

Project Template: Increasing Hemoglobin Levels in Chronic Dialysis Patients

First, look at the data from your most recent monthly labs, annual Lab Data Collection (ELAB) , and Dialysis Facility Report which is prepared by the University of Michigan Kidney Epidemiology and Cost Center Report (KECC report). Review the lab data to determine if hemoglobin levels at your facility are trending downward over the past few months or year. How do you compare to others in your geographic area? Look at your infection and albumin rates since these can be associated with lower hemoglobins. Review you policy and procedure for maintaining Hgb between 10-12 g/dL.

Next, choose team members for your anemia Quality Assessment and Performance Improvement program. Typically the team will include: the medical director, clinical manager, nurse, dietician, social worker and the patient. Each of these team members play a significant role in identifying and treating anemia

Now, review the patient's history, physical exam and laboratory results. Hemoglobin levels are effected by numerous factors: inflammation, infection, erythropoietin , iron, serum ferritin levels, folic acid and vitamin B12, to name a few. Trending hemoglobin and iron can help the clinicians identify issues that may be causing anemia.

To get you started, these are a few **barriers** that have been identified as potential causes of anemia:

- Failure to track hemoglobin rates
- Malnutrition
- Patients lack knowledge regarding which foods are high in protein
- Lack of funds to purchase a healthy diet and/or additional supplements
- GI bleeding
- Secondary parathyroidism
- Infections or inflammation
- Hospitalization
- Complication of diabetes
- Inadequate dialysis
- Acidosis

Root cause: Your CQI team should determine the root cause of anemia at your facility.

Example: **High infection rate for patients with CVCs.**

See attached root cause document for more examples.

Decide on an “AIM” Statement; what are you trying to accomplish?

- 70% of patients will attain the CMS goal for Hgb, 10-12 g/dL, by January 31, 2011.
- If already meeting the CMS goal, set a six month goal to increase the number of patients attaining the CMS goal for hemoglobin by 10%



Name of facility / Provider # _____

Facility Contact/Position _____

Root Cause Assessment
Anemia

Major Barriers to Prevent Anemia	Potential Root Cause For Anemia	Problem in facility?	Potential to change
Patient Factors			
Awareness/Knowledge	• Lack of knowledge concerning the causes of anemia		Y/N
	• Lacks knowledge about proper nutrition that supports RBC production		Y/N
	• Lacks knowledge regarding s/s of anemia		Y/N
	• Lack of knowledge about infection control practices		Y/N
	• Lack of education regarding treatment for anemia		Y/N
Physical factors that increase the chances of anemia	• Certain diseases processes cause anemia (sickle cell , diabetes, thyroid disease)		Y/N
	• Infection and inflammation		Y/N
	• Iron deficiency		Y/N
	• Malnutrition (B12 and or folic acid deficiency, low albumin)		Y/N
	• Bleeding (GI, trauma)		Y/N
	• Menstruation		Y/N
	• Bone marrow depression (leukemia, chemotherapy)		Y/N
	• Hemolysis (dialysis or due to disease such as thalassemia)		Y/N
Communication/ Education	• Failure to recognize and report s/s of anemia to healthcare workers		Y/N
	• Lack of awareness about proper personal hygiene and lack of hand washing that can increase possibility of infections		Y/N
Social	• Cultural bias regarding sickness, hygiene, foods,		Y/N
	• Lacks insurance		Y/N
Other	• Failure to take medications (oral iron, vitamin B12 or folic acid) as prescribed		Y/N
	• Aware that catheters are a major source of infection, but tend to ignore medical advice to have another type of access placed		Y/N
	• Patient complacency or depression		Y/N
	• Under dialyzed		Y/N
	• Hospitalization (missed ESA or iron doses)		Y/N
Nephrologist Factors			
General	• Failure of nephrologists to educate patients about anemia and its causes		Y/N
	• Failure of nephrologist to investigate possible causes of anemia		Y/N
	• Failure to monitor labs and adjust EPO and/or iron needs in a timely manner		Y/N
	• Failure to maintain an up-to-date protocol for EPO and iron dosing		Y/N
	• Failure of nephrologists to lead the CQI program; monitoring Hgb, planning prevention and/or treatment of anemia		Y/N

Facility Factors			
Awareness/Knowledge	<ul style="list-style-type: none"> Facility failed to educate staff about the multiple causes of anemia 		Y/N
	<ul style="list-style-type: none"> Facility lacks method for tracking patient trends for Hgb, Tsat and ferritin 		
	<ul style="list-style-type: none"> Facility lacks an anemia manager who is responsible for following the facility's anemia protocol 		Y/N
	<ul style="list-style-type: none"> Facility lacks a Quality Assessment and Performance Improvement program (QAPI) that addresses anemia 		Y/N
Communication/Education	<ul style="list-style-type: none"> Inadequate communication / education between dialysis facility nurses, technicians and nephrologists regarding anemia protocol 		Y/N
	<ul style="list-style-type: none"> Failure by nurses or technicians to report s/s of anemia in patients 		Y/N
	<ul style="list-style-type: none"> Failure to track and report lab results that contribute to anemia such as; decrease in Hgb, iron, ferritin levels or increase in WBC 		Y/N
	<ul style="list-style-type: none"> Lack of written Policy and Procedure regarding anemia 		Y/N
	<ul style="list-style-type: none"> Techs and nurses may lack adequate training/experience in assessing and following anemia policies and procedures. 		Y/N
Training/Experience	<ul style="list-style-type: none"> Staff lacks training/ experience about facility anemia policies/procedures 		Y/N
	<ul style="list-style-type: none"> Staff lacks training about proper infection control and hand hygiene 		Y/N
	<ul style="list-style-type: none"> Nurses and technicians may not follow proper infection control policies and procedures (hand washing, routine immunizations not given) 		Y/N
	<ul style="list-style-type: none"> Staff lacks training and experience in developing QAPI programs 		Y/N
	<ul style="list-style-type: none"> Facility lacks adequate anemia management training program for staff 		Y/N
Administration	<ul style="list-style-type: none"> Administration does not ensure that a QAPI program for anemia is developed 		Y/N
	<ul style="list-style-type: none"> Administration does follow recommended CMS Conditions for Coverage for infection control and/or anemia 		Y/N
	<ul style="list-style-type: none"> Facility lacks Infection control team 		Y/N

* This list does not include every root cause affecting anemia

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How will you measure improvement?

Monthly measurement as QA monitor

Example of potential measurement (if above goal is used):

Numerator: # of HD patients meeting CMS Hgb goals (70% of patients have a Hgb \geq 11.0.)

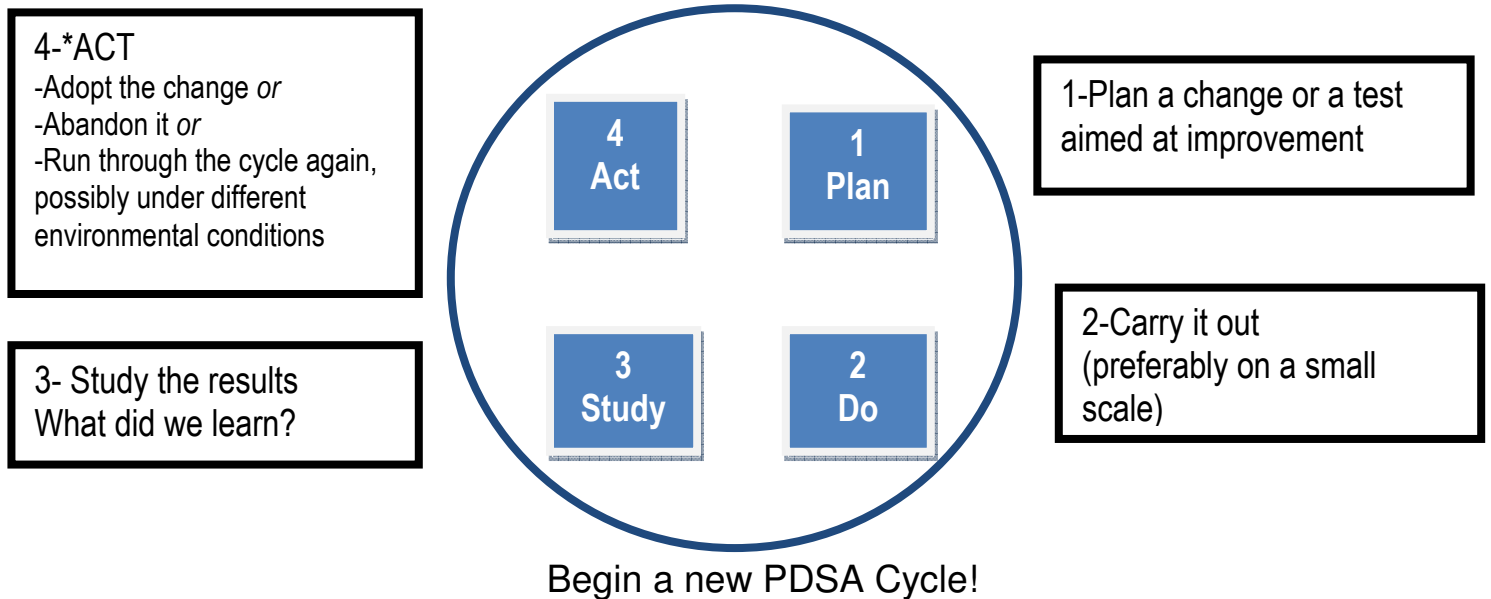
Denominator: total # HD of patients in your facility

Numerator: # of HD patients meeting CMS Hgb goals (10-12 g/dL)

Denominator: total # of HD patients in your facility

Brainstorm potential solutions based on barriers / root cause prioritized by your QI team.

Begin PDSA cycles and document your improvement



Maintaining Hemoglobin Resources

Please contact us if you would like additional help developing a QI project that improves hemoglobin levels

Phone: 303-831-8818

E-mail: info@nw15.esrd.net

Web-site links:

- Anemia education
www.aakp.org/brochures/Anemia.
- Anemia management
http://www.esrdnet15.org/QI/Anemiappt_files/frame.htm
- Anemia in kidney disease and dialysis
<http://kidney.niddk.nih.gov/kudiseases/pubs/anemia/>
- NKF/KDOQI 2007 Anemia Update
www.kidney.org/professionals/KDOQI/guidelines_anemiaUP/index.htm

Articles

- Breiterman-White, Randee, Reznicek, Jaci (2008). "Laboratory Trend Analyses and Proactive Adjustments to Minimize the Need for Holding Epoetin Alfa Doses". Nephrology Nursing Journal 35 (6). 577-581.
- George, Tracey, RN, CDN, CM (2010). "D.O.M.I.N.O. Anemia Management." Dialysis & Transplantation. 39 (6), 234-235.
- Hayslip, Deborah, (2008). Revisions in the Prescribing Information for Epoetin alfa: Implications for Nephrology Nurses and patients on Dialysis". Nephrology Nursing Journal 35 (2). 162-167.