



Performance Excellence and
Accountability in Kidney Care



TECHNICAL/CLINICAL TOOLS

BEST PRACTICE 4: Evaluate and Maintain Adequate Hemoglobin

WHY IS THIS IMPORTANT?

Anemia refers to low blood hemoglobin, hematocrit, and red blood cell mass, and translates to a reduced ability to carry oxygen throughout the body. Anemia often occurs as a consequence of kidney failure or conditions that lead to kidney failure. The more severe the anemia, the greater the likelihood and severity of symptoms, such as weakness, malaise, poor concentration, shortness of breath, palpitations, angina, claudication and heart failure. The further the hemoglobin is below 10 g/dL, the poorer the quality of life and the greater the mortality risk is for patients with ESRD (stage 5 CKD). According to the FDA Black Box Warning on erythrocyte stimulating agents (ESAs) for ESRD, the mortality benefit declines as the hemoglobin level is treated above 12 g/dL. When increasing the hemoglobin above 12, clinicians and patients should share the decision about when the mortality risk of taking an ESA outweighs its benefit. This best practice recommends that ESRD patients be treated to a minimum hemoglobin target of 10, an NQF-endorsed quality measure.

BEST PRACTICE 4

Systematically test for anemia, establish intervention thresholds that take into account risks, benefits, and patient preferences, and intervene accordingly.

HOW DO YOU ACHIEVE THIS BEST PRACTICE?

1. Evaluate hemoglobin, creatinine, creatinine clearance and/or GFR. If the patient is anemic, evaluate cause of anemia (iron stores, ferritin, vitamin deficiency, inflammation, and consider merits of additional work-up).
2. Treat underlying causes, considering target hemoglobin, quality of life, and patient and family goals.
3. Rule out causes of non-response to treatment of anemia or its causes (e.g. inflammation, antibodies, aplastic anemia, lymphoma, gastrointestinal blood loss).
4. Consider use of an ESA:
 - a. Identify ferritin cut-off for iron overload and use as a guide for utilization of ESAs.
 - b. Establish therapeutic target.
 - c. Establish monitoring schedule for labs and dose change.
 - d. Establish CQI processes to track patient's scheduled labs receipt of scheduled ESA doses, and patient's response to ESA dosing to avoid under and overtreatment. Reschedule missed labs in a timely manner and develop a strategy to ensure ESA doses are not missed when patient moves between health care settings.
5. Develop a communication strategy about approach and targets if care is shared with primary care physician.

TECHNICAL/CLINICAL BEST PRACTICE #4: TOOLS AND RESOURCES

Printed Tools and Resources

Kidney School	Module 6: Anemia and Kidney Disease http://www.kidneyschool.org/pdfs/KSModule6.pdf
National Kidney Foundation KDOQI Guidelines	http://www.kidney.org/professionals/kdoqi/guidelines_anemia/cpr32.htm http://www.kidney.org/professionals/KDOQI/guidelines_anemiaUP/anemiaupdate.htm
National Quality Forum-Endorsed Performance Measures for ESRD	http://www.qualityforum.org/Publications/2008/03/National_Voluntary_Consensus_Standards_for_End_Stage_Renal_Disease_Care.aspx
Tools for Anemia Management	<ul style="list-style-type: none"> • Anemia and Iron Management: Success in Reaching Targets Fishbone Diagram • Assessment and Trending Worksheet • Hypo-response to ESA Therapy Root Cause Documentation Tool • Response to ESA Therapy: Cause and Effect Fishbone Diagram • Response to ESA Therapy: Iron-related Factors Cause and Effect Fishbone Diagram • Tip Chart for Nurses

Supporting Literature

<p>Bradbury B, et al. Predictors of early mortality among incident US hemodialysis patients in the dialysis outcomes and practice patterns study (DOPPS) <i>Clin J Am Soc Nephrol.</i> 2007 2:89-99. http://cjasn.asnjournals.org/cgi/content/short/2/1/89</p>
<p>Brookhart MA, et al. Comparative mortality risk of anemia management practices in incident hemodialysis patients. <i>JAMA.</i> 2010 303(9):857-864. http://jama.ama-assn.org/cgi/content/abstract/303/9/857</p>
<p>Pfeffer MA, et al. Baseline characteristics in the trial to reduce cardiovascular events with Aranesp therapy (TREAT). <i>Am J Kidney Dis.</i> 2009 54(1):59-69. Epub 2009 June 5. http://www.ncbi.nlm.nih.gov/pubmed/19501439</p>
<p>Plantinga LC, et al. Preventing repeat hospitalizations in dialysis patients: A call for action. <i>Kidney Int.</i> 2009 76(3):249-251. http://www.ncbi.nlm.nih.gov/pubmed/19904257</p>
<p>Vlagopoulos PT, et al. Anemia as a risk factor for cardiovascular disease and all-cause mortality in diabetes: The impact of chronic kidney disease. <i>J Am Soc Nephrol.</i> 2005 16:3403-3410. http://jasn.asnjournals.org/cgi/content/short/16/11/3403</p>
<p>Wingard RL, et al. The “right” of passage: surviving the first year of dialysis. <i>Clin J Am Soc Nephrol.</i> 2009 4:S114-S120. http://cjasn.asnjournals.org/cgi/content/abstract/4/Supplement_1/S114</p>