Screening for Chronic Kidney Disease and Connection to Care in a Workplace Wellness Setting: A Cost Effectiveness Analysis

Background
- Chronic kidney disease (CKD) is estimated to affect 15% of the US population. Early identification of patients with CKD and referral to care can slow the disease, but patients are often asymptomatic during early stages. Individuals who may have CKD can be identified by kidney function testing that estimates the glomerular filtration rates (eGFR).
- Employee wellness programs offer a way to routinely assess eGFR and to connect individuals who are at increased risk with appropriate resources. However, the benefits of such programs are uncertain.
- **Objective:** The investigators examined the potential health and economic benefits of a CKD outreach program initiated at employee wellness events.

Methods
- The investigators used a model-based cost-effectiveness analysis to evaluate a CKD outreach program paired with an employee wellness program that reports eGFR.
- Participants in an annual employee wellness event with eGFR <60 mL/min/1.73 m² in the first year were invited to participate in the CKD outreach program the second year; those whose eGFR remained <60 mL/min/1.73 m² the following year were referred to care.
- Most model inputs were obtained from published literature and some were obtained from the CKD outreach program (eg, fraction of patients with diabetes mellitus or self-referred for CKD). Cost inputs were obtained from governmental fee schedules.
- The default scenario of the CKD outreach program assumed 40% of individuals invited to participate agreed to be referred to care. Guideline-supported prescription of angiotensin-converting enzyme (ACE) inhibitors was assumed.
- Five-year health outcomes, expressed as quality-adjusted life-years (QALYs), and costs from the perspective of a self-insured employer were simulated in Markov models.
- Separate models were run for diabetic patients and all patients.

Results
- For 1,000 potential CKD patients who were diabetic and invited to participate in the CKD outreach program, the model estimated a gain of 2.6 QALYs and a cost savings of $593,504 in 5 years. Cost savings occurred by year 2 and were most affected by:
  - Fraction of outreach invitations accepted
  - Cost of treatment of end-stage renal disease (ESRD)
  - Efficacy of ACE inhibitors at preventing or delaying ESRD
  - Progression from and prevalence of macroalbuminuria
- For 1,000 potential CKD patients invited to participate in the CKD outreach program regardless of diabetes status, the model estimated a gain of 0.8 QALYs and a cost savings of $75,820. Cost savings occurred by year 4.

Conclusions
- The CKD outreach program paired with employee wellness events was predicted to improve health outcomes of patients with CKD, regardless of diabetes status, and be cost effective for payers.

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Webpage
https://www.ispor.org/heor-resources/presentations-database/presentation/intl2019-184692072

References