

## 5 Diamond Patient Safety Program

### Stenosis Surveillance 2009

\*This presentation was collaboratively developed by the Mid-Atlantic Renal Coalition (MARC) and the ESRD Network of New England for the 5-Diamond Patient Safety Program.

The 5-Diamond Patient Safety Program is endorsed by the Renal Physicians Association (RPA) and American Nephrology Nurses' Association (ANNA).

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## Objectives

- To increase the stenosis surveillance performed per the K-DOQI Guidelines.
- To aid in the development of a vascular access QAPI that will:
  1. Improve the rate of use and preservation of Arteriovenous (AV) fistulas
  2. Decrease the inappropriate use of catheters
  3. Improve the care provided for all types of vascular access

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## What is Stenosis Surveillance?

- Stenosis surveillance is “the periodic evaluation of the vascular access by using tests that may involve special instrumentation and for which an abnormal test result suggests the presence of dysfunction”

-K-DOQI

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## Why is Stenosis Surveillance Important?

- Low blood flow rates and loss of patency affect Hemodialysis (HD) delivery and increase morbidity and mortality
- Thrombosis is the leading cause of loss of vascular access patency in long-term AV accesses, especially grafts
- Thrombosis adversely affects quality of life, may lead to hospitalization, and increases costs

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## K-DOQI Recommended Methods for Stenosis Surveillance

- **Color-Flow Doppler:** Color-Flow Doppler performed as a method of surveillance for the presence of stenosis **at least once during the quarter**
- **Static Venous Pressure:** Static Venous Pressure, direct or derived, performed as a method of surveillance for the presence of stenosis **at least once every two weeks**
- **On-Line Clearance/Access Flow Methods:** The On-Line Clearance (OLC) or Access Flow Methods of surveillance for the presence of stenosis performed **at least once a month**

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## Static Venous Pressure

- **Definition:**
  - Pressure in the access can be measured directly at the site of cannulation in the “arterial” and “venous” segments of the graft by using a pressure measuring device.
    - **Clinical Practice Guidelines and Clinical Practice Recommendations for Vascular Access, Update 2006**  
*American Journal of Kidney Diseases*, July 2006 supplement, pg.S219
- **Documentation:**
  - Dated treatment sheet, progress note or log
- **Frequency:**
  - Minimally every 2 weeks within a quarter

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## Color Flow Doppler

- **Definition:** quantitative color velocity imaging, sometimes referred to as Duplex Doppler Ultrasound
- **Documentation:**
  - Radiology report
  - Progress note of radiology findings
- **Frequency:**
  - Once within a quarter
  - Can be used in conjunction with another form of surveillance

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## On-Line Clearance (OLC) or Access Flow Methods

- **Definition:** a process that compares percent recirculation to clearance value, looks for a positive correlation between Hemodialysis inefficiency and access management.
  - Mehmedovic,N. “On-line clearance monitoring for blood access management”. *EDTNA Journal* 2005 Jul-Sep; 31(3): 137-9
- **Documentation:**
  - Dated treatment sheet, progress note or printout
- **Frequency:**
  - Once a month

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## Stenosis Surveillance Change Concepts

- # 1 Routine Stenosis Surveillance
- # 2 Clinical Team Education
- # 3 Patient Education
- # 4 Outcomes Feedback

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## # 1 Routine Stenosis Surveillance

- Review K-DOQI guidelines for stenosis surveillance recommendations including measurement frequency
- Facility interdisciplinary team adopts standard procedure for stenosis surveillance
- Healthcare Personnel has accountability for reliable surveillance, data collection, documentation and review
- Timely referral of trended data to Nephrologists for:
  - Intervention for access dysfunction
  - Correlation with adequacy data

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## # 2 Clinical Team Education

- Routine in-service or educational programs on surveillance type used in the facility
  - Focus on type and frequency of surveillance
- Continuing educational programs by Nephrologists on stenosis surveillance
- Continuing education programs on vascular access monitoring that include:
  - Tracking difficulties experienced either pre or post treatment
  - Physical assessment

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## # 3 Patient Education

- Care plans include patient education on vascular access care:
  - Importance of access hygiene practiced by both patient and staff
  - Signs and symptoms of infection
  - How to feel the pulse or thrill
  - Ensuring that staff rotate cannulation sites (unless using button hole method)

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## # 4 Outcomes feedback

- Trend surveillance data with access interventions
- Review surveillance data in staff meetings
  - Discuss and evaluate data trends with clotting incidents
  - Ensure improvements are sustained
- Utilize surveillance data in QAPI

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## Conditions for Coverage

The Interdisciplinary Team (IDT) must provide vascular access monitoring and appropriate, timely referrals to achieve and sustain vascular access.

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## Selected Fistula First (FF) Change Concepts

- # 9 Monitoring and Maintenance to assure adequate access function
- # 6 Secondary AV fistula (AVF) placement in patients with AV grafts (AVGs)
- # 7 AVF placement in patients with catheters where indicated

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## FFBI Change Concept 9

- Monitoring and maintenance to assure adequate access function
  - Adopt standard procedures for monitoring, surveillance and timely referral for failing accesses
  - Develop a plan for each patient to determine extent of interventions on an existing access before evaluating and mapping for an AVF

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## FFBI Change Concept # 6

- Secondary AVF placement in patients with AVGs
  - Adopting a “sleeves up” protocol with minimum monthly monitoring of outflow veins
  - Consider AVF placement in patients with history of repeated AVG problems
  - Trend surveillance and monitoring information for proactive access care

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## FFBI Change Concept 7

- AVF placement in patients with catheters where indicated
  - Document
    - Vessel mapping
    - Surgeon evaluation
    - Maturation and cannulation
    - Catheter removal

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## Plan of Care

- Medical records must include evidence of evaluation and basis for the placement of the current access
  - Evaluation for the appropriate vascular access takes into consideration co-morbid conditions, risk factors and whether the patient is a candidate for an AV Fistula

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## Plan of Care *continued*

- The patient's access must be monitored for symptoms of stenosis and to prevent access failure.
  - Physical examination of the access, reviewing pressure changes during HD or noting difficulties in cannulation and/or hemostasis
  - Trending adequacy results
  - Timely referral when indicated
  - Patient education for self-monitoring

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## Documentation

- Surveillance or monitoring documentation can include:
  - Progress notes
  - Treatment sheets
  - Logs
- Documentation must indicate frequency of surveillance
- A member of the IDT must monitor documentation to identify trends and take action as indicated