

A Risk Reduction Strategy to Lower Rates of Hypoglycemia by Determining Root Causes

NYSPFP Webinar

Wednesday Sept 5th, 2018

*Naina Sinha Gregory MD
& Jane Jeffrie Seley DNP*



Background

Adverse Drug Events (ADEs) are:

- Most common cause of inpatient complications
- 1/3 of hospital acquired conditions
- Increases both cost & length of stay

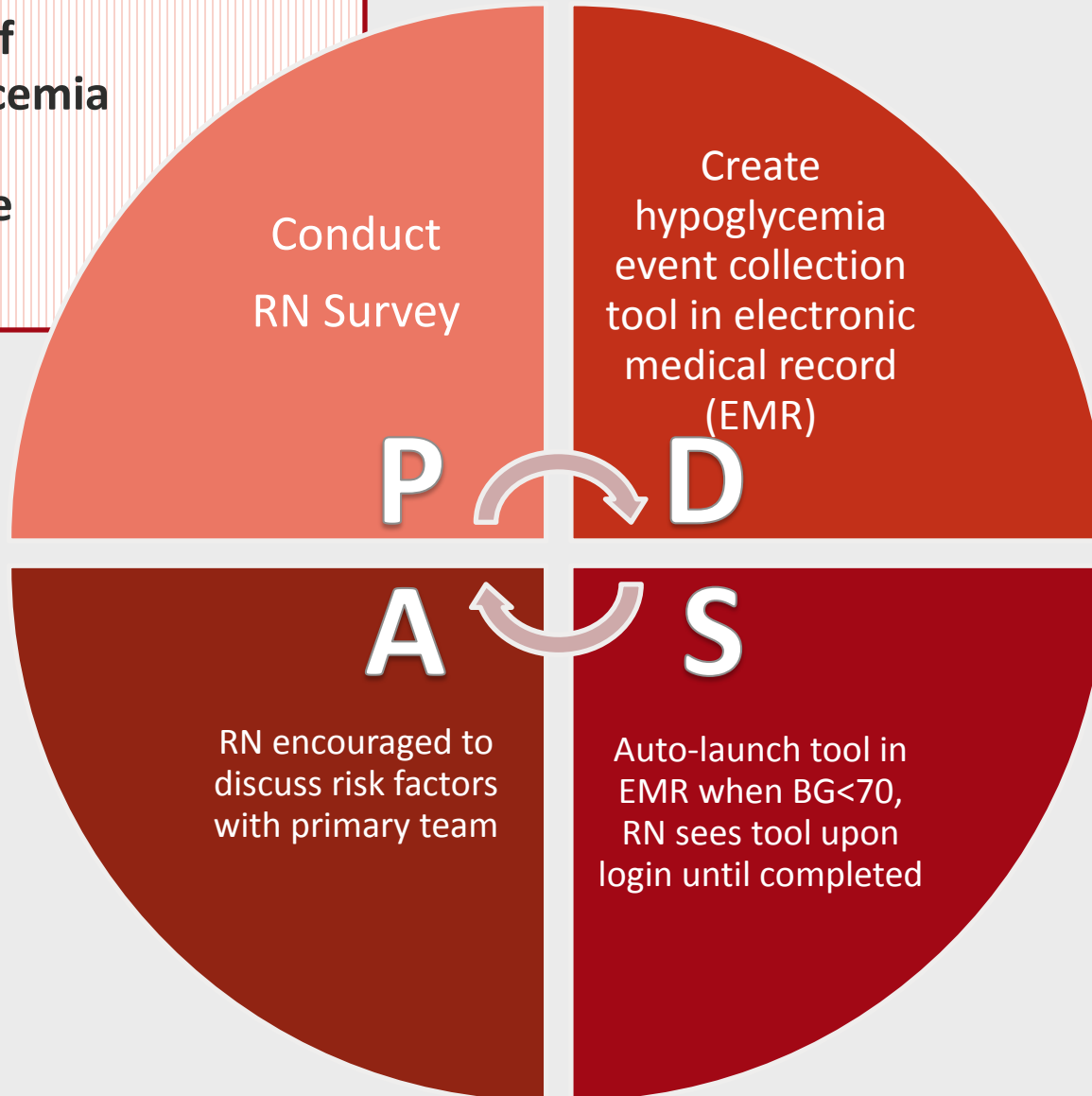
Insulin & other anti- hyperglycemic agents:

- 57% of Adverse drug events
- 50% of hypoglycemic events (<70) and up to 80% of severe hypoglycemic events (<40) are preventable
- Most powerful predictor for a hypoglycemic event is a prior hypoglycemic event during the same stay



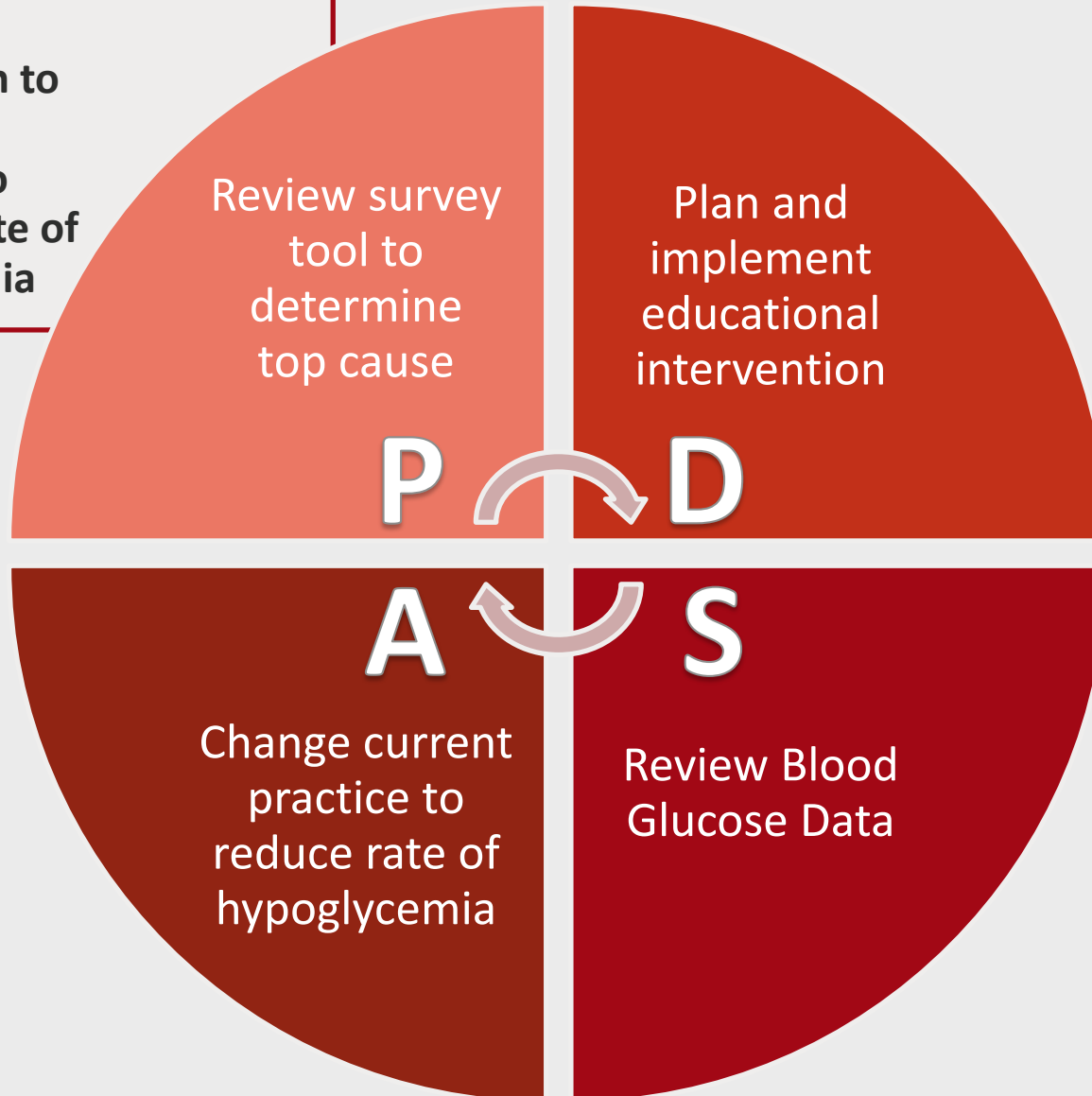
Project Goal #1

- Identify root causes of hypoglycemia on two medicine units



Project Goal #2

- Use targeted educational intervention to implement strategies to decrease rate of hypoglycemia



Phase 1 Intervention

RN

Survey



RN Survey

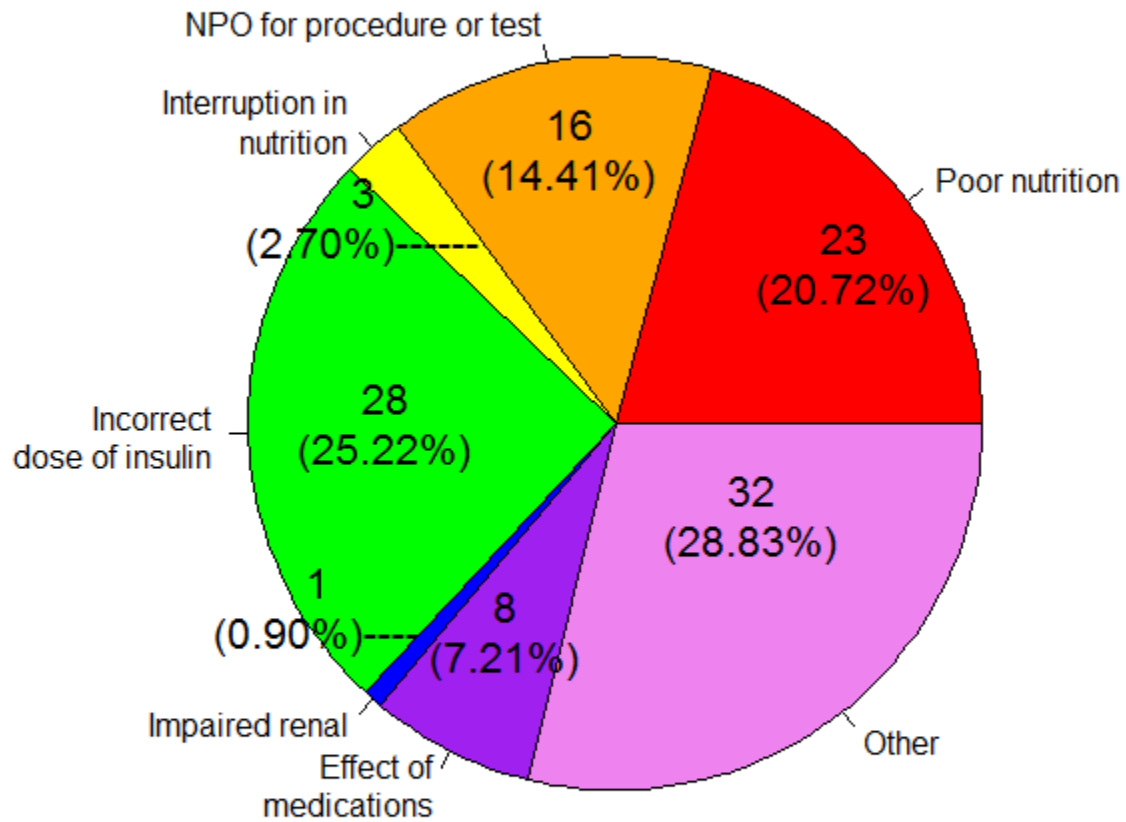
Part 1: What do you think are some reasons why patients may have an episode of hypoglycemia while in the hospital?

Part 2: Circle all of the reasons listed below that you think may contribute to patients having an episode of hypoglycemia in the hospital

- **Poor Nutrition (poor appetite, nausea or vomiting)**
- **NPO for a procedure or test**
- **Interruption in Nutrition (e.g. Tube feeds or TPN being held)**
- **Incorrect dose of Insulin:**
 - Basal insulin (NPH, glargine)
 - Bolus (correction) or mealtime Insulin (aspart)
- **Failure to adequately treat prior hypoglycemia event**
- **Impaired renal and/or hepatic function**



Causes of Hypoglycemia Identified in RN Survey



Your patient John Smith (G05C-432B) recently experienced hypoglycemia (blood glucose: 58). Which of the following reasons do you think may have led to the hypoglycemia?

Check all that apply

Nutrition

- Poor nutrition
- Interruption in nutrition
- NPO for a procedure or test

Medical Conditions

- Impaired renal function
- Impaired hepatic function
- Inadequate treatment of previous hypoglycemic event

Insulin

- Insulin may need adjustment
* contact prescriber to discuss

Other Medication

- Oral diabetes medication
- Change in steroid dose

Other (fill in below)

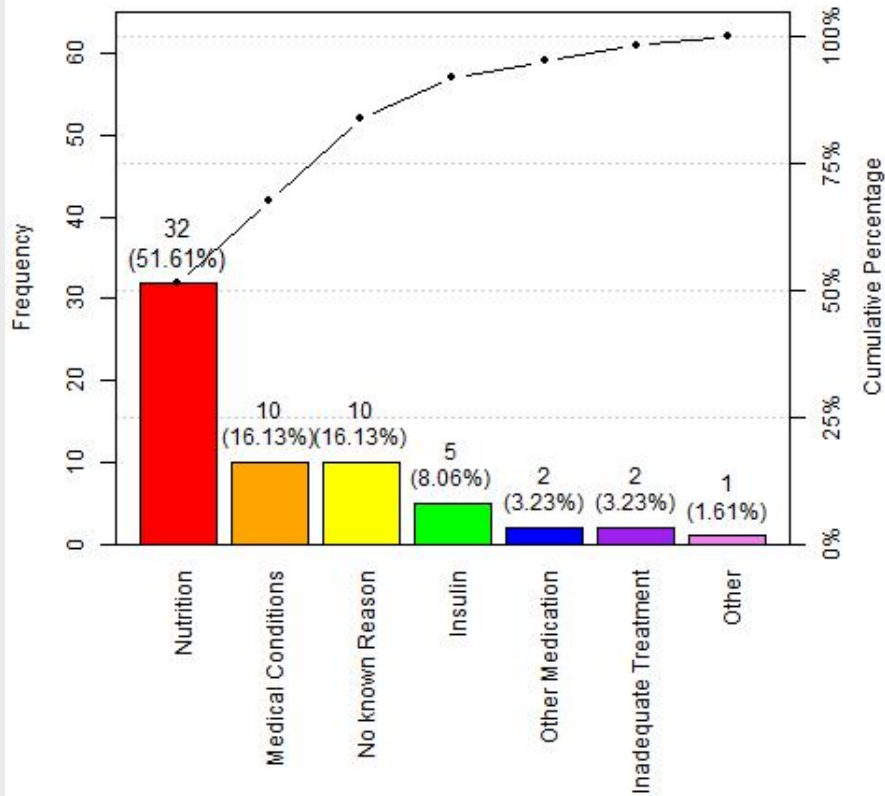
What treatment was given?

Check all that apply

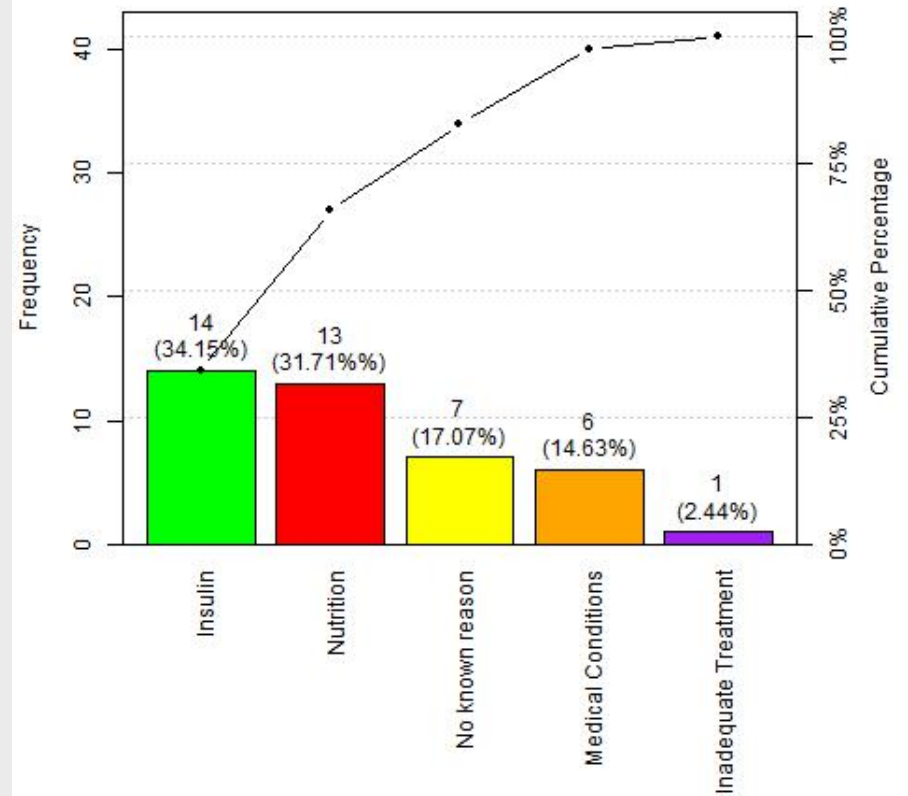
- Glucose gel
- 4 oz. juice
- D50
- Other: (explain)
- None: (explain)

Done

Pareto Chart for RN Hypoglycemia Survey Results



Pareto Chart for MD Chart Review Results



Phase 2

Educational Intervention

**Reducing Hypoglycemia
by Targeting a Root Cause:
Too Much Basal Insulin**



NYP/WC Insulin Dose Adjustment Guidelines

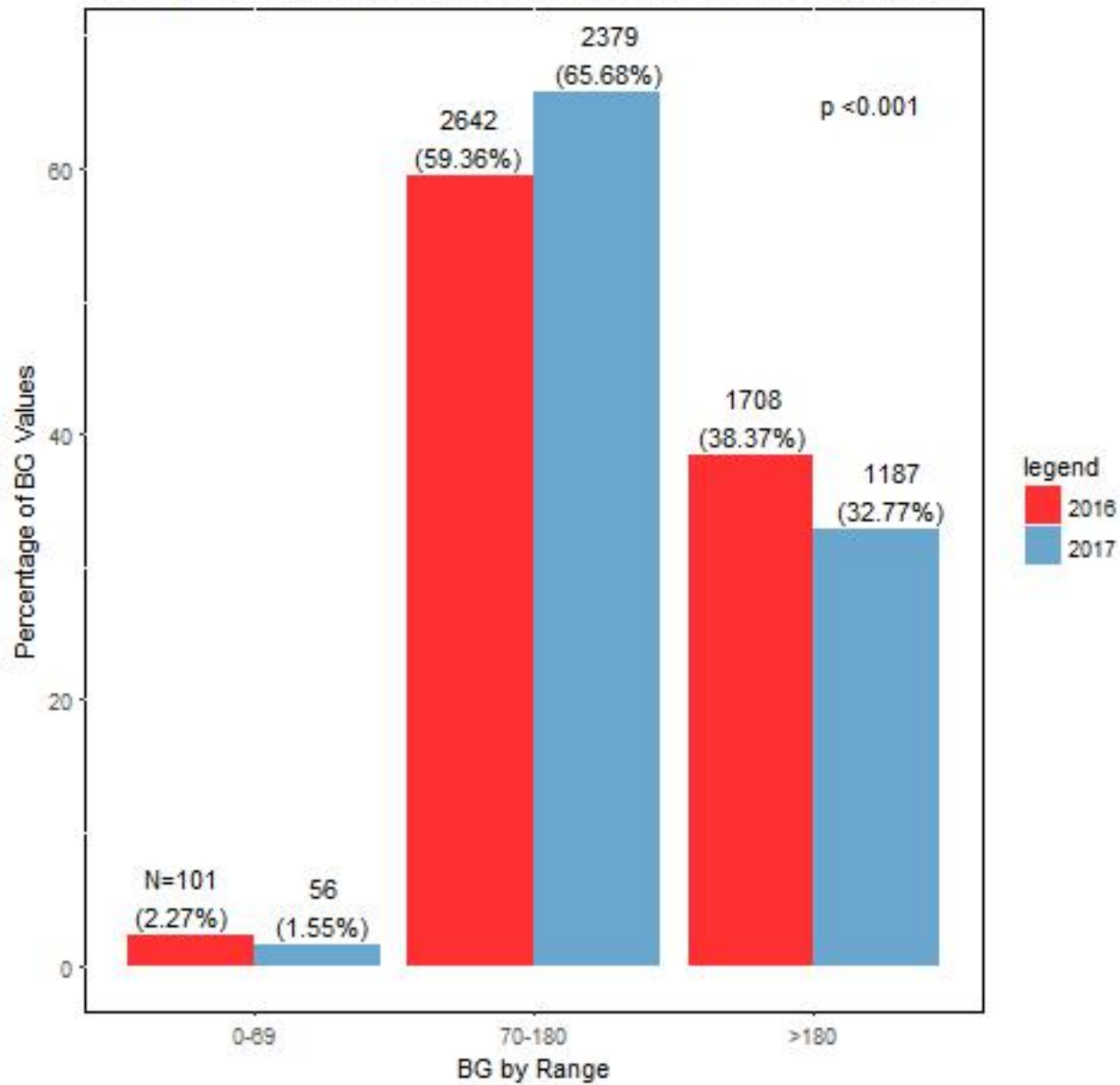
Dose Adjustments Based on Blood Glucose	
BG (mg/dL)	Dose Adjustment
< 50	Decrease by 50%
50 – 69	Decrease by 20%
70 – 99	Decrease by 10%
100 – 180	No Changes
181 – 250	Increase by 10%
> 250	Increase by 20%



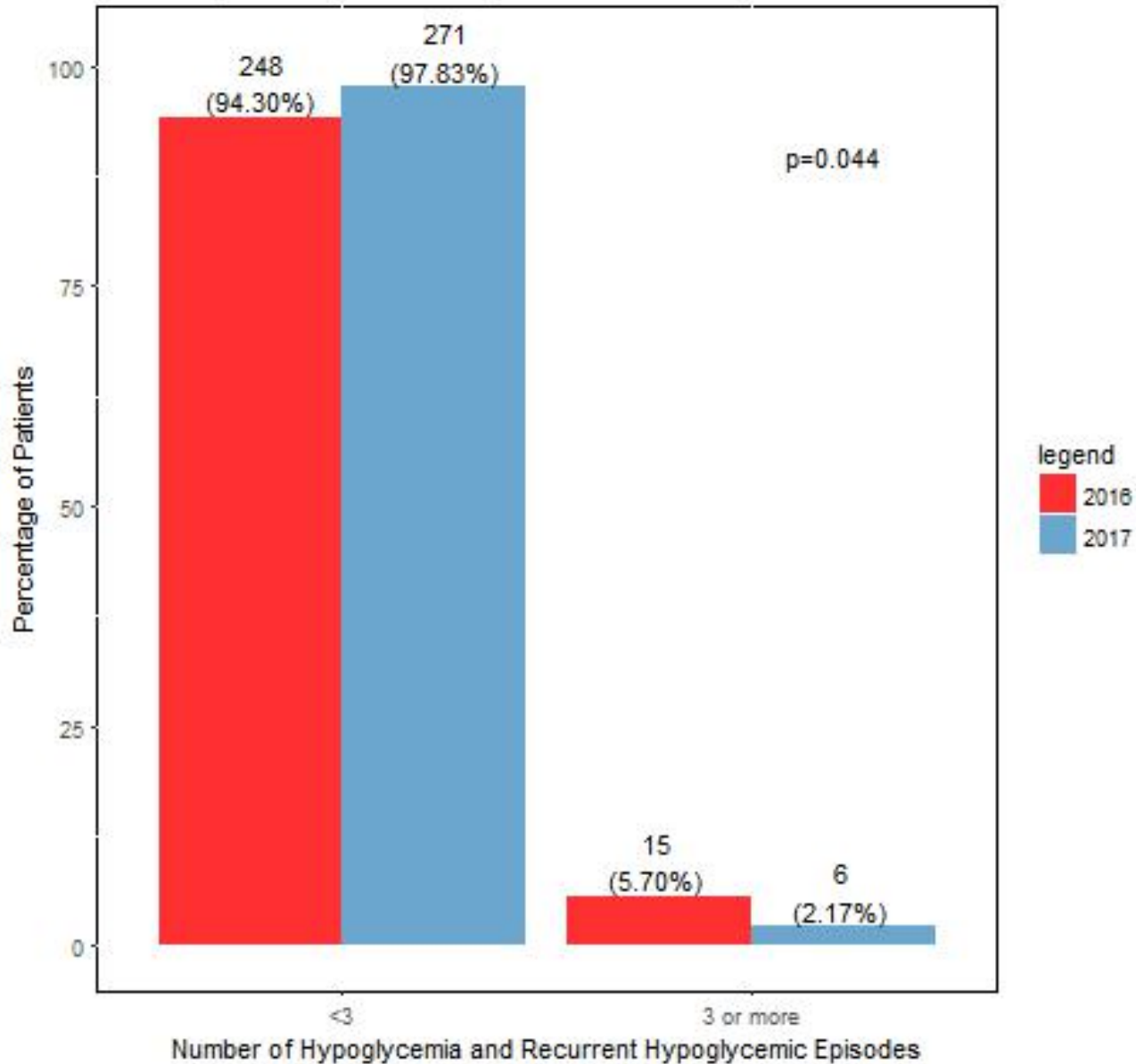
Results



Blood glucose (BG) values March-April 2016 & March-April 2017



Frequency of Hypoglycemic & Recurrent Hypoglycemic Patients March-April 2016 & March-April 2017



Future Directions

- Ongoing house-wide nursing & prescriber education to heighten awareness of root causes of hypoglycemia to inform & promote prevention strategies
- Stimulate discussion between RNs and prescribers to address each hypoglycemic event in real-time
- Launch *new* educational intervention targeting interruptions in nutrition:
 - Second most common cause of hypoglycemia
 - Include recommendations for insulin adjustments in education plan

