TIMING IS EVERYTHING:

IMPLEMENTING A NEW STANDARD FOR COORDINATING CAPILLARY BLOOD GLUCOSE CHECKS TO PROMOTE TIMELY INSULIN ADMINISTRATION

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STEP 1: DO I HAVE A PROBLEM?

- Concern: Patients are not receiving insulin within the advised timeframe.

- What should be happening: Hospital policy states that insulin should be administered within 30 minutes of a capillary blood glucose (CBG) check.

STEP 1: DO I HAVE A PROBLEM?

- What is actually happening:
  - Average Time: 19.47 min
  - Over 30 min: 31 (24.03%)

- Measurable Gap: 14.03%

Insulin administrations audited on 5S: 129

STEP 1: DO I HAVE A PROBLEM?

- Impact:
  - Patient Safety
    - Risk of hyperglycemia and hypoglycemia
  - Financial
    - Longer hospital stays
    - Wasted supplies
  - Patient Experience
    - Patients poked by needles unnecessarily
    - Sets a poor example for diabetes management

STEP 2: DO I KNOW THE ROOT CAUSE?

- Point of Cause: At the bedside as RN enters room to administer insulin.
- Direct Cause: RNs are not made aware of precise time CBG was taken.
- Why:
  - Current Practice: CNAs write CBG result and time on the white board in patients' rooms.
  - Current standard does not have established plan for coordination of CBG checks, insulin administration, and meals.
- Root Cause: Inadequate Standard

STEP 3: HAVE I CONFIRMED CAUSE & EFFECT?

- Hypothesis: If 5 South creates a new standard work outlining specific coordination of three things—the CBG check, insulin administration, and meal tray arrival—RNs will give insulin injections within 30 minutes of the CBG check 90% of the time by October 20th, 2015.

- Experiment & Start Date: New standard work on September 21, 2015.

WHAT IS “STANDARD WORK?”

- Salem Hospital has a form called a “Standard Work” form.
- This is used to write up standards of practice that are used at the hospital or on individual units.
- Often used for “Tests of Change” on individual units.

Salem Health

STANDARD WORK: CBG Checks and Insulin Administration	5 South
Purpose: To help RNs meet the 30 minute standard for insulin administration (giving insulin injection within 30 minutes of the CBG).	
Inputs: Approval from manager, communication to staff, and willingness of staff to implement standard work.	

CONTENT (describe steps and sub-steps) in SEQUENCE	
Sequence	**Brief summary of task**
1.	RN/CNA huddle at beginning of shift: Identify patients requiring CBG checks and develop a plan for timing and communication of these CBGs.
2.	RN confirms that correct orders are in EPIC, including the CBG order and the order stating "notify nutrition services: patient requires CBG checks."
3.	When food tray arrives, CNA takes CBG. (For nightshift, CNA takes CBG around 2100, or time discussed with RN.)
4.	CNA notifies RN of CBG result.
5.	RN tells CNA to give patient food tray if RN will be able to come soon to administer insulin. OR RN tells CNA to wait to give patient food tray if it will be 15-30min before RN is able to administer insulin. (dayshift only)
6.	RN gives insulin injection (if needed) within 30 minutes.

Frequency of Use: AC/HS for diabetic patients and other patients requiring CBG monitoring.
Output: Insulin is consistently given within 30 minutes of CBG check, without multiple CBGs needing to be taken to make this happen.
Process Owner: Registered Nurse.
References: Manning, E. H. & Jackson, L. (2005). An evaluation of the timing between key insulin administration-related processes: The reasons why these processes happen when they do, and how to improve their timing. Australian Health Review, 29 (1), 61-67.

STEP 3: HAVE I CONFIRMED CAUSE & EFFECT?

- Methods:

What/Where	Who	When
Create standard work	Elena, RN	September, 2015
Educate at staff meetings + email standard work to all staff	Elena, RN	September, 2015
Notify staff at shift huddles that new work standard has gone live	Charge RN	September, 2015
Survey Staff	Allie, RN	October, 2015

PRE & POST IMPLEMENTATION STATISTICS

Pre Implementation

- Administrations Audited: 129
- Average Time: 19.47 min
- # Over 30 Min: 31 (24.03%)

1 Month

- Administrations Audited: 121
- Average Time: 12.55 min
- # Over 30 Min: 12 (9.92%)

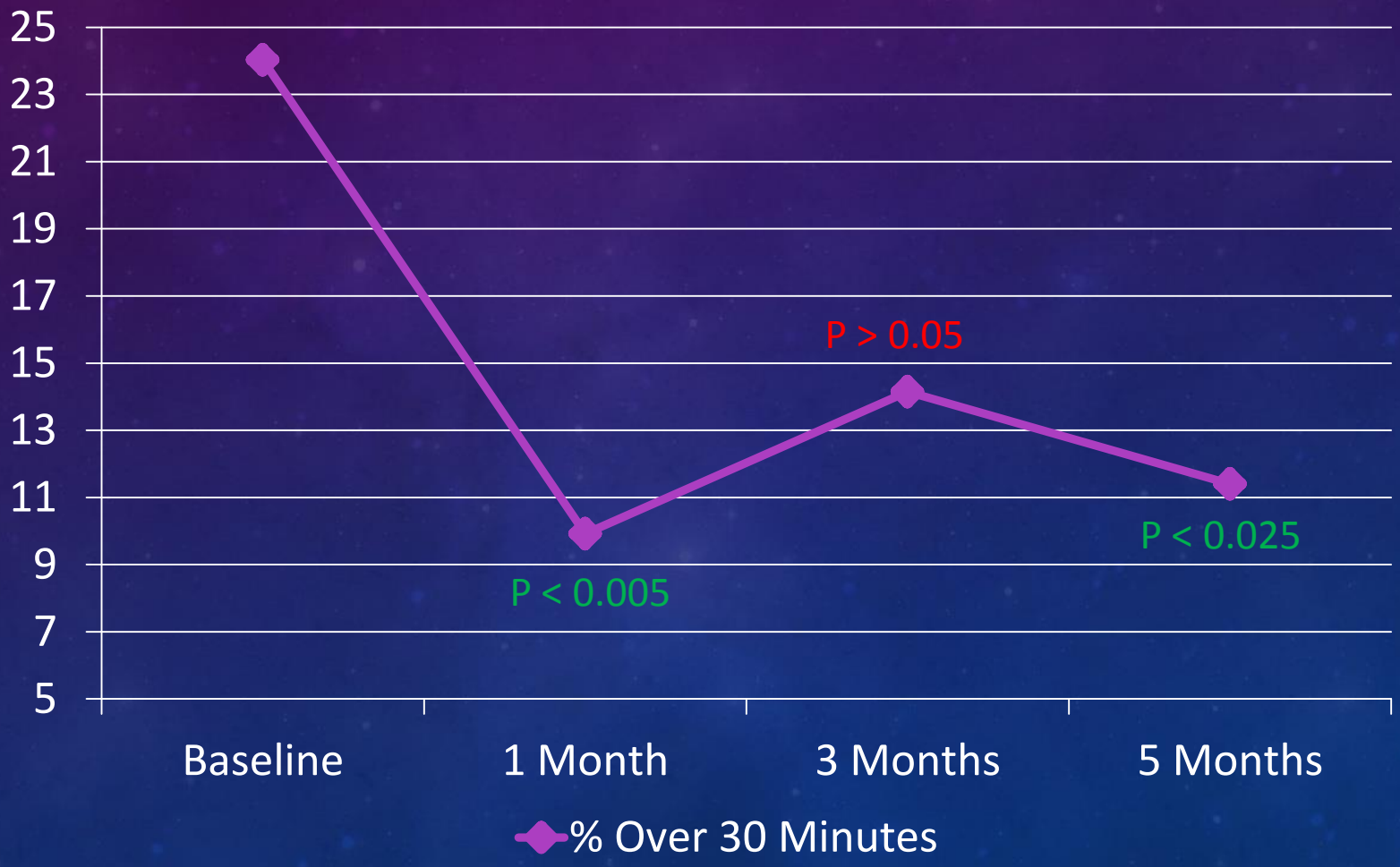
3 Months

- Administrations Audited: 106
- Average Time: 16.94 min
- # Over 30 Min: 15 (14.15%)

5 Months

- Administrations Audited: 114
- Average Time: 13.85
- # Over 30 Min: 13 (11.40%)

STEP 4: HAVE I CONFIRMED COUNTERMEASURE?

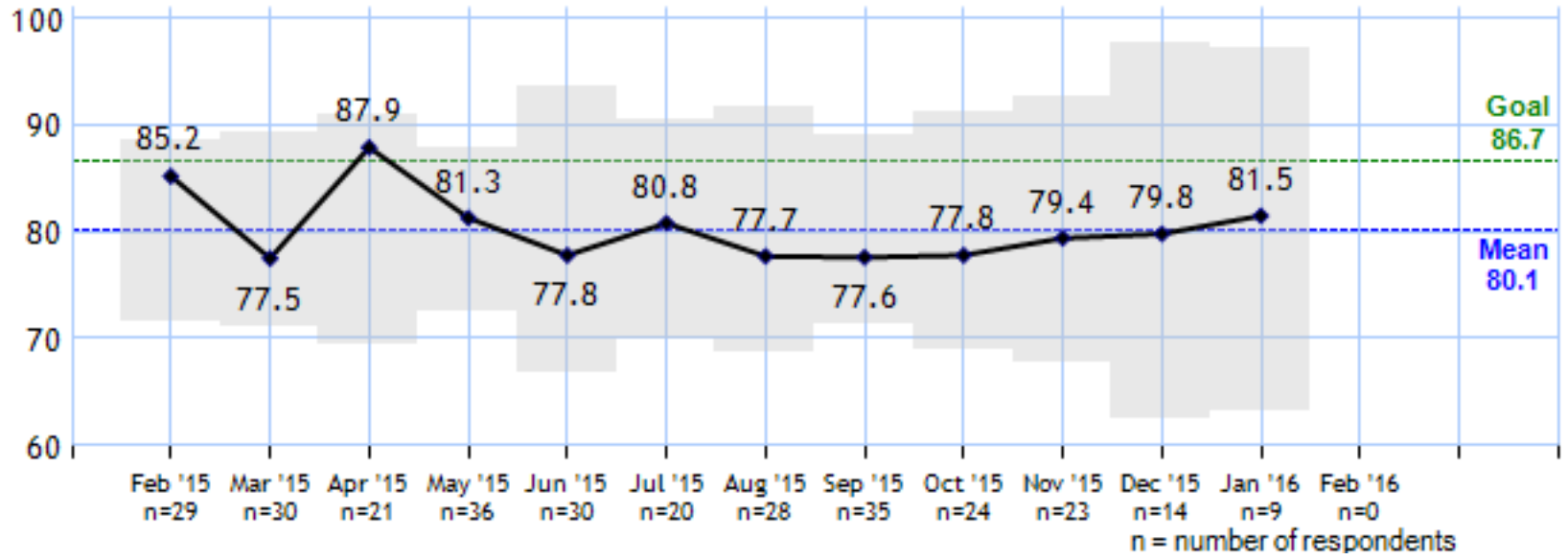


Mean Trends

Inpatient - 5S

Salem Hospital

Section - Meals



5S

Displayed by Discharge Date

NEXT STEPS

Maintain Standard Work on 5 South

- ✓ Remind staff of Standard Work in "Huddle Notes"
- ❑ Put Standard Work into "Notes for Floats"
- ❑ *additionally—working on getting order to "notify nutrition services" added automatically*
- ❑ Spread Standard Work to other Adult Health floors (work-in-progress)

Disseminate Standard Work

- ✓ Present Standard Work To Coordinating Council
- ✓ Select next unit to trial Standard Work
- ❑ Monitor progress of Standard Work on other units

DISCUSSION

Limitations

- Unable to get IT support to gather data from EPIC
- Tedious data gathering process → less data
- Only measured administrations > 30 minutes, did not look at changes in blood glucose level

Recommendations

- Measure rates of hypoglycemia
- Measure rate of extreme hyperglycemia
- Measure glycemic control

IMPLICATIONS FOR NURSING

- Nurses are ultimately responsible for timely insulin administration… BUT we need a process that supports the ability to do this.
- Interdisciplinary communication is KEY!
- If we demonstrate good diabetes care, it encourages patients to manage their diabetes well.

REFERENCES

- Manning, E. H. & Jackson, L. (2005). An evaluation of the timing between key insulin administration-related processes: The reasons why these processes happen when they do, and how to improve their timing. *Australian Health Review*, *29* (1), 61-67.
- Nirantharakumar, K., Marshall, T., Kennedy, A., Narendranm P., Hemming, K. and Coleman, J. J. (2012). Hypoglycemia is associated with increased length of stay and mortality in people with diabetes who are hospitalized. Diabetic Medicine, 29: e445-e448. doi: 10.1111/dme.12002