



Reducing Vascular Access Infiltrations and Patient Falls

Satellite Dialysis of Sunnyvale

Contact Information

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Category: Vascular access safety and patient falls
Type of Facility: Outpatient
Number of Patients: 135-140 in-center patients
Number of Nephrologists: 28 referring nephrologists

Background

Our facility developed two quality assessment and improvement plan (QAPI) projects providing overall improvement in the delivery of care, patient's health and quality of life. The two projects focused on reduction of vascular infiltrations and fall prevention. As a center, we also incorporated prevention of needle dislodgement during treatments on the first project. At present; the center provides outpatient hemodialysis treatments with an average census of 135 to 140 patients. Satellite Dialysis of Sunnyvale currently has a total of 28 referring nephrologists.

Reducing Vascular Access Infiltrations

In October 2012, the Clinical Manager, Medical Director, interdisciplinary team, social worker and facility dietitian looked at quarterly data of increasing vascular infiltrations. As a center, we are concerned about patient safety. In 2012, the number of vascular infiltrations for Q1=11, Q2=6, and Q3=15. During the monthly meeting; it was decided by the Medical Director, Mitra Sorooshian, MD, the interdisciplinary team, Clinical Manager, social worker and dietitian to perform a root cause analysis, and start a QAPI project to decrease vascular infiltration rates in the center.

The root causes analysis identified the following: lack of training regarding access preservation, level of cannulation expertise not identified in center; the problem was not identified early on; lack of ownership; and leadership in the center and turn over in staff and management. The QAPI project was implemented.

The facility reviewed the number of incidents during quarterly QAPI meetings. During a meeting with the Medical Director in March 2013, the Clinical Manager presented the data with the group. In the last quarter of 2012, there were a total of 8 infiltrations and 9



infiltrations for the first quarter of 2013. It was imperative to look deeper into other root causes to why infiltration incidents were still high and do a revision of the current QAPI project. The facility goal was to decrease infiltrations per quarter to five. Under the leadership of the Medical Director, the team performed another root cause analysis and the Clinical Manager included more input from the staff. One input was to revise the list of “experts” in the center and provide more cannulation training to new clinical staff by the “experts”. The Clinical Manager put herself in the clinical area for two weeks for observation of practices and made the following findings:

- Clinical staff were not consistently following the access cannulation and access maturation procedures.
- Clinical staff who were not identified as “experts” or “master cannulators” were cannulating brand new av grafts and fistulas.

Key factors were turnover in the clinical staff, both patient care technicians and registered nurses from 2012 to 2013, lack of cannulation training and good preceptors for new patient care technicians and nurse interns.

Policies and Activities Implemented

The QAPI project was revised and implemented as a result of the finding. During this time, the social worker mentioned to the group that he felt “good” patient education is valuable, and could make a big difference with the project. The social worker suggested creating patient education flyers putting that outline the major steps before cannulation: washing the access arm; having the patient care technician or nurse palpate the thrill; and auscultate the bruit with a stethoscope. They also noted the patient should observe the clinical staff placing a tourniquet on the access arm for vein engorgement per policy. The Administrative Coordinator made colorful flyers outlining the steps and the social worker distributed all flyers to patients. Today, the center gives these flyers to patients with new av fistulas and grafts to help them prepare for the cannulation process. Both staff and patients were educated regarding Satellite Healthcare’s policy and procedure for access cannulation. Through this method, all patient care staff became knowledgeable regarding processes and became familiar with the av access maturation procedure (advancing needle size and flows). In center, each infiltration incident were discussed in the daily staff huddles to brain storm why the access got infiltrated, framed with the questions, “did we do all the steps required?” and “does the person cannulating have expertise?”

The Clinical Manager reviewed both policies on several occasions with the staff during meetings and continued to observed staff as they put on patients on treatment randomly each shift. On both policies; it states the process of: the clinical staff palpating the thrill, auscultation of the bruit and lastly, application of a tourniquet for vein engorgement. Other basic techniques were shared in staff meetings, such as using a syringe to aspirate blood flow for needle placement, using a “wet” stick and educating first time



patients being cannulated not to move or bend their arms when a fistula needle is placed. We also used a clean arm board for stabilization of the access, to help prevent infiltrations and needle dislodgement. In center, the clinical staff identified all “expert” cannulators and preceptors for training. There is also clinical partnership, to which all new patient care technicians and nurse interns will cannulate mature accesses only with the presence of the “expert” cannulators and preceptors. Brand new accesses will only be cannulated by the “experts” without exceptions. Through this process, patients gain trust and reassurance that the process will go smoothly and they will experience less pain. The facility’s goal is no infiltration.

In April 2013, Satellite Healthcare launched the VAL (Vascular Access Leader) technician programs. These presentations were posted in Satellite’s education website available for all registered nurses and certified patient care technicians as a resource for access management. The Clinical Manager assigned specific key topics to the experts to share with the staff learning about access preservation, cannulation and management. This was a very helpful resource with our clinical staff preventing infiltrations in the center.

Each in center hemodialysis facility selected a vascular access leader, who is a registered nurse. The VAL team also has two patient care technicians as part of the VAL. The VALs are in charge of access management, preservation and cannulation of brand new fistulas and grafts. Having a strong and committed VAL team had an impact of decreasing the infiltration rates in the center. The VAL team provides continues patient and staff education.

Outcomes

As a center, the team saw a rise in infiltrations (8) in the last quarter of 2013 and 9 in the first quarter of 2014. In March 2014, Dr. Sorooshian led a staff in-service regarding access preservation, assessment and cannulation. She reminded the staff, “we all need to be in the same page.” The center needs to follow the policy and procedure in access cannulation and assessment consistently. Lastly, she instructed, “please do not cannulate an access that is immature even though you have a doctor’s order” as it will create pain, infiltration and prolonged catheter use for patients.

Around this time, clinic had an influx of new PCTs about 5 new hires of varying experience. The center finally saw a steady decline of infiltrations. By the second quarter of 2014, the center had a total of 6 infiltrations. The center had 5 in the third quarter and 6 in the last quarter of 2014. The revised QAPI project closed October 30, 2014, as scheduled by the Medical Director and interdisciplinary October 2013. The Clinical Manager recognized the staff’s effort and dedication decreasing vascular infiltrations in the center. Today, the center has eight “expert” cannulators in the center. Our goal is to add more people on the list. We say as group, “experience is the best teacher.”



Fall Prevention

The center also focused on fall prevention. The number of incidents of falls at patient's homes were rising. Falls in center were rare. Falls affect patient's safety and overall health and wellbeing. In October 2013, the facility developed a QAPI project to decrease patient falls at home. The root causes identified were: patient's co-morbid conditions (such as Diabetes Mellitus); visual problems; lack of exercise; age above 70; previous fall; lack of access to physical therapy; and lack of staff and patient education resources for fall prevention. The number of incidents in 2013 were: Q1=4, Q2=5, Q3=8 and Q4=5. The center also reviewed data from 2012. As a team, we needed to do more investigation why the numbers increased in the third quarter in 2013. All fall incidents are discussed per protocol during our QAPI meetings. The Clinical Manager developed a simple fall algorithm for staff to address a patient's fall either in center or at home.

Policies and Activities Implemented

When the QAPI was implanted on the first week, one of the center's "master" patient care technician distributed simple fall prevention instructions to all patients. She spent at least ten to fifteen minutes with each patient reiterating the information in the flyer and the seriousness of the risks of patient falls. All falls are documented and reported. The algorithm is focused on providing patients fall prevention materials immediately as soon as any employee know of a patient fall in the center or at home. When there is a fall, the patient is thoroughly assessed by the assigned charge nurse pre dialysis and when they return for the next treatment.

Outcomes

The presence and involvement of the social worker, primary nurse and dietitian post-fall for follow up made a big difference in the patient plan of care and treatment. Although fall incidents at home increased in the first half of 2014, the facility still continued to follow the center algorithm and continued patient education.

The center with the leadership of the Medical Director and interdisciplinary team; decided to keep the QAPI project open for another six months. Slowly, the center saw a decline of home fall incidents by the third and fourth quarters of 2014. In the third quarter of 2014, our social worker shared during the staff meetings that when a patient falls more than once, they feel ashamed, depressed and sometimes they do not want to talk about it. She presented an idea to get some resources from the community. She was diligent in making numerous phone calls in the area. After which, she found students at San Jose State who are doing a program called Silicon Valley Healthy Aging Program as part of their course in Kinesiology. This program focuses in fall prevention practices. Satellite Dialysis of Sunnyvale launched it's first "fall prevention week" in the

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second week of December 2014. The event was a success because the patients in center were receptive to patient education given by the students. And for the most part, "it is not just the staff" who showed concern when someone falls, but students from the community who volunteer to help and spend time with them giving quality patient education in fall prevention.

The success of both QAPI projects were shared companywide under the leadership of Dr. Rohini Arramreddy, MD, Director of Medical Clinical Affairs. The Webinar trainings were offered for three days in the last week of October 2014 focusing in improving center outcomes with the leadership of the Medical Director. Satellite dialysis of Sunnyvale shared best practices highlighting the important points on what we have done as a center and celebrate the success of our outcomes in reducing vascular infiltration rates in center and falls at home.