

PROJECT VIGNETTE 3 OF 3

Mayo dialysis: improving anemia management

Mayo Clinic | Simulation, clinical judgment, and measured results

The problem

Patients receiving long-term hemodialysis experienced harmful fluctuations in hemoglobin levels. Anemia treatment needed to account for individual patient responses and biological delays while reducing unnecessary medication use.

The approach

Jim led a multidisciplinary collaboration that developed the Mayo Clinic Anemia Management System (MCAMS). Patient-specific simulation supported individualized dosing recommendations. Clinical expertise, system dynamics, and performance measurement were brought together; clinicians retained treatment judgment.

The result

The published peer-reviewed quality improvement study reported that patients within the desired hemoglobin range increased from 69% to 83%, while those above the range fell from 26% to 6% (first six months of 2007 compared with first five months of 2010). The authors also reported about 40% less darbepoetin use. These results belonged to the client clinical team and were reported in a nonrandomized practice improvement project.

Could this help your organization

Consider the management lessons to be learned when recurring variation persists despite repeated adjustments. Examples abound among healthcare, manufacturing, engineering, administration, and service industries. Could combining the collective wisdom of your team with a model of feedback and delays in your value delivery system reveal a more effective way to design governance policies?

Sources: McCarthy et al., Mayo Clinic Proceedings 89(1), 87-94 (2014), doi:10.1016/j.mayocp.2013.10.022. Rogers, Gallaher & Dingli, System Dynamics Review 34, 121-153 (2018), doi:10.1002/sdr.1606. Historical results describe this project.