

## Fistula First Change Package

Clinical and organizational recommendations based on best practices for increasing AV fistula use and improving hemodialysis patient outcomes:

### 1 Routine CQI review of vascular access

- Designate staff member in dialysis facility responsible for vascular access CQI (RN if feasible but can be any renal care professional). Incorporate vascular access into facility-based CQI process.
- Assemble multi-disciplinary vascular access CQI team in facility or hospital.
  - Minimally: Medical Director and VA CQI Coordinator.
  - Ideally: Representatives of all disciplines, including access surgeons and interventionalists.
- Investigate and track all non-AVF access placements and AVF failures.

### 2 Timely referral to nephrologist

- Primary care physicians utilize pre-ESRD/CKD referral criteria to ensure timely referral of patients to nephrologists, ideally prior to Stage 4 CKD.
  - Establish meaningful criteria for PCPs who may not perform GFR or creatinine clearance testing (i.e. serum creatinine criteria, conversion formula for GFR)
- Nephrologist documents AVF plan for all patients expected to require renal replacement therapy, regardless of RRT being considered.
- Designated nephrology staff person educates patient and family on benefits of AVF and to protect vessels, when possible using bracelet as reminder.

### 3 Early referral to surgeon for “AVF only” evaluation and timely placement

- Nephrologist/skilled nurse performs appropriate evaluation and physical exam prior to surgery referral.
- Nephrologist refers for vessel mapping where feasible, ideally prior to surgery referral.
- Nephrologist refers patients to surgeons for “AVF only” evaluation, no later than Stage 4 CKD (GFR<30). Surgery scheduled with sufficient lead-time for AVF maturation.
- Nephrologist defines AVF expectations to surgeon, including vessel mapping.
- If pre-ESRD placement of AVF does not occur, nephrologist ensures that patient receives AVF evaluation and placement (if feasible) at the time of initial hospitalization for temporary access (e.g. catheter).

### 4 Surgeon selection based on best outcomes, willingness, and ability to provide access services

- Nephrologists communicate expectations to surgeons regarding AVF placement and training in current AVF surgical techniques, based on K/DOQI Guidelines and best practices.
- Nephrologists refer to surgeons willing and able to meet AVF expectations based on K/DOQI and best practices.
- Surgeons are continuously evaluated on frequency, quality, and patency of access placements. Data collection and outcomes tracking ideally initiated and reported at the dialysis center as part of ongoing CQI process, and can be aggregated at the Network level.

### 5 Full range of appropriate surgical approaches to AVF evaluation and placement

- Surgeons utilize current techniques for AVF placement including vein transpositions.
- Surgeons ensure mapping is performed for any patient candidate not deemed suitable for AVF based solely on physical exam.

## 6 Secondary AVF placement in patients with AV grafts

- Nephrologists evaluate every AV graft patient for possible secondary AV fistula, including mapping as indicated, and document plan in patient's record.
- Dialysis facility staff and/or rounding nephrologists examine outflow vein of all forearm graft patients ("sleeves up") during dialysis treatments (minimum frequency=monthly) to identify patients who may have suitable upper outflow vein for elective secondary AVF conversion in upper arm. Inform nephrologist and surgeon of need to evaluate identified outflow vein for AVF conversion.
- Nephrologist refers to surgeon for evaluation/placement of secondary AVF before failure of AVG.

## 7 AVF placement in patients with catheters where indicated

- Regardless of prior access (e.g. AV graft), nephrologists and surgeons evaluate all catheter patients as soon as possible for AVF, including mapping as indicated.
- Facility implements protocol to track all catheter patients for early removal of catheter.
- Nephrologists make every effort not to admit patients to clinic with "catheter only".

## 8 Cannulation training for AV fistulas

- Facility identifies and uses best cannulators and best teaching tools (e.g., videos) to teach AVF cannulation to all appropriate dialysis staff.
- Dialysis staff uses specific protocol for initial dialysis treatments with new AVFs and assigns the most skilled staff to such patients.
- Facility offers option of self-cannulation to patients who are interested and able.

## 9 Monitoring and maintenance to ensure adequate access function

- Nephrologists and surgeons conduct post-operative physical evaluation of AVFs in 4 weeks to detect early signs of failure and refer for diagnostic study and remedial intervention as indicated.
- Facilities adopt standard procedures for monitoring, surveillance, and timely referral for the failing AVF.
- Nephrologists, interventional radiologists, and surgeons adopt standard criteria, and a plan for each patient, to determine the appropriate extent of intervention on an existing access before evaluating and mapping for an AVF.

## 10 Education for care givers and patients

- Routine facility staff in-servicing and education program in vascular access.
- Continuing education for all caregivers to include periodic in-services by nephrologists, surgeons, and interventionalists.
- Facilities educate patients to improve quality of care and outcomes (e.g., prepping puncture sites, applying proper pressure at needle sites without clamps, AVF brochures, etc.).

## 11 Outcomes feedback to guide practice

- Networks work with dialysis providers to provide specific outcomes feedback to all decision-makers, including incident and prevalent rates of AVF, AVG, and catheter use.
- Review data monthly or quarterly in facility staff meetings. Discuss and evaluate data trended over time for incident and prevalent rates of AVF, AVG, and catheter use. Track and disseminate all vascular access-related outcomes.

For further information, contact your ESRD Network. A complete listing of ESRD Networks can be found at: <http://www.esrdnetworks.org/>. *Fistula First* is an initiative of the Centers for Medicare and Medicaid Services and the Department of Health and Human Services. Project assistance provided by the Institute for Healthcare Improvement.





This educational item was produced through the AV Fistula First Breakthrough Initiative Coalition, sponsored by the Centers for Medicare and Medicaid Services (CMS), Department of Health and Human Services (DHHS). The content of this publication does not necessarily reflect the views or policies of the DHHS, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The author(s) assume full responsibility for the accuracy and completeness of the ideas presented, and welcome any comments and experiences with this product.