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AFTER ‘FISTULA FIRST’: RETHINKING VASCULAR ACCESS IN END-STAGE KIDNEY DISEASE

How kidney care teams are moving away from one-size-fits-all approaches—and embracing AV grafts as a timely, patient-centered option

Putting patients at the center of vascular access decisions

Clinicians and researchers are embracing a more personalized approach to vascular access in dialysis—one that accounts for individual needs rather than applying the same solution to every patient. For years, the fistula-first initiative shaped decisions in end-stage kidney disease (ESKD), positioning arteriovenous fistulas (AVFs) as the default option. While the initiative had good intentions, it often overlooked critical patient differences.

Today, the updated 2020 Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines promote a life-plan model for planning the patient's entire kidney disease journey. With less pressure to prioritize fistulas, care teams are taking a closer look at other vascular access options—especially arteriovenous (AV) grafts—as a way to tailor treatment to each patient.

"The message of Fistula First was very effective and had an impact on physician decision making. The current KDOQI Guidelines however encourage physicians to also consider other access options and to evaluate patients for the access type best suited for them," says Charmaine Lok, MD, FRCPC, MSc, professor of medicine at the University of Toronto and medical director of the chronic kidney diseases and hemodialysis vascular access programs at Toronto General Hospital.

Defaulting to fistula creation without fully evaluating individual patient factors has had real-world consequences, she says. "As a result of the well-intended Fistula First Initiative, more patients were receiving fistulas for vascular access, although some could have been evaluated for other access options," Lok explains. The result is increasing failure rates, rising catheter dependence and growing costs [1]. This shift calls for a reevaluation of vascular access strategies, resource use and established clinical practices.

The problem with fistula first for every patient

Fistula first was a highly successful national initiative with the intention of increasing fistula rates because the underlying premise was that fistulas had fewer complications, better survival and were less costly than other vascular access types, such as hemodialysis grafts and catheters, says Lok. "The problem is that there were flaws in the underlying data and its interpretation," she adds.

A recent study reveals that approximately 50% of fistulas created during the fistula-first era were ultimately futile [2]. The paper concluded that the paradigm shift to the ESKD Life-Plan—an approach based on the Patient Life-Plan, Access Needs (PLAN) framework—will hopefully match vascular access strategies to

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individual patient needs [2]. There's also concern that the focus on fistulas discouraged critical thinking and led to skill erosion. "The new KDOQI Guidelines enable physicians to evaluate each patient's circumstances and access needs and exercise their skills to create a fistula or implant a graft." says Lok.

The data paints a concerning picture. As many as 75% [3] of patients who initiate dialysis on a central venous catheter (CVC) remain on a CVC after 3 months. Fistulas not only take longer to mature, but studies have reported 18%-53% of fistulas fail to mature, and data within the article indicated they had a non-suitability rate of their fistulas of ~60% [4]. Half require interventions to mature [5].

The KDOQI guidelines: A new system for vascular access planning

In response to these challenges, the updated KDOQI guidelines usher in a more nuanced, patient-centered model. The new message? "Have a PLAN…to get the right access in the right patient at the right time for the right reasons." Lok says, "It encourages clinicians to pause and think about the patient first and then determine what's best."

Key features of the new approach:

- PLAN framework: Patient Life-Plan, Access and Needs
- Team-based decision-making, led by the nephrologist and surgeon in collaboration with the patient
- Personalized pathway to vascular access
- Emphasis on planning to reduce unnecessary procedures, catheter use and their associated complications
- Decision support tools, including the My Vascular Access app and implementation templates

"Over time, patients were getting fistulas when they probably shouldn't, depending on the circumstances."

— Charmaine Lok, MD, FRCPC, MSc, professor of medicine at the University of Toronto and medical director of the chronic kidney diseases and hemodialysis vascular access programs at Toronto General Hospital

The guidelines emphasize team-based planning through the PLAN, a structured method that helps map out the kidney replacement modalities (ESKD Life-Plan) and associated dialysis access (access needs) that will best support a patient's long-term health and treatment trajectory. Lok describes it as a multi-layered plan that considers "the who, what, when and where" for both initial and future access needs. The framework outlines when a fistula, graft or catheter may be appropriate, depending on the clinical scenarios.

Rethinking the role of AV grafts

Before fistula first, AV grafts were about 40% of vascular access, dropping to approximately 16% after the initiative [6]. AV grafts are emerging once again as a key option for vascular access, particularly in patients who may not be ideal candidates for fistulas. Lok says there are at least two key clinical scenarios where vascular grafts are more appropriate.

The first is when patients don't have suitable vessels for a fistula. "Oftentimes, patients have badly damaged or calcified vessels where a fistula may not mature due to its poor quality, such as lack of vessel distensibility," she notes. Grafts are also useful when patients need to start dialysis quickly. According to Lok,

approximately 40% of patients start dialysis urgently [7]. And in most of these cases in North America, they don't have enough time for fistula maturation. "Instead of inserting a catheter, you can place an early cannulation graft that can be used within 24 to 72 hours," she says.

This is a game-changer, adds Lok. "Well-designed randomized controlled trials show that early cannulation grafts have the equivalent patency compared to standard grafts and reduced bacteremia and mortality compared to catheter use [8, 9]." Moreover, properly selected grafts may even outperform fistulas. "There are studies that show AV grafts can have superior survival compared to fistulas that require multiple interventions before use [10, 11]. Therefore, a comprehensive approach to the patient's life plan that includes their access needs offers many benefits to the patient," she says.

Lok also points to a study that showed that AV graft use increased by approximately 1.5 times[9] in one institution after implementing the updated KDOQI guidelines. The authors concluded that a more selective approach to fistula placement reduces the number of vascular access procedures and lowers costs, she says. "That translates into potentially greater patient satisfaction."

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Overcoming barriers to adoption

If the clinical case is so strong, why haven't the updated guidelines and ESKD Life-Plan been more broadly adopted? One reason is a lack of awareness. A key barrier, says Lok, is the lack of coordination across care settings. "The main issue is having an established map for these patients—their ESKD Life-Plan and vascular access life plan—that every care provider has access to," she explains. Another challenge is systemic fragmentation. Patients often bounce between different centers and clinicians. The nephrologist might not know which surgeon the patient saw or vice versa. Time and reimbursement pressures also get in the way.

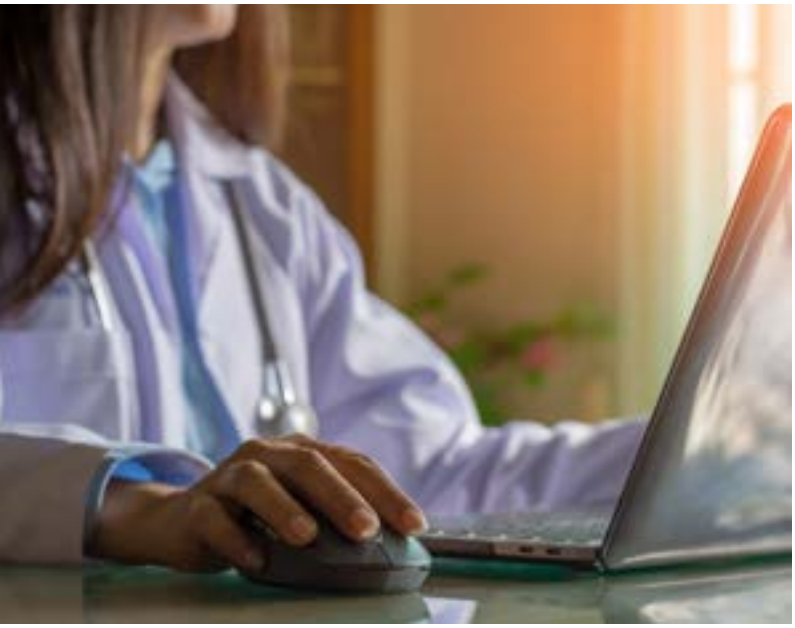
Awareness continues to be a hurdle as well. "People may not even be aware of the new

strategies," Lok notes. "Unfortunately, the guidelines were released around the same time as the COVID-19 pandemic was declared, and they were overshadowed." She adds, "Patients need to play a bigger role and be the communicators between clinicians and surgeons." They should be involved in their PLAN and speak up—especially when it comes to protecting their veins.

To help overcome these challenges, Lok recommends coordinated planning efforts and greater access to supportive tools and education. Steps include:

- Embedding access planning into Electronic Medical Record (EMR) templates
- Training across specialties—including nephrologists, interventionalists and surgeons
- Using resources such as the My Vascular Access app, which is being updated to include more access types, including early cannulation grafts

One of the most promising tools is the My Vascular Access app, which Lok developed to support both physicians and patients. "What's key is it can help clinicians determine the most appropriate vascular access, and that is a paradigm shift to thinking about the patient rather than just fistula first," says Lok. "By selecting the most appropriate access, we can reduce the unnecessary procedures, a proxy for how well the access functions and the most important variable identified by patients for their vascular access," she adds.



"Dialysis facilities are no longer evaluated on fistula rates in federal quality programs—a change that supports more collaborative and patient-specific decision making."
— Adam Borden, Americas reimbursement and policy leader with W. L. Gore & Associates

Beyond cost: Economic impacts and quality gains

While the KDOQI guidelines are rooted in clinical best practices, their impact on cost and resource use is also significant. Lok noted that when the appropriate access is chosen at the outset, it can reduce both complications and the overall cost of care.

Using grafts in the right scenarios can lead to the following [9, 12]:

- Fewer access-related procedures
- Lower long-term costs
- Less burden on patients and providers

"There may be economic implications of the guidelines, and as they're becoming implemented, we're going to have more data

to see their potential impact," says Lok. For example, she says studies have shown that the use of early cannulation grafts compared to CVCs is associated with cost savings [12]. "Studies have also demonstrated that a more selective fistula placement, which involves appropriate graft use, actually reduces the cost of access management." [9] The takeaway? "Getting the right access for the right patient at the right time for the right reasons is important because otherwise, you may be using a lot of unnecessary interventions for the wrong access," says Lok.

How payment models are evolving—and what that means for access decisions

The shift toward more individualized vascular access planning is also being reflected in Medicare policy. Adam Borden, Americas reimbursement and policy leader with W. L. Gore & Associates, explains that the Centers for Medicare & Medicaid Services (CMS) has removed outdated incentives from its ESRD Prospective Payment System (PPS) that once reinforced a fistula-first mindset. Dialysis facilities are no longer evaluated on fistula rates in federal quality programs—a change that supports more collaborative and patient-specific decision-making. Scoring now centers on minimizing long-term catheter use.

The Merit-based Incentive Payment System (MIPS), which applies to individual clinicians under Medicare fee-for-service, includes a long-term catheter rate measure within the nephrologist measure set. While participation is optional, if nephrologists choose to report on it, performance is tied to their ability to reduce catheter use.

"These policy changes, combined with the updated KDOQI guidelines, send a clear message: let's provide the most appropriate care for the patient," says Borden. "If clinicians think a graft is the right vascular access to start with, they should be able to do that." Although future alternative payment models are still evolving, current reforms support the clinical flexibility to align vascular access strategies with what's best for the individual.

Conclusion

The KDOQI guidelines represent more than a change in vascular access selection—they signal a broader shift toward patient-centered care in dialysis planning. The fistula-first message was powerful and well-intentioned, but its one-size-fits-all application overlooked the complexity of vascular access needs. Matching the right access to the right patient at the right time is critical.

This newer model is gaining traction as clinicians and kidney teams begin to adopt its principles. Taking the time to understand a patient's access needs is an upfront investment but one that pays off in terms of safety, efficiency and outcomes. As providers seek to improve performance and manage costs, AV grafts are proving to be a viable and clinically appropriate option—particularly when thoughtfully selected as part of the ESKD Life-Plan.

The guidelines are also fueling new research—spanning topics like the impact of CVCs, antimicrobial lock solutions, ultrasound-guided cannulation, AI for vascular access monitoring and long-term outcomes of drug-coated balloons. This growing body of evidence not only validates the shift toward more personalized vascular access planning and management—but also reinforces the ultimate goal to deliver care that is safer, more effective and better aligned with the needs of each patient. ■

The information provided is intended to be general guidance based on current medical practices in the field. The steps described here may not be complete and are not intended to be a replacement for the Instructions for Use (IFU) or the education, training and professional judgment of health care providers (HCP). Licensed HCP remain responsible for making decisions about patient care and the use of medical technologies.

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