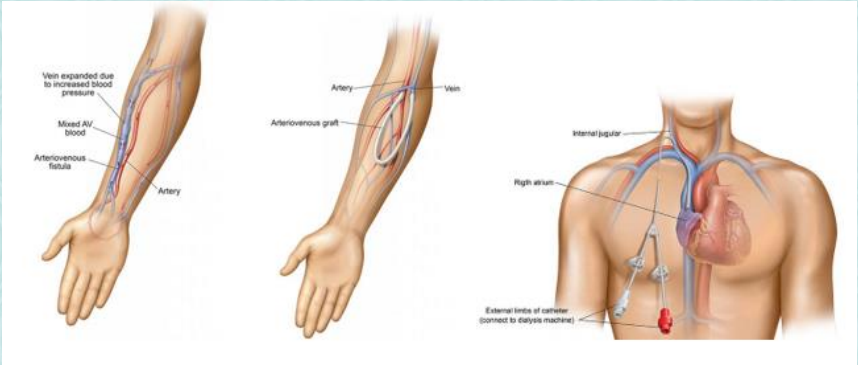
Live. Learn. Hope.

Dialysis Access Management



Clinical Education

4/2021

NORTHWEST Kidney Centers

Disclaimer

- The Independent Study Training Plans were developed in 2021 and will be available for Continuing Education Credits until 2023.

- During this period, policies, protocols, procedures, and supplies may change. Therefore, **ALWAYS** refer to K-NET and Policy Manager for the most current information.

- Remember that these Independent Study modules are designed to stimulate critical thinking skills and introduce/review the different workflow processes

Learning Objectives

At the end of this presentation, the nurse will be able to:

1. Understand the purpose of the "Fistula First Initiative."
2. Explain the reasons for aiming for lower CVC & higher AVF rates.
3. Identify the timeline for CVC removal & AVF placement.
4. Recognize the roles of the primary care nurse in promoting AVF rates.
5. Describe the assessment of maturing AVF and cannulation process.

Background Information

- There was a decreased in AVF use and continued rise in surgical placements of CVCs and AVGs in late 1990's and early 2000's.

- High rates of vascular access failures & hospitalizations due to vascular access complications & contributed to higher morbidity & mortality rates until mid 2000's.

- In the 1990's, over $1 billion dollars (14% of ESRD budget) were spent on vascular access complications.

- 500,000 vascular access surgeries were performed in 2007. (Lee, 2017)

Dialysis Access Infection

- Infection is the second leading cause of death in dialysis patients (CV deaths leading cause)
- 15% of deaths among HD patients are related to infections
- Access-related infections are the leading cause of infection in CKD stage 5 patients
- CVCs have the highest incidence of infection (CLABSI) leading to higher morbidity, longer hospitalization, & higher medical costs.

(Counts, 2015)

Fistula First was Born!

- In 2003, the Fistula First Breakthrough Initiative (FFBI) was initiated in the U.S. due to low rate/use of AV Fistulas
- Project was a collaboration between CMS, ESRD Networks, & dialysis providers
- Goals:
    1. Increase AVF use for HD patients
    2. Collect, analyze, & disseminate data on AVF use in the U.S.
    3. Exceed the Kidney Disease Outcomes Quality Initiative (K/DOQI) guidelines of 50% AVF use in incident and 40% in prevalent HD patients. Revised to 65% on all prevalent patients by 2009. (Lok, 2007)

Impact of Fistula First Initiative

AVF use in The U.S. was up to 63% at the end of December 2015

The initiative also:

1. Increased importance of vascular access review in QI process.
2. Improved timely referral to vascular surgeons for AVF evaluation and placement.
3. Raised awareness on importance of AVF cannulation training, monitoring, & maintenance of AVF after creation.
4. Involved patients and families in proper care of AVFs through education.

(Lee, 2017)

CVC Rates

2003–2011 CVC use in the U.S. = 22-28%

Fistula First was renamed:

"Fistula First – Catheter Last"

By December 2015 CVC rates in the U.S.:

- Incident patients = 75%
- Prevalent patients = 19%
- CVC use greater than 90 days improved to 11%

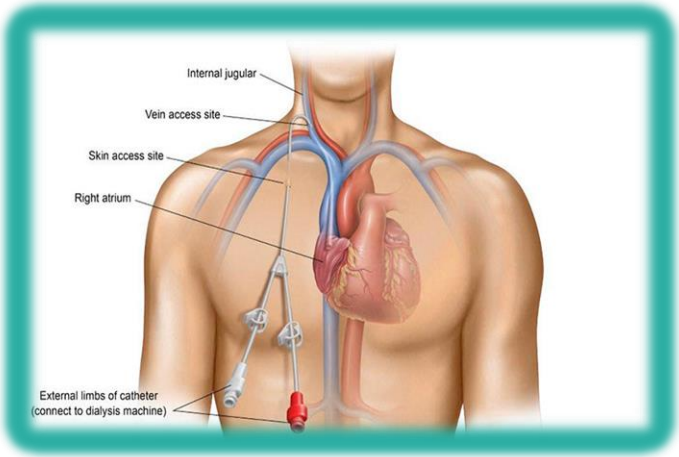
Higher rates attributed also because CVC is being used as a "bridge" until AFV is ready.

(Lee, 2017)

Why Not CVC?

CVC use has been associated with several complications such as:

- Higher morbidity related to infections
- Hospitalizations
- Dysfunction
- Higher recirculation
- Central venous stenosis
- Increased mortality



Why Fistula First?

- AVFs have the lowest incidence of infection
- Lower morbidity & mortality
- Less invasive surgical procedure
- Patient's own vessels – less rejection
- Will last longer
- Lower cost to place and maintain

arteriovenous
FISTULA FIRST
AVF — The first choice for hemodialysis

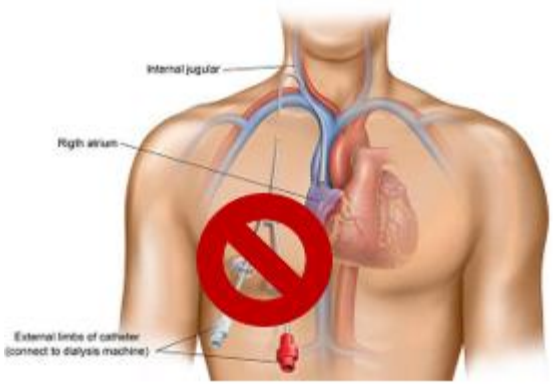
NKC Program

In response to various CMS criteria regarding vascular access and particularly to the "*Fistula First Initiative*", NKC has developed the **Access Management Program.**

Quality **A**ssessment & **P**erformance **I**mprovement (**QAPI**) measures aim for:

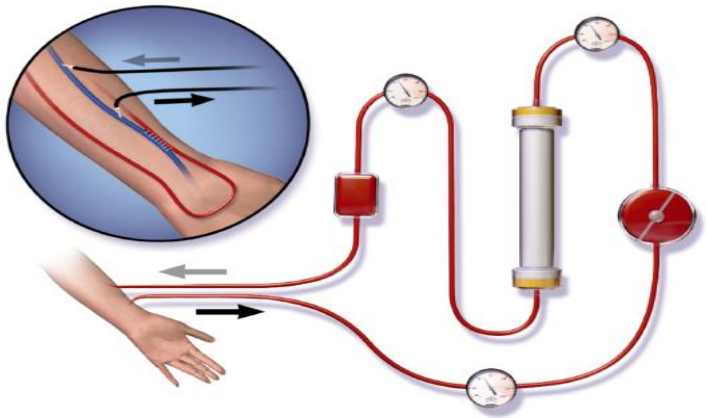
≥80% AVF ***

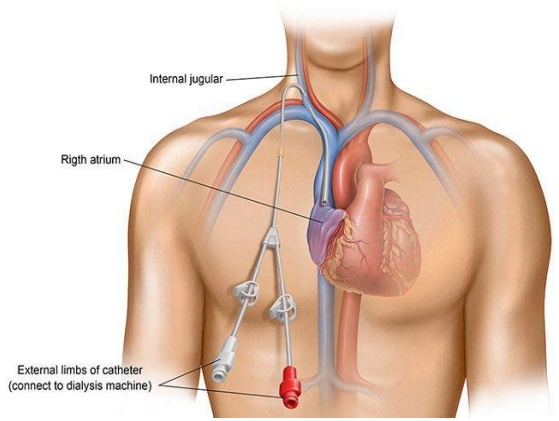
<10% CVC ***



NKC Goal

To provide an organized method of assessing patients for permanent vascular access placement and removal of catheter within 90 days of placement. Aim for <10% catheter rate.





Why Aim for Lower CVC Rates?

- First (most important) reason – for patient's overall health

- Second – for the organization:
  - Medicare Quality Incentive Program imposes penalties of reduced reimbursement
  - lower five-star ratings for dialysis providers that have too few fistulas or too many catheters.

(Brown et. al., 2017)

NKC Policies

- ✓ NKC only accepts dialysis patients with tunneled, cuffed catheters.
- ✓ A referral to a vascular access surgeon for the creation of a permanent access placement is required.
- ✓ Barriers to permanent access placement must be identified-referral to other members of the IDT for resolutions.
- ✓ QAPI team (IDT) collaborates & monitors to support & accomplish NKC's goals for the Permanent Vascular Access Placement Program – specifically CVC reduction.

Primary Care Nurse Roles

Policy CD-B1021, the Primary Care Nurse will:

1. Act as the vascular access coordinator
2. Be responsible for initiating the vascular access timeline
3. Document the vascular access status of the patient in the EMR
4. Communicate “Next Steps” for access cannulation and catheter removal
5. Provide education to patient/family about permanent access choices
6. Responsible for initial assessment of access & subsequent assessments – each documented in EMR

Vascular Access Status, Goal & Plan

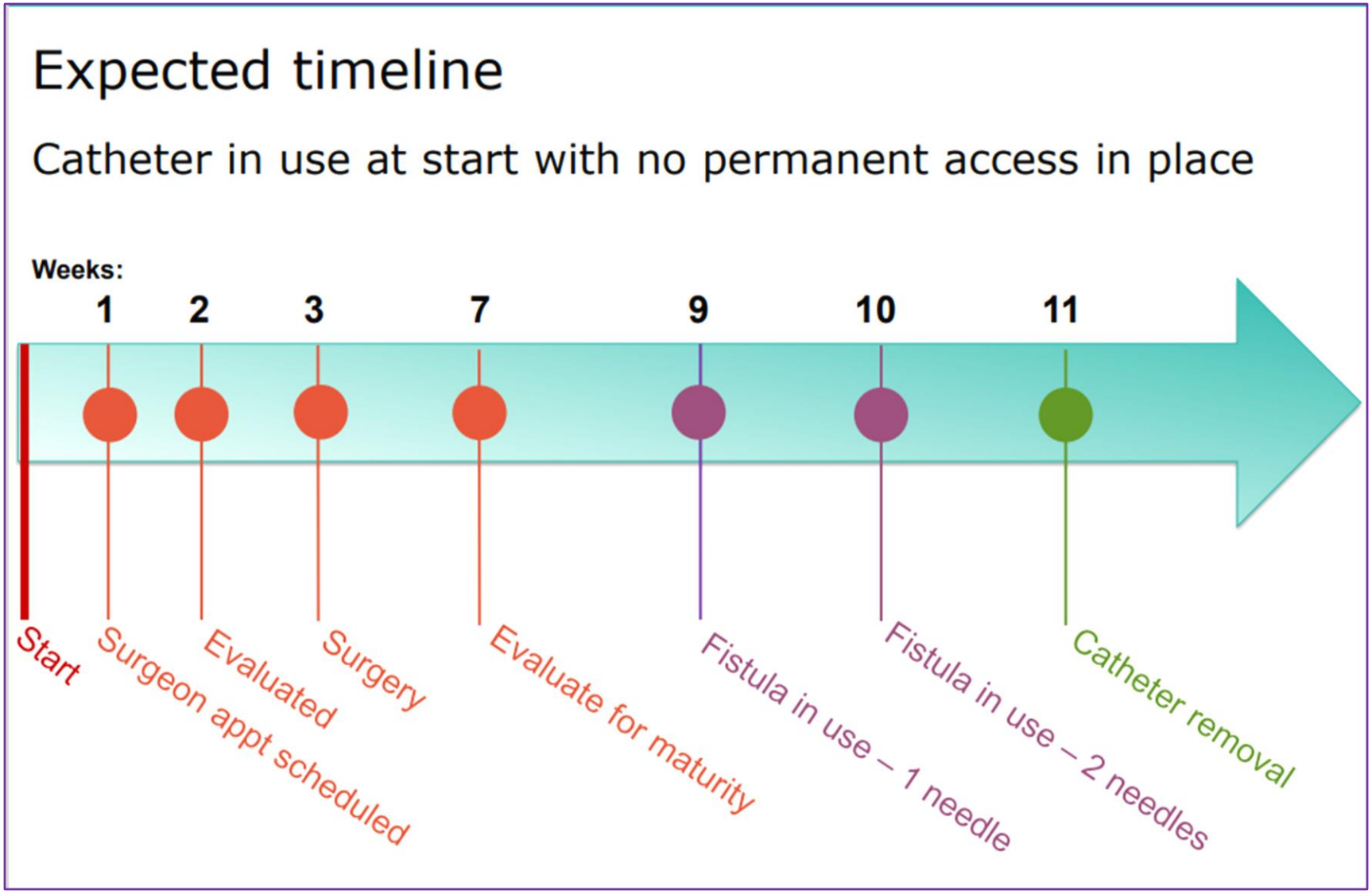
Policy # CD-A1126F

Required documentation in the EMR by Primary Care Nurse

Refer to Clarity User Manual - Nurses "*Access Care Pathway*"

Status	Required Documentation and Frequency
Ineligible for permanent access	• Review with every CA/POC • Provide documentation of confirmation of ineligibility from Nephrologist. • Document any nursing action taken, goal and plan in the EMR.
Eligible patient refuses permanent access	• Review with every CA/POC • Document any nursing action taken, goal and plan in the EMR. • Discuss with IDT and notify Medical Director. • Provide patient education. • Refer to MSW
Eligible – temporary CVC only	• Document weekly the progress towards permanent access placement in the EMR. • Document nursing actions taken, goal and plan. • Provide education
Eligible - Permanent Access and temporary CVC	• Document weekly the progress towards permanent access placement in the EMR. • Document nursing actions taken, goal and plan
Permanent Access Only	• Document any issues, access concerns in the EMR. • Review w/ q CAPOC

Catheter Elimination Timeline



Assessment of Maturing AVF

Q Dialysis - RN assessment and documentation (see procedure "Look, Listen, & Feel")
For abnormal findings, see "AVF/AVG Dysfunction Algorithm"

Week Four
Care Manager or Designee complete ultrasound, assess for maturation:
- >1" total palpable length
- < 6mm depth

No → Fax surgeon & nephrologist for intervention within 1 business day

Yes

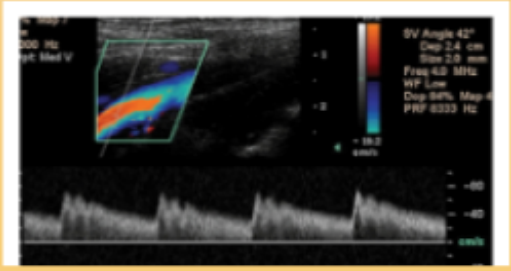
Week Six
Care Manager or designee complete ultrasound, assess for maturation:
- >1" total palpable length
- > 6mm diameter
- <6mm depth

Yes

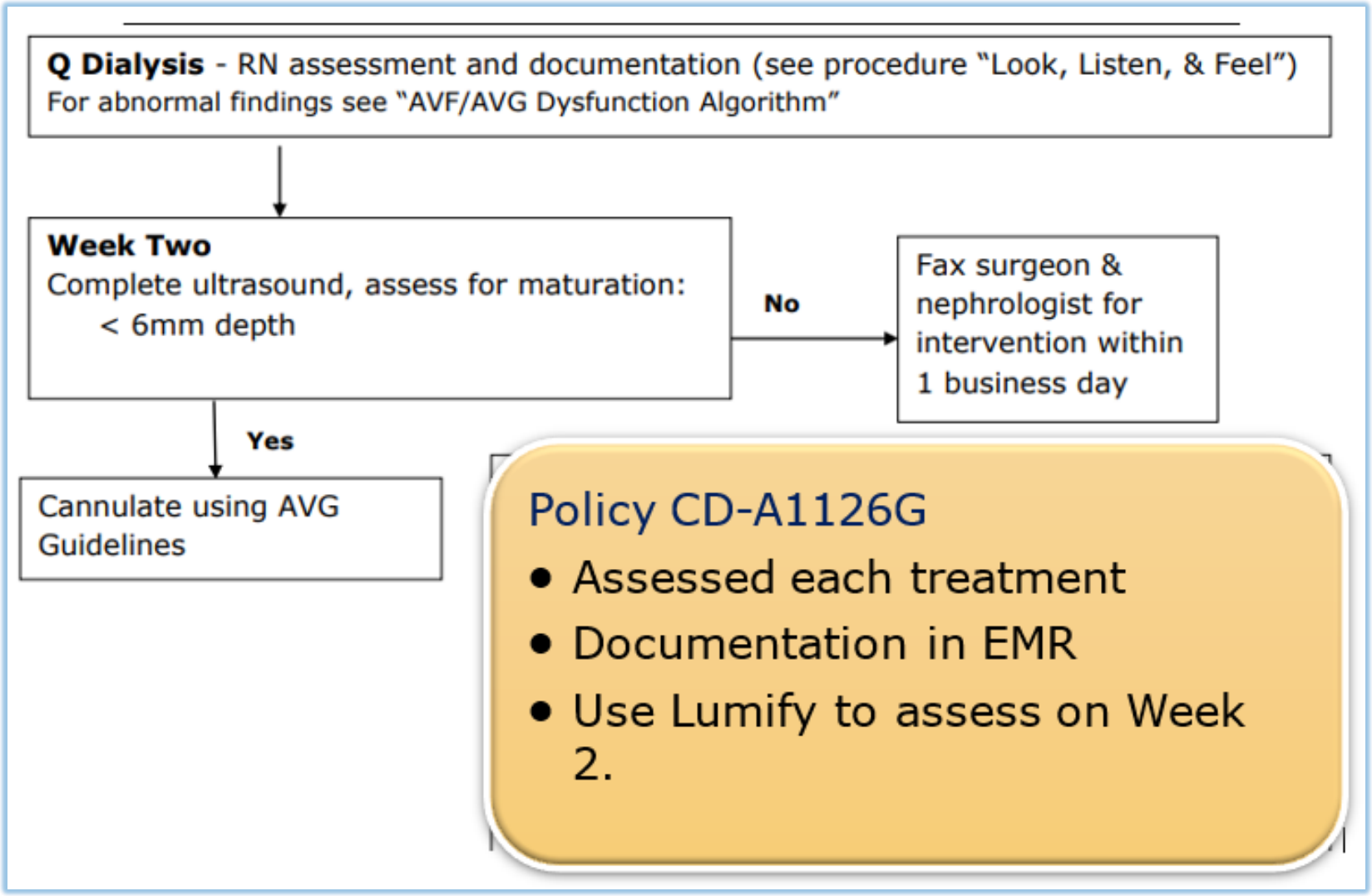
Cannulate using AVF Cannulation Guidelines

Policy CD-A1126B

- Assessed each treatment
- Documentation in EMR
- Use Lumify to assess starting on Week 4 through Week 6
- Rule of 6's criteria

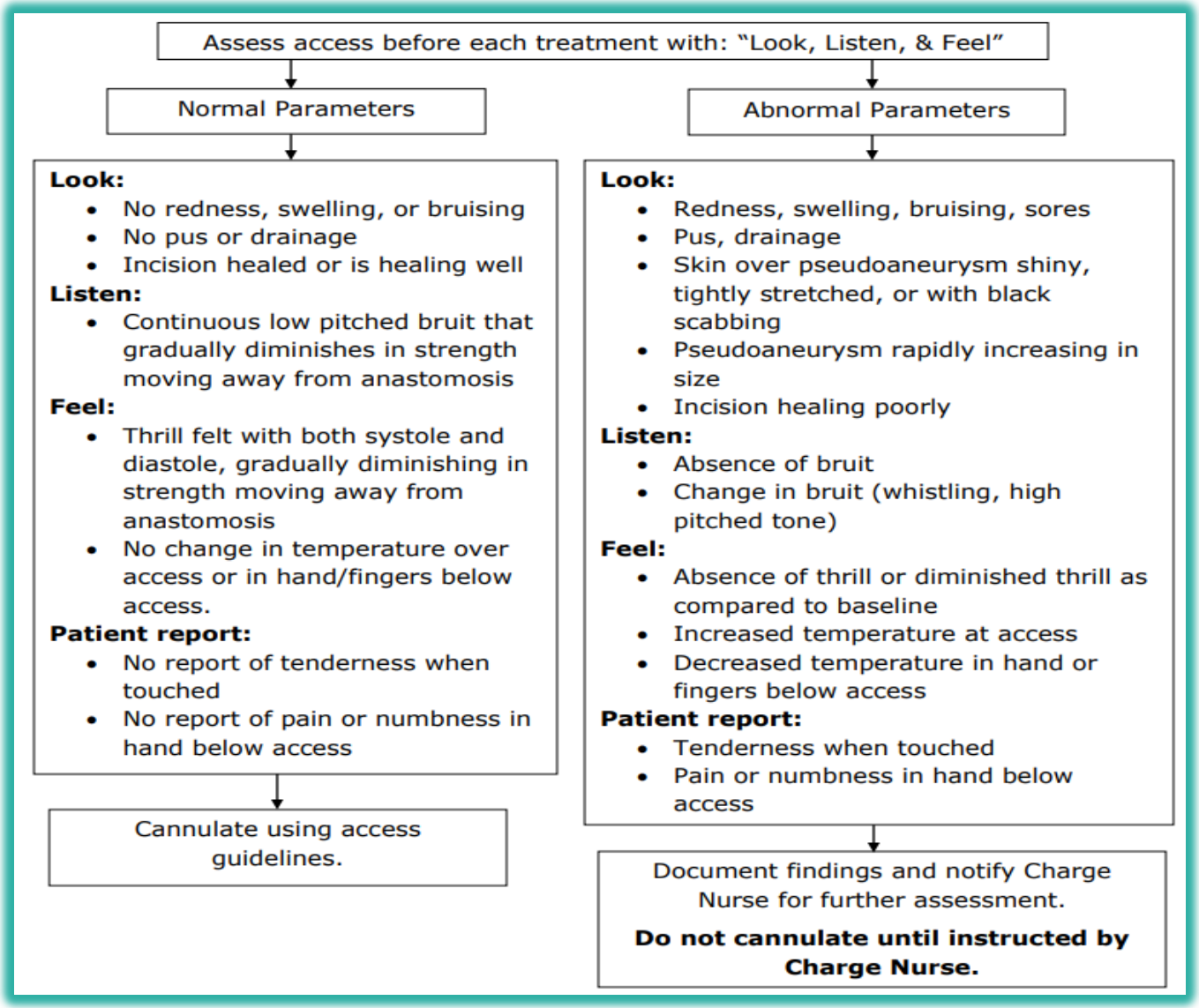


Assessment of Maturing AVG



Look, Listen, & Feel

Policy # CD-A1126C



New AVF Cannulation Guidelines

Policy # CD-A1126B

AVF Cannulation Guidelines

AVF – Week 1
Cannulation *by experienced staff only* for at least first six runs, if no experienced staff, ok to hold cannulation and use CVC
17 gauge needle for arterial needle– catheter for venous return
OR 17 gauge needles for both A&V if confirmed with RN.
QB up to 250ml/min as tolerated
DO NOT use clamps on new access
Always use a tourniquet for fistulas
Adjust heparin off time to 30 minutes if receiving hourly dose.
3 consecutive treatments with x2 needles, **refer for CVC removal**

Weeks 2 and 3
16 gauge needles both A&V if approved by Care Manager or designee
QB up to 350ml/min as tolerated
3 consecutive treatments with x2 needles, **refer for CVC removal**

Week 4 and ongoing
Advance to 15g needles both A&V if approved by RN.
Adjust blood flow rates to needle gauge

Blood flow rates to needle gauge
200 – 250 ml/min = 17 gauge
>250 – 350 ml/min = 16 gauge
>350 – 450 ml/min = 15 gauge

Needle placement
- A&V bevel up, tips at least 2" apart
- V - always place in direction of flow
- A – place either against flow or with flow based upon assessment
- Rotate sites
- Exceptions to protocol must be accompanied by MD order

New AVG Cannulation Guidelines

Policy # CD-A1126B

AVG Cannulation Guidelines

AVG Week 1
Cannulation *by Expert Cannulator only* for at least first six runs or more if needed, if no experienced staff available, OK to hold cannulation and use CVC. **Only the Expert Cannulator can give the permission for other staff to begin using the access.**

16 gauge needles both A&V
QB up to 350ml/min as tolerated
Adjust heparin off time to 30min
3 consecutive treatments with x2 needles, **refer for CVC removal**

Week 2 & ongoing
If appropriate, advance to 15g needles both A&V
Adjust blood flow rates to needle gauge.

Blood flow rates to needle gauge
>250 – 350 ml/min = 16 gauge
>350 – 450 ml/min = 15 gauge

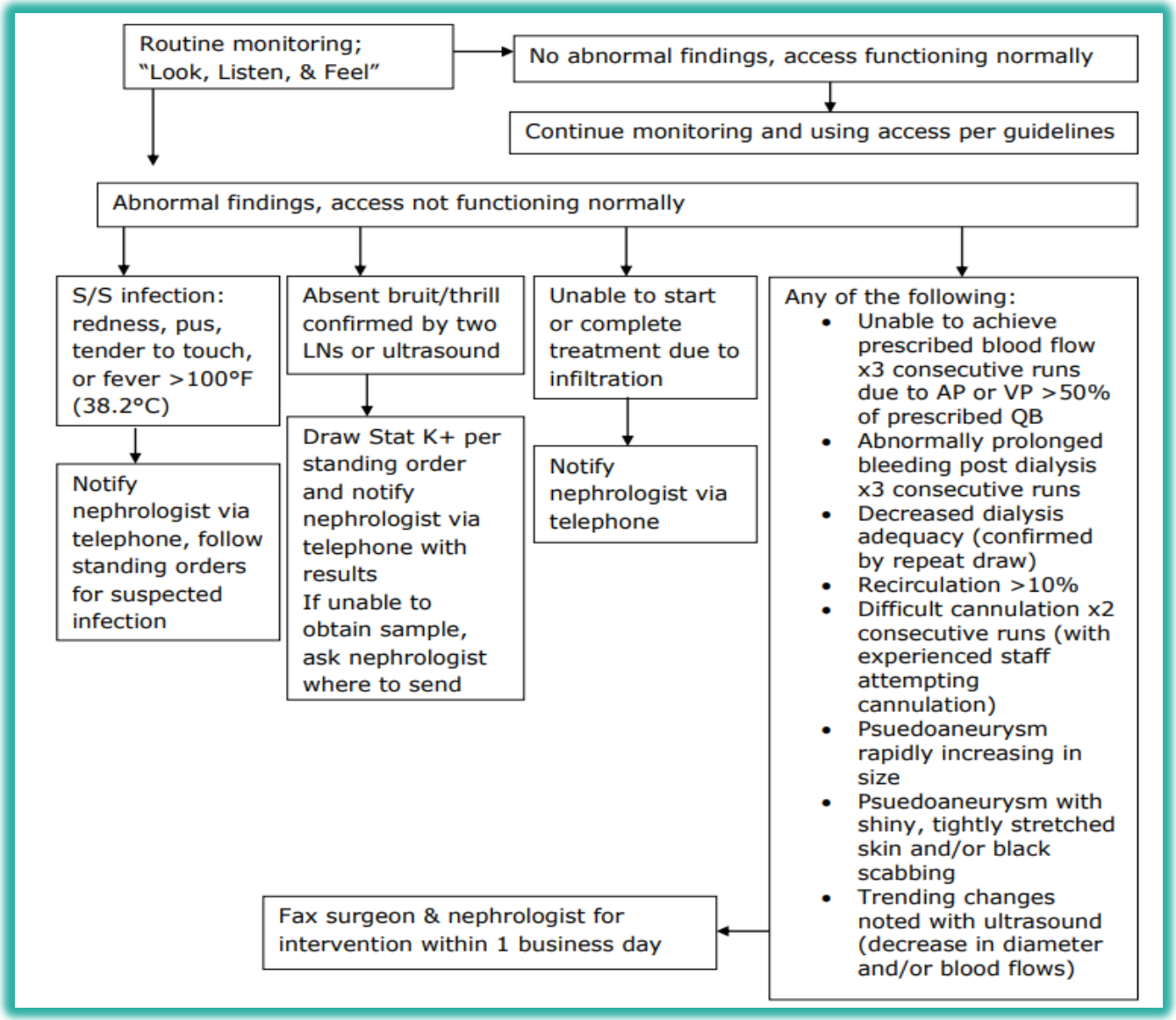
Needle placement
- A&V bevel up, tips at least 2" apart and at least 1.5" from anastomosis
- V - always place in direction of flow
- A – place either in direction of flow or against direction of flow based upon assessment
- Rotate sites
- Exceptions to protocol must be accompanied by MD order

Care & Use of AVF / AVG

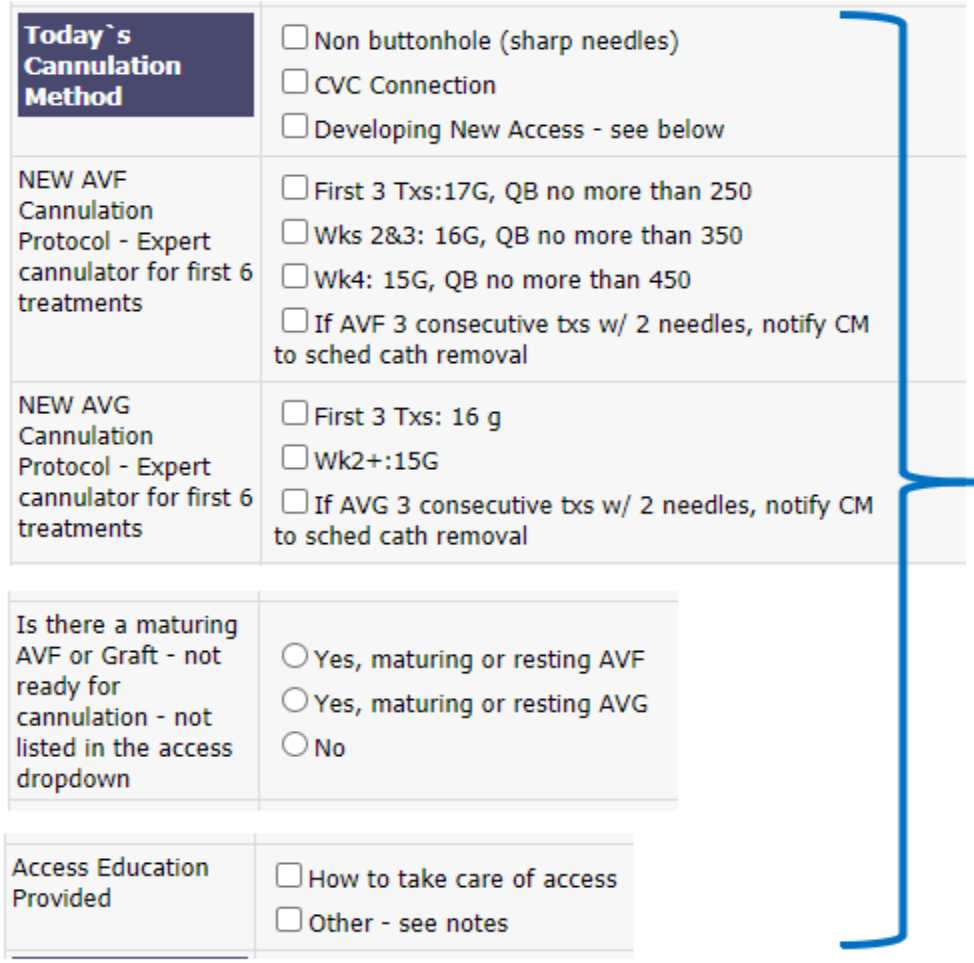
- ✓ Infiltrations must be reported/documented/ice packed
- ✓ No more than 2 px's per site
- ✓ Rotate px sites
- ✓ Must be visible at all times
- ✓ Encourage self cannulation/px holding
- ✓ Discourage use of anesthetics
- ✓ Use of clamps = one px at a time

AVF/AVG Dysfunction Algorithm

Policy # CD-A1126G



Nurse Documentation in RTC

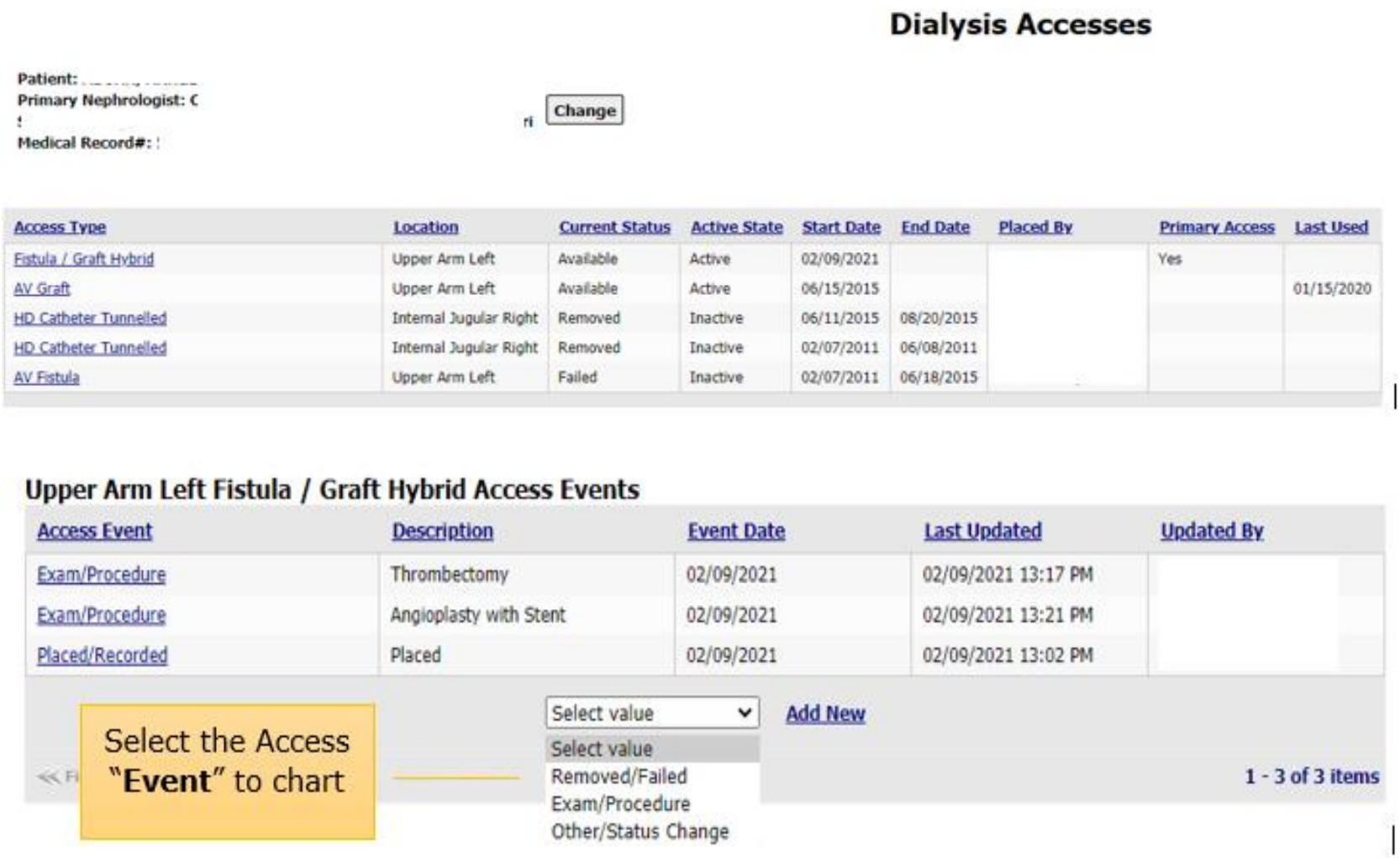


Today`s Cannulation Method	☐ Non buttonhole (sharp needles) ☐ CVC Connection ☐ Developing New Access - see below
NEW AVF Cannulation Protocol - Expert cannulator for first 6 treatments	☐ First 3 Txs:17G, QB no more than 250 ☐ Wks 2&3: 16G, QB no more than 350 ☐ Wk4: 15G, QB no more than 450 ☐ If AVF 3 consecutive txs w/ 2 needles, notify CM to sched cath removal
NEW AVG Cannulation Protocol - Expert cannulator for first 6 treatments	☐ First 3 Txs: 16 g ☐ Wk2+:15G ☐ If AVG 3 consecutive txs w/ 2 needles, notify CM to sched cath removal
Is there a maturing AVF or Graft - not ready for cannulation - not listed in the access dropdown	○ Yes, maturing or resting AVF ○ Yes, maturing or resting AVG ○ No
Access Education Provided	☐ How to take care of access ☐ Other - see notes

Nurse Assessment charting elements in the RTC about the maturing or new AVF/AVG

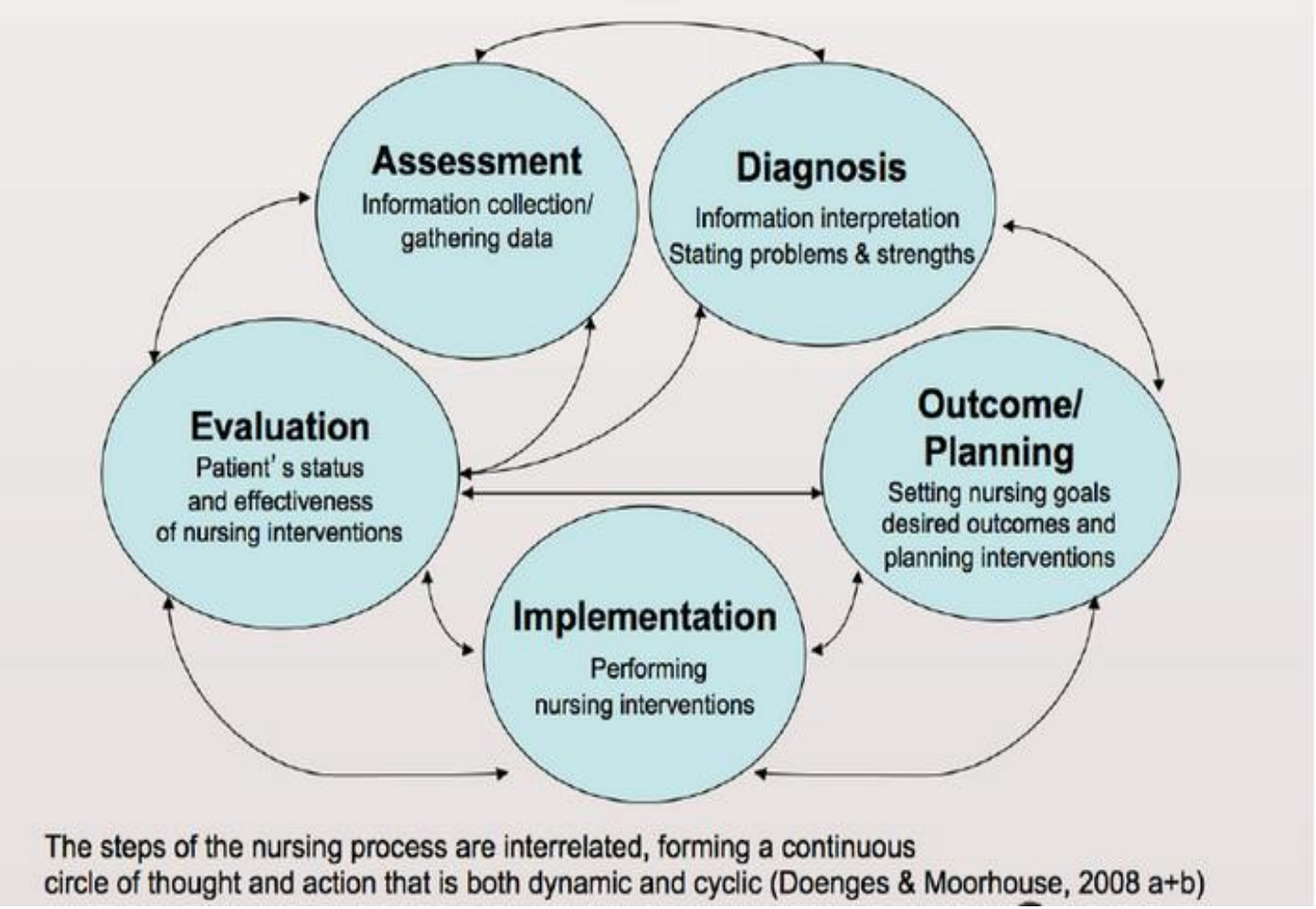
See Clarity User Guide – "Nurses" in K-Net

Dialysis Accesses Screen Charting



See Clarity User Guide – "Nurses" in K-Net

Remember The Nursing Process!



The steps of the nursing process are interrelated, forming a continuous circle of thought and action that is both dynamic and cyclic (Doenges & Moorhouse, 2008 a+b)

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Questions?