“Dialysis care : It is not just a care”
Anemia Nurse Manager in Dialysis: A Cost Effective Model for Better Care

Introduction

Hamad General Hospital (HGH) is a comprehensive healthcare system that cover most needs for the State of Qatar. Fahad Bin Jassim Kidney Center (FBJKC) is the main provider of hemodialysis (HD) treatment in the country and contains 80 HD Stations and provide hemodialysis services for about 430 patients.

In September 2015 we studied a new centralized anemia management care which is Nurse based-Nephrologist supervised model, all patients located in FBJKC were included. They were followed for 6 months (May to December 2016) and compared to baseline parameters in May 2016. Nurses reviewed the results with the nephrologist and prescriptions for erythropoiesis stimulating agents (ESA) given (physician prescription is mandatory per health authority in Qatar). Data collection done under IRB approval. to achieve better hemoglobin (Hgb) targets (minimum 70% in target range (10-12g/dL) per KDOQI/KDIGO guidelines), avoid extreme Hg levels (below 9 g/dl to avoid symptoms and avoid blood transfusion and above 13 g/dl to avoid clotting events, high blood pressure and other long term complications) and improve overall administrative anemia management process including cost reduction (by decreasing unnecessary overdosing of erythropoiesis stimulating agents (ESA).

Aim

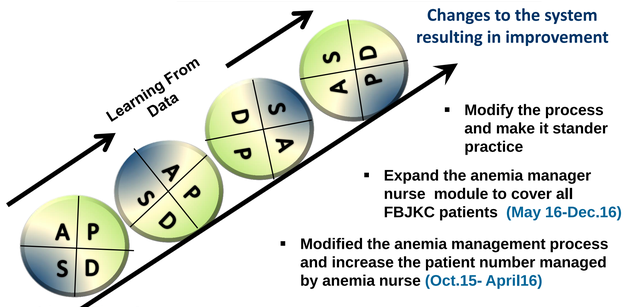
The model aim of central anemia management:

- Increase percentage of HD patient with Hemoglobin level of 10-12 g/dl to 70 % by the end December 2016.
- To reduce the cost by decreasing the ESAs dose weekly consumption by 10% by the end of December 2016.

Intervention

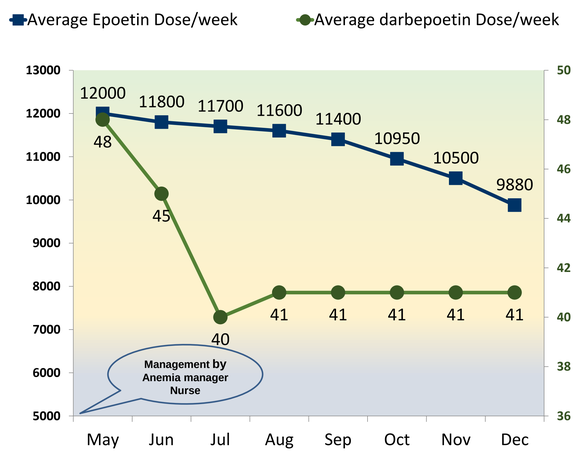
- Anemia Nurse management (ANM)team consist of 2 anemia nurse manager, supervising physician, quality reviewer and lead nephrologist
- ANM team evolved from two part-time nurses under supervision of an expert nephrologist who provided extensive training for them for 2 months to become mostly independent.
- The anemia Nurses reviewed the results one day after blood sample collection with the nephrologist and the prescriptions for ESA and iron were written simultaneously (physician prescription is mandatory per health authority in Qatar).
- Patients who did not have any Hgb values during this period were excluded
- ANM coordinated with pharmacy and social workers to assist patients in need to obtain their medicine. We have high rate of people travelling outside Qatar including HD patients (10-15% at any point), ANM developed tools to educate patients and make sure they receive their ESA aboard while monitoring Hg closely before and after travel.

Anemia Management Improvement Ramp

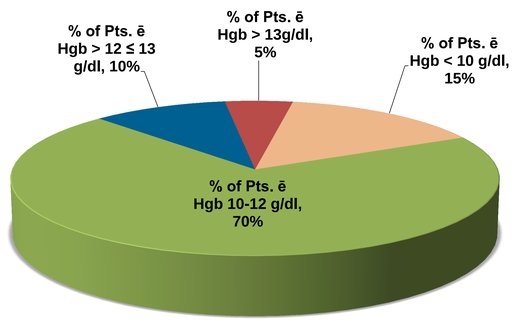


Results

Erythropoiesis-stimulating Agent Dose (ESAs)



Hemoglobin status in December 2016



Measurement Outcome

- 360 patients included. 70% of patients achieved target Hg in FBJ. 11% only had extreme Hg.(<9 g/d l&>13 g/dl)
- We expanded gradually that we were able to accommodate timing of nurses with proper replacement. Epoetin (100 patients) and Darbepoetin (260 patients) use in FBJ under ANM model decreased by mean of 16% in comparison to baseline in May 2016 (17% in Epoetin and 15% in Darbepoetin).
- Cost saving estimated for Darbepoetin was 14 US dollars weekly and for Epoetin was 8 US dollars weekly compared to baseline. This translated into about 16000 US dollars monthly for Darbepoetin and 3500 US dollar for Epoetin.
- Annual saving for both ESAs in December 2016 estimated at 233000 dollars when compared to baseline ESAs usage in May 2016. Taking into account annual nurses’ salaries estimated at 44000$ led to direct net saving of 189000 dollars per year.

Conclusion

ANM successfully achieved targets of anemia management in HD patients. The model was cost effective mostly by maintaining stable Hg which led to reduction in use of Epoetin and Darbepoetin. Most challenges were overcome with multidisciplinary team efforts. Further advancement being done to improve and systematize work up process, referrals for resistant cases and improve logistics.

Improvement team

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References

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- HMC Clinical Protocol CP102,Anemia Management In Adult Hemodialysis Population, June 2015

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