



Maximizing Patient Safety through Education & Visibility of Vascular Access Site for Hemodialysis Patients

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Background

In February 2009, a Patient came to our inpatient Dialysis Unit for dialysis. During the treatment, the arterial side of the dialysis catheter became disconnected and patient started bleeding. The catheter connection site was not visible which delayed the recognition of the bleeding. Patient became hypotensive and unresponsive. Despite ACLS protocols, patient unexpectedly expired.

RCA was conducted by the Department of Performance Improvement because it was an unexpected preventable death. The goal of the RCA is to look for root cause, to analyze our current process why it failed and how we can prevent such an occurrence in the future.

Problem:

- ✚ The catheter connection site on the patient side was not visible which delayed the recognition of the bleeding. The standard of care demands that the ports remain visible.
- ✚ The dialysis machine alarms are not always reliable in giving early signs of patient bleeding or venous line disconnection
- ✚ No written evidence of patient education done.

Purpose of this project:

- ✚ To establish awareness among staff and patients on the importance of keeping access line and site visible during dialysis treatment. The dialysis machine speeds at 350ml/minute or greater; if the access is disconnected, the patient can loose a unit of blood in less than one minute and can bleed to death if not detected on time.
- ✚ To minimize access disconnection during dialysis by using a connecting device (**Fresenius HemaClip**) that will effect the achievement of this goal.

Corrective Action Plans:

1. Revision of the Dialysis Flow Sheet and policy to reflect the new changes that will take place in the process of dialyzing patient and the use of the new Fresenius HemaClip devise to secure access site.
2. Train Dialysis Staff on the use of disposable Fresenius HemaClip, and to demonstrate competency in the use of the devise.



Patients are encouraged to inform the caregiver if feeling cold. Blankets are available; Gloves may be worn to keep hand warm and speak-up if they have concerns about exposing the site.

What Must the Nurses Do:

- ✚ Place and secure access site with Fresenius HemaClip at the arterial and venous line upon initiation of dialysis.
- ✚ Check and document findings including arterial lines pressures every 30 minutes on the Dialysis Flow Sheet.
- ✚ Document patient education on the importance of keeping their access site and line visible

Patient Education:

Patient Education form with instructions was created for patient to read and sign or if patient cannot read, staff to read to patient at the beginning of each dialysis treatment:

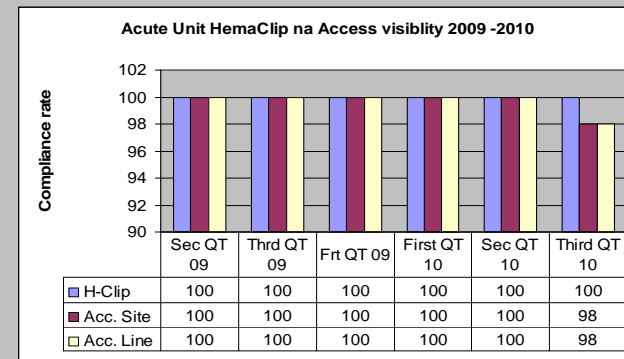
- 1- Your access and lines must be kept uncovered and visible at all times.
- 2- Your healthcare provider will monitor your access and lines every 30 minutes or as needed. In the event

that the blood is seen coming from the site or from the line (s) you must immediately inform the staff.

Any patient, who refuses to sign or to expose his /her access arm for monitoring, will be documented on the monitoring form as well as the progress note.

Outcomes:

- ✚ No incident of catheter site disconnection since the last occurrence.
- ✚ 98% compliance from patients on the exposure to access site and lines.
- ✚ 100% compliance from patient and staff in completing Educational Form



Challenges:

- Refusal by few patients to expose arm for visibility of access site and lines despite education
- Impossibility of catheter exposure to patients with access in the groin. Staff and patient were educated to frequently check the area for bleeding.
- Nursing staff are concerned about the excessive paper pile up as a result of the required patient signature for each treatment. A suggestion was made for patient to sign the educational form on the initial treatment and reinforcement made at subsequent visits with documentation in the teaching record.