghanem	Technical Field Specialist (Vascular access ultrasound)	GE Healthcare, Saudi Arabia
Myssa Salamah, BSN RN, CCNE	Education Coordinator	Nursing Development Saudization

Description of Intervention

In May 2021, Joy Barrios, MSN RN, Nurse Clinician, HDU, liaised with Reda Ghanem, Technical Field Specialist (vascular access ultrasound), General Electric (GE) Healthcare Company, Saudi Arabia, regarding an advanced ultrasound machine which could be used to scan the difficult to cannulate AVF. When the new ultrasound scanning machine was delivered to the HDU, Joy underwent familiarization with the new machine with direct one to one support from Reda Ghanem. The HDU team also noted that the increase volume of patients, the addition of new graduate nurses, and the lack of skills-based training on the new ultrasound machine could be leading to the increase in the BSI rates. They discussed this with Joy.

Assessment

Joy gathered feedback from the nursing staff concerning practice issues related to the increased number of difficult fistulas. Staff expressed lack of confidence in dealing with both complex and difficult fistulas, as well as in the cannulation of newly created AVF following an 8-week period of maturation before usage. In addition, many new graduates had been added to the HDU workforce due to the increase in volumes in this patient population. They were not yet confident in the skill sets needed for the AVF patient population. **Evidence SE8EOb.1 Nursing Continuing Education Assessment**

Several educational interventions were implemented between May to October 2021 which resulted in 18 nurses successfully completing the AVF Ultrasound Scanning Program.

An education plan was developed which provided the roadmap for the successful delivery of the program. Interventions included:

- Development of a practice-based education program delivered between May to October 2021 on AVF ultrasound scanning in practice. **Evidence SE8EOb.2 Implementation Plan–AVF Ultrasound Scanning Program**
- Collaboration with external field specialists within Saudi Arabia to provide support with the ultrasound machine.
- Sessions on scanning and vein identification from representative of Radiology Department: Ultrasound Sonographer, to support the program.
- Development of small group teaching to practice using phantom limb simulation equipment.
- Direct teaching support in practice from a dedicated Nurse Clinician working alongside staff practicing scanning techniques.
- Theoretical development to enhance applied knowledge to practice using resource materials from GE Healthcare and support from unit-based Nephrologists.
- Practice assessments to determine successful application of knowledge and skills to confirm skills checkoff verification process conducted between September – October 2021.

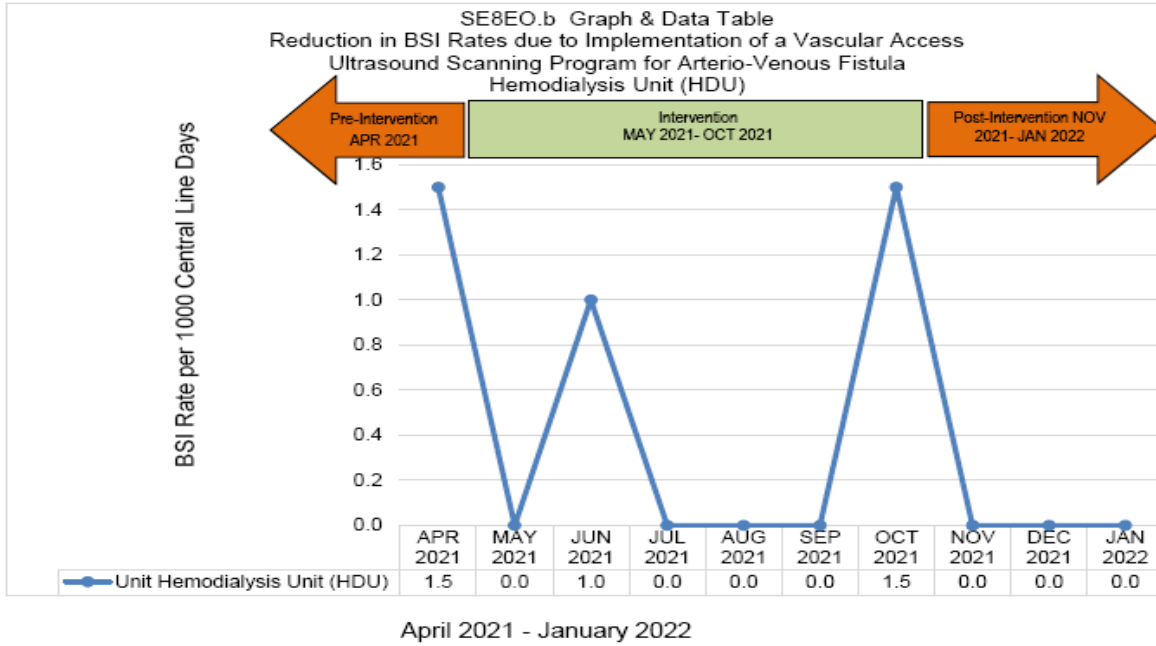
Table SE8EOb.2: Nurses Who Completed the AVF Ultrasound Scanning Program

Name & Credentials	Job Title	Department
Joynalyn Barrios, MSN RN	Nurse Clinician	HDU
Ryza Dagdag, BSN RN	Staff Nurse 1 (SN1), Clinical Nurse	HDU
Vivian Barao, BSN RN	SN1, Clinical Nurse	HDU
Judy Soriano, BSN RN	SN1, Clinical Nurse	HDU
Salha Langa, BSN RN	SN1, Clinical Nurse	HDU
Faith Bautista, BSN RN	SN1, Clinical Nurse	HDU
Abdullah Thobaity, BSN RN	SN1, Clinical Nurse	HDU
Ahmed Hazmi, BSN RN	SN1, Clinical Nurse	HDU
Tercilly Lim, Dip.N RN	SN1, Clinical Nurse	HDU
Adrian Mariano, BSN RN	SN1, Clinical Nurse	HDU
Anthony Diputado, BSN RN,	SN1, Clinical Nurse	HDU
Catherine Yap, BSN RN	SN1, Clinical Nurse	HDU
Aisha Maulana, BSN RN	SN1, Clinical Nurse	HDU
Meyen Villona, BSN RN	SN1, Clinical Nurse	HDU
Roseviminda Tenebro, BSN RN	SN1, Clinical Nurse	HDU
Chona Diana, BSN RN	SN1, Clinical Nurse	HDU
Chen Mei Lim, Dip.N RN	SN1, Clinical Nurse	HDU
Ida Adnan, Dip.N RN	SN1, Clinical Nurse	HDU

All interventions occurred from May to October 2021.

Outcome

There was a reduction in BSI rates from 1.5/1000 patient days in April 2021 to zero in November 2021.



Graph SE8EOb: Reduction in BSI Rates