

# Determining when intravenous iron treatment is appropriate in hospitalized patients

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## Background

- Iron deficiency anemia is the most common form of anemia and affects millions of Americans every year
- Iron deficiency is a common comorbidity in pregnancy, chronic kidney disease (CKD), heart failure and many other conditions
- Iron deficiency can be diagnosed if ferritin < 30ng/mL, ferritin < 100ng/mL and CKD, or ferritin 100 – 300ng/mL and transferrin saturation < 20%
- Oral iron products are used to restore iron levels in patients with iron deficiency. In some situations, parental iron products are used instead.
- The specific criteria required to switch from oral to intravenous iron varies

## Objective

- This study aims to determine what factors play into the decision-making process of healthcare professionals when starting a patient on intravenous iron products.

## Methods

### Study design:

- Single-center retrospective chart review

### IRB approval:

- Springfield Committee for Research Involving Human Subjects Institutional Review Board

### Inclusion criteria:

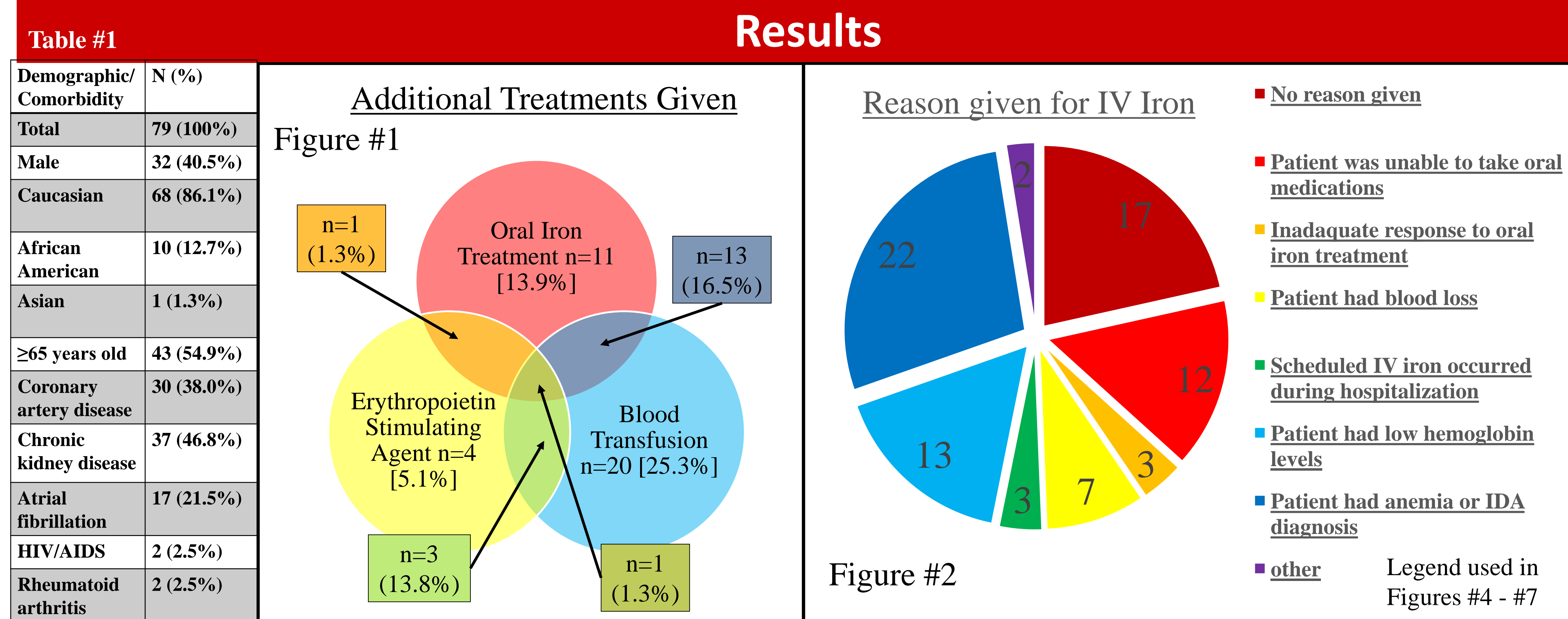
- Patients treated with at least 1 dose of intravenous iron sucrose
- Age 18-89 years old and hospitalized for at least 24 hours between May 2018 to May 2022

### Exclusion criteria:

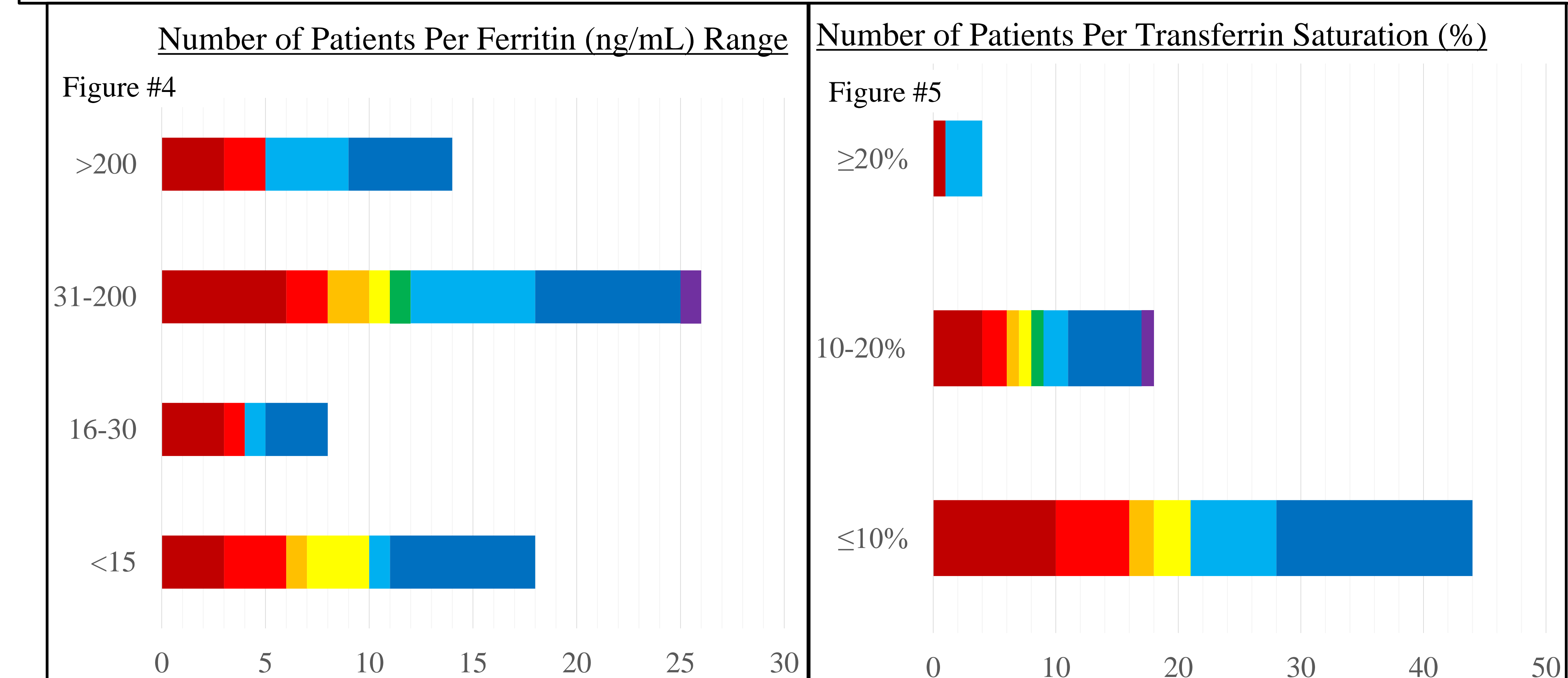
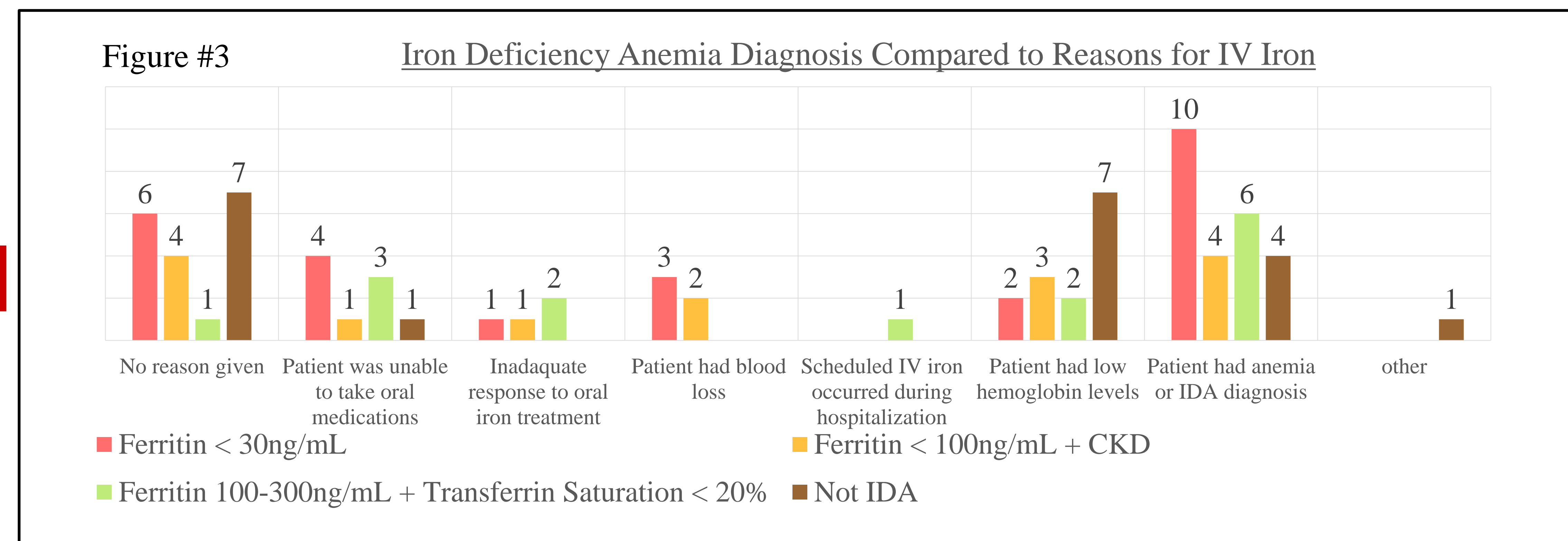
- Patients who received blood transfusion before iron panel results, diagnosed with end stage renal disease and on dialysis, active cancer being treated with chemotherapy

### Data analysis:

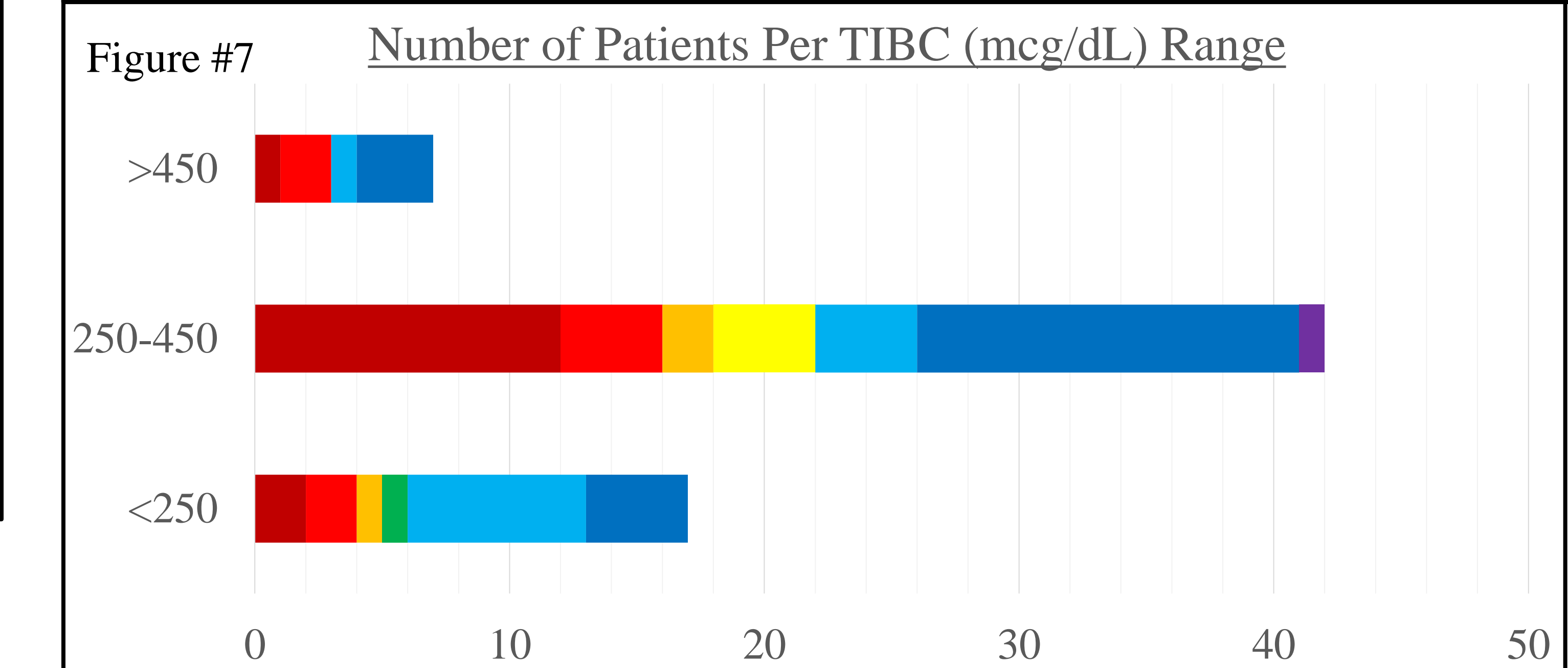
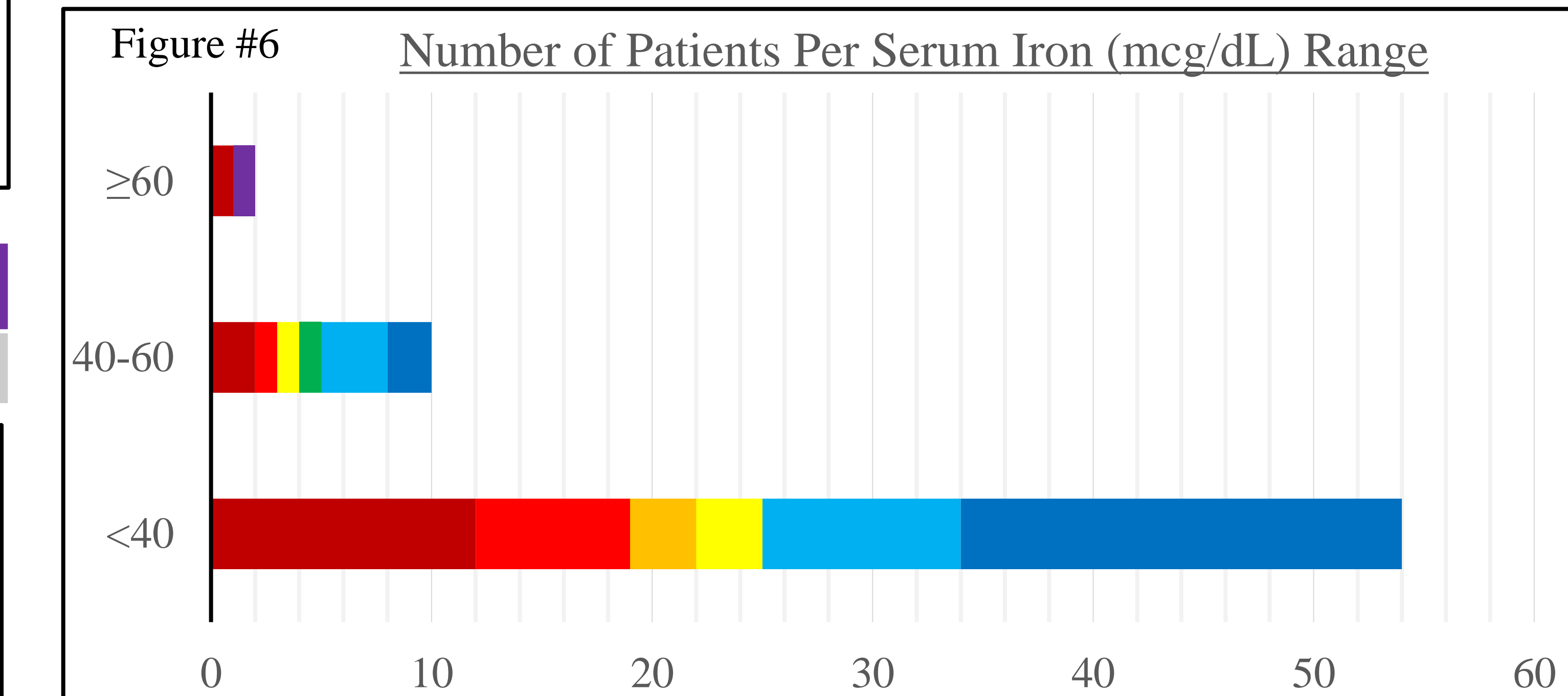
- Data on these patients' treatments, iron panels, and provider notes will be analyzed and compared



Patients Without Iron Panel (n=13)	No reason given	Patient was unable to take oral medication	Patient had blood loss	Scheduled IV iron occurred during hospitalization	Patient had low hemoglobin levels	Other
	2	4	3	2	1	1



Treatment	Ferritin (ng/mL)		Serum Iron (mcg/dL)		TIBC (mcg/dL)		Transferrin Saturation (%)	
	Yes	No	Yes	No	Yes	No	Yes	No
Oral Iron Product	153 (2-658)	158 (4-1533)	32 (10-77)	26 (10-56)	325 (151-605)	340 (111-556)	10.9 (1.7-19.6)	9.2 (2.3-39.6)
Blood Transfusion	160 (2-1533)	136.5 (4-777)	26.4 (10-77)	27.6 (10-56)	339.2 (150-605)	315.7 (111-556)	9.3 (1.7-28.0)	10.1 (2.3-39.6)
Erythropoietin Stimulating Agent	423 (29-874)	117 (2-1533)	31 (14-61)	27 (10-77)	243 (151-407)	337 (111-605)	14.3 (4.9-24.8)	9.2 (1.7-39.6)
Intravenous Iron Product Only	130 (4-777)	156 (2-1533)	29 (10-56)	26 (10-77)	337 (111-556)	322 (150-605)	10.3 (2.3-39.6)	9.5 (1.7-28)



## Limitations

- Small sample size, single institution, retrospective design
- Subjective interpretation required of some progress notes to organize reasons in Figure #2

## Conclusion

- Complete documentation should be encouraged across hospital staff to ensure patient safety
- Ensuring patients receive necessary diagnostic test to determine guideline driven care should be encouraged