

Adherence to Stable Hemoglobin Anemia Protocol Increases Achievement of Target Hemoglobin Levels

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INTRODUCTION

SHAPE (Stable Hemoglobin Anemia Program Effort) is an ongoing quality improvement effort at a large dialysis provider to optimize anemia management. SHAPE is a computer-assisted decision support tool that allows software-assisted data presentation and tracking of protocol adherence. The program goal is to provide a protocol that, with greater than 95% acceptance of protocol orders, achieves a high percentage of hemodialysis patients with hemoglobin (Hb) in the 10-12 g/dL target range, and minimizes the percentage of patients below and above-target.

METHODOLOGY

- To evaluate potential design elements, we evaluated 6 protocols in over 7,000 patients undergoing treatment in over 100 in-center hemodialysis facilities (Table 1).
- We accumulated over 3,000 patient-years experience by September, 2010, when patients in the 6th and final pilot, which incorporated the most successful elements of previous pilots, had accumulated up to 4 months of experience.
- At that time, we compared baseline results in patients who were enrolled in the final SHAPE pilot protocol for at least 3 months to the group of all incident and prevalent DaVita patients.

RESULTS

Table 1. Patient Demographics

	Patients
N	7,212
Age (yr)	61.3 ± 15.7
% Male	51.9%
<i>Race and Ethnicity</i>	
% African American	31.4%
% Hispanic	11.9%
% Asian, Pacific Islander	2.7%
% Native American	0.8%
% Other	0.2%
% Diabetic	71.5%
Vintage (yr)	1.9 ± 3.2
BMI	28.1 ± 8.0

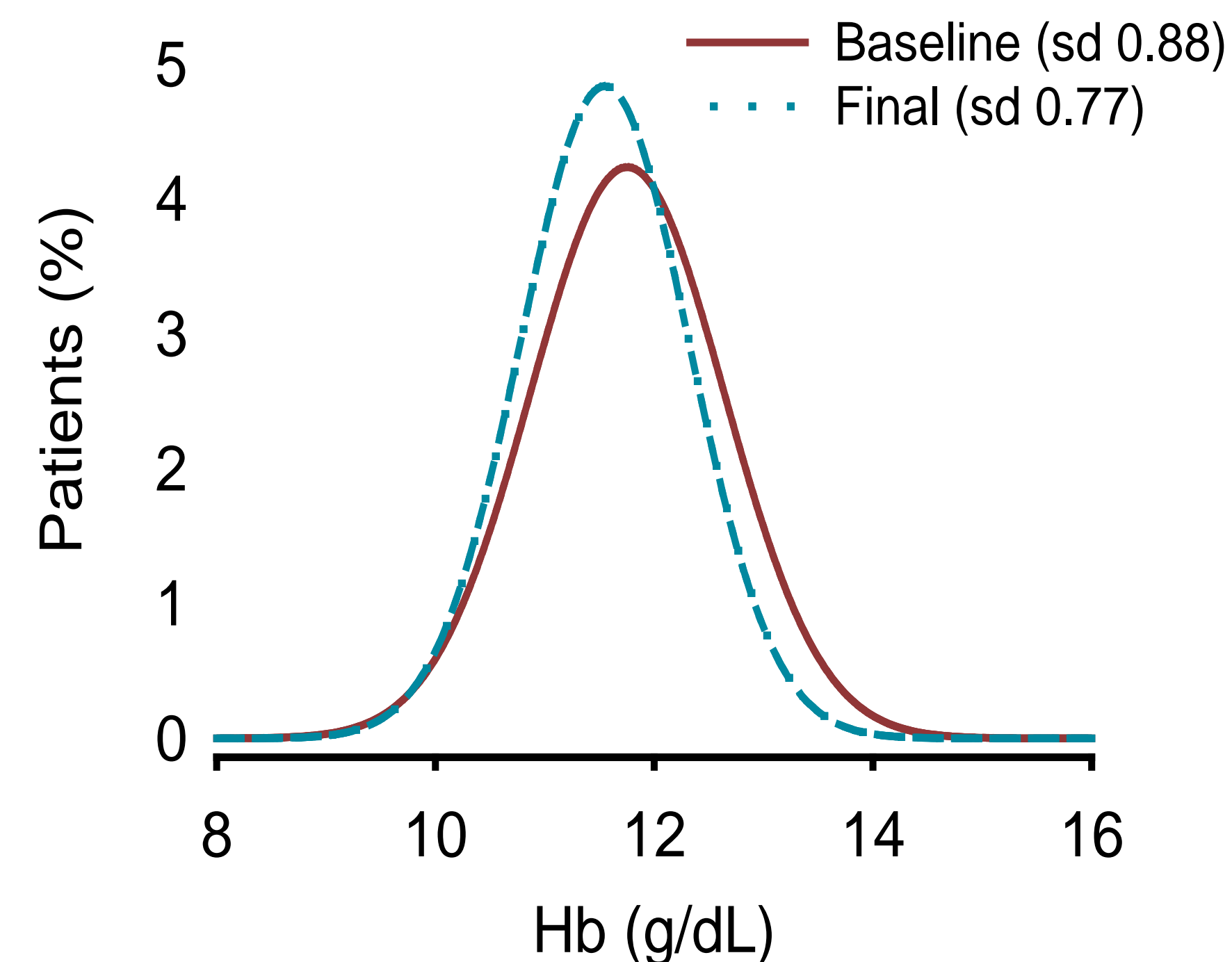


Figure 1. Hb distribution in patients before and after initiating the SHAPE pilot protocol.

Table 2. Per-Protocol Order Acceptance Rate and Target Hb Performance.

Cohort	Rate of Per-Protocol Orders	Hb 10-12 g/dL (%)
All participating pilot facilities	> 60%	71.3
Highest-adherence pilot facilities	> 95%	77.7
All DaVita Facilities Aug '10		62.4

SUMMARY of RESULTS

- The SHAPE pilot achieved its performance goals of a high percent of patients within Hb 10-12 mg/dL range (Table 2).
- The SHAPE pilot tightened the Hb distribution curve, minimizing the percent of patients above target range while maintaining excellent performance in the below-target range (Figure 1).
- When protocol acceptance rates were highest (that is, <5% of physician orders were off-protocol), percentage of patients on the Hb target range was greatest (Table 2).

KEY LEARNINGS

- ✓ Anemia management using the newest version of SHAPE produces excellent Hb outcomes.
- ✓ High acceptance of protocol orders improves outcomes and assures performance under the proposed CMS Quality Incentive Program.

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