Development of Chronic Kidney Disease (CKD) and End-Stage Renal Disease (ESRD) Cost Measures for Use in CMS Innovation Center Model

Technical Expert Panel Summary Report: Addendum

May 2021
1 INTRODUCTION

The Centers for Medicare & Medicaid Services (CMS) has contracted with Acumen, LLC (Acumen) to develop 1-2 measures to assess the costs of care for Chronic Kidney Disease (CKD) and End-Stage Renal Disease (ESRD) beneficiaries for use in a model from the Center for Medicare and Medicaid Innovation (Innovation Center). The contract name is “Physician Cost Measures and Patient Relationship Codes (PCMP).” The contract number is 75FCMC18D0015, Task Order 75FCMC19F0004.

Following the TEP meeting on September 30, 2020, Acumen reviewed the feedback from the discussions and conducted analyses to test potential impacts on measure specifications. The full TEP Summary Report describes input provided by panelists during the TEP meeting. The following sections of this addendum summarize key takeaways, Acumen’s testing, and the final measure specifications for the CKD and ESRD Cost of Care measures. Sections 2 through 4 describe TEP input, testing, and measure specifications surrounding costs, risk adjustment, and progression from CKD to ESRD, respectively, and Section 5 concludes the addendum. This addendum should be reviewed alongside the full TEP Summary Report.

2 ADDRESSING SELECT COSTS

Many TEP panelists were in favor of excluding costs of some services from the CKD Cost of Care and ESRD Cost of Care measures, particularly the costs of vascular access for patients with CKD, to encourage upstream fistula placement. Excluding other services—other kidney-related costs such as transplant costs, parathyroidectomy, and hospice and palliative care costs, as well as some interdisciplinary services and some services not related to kidney care—was also discussed.

Following the TEP meeting, Acumen analyzed cost statistics for categories of services brought up by TEP members and examined the impact of potential exclusions on overall measure costs. The analysis found that excluding services discussed by the TEP would have a small impact on total costs included in the measure, while retaining high overall cost coverage of the measures.

It is important, however, to ensure that the KCF Option cost measures align with other cost measures in the Kidney Care Choices (KCC) Model. Following discussions with CMS, only kidney transplant-related costs were excluded from the final measure specifications, a decision.

that was consistent with the rest of the KCC Model framework. Excluding kidney transplants from the cost measure ensures that providers are not disincentivized from performing transplants. The decision to include the costs of all other services reflected an effort to preserve alignment with the Comprehensive Kidney Care Choices (CKCC) Option of the KCC Model and to facilitate future comparison between the two options.

3 RISK ADJUSTMENT

TEP panelists generally supported using risk adjustment to capture predictors of patient cost, including:

- High-risk comorbidities like dementia, diabetes, non-renal organ failure, non-renal solid organ transplant recipients, and vascular disease
- Both CKD stage 4 and CKD stage 5 as separate variables
- Social risk factors (or social determinants of health) such as geographic poverty and dual eligibility in Medicare/Medicaid
- Estimating different risk adjustment models for CKD and ESRD patients

Per discussions with CMS, the final measure specifications use the CMS-HCC Version 24 model covariates, which includes a large universe of clinical comorbidities, including those discussed by the TEP. Dual eligibility in both Medicare and Medicaid is also included. Different risk adjustment models are applied for CKD and ESRD. While the TEP considered race as a potential risk adjustor, recent work suggests that race should be omitted from risk adjustment,3 and the final specifications do not include it as it is not part of the standard CMS-HCC model.

The final cost measure specifications use the Medicare Advantage (MA) rate book4 for risk adjustment. Acumen estimated an updated risk adjustment regression using more recent claims data and Acumen-estimated risk adjustment coefficients and compared these coefficients to the MA rate book. Although there were minor improvements in model performance using the updated coefficients, the MA rate book coefficients were retained to ensure consistency between the KCF and CKCC Options.

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2 The CMS-HCC model collapses diagnoses into “condition categories” and uses linear regression on Fee-For-Service reimbursements to predict a patient’s cost, given their clinical history. For more information, visit https://www.cms.gov/Medicare/Health-Plans/MedicareAdvSpecRateStats/Risk-Adjustors


4 For more information on MA risk adjustment, visit https://www.cms.gov/Medicare/Health-Plans/MedicareAdvSpecRateStats/Risk-Adjustors
4 CAPTURING PROGRESSION FROM CKD TO ESRD

The TEP discussed the difficulties in measuring progression from CKD to ESRD given the limitations of claims data. Additionally, TEP members gave feedback that adjusting cost measure specifications to explicitly build in incentives to slow disease progression may be challenging or unnecessary, especially since other KCF Option measures build in this incentive. During development, Acumen evaluated the percentage of beneficiaries who transitioned among the following groups to all others: CKD, ESRD, transplant status, not aligned with the model due to lack of claims history, or deceased.

The final measure specifications do not explicitly capture costs attributable to progression to ESRD. Instead, it estimates a beneficiary-month model, where CKD and ESRD beneficiary-months are compared within respective CKD and ESRD cost measures. Months where beneficiaries transition from CKD to ESRD are designated as ESRD, which ensures that dialysis costs are not compared to CKD costs. This decision eliminates possible perverse incentives to time dialysis initiation with the start of a new measurement period to avoid appearing more costly on the CKD Cost of Care measure. As mentioned above, separate risk adjustment models are estimated for the CKD and ESRD populations. Although this cost measure does not explicitly include incentives to slow disease progression, the KCF Option has other measures intended to capture the progression from CKD to ESRD.

5 CONCLUSION

Following TEP discussions, Acumen performed a variety of exploratory tests and worked with CMS to review and finalize specifications for the CKD and ESRD Cost of Care measures. CMS considered TEP input and testing analysis results alongside program-level considerations, such as consistency and comparability among the KCC Model Options, in finalizing the measure specifications.

Kidney care is an impactful measure area that affects millions of Medicare beneficiaries. To incentivize cost-effective, high-quality clinical care for patients with CKD and ESRD across all clinicians, the CKD and ESRD Cost of Care measures used in the KCF Option could be re-specified for use in other clinician programs. The TEP’s detailed input and Acumen’s exploratory investigation results will be valuable to revisit as part of any future development of potential kidney-related cost measures.