The topic, ESRD and In-center Dialysis versus Home Dialysis, will go forward for refinement as a systematic review. The scope of this topic, including populations, interventions, comparators, and outcomes, will be further developed in the refinement phase.

When key questions have been drafted, they will be posted on the AHRQ Web site and open for public comment. To sign up for notification when this and other Effective Health Care (EHC) Program topics are posted for public comment, please go to http://effectivehealthcare.ahrq.gov/index.cfm/join-the-email-list1/.

### Topic Description

**Nominator(s):** Public payer

**Nomination Summary:** The nominator is interested in the comparative effectiveness of in-center dialysis versus home dialysis for patients with end-stage renal disease (ESRD). The nominator indicated that an AHRQ systematic review could provide evidence to inform decisions about implementing quality improvement (QI) initiatives and adopting measures for QI programs.

**Staff-Generated**

**Population(s):** Adults with a diagnosis of ESRD, with or without comorbidities, including diabetes, obesity, hypertension, cardiovascular disease (CVD), and other chronic diseases

**Intervention(s):** home dialysis (hemodialysis, peritoneal dialysis)

**Comparator(s):** In-center dialysis (hemodialysis); all other treatment options

**Outcome(s):** All-cause mortality; cause of death; sepsis from health care associated infections (HAIs) and non-HAIs; transition to comfort care; kidney transplantation; hospital admissions and readmissions; abnormalities in electrolytes and mineral metabolism; hypercalcemia, parathyroidectomy fluid overload; anemia; dialysis access complications; quality of life; residual renal function; failure of home dialysis; health consequences of treatment failures; utilization of healthcare resources

**Key Questions from Nominator:**

1. For patients with a diagnosis of ESRD, what are the comparative effectiveness risks and benefits of in-center dialysis versus home dialysis (home hemodialysis and peritoneal dialysis)?
2. What are the barriers to the delivery of home dialysis?
3. What are the predictors and consequences of home dialysis failure?
4. Do these findings differ between different population groups (e.g., patients of different races and ages; patients with comorbidities including, diabetes, obesity, hypertension, CVD, and other chronic diseases; patients with differing insurance payers)?

## Considerations

- At the end of 2012, there were more than 636,905 cases of ESRD in the US, an increase of 3.7% since 2011. Dialysis is the only treatment option for individuals with ESRD until a match for renal transplant is identified. The vast majority (91.0%) of dialysis patients in the US were treated by in-center hemodialysis in 2012. However, over the past decade, the use of home hemodialysis has increased markedly. There were five times more patients using home hemodialysis in 2012 than in 2002.¹

- Adverse outcomes, including mortality infections and hospitalization, are high among patients receiving dialysis. Preliminary evidence suggests that patients undergoing daily home hemodialysis have lower adjusted mortality rates compared to those who dialyze in-center, although research has not conclusively found one dialysis modality to be superior to the other.

- A search of the literature did not identify any systematic reviews that comprehensively addressed the topic. However, a search of the evidence identified enough relevant studies making a new comprehensive systematic review feasible.

- An AHRQ systematic review also has the potential for impact because of high interest from a potential stakeholder group.

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