

# Root Causes of Low AVF Rates

Taken from the CMS QIP template for Increasing AVFs in Hemodialysis Patients

|                         | Root Cause | Potential to change |
|-------------------------|------------|---------------------|
| <b>Patient Factors</b>  |            |                     |
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| <b>Facility Factors</b> |            |                     |
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| <b>Other Factors</b>    |            |                     |
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| Vascular Surgeon Factors    |   |     |
|-----------------------------|---|-----|
| Awareness/<br>Knowledge     | • Misconception that the need to dialyze immediately (or very soon) requires that a graft be placed.  | Yes |
|                             | • Belief that a patient's lifespan is so limited that a successful graft will be more useful and less problematic than a fistula that may develop slowly <sup>14</sup>  | Yes |
|                             | • Belief that sonography is not helpful for mapping vasculature prior to access placement   | Yes |
|                             | • Lack of recognition of the requirements for success, e.g., fistula lengths must be adequate for cannulation, minimum blood flows that are necessary for dialysis must be achievable (not just a dopplerable blood flow), positions need to allow for appropriate needle placement during dialysis, etc. | Yes |
|                             | • Failure to recognize importance of Vascular Access Team and surgeon's and nephrologist's roles on it.   | Yes |
|                             | • Failure to recognize the importance of routinely providing a dialysis unit with the operative report for access placements and revisions  |     |
| Communication/<br>Education | • Failure to educate the patient on post-op care and monitoring of a fistula  | Yes |
|                             | • Failure to provide the patient with a pictorial description of the access for their own records, and for sharing with other care providers  | Yes |
| Training/Experience         | • Lack of training re: AVFs (includes mapping and surgical techniques). Surgical training programs place little emphasis on vascular access approaches, techniques and troubleshooting, especially for the more complicated procedures  | Yes |
|                             | • Graft is technically less difficult than a brachial cephalic or transposition fistula   | No  |
|                             | • Lack of experience with placement of tunneled cuffed catheters or PD for short-term use while a fistula is maturing such that a graft is placed instead, especially if the surgeon has a perceived sense of urgency to have an arm access in place.   | Yes |
|                             | • Surgeon may lack the patience, training, or commitment to manage the fistula that is not maturing properly—may be quick to convert to a graft if a fistula is not maturing quickly or they are experiencing difficulties with it.   | Yes |
| Business                    | • Lack of tools &/or reimbursement to fully assess patients as to whether or not they are suitable candidates for AVFs (e.g. sonography units not available, not funded, or lack expertise related to mapping).   | No  |
|                             | • Lack of surgeons that are interested in access, lack of O.R. availability – some excellent vascular surgeons choose not to do access work   | No  |
|                             | • Access work is seen as cumbersome due to the complicated patient population involved. The surgical procedure itself may not take long, but getting medication lists, problem lists, H&P, other necessary steps in getting to the OR takes a lot of extra time.  | No  |
|                             | • Reimbursement by Medicare for placement of a graft is higher than the reimbursement for fistula placement.  | No  |
| Social                      | • Surgeons may prefer grafts due to their shorter maturation period that allows them to complete the “episode of care” for a difficult, challenging patient more quickly (i.e. they do not have to continue to care for the patient as long).   | No  |
|                             | • Unlike transplant surgeons, access surgeons get little or no recognition from patients or colleagues for great access results.  | Yes |

| Insurance/reimbursement |  |  |
|-------------------------|--|--|
|                         | <ul style="list-style-type: none"> <li>• Nonpayment for sonography in the surgeon's office or O.R.</li> <li>• Delayed surgical referral due to managed care problems (need to get referrals through PCP, no vascular access surgeon on panel, etc.)</li> <li>• No access to well qualified surgeon due to insurance/managed care or geographic reasons</li> <li>• Surgeon may not be reimbursed for the follow-up care, especially for the poorly maturing fistula</li> <li>• Both facilities and providers may wait for Medicare coverage to begin before placing an access. This delay in access placement may then lead to a perceived urgency to have an arm access and the choice of a graft over a fistula.</li> <li>• Delays in access placement related to delays in the approval process for Managed Care patients may lead to a perceived urgency to have an arm access and the choice of a graft over a fistula.</li> </ul>   | <p>No</p> <p>Yes</p> <p>?</p> <p>No</p> <p>Yes</p> <p>Yes</p>  |
| Other Factors           |  |  |
|                         | <ul style="list-style-type: none"> <li>• ER/ICU/General surgery staff and others may be unaware that subclavian lines can impact vascular access decisions</li> <li>• Late referral, or nonreferral, to nephrology, causing the need for temporary catheters which may impact on future access and cause a sense of urgency for a working permanent access</li> <li>• PIC lines are being used with increased frequency, sometimes even indiscriminately, and may impact future access options.</li> <li>• Fistula outflow veins are difficult to declot requiring catheter placement. Because of recurrent problems, a graft may be opted for.</li> <li>• Patients in crisis not identified quickly enough by other physicians to avoid placement of lines that affect future access decisions (e.g. a patient in ICU for several days may have had several peripheral IVs, multiple blood draws, central lines, etc. that could "ruin" vessels).</li> <li>• Lack of focus on access surgery with regard to quality assurance. Some surgical procedures and outcomes are tracked for QA purposes. There is no similar focus on access and there are no generally accepted standards in the surgical community related to access.</li> <li>• Hospitals (nursing floors, labs) lack good protocols that preclude venipuncture in arms designated for access</li> <li>• Delays in access placement related to limited available OR space and/or surgeon-time may lead to a perceived urgency to have an arm access and the choice of a graft over a fistula.</li> <li>• Lack of adequate sonography services (including familiarity on the part of the sonographer with the specific needs of vascular access mapping)</li> <li>• Lack of adequate tunneled catheter support, e.g., surgical or interventional radiology support for placement.</li> <li>• Hospital medical records departments and/or surgical departments fail to recognize the importance of providing the operative reports for access placements and revisions to dialysis units and lack systems to assure that they are sent</li> </ul> | <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>?</p> <p>Yes</p> |

**\*\* Note:** It is important to recognize that these root causes, especially the patient physical factors, reflect only **relative barriers**. They do **not** rule out the possibility of a fistula in a particular patient, but may mean that additional evaluation may need to occur to determine the suitability of an individual patient.

\*These factors may impact the rates for long-term catheter use rather than the choice of fistula or graft

<sup>δ</sup> Though listed as no potential to change, that reflects the patient currently coming to dialysis. Current education could impact these factors in the more distant future.