

## Problem Definition

- ESRD patients are vulnerable to hypoglycemia due to impaired insulin clearance, glucose metabolism changes, and effects of dialysis. Hypoglycemic events lead to serious and life-threatening complications.

## Aims For Improvement

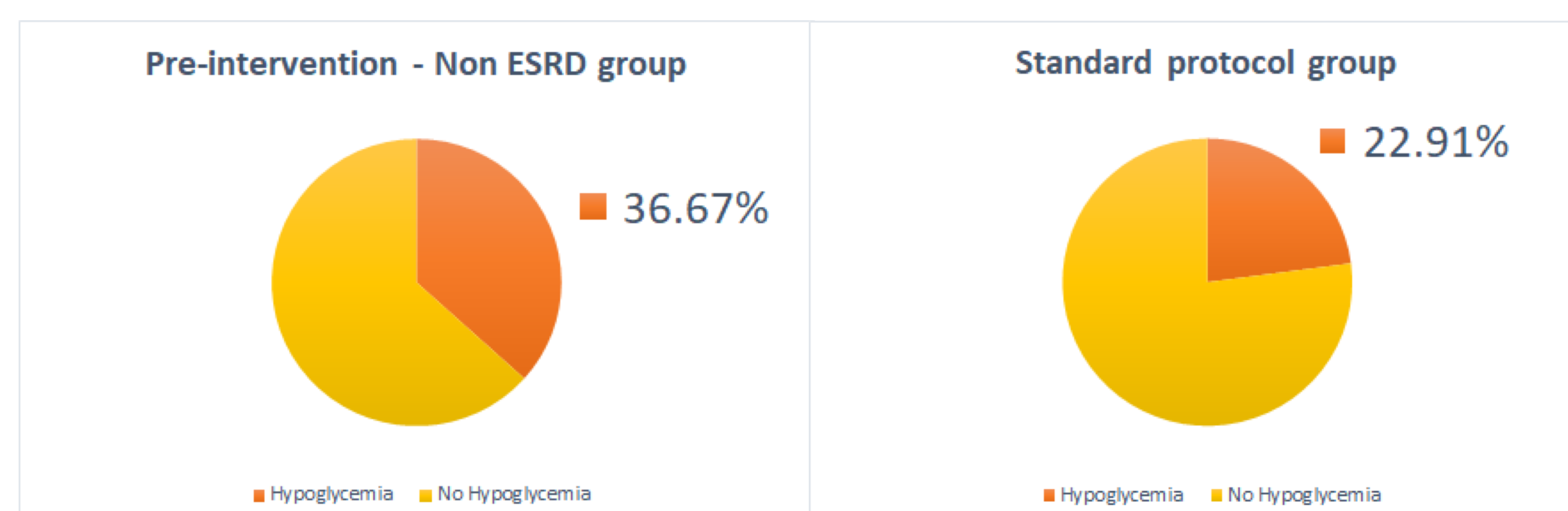
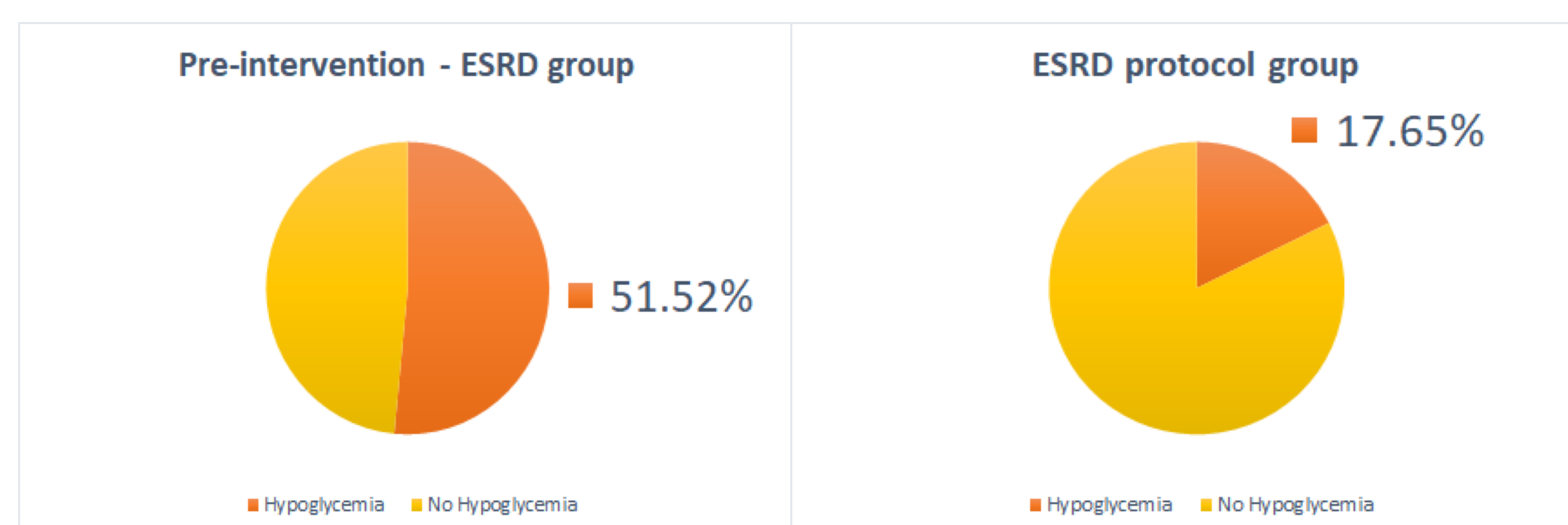
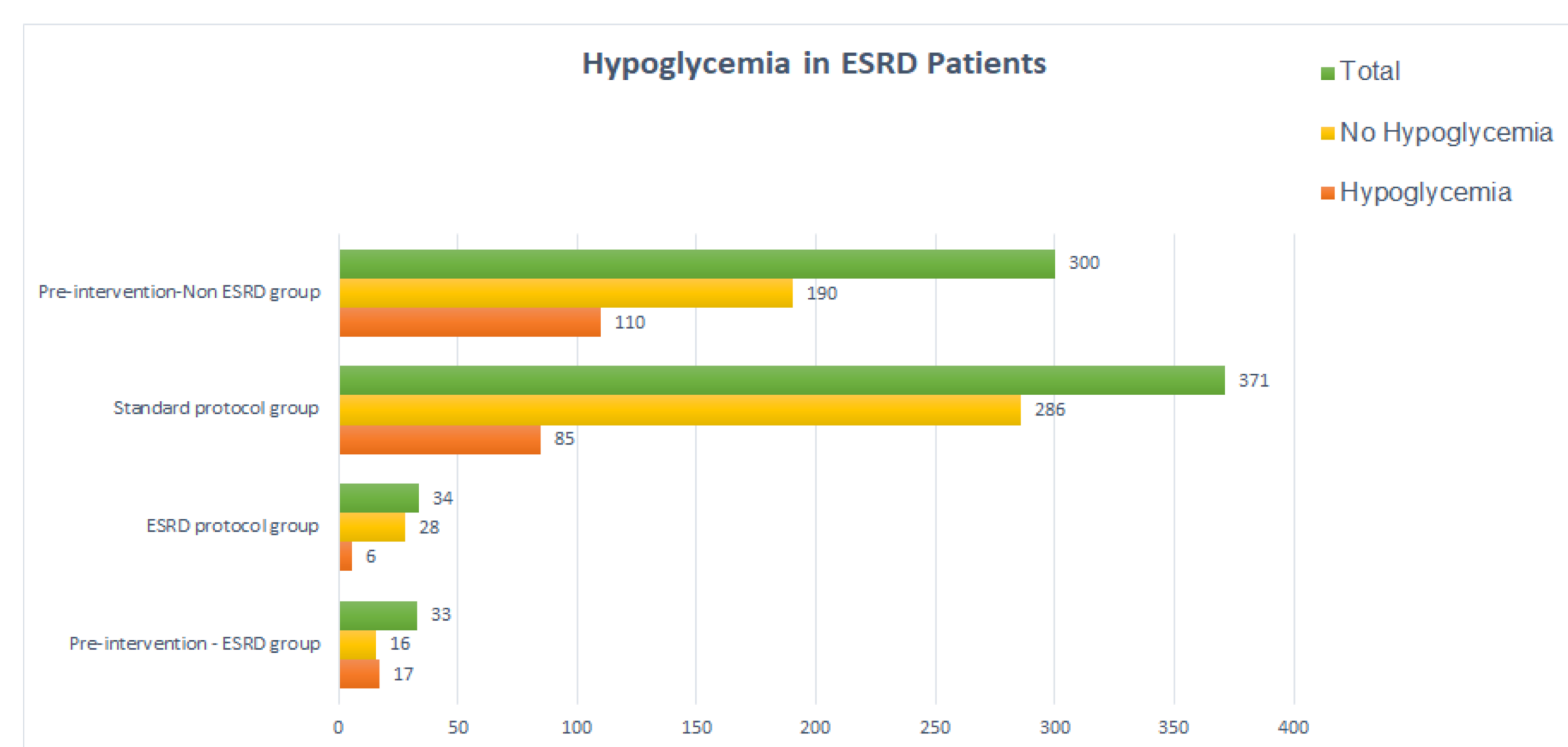
- To decrease the rate of hypoglycemic events amongst ESRD patients receiving insulin for hyperkalemia treatment.

## Methods

- Retrospective review on the rates of hypoglycemic events amongst ESRD patients before (**Pre-Intervention**) and after (**ESRD protocol**) the introduction of 'ESRD dosing' order set on November 19, 2019.
- Pre-Intervention and standard protocol groups received **10 units** IV regular insulin for all patients regardless of kidney function, while ESRD protocol patients received **5 units** of IV regular insulin.

## Results

- Hypoglycemia was defined as BG <70 mg/dl and we included any hypoglycemic events within 6 hours of receiving Insulin for hyperkalemia treatment
- Among the patients who received pre-intervention insulin protocol, hypoglycemia rate was noted to be 51.5 % (17/33) as opposed to 17.6% (6/34) in ESRD protocol group.



## Lessons Learned and next steps

- This study shows that hypoglycemia is a common occurrence following the use of IV insulin for management of hyperkalemia despite concurrent use of glucose.
- With this intervention, the number of ESRD patients receiving appropriate insulin therapy was increased, and there was a significant reduction in hypoglycemia
- We also noticed there was a reduction in the rate of hypoglycemia in non ESRD patients as well. Other factors may be involved that we have not identified.
- We hypothesize, likely ESRD dosing for CKD patients can also lower hypoglycemic events
- Limitation – We only focused on patients who were treated with the order set.