

# Building an Ideal Quality Metric for ESRD Health Care Delivery

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## Introduction

The utilization of quality metrics to monitor provider performance has increased substantially within the United States health care system over the past decade. Virtually all health care providers are now held accountable by regulatory agencies for patient outcomes, patient satisfaction, and established best practices. These metrics have been a key attribute of health care reform to promote decisions that positively affect patient health. Numerous studies have examined the influence of report cards on outcomes, clinician and patient behavior, and financing in various health care contexts. At a broad level, empirical evidence shows both significant benefits associated with quality oversight and unintended consequences that may detrimentally affect health care delivery (1,2).

The implementation of report cards in regulatory oversight processes is perhaps no more prominent than in the ESRD program. In particular, regulatory agencies generate publically available report cards for health care organizations that directly treat or affect prognoses of patients with ESRD that have significant ramifications on public perception of institutional performance and can affect clinical and patient decision making. In this commentary, we discuss the components of the current report cards for ESRD providers and potential challenges and misalignment between the metrics used for quality evaluation for different providers that can adversely affect patient care. We also propose the concept of an ideal report card with the intent to construct a measure that better aligns incentives between different providers to optimize outcomes for the ESRD population.

## Current Quality Oversight for Patients with ESRD Providers

Quality reports for organizations that affect outcomes of patients with ESRD are highly visible in the public domain. These publicly available data are directly used for regulatory review, reimbursement, and contracting by private payer organizations. The designation of poor or exceptional performance for providers may significantly influence the reputation and financial health of providers and undoubtedly, can affect patient choice of dialysis facility and transplant center. In this commentary, we consider three types of ESRD care

delivery organizations, namely dialysis centers, organ procurement organizations (OPOs), and transplant centers. Clearly, these institutions do not represent all providers for the ESRD population (or more broadly, the pre-ESRD population), but we focus on these providers on the basis of their direct effect on outcomes of patients with ESRD and the well established report cards used to evaluate their performance.

The specific metrics that are currently published and used for rating the quality of ESRD providers are listed on Table 1. For dialysis centers, numerous metrics are available on the Dialysis Facility Compare website ([www.medicare.gov/dialysisfacilitycompare](http://www.medicare.gov/dialysisfacilitycompare)) that assess both processes of care and patient outcomes by facility. In addition to general characteristics and contact information for dialysis centers, individual clinical parameters and outcomes are available along with a composite five-star rating, in which facilities are compared on a normative reference. As a part of the Centers for Medicare and Medicaid Services (CMS) Quality Incentive Program, these performance metrics may affect up to 2% of reimbursement for dialysis providers (3).

OPO performance metrics are published publicly by the Scientific Registry of Transplant Recipients (SRTR; [www.srtr.org](http://www.srtr.org)) on a biannual basis (4). These data are used by both the CMS and the Membership and Professional Standards Committee (MPSC), which is charged with evaluating whether OPOs remain in compliance for the Organ Procurement and Transplantation Network (OPTN) and the United Network for Organ Sharing. OPOs are held accountable by several metrics, including a new donor yield measure evaluating the number of organs transplanted per donor after adjustment for donor characteristics (5).

Transplant centers also receive biannual Program-Specific Reports by the SRTR, which include descriptive data about the recipient and donor populations at each center along with several risk-adjusted measures outlined in Table 1. The metrics that are primarily used for quality oversight for transplant centers are risk-adjusted 1-year graft and patient survival for each solid organ recipient cohort. On the basis of the Conditions of Participation by the CMS, OPOs and transplant centers that fail to meet quality thresholds may be required to enter into a quality improvement program including a Systems Improvement Agreement

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**Table 1. Quality metrics currently used to assess providers for patients with ESRD**

Dialysis Centers	Organ Procurement Organizations	Transplant Centers
Patient satisfaction <sup>a</sup>	Standardized donation rate ratio <sup>b</sup>	Transplant rate <sup>c</sup>
Anemia management <sup>b</sup>	Donations per 100 eligible deaths <sup>b</sup>	Waitlist mortality <sup>c</sup>
Standardized transfusion ratio	Adjusted organ yield <sup>b</sup>	1 yr Adjusted graft survival <sup>d</sup>
Standardized infection ratio <sup>b</sup>	Organ yield for research <sup>b</sup>	1 yr Adjusted patient survival <sup>d</sup>
Dialysis adequacy <sup>b</sup>	Adjusted organ yield by organ <sup>b</sup>	3 yr Adjusted graft survival <sup>d</sup>
Percentage of AV fistula utilization <sup>b</sup>	Transplanted organs stratified by donors after cardiac and brain death <sup>b</sup>	3 yr Adjusted patient survival <sup>d</sup>
Mineral and bone disorders <sup>b</sup>		
Standardized hospitalization ratio <sup>b</sup>		
Readmission rate <sup>b</sup>		
Standardized mortality rate <sup>e</sup>		

AV, arteriovenous.  
<sup>a</sup>On the basis of survey periods and updated semiannually.  
<sup>b</sup>On the basis of annual assessments.  
<sup>c</sup>On the basis of 1 yr of patients on the waiting list at transplant centers.  
<sup>d</sup>On the basis of a two and one half cohort of patients transplanted at centers.  
<sup>e</sup>On the basis of a 3-yr assessment.

and potentially lose government funding on the basis of repeated low performance (6). Transplant centers are also evaluated by the MPSC/OPTN on the basis of adjusted 1-year graft and patient survival using different statistical evaluation of 1-year outcomes than those used by the CMS (7,8).

### The Problems of Misaligned Incentives

One of the most notable facets of current quality oversight is that there are no existing metrics that extend beyond individual provider. Because the health care needs of patients with ESRD are rarely met by a single provider, it is important that high-quality delivery of care is integrated and coordinated and that information is effectively shared between providers with the paramount goal of optimizing patient outcomes. Thus, forms of misaligned quality metrics may occur if they do not promote or even dissuade cohesive care between providers or if there is misalignment between the measured performance of the individual provider and the optimal care for patients. In this commentary, we discuss examples in which quality metrics for specific ESRD care delivery organizations are misaligned and may negatively affect patient outcomes.

We consider the current metrics used for dialysis programs and the discordance with promoting cohesive patient care delivery for potential transplant candidates. Although metrics account for measurable variations in the acuity of patients on dialysis, the system of oversight does not incentivize expeditious referral of patients to transplantation. In fact, patients with ESRD who are most likely to perform well on certain quality measures for dialysis centers (e.g., reduced cardiovascular events and mortality risk) may also include the ideal transplant candidates (9–11). This issue is coupled with relatively new forms of bundled payments, such as those for patients with ESRD, that are also cost effective (*i.e.*, requiring the least interventions) for dialysis centers and may be the most viable for rapid placement for

transplant evaluation. This is problematic, because dialysis centers are placed in an unfortunate circumstance in which patients who are most likely to improve their measured quality and financial performance are also commonly the most important to refer to a transplant program (and subsequent outcomes are no longer attributable to the dialysis center). Thus, there is a glaring gap in current quality metrics used for dialysis programs to incentivize rapid placement of patients as transplant candidates and/or living donor transplant recipients. Furthermore, given the robust evidence indicating the improved life expectancy, quality of life, and cost-effectiveness of transplantation relative to maintenance dialysis, the lack of incentives to expeditiously promote transplantation may place optimal measured dialysis facility quality at odds with the optimal treatment for certain patients (10,12). Although there is current documentation that patients on dialysis must be educated about transplantation, this form of education has been shown to be variable and is not consistently administered or understood by patients (13). Moreover, there is wide heterogeneity in standardized transplantation rates of dialysis centers, rendering the need to incorporate incentives for dialysis centers to identify potential transplant candidates an imperative (14,15).

Another example of misaligned incentives is between OPOs and transplant centers. The primary metrics currently used to evaluate transplant centers are 1-year patient and graft survival. Although these metrics are risk adjusted for numerous recipient and donor characteristics, there is compelling evidence that centers reduce transplant rates after low-performance evaluations, potentially illustrating reluctance to accept relatively higher-risk organs and patients (16–18). Centers also have a reduction of patients with private payer insurance associated with receiving lower performance evaluations, suggesting loss in contracts and financial benefits to centers (19). Thus, despite the efficacy (and cost-effectiveness) of kidney transplantation, centers may not be as aggressive accepting relatively

higher-risk patients or donors on the basis of potential consequences associated with low performance metrics. OPOs are evaluated on the basis of donation rates and donor yield (organs transplanted per donor). Although identification of deceased donors and procurement of organs that are viable for transplantation are critical roles of OPOs, organs that are not ultimately accepted for transplantation by centers (*i.e.*, discarded) may detrimentally affect OPO metrics. Thus, the aggressiveness of OPOs to procure organs from certain donors in a risk-averse transplant environment may be tempered. Alternatively, if OPO metrics were designed in such a way to incentivize accessing all available deceased donor organs and if transplant centers were not reluctant to accept organs over concerns for their effect on measured performance, the rate of transplantation may significantly increase.

The importance of aligned incentives is paramount to reinforce cohesive care between providers. Most importantly, the lack of coordination among providers may hinder processes of care and place quality metrics at odds with optimal patient outcomes. Given that there is substantial evidence that quality report cards alter provider behavior, incentives that only targets outcomes in a narrow window of care may run counter to what is most impactful to patients. From a patient’s perspective, achieving the optimal outcomes across care providers is most critical. For patients with ESRD who are potential transplant candidates, metrics should strongly encourage timely transplant referral. Transplant centers should not be solely evaluated on the basis of 1-year post-transplant outcomes (conditional on if a patient survives to the time that a transplant is available). In fact, there is significantly more variation in patient survival explained by centers’ rates of transplantation than 1-year post-transplant survival rate (20). Furthermore, the differences in transplant recipient survival are minor between the best and worst transplant centers compared with patient expected survival with any transplant compared with remaining on dialysis (16). Lastly, metrics that do not incentivize procurement of all available deceased donor organs for OPOs may attenuate the rate of deceased donor allocation and transplantation and ultimately, extend waiting times to transplant and waitlist mortality.

### Considering an Ideal Quality Metric for ESRD Providers

Given the misaligned incentives of current quality metrics, the more difficult conundrum is to consider ideal metrics that would eliminate conflicts of incentives and align incentives of the providers with the best interest of the patient population across the spectrum of care. Qualities of an ideal metric include meaningful measures that directly affect outcomes, minimize the potential for unintended consequences, are nongameable and made up of consistently collected objective measures, and adequately account for the acuity and characteristics of patients. In addition, there is clear need to incorporate patient perspectives and individual decision making within a quality assessment framework (21–24). These parameters may include patient preferences, reported quality of life, and implementation of shared decision making, but relative to

**Table 2. Key elements of a proposed shared accountability model for ESRD health care delivery**

Patient Population	Geographic Regions	Outcome Measures	Health Care Providers	Regulatory Agencies
All patients with ESRD Patients with ESRD and age limits ( <i>e.g.</i> , <70 yr old) Patients with ESRD without objective contraindications to transplantation	ESRD network regions UNOS regions	All-cause mortality Hospitalization rates	Dialysis centers Primary providers	HHS CMS
	Donor service areas	Patient-reported outcomes	Kidney transplant centers	UNOS
	Neighborhoods with regional divisions to be determined	Cost-effectiveness/value of care  Time to placement on a waiting list or transplantation Time to transplantation	Organ procurement organizations	HRSA  Private payers

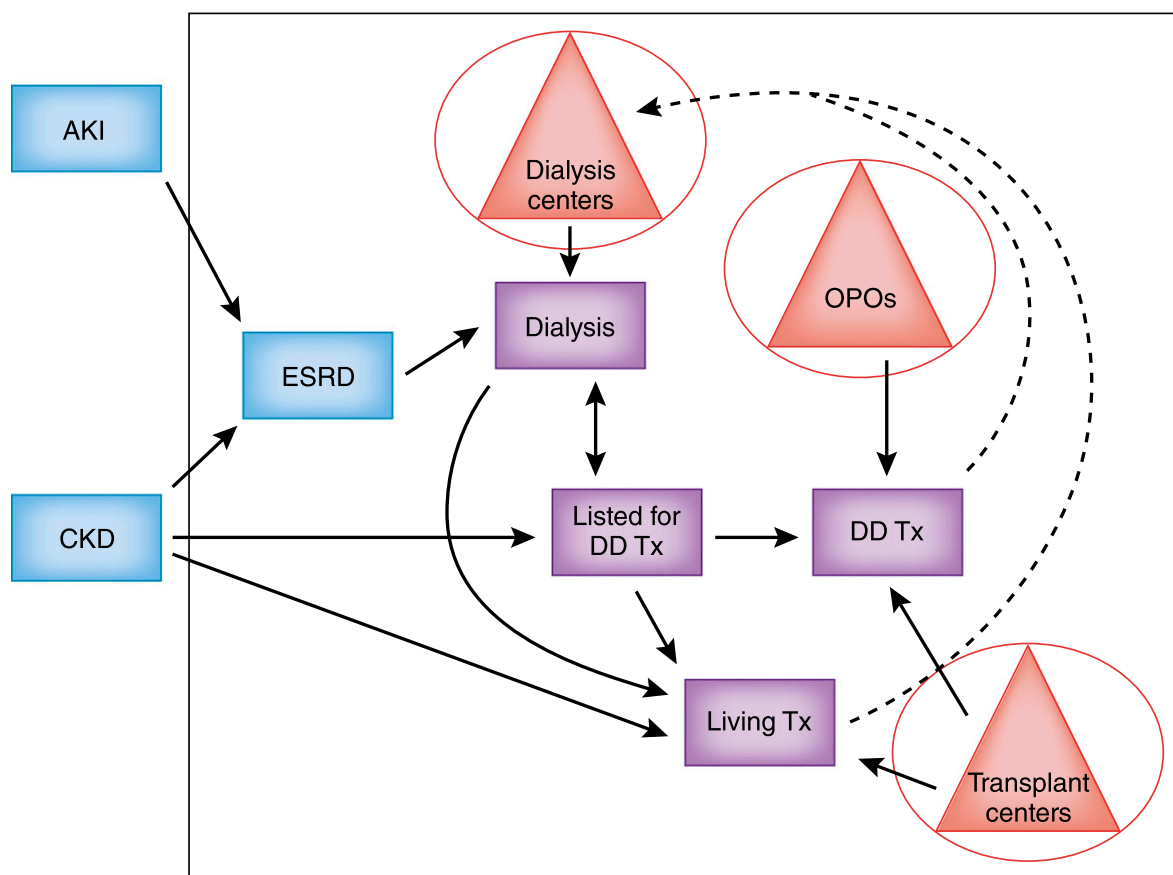
HHS, Health and Human Services; UNOS, United Network for Organ Sharing; CMS, Centers for Medicare and Medicaid Services; HRSA, Health Resources and Services Administration.

their importance in care, these metrics may not now be sufficiently quantifiable to be included in quality assessments. With these characteristics in mind, we propose a framework by which incentives between organizations would be more directly aligned with the focus on patient outcomes across the continuity of care provided.

We propose consideration of a shared accountability model, in which ESRD providers are jointly responsible for the outcomes of patients within a defined geographic region. The concept of this model is to broaden the perspective of care beyond individual providers and encourage coordination between providers to achieve outcomes that are beneficial to patients across transitions in care. For example, consider a quality metric evaluating the outcomes for a given ESRD population that are attributed to each of the organizations discussed in this commentary (dialysis centers, OPOs, and transplant centers). In this model, a measure could be used to evaluate the all-cause mortality rate (for example) for patients from the time of ESRD onset and extending throughout their transitions in care. Providers would be highly incentivized to coordinate care with collective responsibility and aligned priorities for the patient population for which they are responsible. Quality assessment would extend beyond the confines of

individual providers and be more consistent with a patient-centric viewpoint, which would be irrespective of the specific care provider (25). The individual metrics, defined populations, and geographic regions would need to be carefully considered (examples are listed in Table 2). However, the concept of extending this model beyond silos of care may strongly affect incentives for providers and eliminate artificially induced discordance in objectives. Importantly, the ESRD population is carefully tracked through transitions in care (Figure 1) by current data collection systems, affording an opportunity to design metrics that account for longitudinal outcomes. Moreover, given that the CMS (and the US Department of Health and Human Services) adjudicates quality measures and finances a large proportion of care for each of the providers discussed in this commentary, there is additional opportunity to take a high-level view of quality of care beyond a silo approach that could simultaneously incentivize care that improves ESRD outcomes and cost-effective care.

There are also significant challenges with our proposal that we acknowledge. The specific attribution of patients in a defined geographic region to a set of providers would need to be carefully considered. There would inevitably be dissent regarding the designation of quality that is



**Figure 1. | Treatment pathways and quality oversight for ESRD health care delivery.** Currently, dialysis centers, organ procurement organizations (OPOs), and transplant (Tx) centers are evaluated for quality in isolation (red circles). Our proposed model is to evaluate providers simultaneously on the basis of outcomes for a population of patients with ESRD throughout transitions of care (green box). The Centers for Medicare and Medicaid Services uses data to evaluate quality of each of these providers. ARF, acute renal failure; DD, deceased donor.

deemed the responsibility of other providers within a given region. This framework also does not alleviate problems with unmeasured risks that explain patient outcomes and are not affected by quality of care (26–28). These unmeasured risks include social factors and community-level risks that are not typically incorporated into quality measures and may not reflect quality of care but may ultimately have significant effect on patient outcomes. Moreover, because these factors tend to cluster geographically, some accounting for these “underlying risks” may be crucially important (27,29). In addition, although outcomes, such as all-cause mortality, have several advantages as an end point used for quality metrics, we would certainly agree that other end points are equally if not more important to consider including patient-reported outcomes, cost-effectiveness, and value of care (30–32). However, we must consider the benefits relative to the status quo and acknowledge that many of these same limitations exist with current metrics and in our view, promote significant unintended consequences. We submit that, despite the specific metric used, the concept of treating a patient population as a whole, considering ESRD as an episode of care, aligning incentives and promoting engagement between providers, and keeping long-term patient outcomes as a focus have great potential and are preferable to the current metrics that reward behaviors that may be inconsistent with patients’ long-term best interest.

As discussed by Michael Porter on the subject of value of health care, “[t]he benefits of any one intervention for ultimate outcomes will depend on the effectiveness of other intervention throughout the care cycle. Accountability of value should be shared among the providers involved. Thus, rather than focused factories concentrating on narrow groups of interventions, we need integrated practices that are accountable for the total care for a medical condition and its complications” (33). In what medical context would these concepts apply better than ESRD?

#### Disclosures

None.

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