



# **ESRD Treatment Choices**

## **Kidney Transplant Learning Collaborative Change Packages**

Kidney Donation and Kidney Utilization Change  
Packages

March 31, 2020

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# The Case for Change in Deceased Kidney Donation and Utilization

## The Challenge

In the United States, approximately 94,000<sup>i</sup> people are on the kidney transplant waitlist. That list has been growing about 3 percent annually, although there were 23,401<sup>ii</sup> kidney transplants in 2019. More candidates are added to the list than removed each year.

The average time on the waitlist is five years.<sup>iii</sup> Every day, approximately 10 people die waiting for a kidney transplant, which equates to over 3,500 deaths per year. This high mortality rate is staggering, yet some 3,500<sup>iv</sup> kidneys in 2019 were recovered and discarded.

To expedite the transition of patients from dialysis to kidney transplant, the Centers for Medicare & Medicaid Services (CMS) is working with Organ Procurement Organizations (OPOs), transplant programs, and donor hospitals to increase the number of patients that receive kidney transplants.

Significant improvement is possible on two tracks:

- Donation – by *increasing* the number of deceased donors and *increasing* the number of kidneys made available for recovery.
- Transplant – by *decreasing* the number of recovered kidneys that are discarded.

**Table 1: Scale of the Kidney Challenge**

<p><b>Patients with Kidney Failure = 661,000<sup>v</sup></b></p> <ul style="list-style-type: none"> <li>• On Dialysis = 468,000</li> <li>• Living with Kidney Transplant = 193,000</li> <li>• Deaths per Year = 47,000</li> </ul>
<p><b>Transplant Candidates on Kidney Waitlist = 94,000<sup>vi</sup></b></p> <ul style="list-style-type: none"> <li>• Added to the kidney waitlist = 41,088 (2019)</li> <li>• Removed from kidney waitlist = 37,913 (2019)               <ul style="list-style-type: none"> <li>○ Died = 3,569 (2019)</li> <li>○ Too sick to Transplant (4,228)</li> </ul> </li> <li>• Increase from 2018 = 3,175</li> </ul>
<p><b>Kidney Transplants = 23,401 (2019)<sup>vii</sup></b></p> <ul style="list-style-type: none"> <li>• Deceased Donor = 16,534 (71%)</li> <li>• Living Donor = 6,867 (29%)</li> <li>• Kidneys Discarded = 3,500 per year (Approx.)</li> </ul>
<p><b>Deceased Donors = 11,152 (2019)<sup>viii</sup></b></p> <ul style="list-style-type: none"> <li>• Brain Death Donors = 8,463 (76%)</li> <li>• DCD Donors = 2,689 (24%)</li> </ul>

Note: DCD = donation after circulatory death

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## National Aims Drive Results

A guiding principle of CMS improvement efforts is that “Aims create systems and systems create results.”<sup>ix</sup> Building on the President’s Executive Order of July 2019,<sup>x</sup> CMS established two national aims that will guide the improvement in kidney donation and transplant communities.

**National Aim 1:** Increase annual growth in the number of deceased donor kidneys transplanted from 5 percent to 15 percent or more nationally by spreading the best practices of OPOs and donor hospitals to routinely recover and place all available kidneys, including those that are traditionally harder to place.

**National Aim 2:** Decrease the current national discard rate of procured kidneys from 20 percent to 15 percent or less by spreading best practices of transplant programs and OPOs that are successfully transplanting all available kidneys.

The first aim calls for an annual increase in deceased donor kidneys transplanted by at least 2,460 (15%) instead of 820 (5%). This would be an increase of at least 1,640 more transplanted kidneys. A total of almost 19,000 deceased donor kidneys would be transplanted in a year rather than 17,200. This improvement would be driven on the donation side of the system with increases in both deceased donation and recovery of kidneys.

The second aim means that, for example, 22,000 recovered kidneys in a year would result in at most 3,300 discarded kidneys (15%) instead of 4,400 (20%). This would be an improvement of 1,100 in reduced discards and would increase kidney transplants by 1,100 annually.

Focusing on the achievement of these two aims, CMS will launch a learning collaborative that will build on the previous work of the Health Resources and Services Administration (HRSA) Organ Donation Collaborative (2003), which was instrumental in hardwiring exceptional practices that have improved organ donation rates for both brain death and donation after circulatory death (DCD). These change packages also build on more recent kidney-focused improvement efforts, such as the HRSA Collaborative Innovation and Improvement Network (COIN), which explored innovative approaches to increasing kidney transplantation with a focus on utilization of DCD with a kidney donor profile index (KDPI) score greater than 50 percent.

## Two Change Packages Share Effective Practices

The new CMS End Stage Renal Disease (ESRD) Treatment Choices (ETC) Kidney Transplant Learning Collaborative will focus on kidney donation and utilization and will foster collaboration between two specific groups. The *Kidney Donation Change Package* is designed to promote collaboration between donor hospitals and OPOs. The *Kidney Utilization Change Package* is designed to promote collaboration between transplant programs and OPOs. The users of each change package are expected to review the strategies and actions outlined in their respective change packages and work collaboratively to implement the strategies to improve their collective performance on the aims.

The two change packages are synergistic. The intent of the collaboration of the donor partnerships (donor hospitals and OPOs) is that they will increase the number of deceased donor kidneys available for transplantations by:

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- ✓ Broadening their definition of an eligible donor (increase denominator of eligible donors).
  - ✓ Increasing the conversion rate of eligible donors (increase number of donor gifts offered).
  - ✓ Increasing the number of kidneys procured.

The intent of the collaboration of the transplant partnerships (transplant programs and OPOs) is that they will decrease the number of discarded kidneys by:

- ✓ Broadening their definition of an acceptable kidney (increase the use of “less-than-ideal” kidneys).
- ✓ Increasing the acceptance rate of kidneys by patients and transplant centers.
- ✓ Increasing the number of active waitlist candidates who are “transplant ready.”
- ✓ Increasing the number of kidney transplantations for eligible patients.

## How to Use the Change Packages

As mentioned above, the expectation is that the donor hospitals and transplant programs collaborate with OPOs to adopt actions suggested in the change packages that are necessary to achieve the national aims. The change packages do not identify which organization is responsible for the specific action. The accountability for those actions is the product of the collaboration between organizations. The Kidney Donation and Kidney Utilization Change Packages are each organized with a summary of three main strategies supported by specific outcomes to be generated for the strategy. The following section contains action items for the strategies and desired outcomes that were surfaced from site visits to high-performing organizations and reviewed by a national Technical Expert Panel.

The following actions are suggested for implementation of the change packages:

1. **Start with a Bang!** Convene and publicize a “Kidney Kickoff” with key leadership from the hospital and the OPO to review the change package and assess the readiness of both organizations to begin activating one or more of the highly effective practices. The transplant program and the OPO would utilize the same process to initiate action.
2. **Quantify Success.** Develop the bold aims for each organization that will drive and define success in contributing to the achievement of the national aims.
3. **Put the Systems in Place.** Create the internal structure and accountability necessary to implement the change package and produce results.
4. **Share the Results.** Share the bold aims and results with key stakeholders (staff, Boards, medical professionals, community leaders, etc.).

The transplant community has come together in support of this effort. The information contained in the change packages reflects the community’s commitment and provides a pathway to procure kidneys for every person who needs one. Support for this effort can continue through participation in the upcoming CMS ETC Kidney Transplant Learning Collaborative.

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## Kidney Donation Change Package

### Three Defining Strategies That Increase the Number of Kidneys Available to Active Candidates by Increasing Kidney Donation and Recovery

1. **Robust Leadership.** Donor hospital executive leadership accepts ownership of the donor program and commits to a partnership with the OPO to establish benchmark targets for organ donation and kidney recovery.
  - A. OPO and its donor hospital network executives adopt bold aims guided by data and national priorities to improve donor potential and kidneys recovered.
  - B. OPO and its donor hospital network establish a culture of accountability for results and continuous quality improvement.
  - C. OPO and its donor hospital network charter and deploy Interdisciplinary Donor Councils (IDC) to advance donation, improve the kidney donation process, and increase the number of kidneys donated.
2. **Right System.** OPO and its donor hospital network hardwire “donation system” practices that expand the opportunity for donations and ensure high donor potential and high kidney availability. Partners should seek best-in-class performance as established benchmarks.
  - A. OPO and its donor hospital network adopt the top nine recognized principles that guide effective practice to increase organ donation (see Notes to the Kidney Donation Change Package on pages 8–9 for further illustration of items).
  - B. Each donor hospital with its OPO establishes a robust donor kidney management plan to ensure kidney availability.
3. **Engaged Community.** OPO and donor hospitals have the Donor Service Area (DSA) community at every level supporting organ donation and kidney transplantation as a solution to the health crisis of widespread kidney failure.
  - A. Give organ donation and kidney donation a community-wide presence in the DSA.
  - B. Hardwire the story and methods of donation and kidney transplantation into the curriculum of healthcare professional education with a heavy focus on hospital personnel who are directly involved in the organ donation process.
  - C. Systematically train and update hospital personnel, ensuring leaders, physicians, nurses, and all critical care providers are knowledgeable and prepared for their roles in the donation process and instinctively use donation practices and protocols.

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## Kidney Donation Change Package – Action Items

1. **Robust Leadership. Donor hospital executive leadership accepts ownership of the donor program and commits to a partnership with the OPO to establish benchmark targets for organ donation and kidney recovery.**
  - A. OPO and its donor hospital network executives adopt bold aims guided by data and national priorities to improve donor potential and kidneys recovered.
    - i. Continually lead OPO/donor hospital strategic planning throughout the year and goal setting activities for donations and kidney recovery with a focus on kidney failure and mitigating the waitlist crisis.
    - ii. Establish a shared philosophy of the approach to donation between the donor hospital and OPO (i.e., “Zero-missed donation opportunities,” “Every organ, every time,” “Every referral, every time”).
    - iii. Set bold aims based on national, regional, and DSA data and high-performing OPOs/donor hospitals for donation (specifically for donation after brain death and donation after circulatory death), conversion rates, kidneys available for recovery, and number of kidneys recovered.
    - iv. Strategically align OPO and donor hospital resources that ensure the “donation system” functions optimally.
  - B. OPO and its donor hospital network establish a culture of accountability for results and continuous quality improvement.
    - i. Hold regular meetings between donor hospital leadership and OPO leadership to review performance data on bold aims and ensure an increase in the number of kidneys recovered.
    - ii. Include bold aims in the donor hospital and OPO strategic plan performance measures.
    - iii. Ensure policies, protocols, and practices are focused on measurable goals with continual tracking/trending of donation metrics, and compare performance against other similar hospitals and local, regional, and national benchmarks.
    - iv. Solicit and utilize feedback about case activity to optimize the donation experience for all stakeholders.
  - C. Donor hospitals charter and deploy Interdisciplinary Donor Councils (IDC) to advance donation, improve the kidney donation process, and increase the number of kidneys donated.
    - i. Donor hospital sets up and staffs an Interdisciplinary Donor Council (IDC) to support donor hospital and OPO efforts to identify potential donors, maximize family support and communication, and optimize the availability of organs for transplantation.
    - ii. Donor hospital ensures that IDC has representation from all stakeholder disciplines including (but not limited to) nephrologists and other physicians, critical care, palliative care, social work, executive leadership, finance, and any other champions for donation.

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- iii. Donor hospital empowers the IDC to support programming and OPO access, ensuring that staff are educated on protocols. Facilitate OPO introductions/access to hospital forums/committees.
  - iv. Donor hospital executives and/or senior leadership actively participates in IDC and donor-related committees.

**2. Right System. OPO and its donor hospital network hardwire “donation system” practices that expand the opportunity for donations and ensure high donor potential and high kidney availability. Partners should seek best-in-class performance as established benchmarks.**

- A. OPO and its donor hospital network adopt the top nine recognized principles that guide effective practice to increase organ donation (see Notes to the Kidney Donation Change Package on pages 8–9 for further illustration of items).
  - i. Honor the first-person authorization for donation without exception.
  - ii. Use broad clinical triggers (i.e., all patients on ventilators and all circulatory deaths) and adopt a policy of timely hospital referral to OPO.
  - iii. Streamline the referral process between the OPO and the hospital.
  - iv. Adopt OPO rapid (two-hour) and on-site (where practical) response to referrals from donor hospitals for every potential donor scenario.
  - v. Provide aggressive clinical care/donor management for potential donors, ensuring the opportunity to donate is preserved.
  - vi. Develop “cues” from the family to initiate timely approach for donation.
  - vii. Deploy OPO staff as trained designated requestors.
  - viii. Provide unconditional support to the family.
  - ix. Ensure donor hospital clinicians and OPO staff are organized and trained to provide the potential donor family with consistent messaging in all phases of the critical care process.
- B. Donor hospital and OPO establish a robust donor kidney management plan to ensure kidney availability.
  - i. OPO and donor hospital clinicians agree to utilize the broadest national definitions of an “acceptable kidney” (e.g., acute kidney injury [AKI] kidneys, hepatitis C kidneys, HIV+ kidneys) for OPO and hospital clinicians to determine appropriate donations.
  - ii. Donor hospitals use nephrologist to optimize kidney function and availability.

**3. Engaged Community. OPO and donor hospitals have the Donor Service Area (DSA) community at every level supporting organ donation and kidney transplantation as a solution to the health crisis of widespread kidney failure.**

- A. Give organ donation and kidney donation a community-wide presence in the DSA.
  - i. Participate in community events. Work with high schools, faith-based agencies, first responders, local businesses, and other community organizations to make donation the default.



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- ii. Build partnerships with the Department of Motor Vehicles and local and state law enforcement to create awareness related to donor designation from an early age.
- B. Hardwire the story and methods of donation and kidney transplantation into the curriculum of healthcare professional education with a heavy focus on hospital personnel who are directly involved in the organ donation process.
- i. Provide current methods, practices, and rationale related to kidney donation to schools of medicine and nursing, residency programs, and professional associations.
  - ii. Train clinical students and residents on how to explain “brain death” and “circulatory death.”
  - iii. Provide clinical students instruction on the scale and urgency of the kidney failure crisis, dialysis risks and cost, and transplantation as the best solution.
- C. Systematically train and update hospital personnel, ensuring leaders, physicians, nurses, and all critical care providers are knowledgeable and prepared for their roles in the donation process and instinctively use donation practices and protocols.
- i. Make donor hospital staff aware that the OPO is the right “designated requestor” and collaborate to determine who will be involved in the request process and what to listen for during conversations with families.
  - ii. Provide clinical peer-to-peer educational opportunities (e.g., physician to physician, critical care RN to critical care RN) by using kidney donation champions from other organizations.
  - iii. Make clinical staff aware of and use “transitional language” to introduce family care coordinators/OPO staff at the right time for the family.
  - iv. Secure a significant role in new donor hospital staff orientation and train staff on donor philosophy, policies, and practices.
  - v. Utilize “Connect to Purpose” speakers (such as donor families and kidney transplant recipients) in departmental meetings and public events to build an understanding of kidney donation.
  - vi. Close the loop with donor (critical care or hospital) staff. Provide a report (e.g., “hero outcome memorandum”) for all patients who made an organ donation. Share with administration and all departments that cared for the patient.

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## Notes to the Kidney Donation Change Package

### Top Nine Recognized Principles That Guide Effective Practice to Increase Organ Donation

1. **Honor the first-person authorization for donation without exception.**
  - ✓ Donor hospital develops a donation policy that includes a plan for escalation in addressing scenarios where the family is adamantly opposed to donation in the presence of a legal gift document.
  - ✓ Donor hospital supports the OPO in all cases where there is organ donor designation, ensuring the intention of the decedent to donate is honored and families supported.
2. **Use broad clinical triggers (i.e., all patients on ventilators and all circulatory deaths) and adopt a policy of timely hospital referral to OPO.**
  - ✓ Hospital and OPO collaborate to fine-tune language for referral triggers.
  - ✓ Hospital and OPO provide comprehensive hospital-wide education, ensuring staff know when to notify the OPO. Use clinical triggers to define standards of practice for “timely referral” of potential organ donors.
  - ✓ Hospital and OPO systematically and periodically review data and adjust the triggers where necessary.
3. **Streamline the referral process between OPO and hospital.**
  - ✓ Ensure operational efficiencies are in place that minimize the length of time hospital staff are on the telephone at the time of initial referral call/notification.
  - ✓ Utilize remote access to electronic medical record (EMR) to reduce the amount of time on the phone with nurses calling in referrals.
4. **Adopt OPO rapid (two-hour) and on-site (where practical) response to referrals from donor hospitals for every potential donor scenario.**
  - ✓ Use the visit to perform effective surveillance for potential donors by developing relationships with donor hospital staff.
  - ✓ Invite the OPO to attend patient rounds.
5. **Provide aggressive clinical care/donor management for potential donors, ensuring the opportunity to donate is preserved.**
  - ✓ Ensure the establishment of a Catastrophic Brain Injury Guideline (CBIG) in the hospital.
  - ✓ Use evidence-based practices to provide optimal critical care through the end of life.
  - ✓ Ensure the hospital’s DCD policy and practices are aligned with the OPO practice.
  - ✓ Establish standards of practice and procedures for stabilization of potential donors.
  - ✓ Ensure that standing orders for organ donation after brain death and DCD are fully integrated into routine hospital order sets.
  - ✓ Use nephrologist to optimize kidney management.

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**6. Develop “cues” from the family to initiate timely approach for donation.**

- ✓ The family holds no hope for survival.
- ✓ Brain death has been declared.
- ✓ A decision was made to limit/withdraw life-sustaining therapy that would compromise donation opportunities.
- ✓ The family brings up donation.
- ✓ Pulmonary or hemodynamic instability with cardiac arrest is imminent.
- ✓ Donation is brought up by the care team (independent of OPO).

**7. Deploy OPO staff trained as designated requestors.**

- ✓ Jointly develop and implement a plan for how the donation discussion will go.
- ✓ Hold after action reviews (AARs), or debriefing sessions ideally within 1 week of all potential organ donor cases, regardless of outcome.

**8. Provide unconditional support to the family.**

- ✓ Develop a trusting relationship with the patient’s family to preserve the opportunity for kidney donation.
- ✓ Effectively communicate to the patient’s family that “all that could be done has been done” in the best interest of the patient.
- ✓ Help the family understand the meaning of “brain death” or “circulatory death” and share medical results and brain imaging as needed.
- ✓ Engage palliative care teams to prepare the family for end of life decision-making.
- ✓ Define and provide an appropriate environment for the consent conversation.
- ✓ Establish expectations with the family around the time needed to recover organs and work with the family on how to say goodbye to their loved one.
- ✓ Honor the donor in a manner consistent with the family’s wishes (including Honor Walks, Donate Life Flag)

**9. Donor hospital clinicians and OPO staff are organized and trained to provide the potential donor family with consistent messaging in all phases of the critical care process.**

- ✓ Ensure the attending physician is involved in guiding/implementing pre- and/or post-donor management strategies.

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## Kidney Utilization Change Package

### Three Strategies That Increase Kidneys Transplanted While Reducing Kidneys Discarded to the Lowest Level Possible

1. **Robust Leadership.** OPO and transplant program executive leadership accept ownership of the program and commit the partnership to benchmark targets for outcomes in kidney donation acceptance, transplantation, and avoidance of discards.
  - A. OPO sets bold aims on the number and types of kidneys transplanted and discard rates for its transplant network and shares the commitment with its transplant programs, creating a framework for joint accountability for outcomes.
  - B. OPO and transplant programs establish accountability for increasing kidney transplants and avoiding kidney discards through continuous quality improvement.
  - C. OPO and transplant programs hire their respective staff and manage their operations to function as a high-performing transplant team accountable for achievement of bold aims.
2. **Right System.** OPO and transplant programs follow highly effective practices that ensure efficient kidney acceptance, transplantation of all accepted kidneys, and lowest possible rates of kidney discards.
  - A. Transplant programs, dialysis centers, and community nephrologists are ready to manage patients as candidates for the active waitlist.
  - B. OPO and transplant program operations are ready to process offers and acceptances at any time or day.
  - C. “Active” waitlist candidates are always “transplant ready”; the transplant program is ready to accept a kidney when offered.
  - D. Transplant programs are ready to process each type of “less-than-ideal” kidney with proactive protocols for each case.
  - E. Transplant program decision-makers are prepared to manage risk and accept offers. OPO and transplant programs standardize the decision-making process for accepting a kidney offer.
  - F. OPO drives its network to engage transplant programs to achieve their lowest possible kidney discard rate. (Note: A zero-discard rate is not the target as it may discourage recovery of “less-than-ideal” kidneys.)
3. **Engaged Community.** OPO and its transplant programs have every level of the community behind efforts to increase kidney transplantation as a solution to widespread kidney failure.
  - A. Patients and their families understand the benefits and trade-offs between dialysis and transplantation with their providers helping them set realistic expectations.

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- B. OPO and transplant program teams are prepared and current in the next generation of evolving kidney transplant knowledge and processes and the increasing demand for kidneys.
  - C. Stimulated and guided by the OPO, and collaborating with transplant programs, the local health care community is actively involved in the campaign to increase kidney transplantation.

## Kidney Utilization Change Package — Action Items

1. **Robust Leadership. OPO and transplant program executive leadership accept ownership of the program and commit the partnership to benchmark targets for outcomes in kidney donation acceptance, transplantation, and avoidance of discards.**
  - A. OPO sets bold aims on the number and types of kidneys transplanted and discard rates for its transplant network and shares the commitment with its transplant programs, creating a framework for joint accountability for outcomes.
    - i. Leadership of OPO and transplant program holds annual strategic planning and goal-setting events for kidney transplantation, and sets aims that are measurable and included in the overall hospital and OPO strategic plans.
    - ii. Transplant program and OPO network aims are based on national, regional, and OPO network data on high-performing programs for kidney transplants and discards.
    - iii. Transplant program and OPO establish (a) a vision to relentlessly pursue the utilization of all kidneys and (b) a culture where all kidney offers are reviewed with the intent to accept. Incorporate the belief that there is “A right person for every recovered kidney.”
  - B. OPO and transplant programs establish accountability for increasing kidney transplants and avoiding kidney discards through continuous quality improvement.
    - i. The OPO and transplant program leadership meet at least quarterly to review and take action to improve performance on bold aims and share the results with key stakeholders (e.g., Boards, medical staff, dialysis centers, community leaders, etc.).
    - ii. Network leadership and transplant teams use three types of metrics to monitor, understand, and improve performance on aims (See Page 16 Measurement Supporting Achievement of Aims):
      - a. Measures for the donor community (OPO and donor hospitals).
      - b. Measures for the transplant community (OPO and transplant programs).
      - c. OPO-specific measures (OPO Donation and Transplant Network).
    - iii. Transplant teams formally follow up on declined kidneys as an opportunity to improve the understanding of the acceptance criteria

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- between transplant program decision-makers and OPOs and influence changes in practice.
  - iv. Transplant teams review organ acceptance patterns on a routine basis and identify missed opportunities for kidney utilization. (Identify variations in acceptance between team members and any negative outcomes for patients overlooked).
  - v. During quality improvement meetings, transplant program seizes opportunities to incrementally increase the risk tolerance for “less-than-ideal” kidneys.
- C. OPO and transplant programs hire their respective staff and manage their operations to function as a high-performing transplant team accountable for achievement of bold aims.
- i. Cultivate deep partnership relationships between OPO and transplant programs within and outside the Donor Service Area (DSA).
  - ii. Use proven recruitment and retention strategies to build the right team.
    - a. Recruit and retain clinicians who have the philosophy of care and risk tolerance that aligns with the expectations of the transplant program/OPO.
    - b. Recruit and retain physicians with the commitment and technical expertise to manage the complexities associated with the use of “less-than-ideal” kidneys.
  - iii. Provide a full onboarding process with expectations of ongoing education and regular evaluation of competencies and performance and continued training on new techniques and technologies.
  - iv. Recruit and retain a diverse and talented workforce utilizing proven human relations (HR) strategies and effective practices for on-boarding, off-boarding, growing talent, and leadership development.
    - a. Use panel interviews, including peer-to-peer interviews.
    - b. Implement a Division of Culture for new hires to find the right person and the right fit for the team.
2. **Right System. OPO and transplant programs follow highly effective practices that ensure efficient kidney acceptance, transplantation of all accepted kidneys, and lowest possible rates of kidney discards.**
- A. Transplant programs, dialysis centers, and community nephrologists are ready to manage patients as candidates for the active waitlist.
- i. Transplant programs monitor the time it takes to get patients on the transplant program waitlist from their initial referral from their community nephrologist (the time it takes for the evaluation process and testing to be completed before the patient is waitlisted).
  - ii. Transplant programs regularly inform dialysis centers of the patient’s status and when and what tests are needed.

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- B. OPO and transplant program operations are ready to process kidney offers and acceptances at any time of day.
- i. Transplant program organizes and maintains staffing 24/7, 365, with no variances in capability based on the day of the week or time of day.
  - ii. Transplant program coordinator is paired with a physician (e.g., nephrologist) to manage waitlist patients (to remove clinical barriers that prevent patients from being transplant ready).
  - iii. Transplant program and OPO establish dedicated points of contact to facilitate the timely and accurate flow of information between the organizations; provide direct access between transplant decision-makers and OPO personnel through the sharing of phone numbers, email addresses, call schedules, etc.
- C. “Active” waitlist candidates are always “transplant ready”; the transplant program can accept a kidney when offered.
- i. Transplant program manages the waitlist so that an “active” patient can always accept a kidney. (Active waitlist is actionable.)
  - ii. Transplant program ensures that the “active” patients have the appropriate support and are physically and mentally ready to accept a kidney; they understand the transplant process and the results expected (including the possibility of delayed graft function).
  - iii. Transplant program maintains a large pool of active candidates and “know the candidates well” to increase possibility of kidney placement.
  - iv. Transplant program uses the hospital EMR to document and ensures that all candidates’ required evaluation testing is complete and to prevent duplicative testing.
- D. The transplant programs are ready to process each type of “less-than-ideal” kidney with proactive protocols for each case.
- i. Discuss utilization of “less-than-ideal” kidneys as an option during the evaluation and continuously while the candidate is on the waitlist; approach all patients with options.
  - ii. Provide a full spectrum of transplant possibilities, and follow up, including the use of high KDPI kidneys, two high KDPI kidneys, PHS, increased risk, hepatitis C virus (HCV+), etc.
  - iii. Frequently revisit consent for the use of “less-than-ideal” kidneys if not obtained during evaluation.
  - iv. Set expectations of delayed graft function (DGF) with candidates and discuss the dialysis implications; present DGF as a transplant expectation and success.
  - v. Develop and test scenarios where the strategy is to use a series of transplants with “less-than-ideal” kidneys to keep patients off dialysis and extend life expectancy.

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- E. Transplant program decision-makers are prepared to manage risk and accept offers. OPO and transplant programs standardize the decision-making process for accepting a kidney offer.
    - i. Transplant program sets up “kidney offer filter criteria in DonorNet” that reflect actual transplant program practice and stewardship of the kidney to avoid delays from receiving offers that will never be accepted.
    - ii. Transplant program creates predictable organ offer acceptance behavior across transplant program team members.
    - iii. Transplant program adopts a philosophy of accepting the offer. (Incorporate checks and balance into decision-making, such as it only takes one person to accept the offer, but two people to reject the offer.)
    - iv. Transplant program has the intake team prepare a timely, complete, and objective “offer package” for physician review. (Work with physician decision-makers on what best package content looks like.)
  
  - F. OPO drives its network to engage transplant programs to achieve their lowest possible kidney discard rate. (Note: A zero-discard rate is not the target as it may discourage recovery of “less-than-ideal” kidneys.)
    - i. Look beyond the KDPI to determine if a kidney will work for a patient. Review all clinical data (i.e., pictures, pump-data, biopsies) to ascertain the whole picture of the organ offer; do not rule out acceptance based on one number.
    - ii. Monitor and review impact of DGF on hospital length of stay, use of dialysis, and cost implications; monitor the increase in DGF patients who receive “less-than-ideal” kidneys.
    - iii. Actively pursue and utilize kidneys from donors over 60 years old for utilization in patients over 60 years old.

3. **Engaged Community. OPO and its transplant programs have every level of the community behind efforts to increase kidney transplantation as a solution to widespread kidney failure.**

- A. Patients and their families understand the benefits and trade-offs between dialysis and transplantation with their providers helping them set realistic expectations.
  - i. Provide continuous education on kidney transplantation and related options (e.g., high KDPI kidneys) to patients and their families.
  - ii. Develop scripts to standardize patient education including a focus on post-transplant events and possibilities (e.g., likelihood of dialysis) to ensure patient expectations are realistic.
  - iii. Regularly communicate information and messages about “less-than-ideal” kidneys in different formats (in-person, written, video, web-based, etc.) and allow patients to take educational materials home.
  - iv. Provide at least one monthly contact with patients/families to provide ongoing education while on the kidney waitlist.



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- B. OPO and transplant program teams are prepared and current in the next generation of evolving kidney transplant knowledge and processes and the increasing demand for kidneys.
- i. Transplant program ensures the understanding of transplant practices and policy through unit-specific education.
  - ii. OPOs have a teaching culture with dedicated staff accountable to provide education and professional development to all involved personnel and organizations in an energizing and measurable way.
  - iii. OPO and transplant program hospitals use cross organizational training programs to put faces with names and foster personal relationships with those working to successfully transplant kidneys.
- C. Stimulated and guided by the OPO and collaborating with transplant programs, the local health care community (especially primary care physicians and community nephrologists) is actively involved in the campaign to increase kidney transplantation.
- i. Healthcare professionals, as they participate in local, state, and national professional events, learn about transplant opportunities from national leaders.
  - ii. Dialysis centers position dialysis not as an end therapy, but rather as “a bridge to kidney transplantation.”
  - iii. Community nephrologists participate in and streamline the referral process for kidney transplantation.
  - iv. OPOs and transplant programs have forums and events for sharing effective practices, innovations, and ideas around reducing kidney discards and changing practice.

## Measurement Supporting Achievement of Aims

With the focus on the two national aims, large-scale improvement initiatives must be driven by data. OPOs, donor hospitals, and transplant programs are being asked to translate these national aims into bold, measurable targets that become part of the organizations' management systems. Applying these packages will generate measures and targets that lead to achievement of the aim. All these measures become part of the organizations' day-to-day management practices.

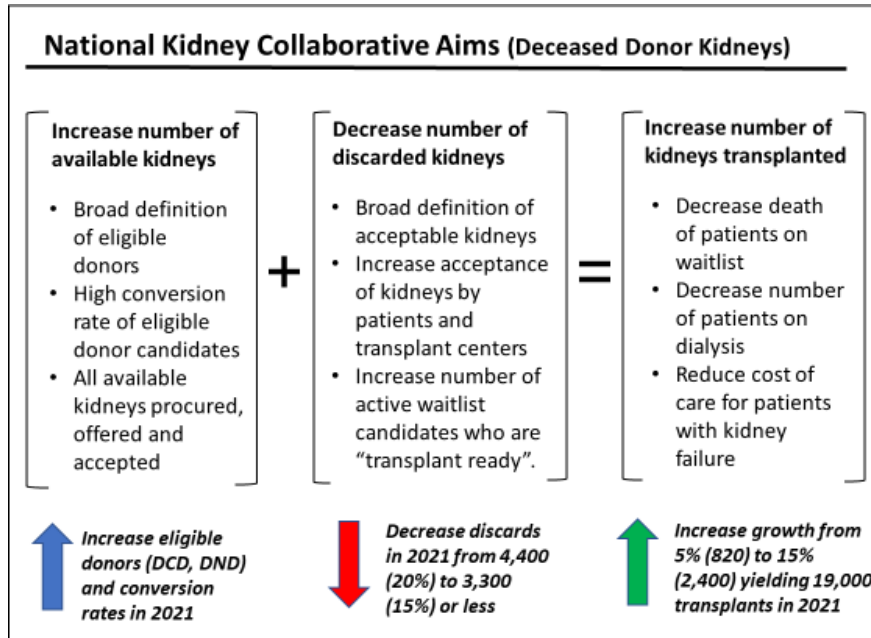
The effort to improve kidney donation and transplantation is guided by two national aims:

- ✓ Increase annual growth in the number of deceased donor kidneys transplanted from 5 percent to 15 percent or more.
- ✓ Decrease the current national discard rate of procured kidneys from 20 percent to 15 percent or less.

The aim metrics require data that are currently available to the OPO, donor hospitals, and transplant programs. The intended improvements can be tracked over time and measured against targets. Each OPO and its donation and transplant networks can contribute to achieving these beneficial outcomes.

Simple arithmetic and logic can be used to realize these aims, as illustrated in Figure 1. If more kidneys are recovered and fewer are discarded, the number of kidney transplants can be increased. The aims and the change packages bring into play a significant number of causal drivers that produce intentional outcomes.

**Figure 1: National Kidney Collaborative Aims**



To realize these aims, the kidney donation and transplant change packages describe what can be done at several stages in going from an eligible death to successful kidney transplants. Those stages include designated donation requestors, kidney recovery, kidney management, offers and acceptance, waitlist management, candidate preparation, and transplantation. All these steps must be managed and can be supported with data. Table 2 includes a list of the recognized measures

that are available through the Organ Procurement and Transplant Network (OPTN)/Scientific Registry of Transplant Recipients (SRTR). Participants are encouraged to review the applicable measures, establish consistent understandings of their meaning, and create meaningful targets that move collectively toward the national aims.

**Table 2: Recognized Measures Used to Manage the Kidney Donation, Recovery and Transplant Process**

<b>A. Measures for the Donor Community (OPO and Donor Hospitals)</b>
<p>General measures for OPO and donor hospitals</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number of donors (understand the true denominator)</li> <li><input type="checkbox"/> Donation rate (actual donors/potential donors)</li> <li><input type="checkbox"/> Referral rate</li> <li><input type="checkbox"/> BD and DCD proportion of donors</li> <li><input type="checkbox"/> Observed/expected kidney utilization (growth in kidneys available from prior year)</li> <li><input type="checkbox"/> Number of available kidneys (rates, trends)</li> <li><input type="checkbox"/> Number of recovered kidneys</li> </ul>
<b>B. Measures for Transplant Community (OPO and Transplant Program)</b>
<p>General measures for OPO and transplant programs</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number of kidneys transplanted and number not transplanted</li> <li><input type="checkbox"/> Number of offers per kidney accepted, not accepted</li> <li><input type="checkbox"/> Number of offers per kidney accepted and transplanted</li> </ul> <p>Transplant program kidney management measures</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number on the waitlist (trends)</li> <li><input type="checkbox"/> Number and proportion of active kidney candidates on the waitlist</li> <li><input type="checkbox"/> Time on the waitlist (average, range, distribution)</li> <li><input type="checkbox"/> Number of offers candidates receive</li> <li><input type="checkbox"/> Number of waitlist deaths or removals</li> <li><input type="checkbox"/> Number of offers for candidates who died or were removed from waitlist</li> </ul> <p>Transplant program performance measures</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number of accepted organs transplanted</li> <li><input type="checkbox"/> Number of accepted kidneys not transplanted (transplant center discard)</li> </ul>
<b>C. OPO-Specific Measures (Donation and Transplant Networkwide)</b>
<p>Measures used to track contribution to the national kidney transplant aims</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Number of kidneys recovered and transplanted</li> <li><input type="checkbox"/> Number of kidneys recovered and not transplanted</li> <li><input type="checkbox"/> Number of accepted kidneys transplanted</li> <li><input type="checkbox"/> Number of accepted kidneys not transplanted (discarded kidneys)</li> </ul>

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