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Improving Resulted Hemoglobin A1c Rates: A Feasibility Study for Point-of-Care Hemoglobin A1c Testing at an Urban Family Medicine Office

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Background and Introduction

- Hemoglobin A1c is the gold standard for evaluating glycemic control in patients with diabetes mellitus. It is an index measure of the patient's average blood glucose level over the preceding 3 months.

- In a meta-analysis of diabetes management, rapid availability of testing (point-of-care versus routine lab) resulted in more frequent intensification of therapy and lowered A1c levels.

- Over the course of 12 months (September 2015- August 2016) only 62.0% of Jefferson Family Medicine Associates (JFMA) patients had a A1c reported

Study Aims

- Our practice's goal is to increase the number of up-to-date hemoglobin A1c for diabetic patients seen at JFMA in order to help improve glycemic control.

- The aim of this study is to see if point-of-care (POC) hemoglobin A1C is a feasible way to increase the number of up-to-date hemoglobin A1C. We looked at various factors including timing, training, and flow.

Methods

Sample Selection:

Adult patients with the diagnosis of diabetes or at risk at diabetes who had not had an A1c in the last 3 months who visited Jefferson Family Medicine Associates' Team One on two selected dates.

Process:

1. Identify patients with diabetes mellitus or a risk of diabetes via chart review of Team 1 provider schedules.

2. Observe medical assistants (MA) from start (MA collects blood tube) to finish (MA documents data in computer).

3. Document the MA workflow through mapping and obtain qualitative feedback on the process from MA.

4. Record the start and finish times.

5. Analysis mapping and time measurements; as well as qualitative feedback from medical assistants.

Mapping and Data
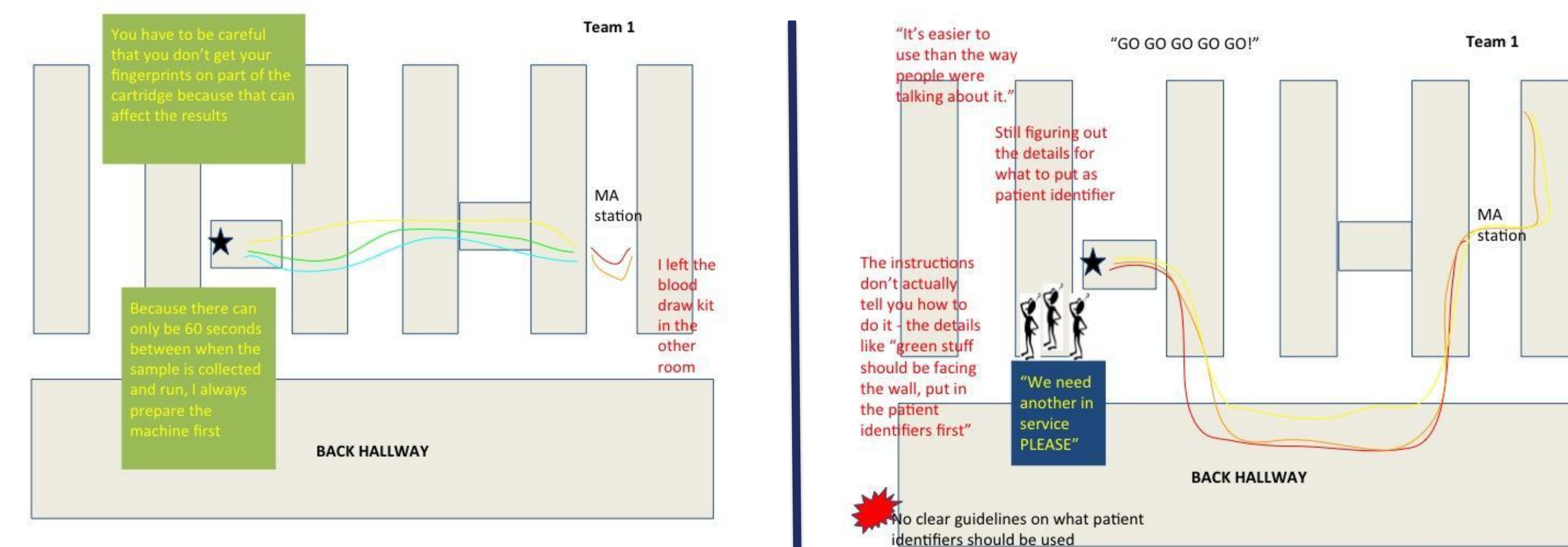
MA collects tubes needed	MA Enters room	MA Leaves Room	Enters A1c Room	A1c Resulted	A1c Entered into Computer	Total Time (minutes)
1:24	1:27	1:29	1:29		1:33	1:36 (gave up)	9
1:42	1:45	1:47	1:47		1:51		9
1:53	1:56	2:01	2:01		2:06	2:07	14
2:08	2:10	patient left					n/a
2:35	2:38	2:39	2:40		2:44		*new diagnosis* 9
2:41	2:46	2:48	2:48	(came back 28 s after result) 2:52			13
2:55	3:02	3:03	3:03	(came back @ 3:06 after flu shot) 3:07			13
3:35	3:37	3:39	3:39		3:43	3:45	10
4:26	4:30	4:31	4:32		4:36	4:38	12
1:15	1:17	1:22	1:23		1:27	gave up	n/a

Result Analysis

- An average of 10.2 additional minutes were spent by the MAs performing the test.

- MAs were able to incorporate operating the A1c machine into their workflow and could consecutively perform tasks such as urinalysis and administering vaccines while the A1c sample was being processed.

- MAs reported that additional training is needed.

- Feedback from the medical assistants:

"The instructions don't actually tell you how to do it - the details like "green stuff should be facing the wall, put in the patient identifiers first"

"I'm on a mission!" "Because everyone gets in my way!"

"My patient is waiting for this…I only have 2 rooms. I feel bad."

Conclusions

- It is feasible to have an A1c in our practice to implmenent POC A1C testing

- Successful implementation would require buy-in from MAs and providers as well as potential reconstructing the geography of the office/clinic

Challenges and Limitations

- Small sample size that may not be representative of JFMA patient's population

- We did not look at how collection of POC A1C affected patient outcomes or clinical management

- Lack of comparison group to determine if similar delays exist with other POC testing and interventions (ie EKGs, vaccines, INR, etc.)

- Cost of testing: $8/A1c slide

Potential Future Directions

- Improve training for medical assistants on POC A1C testing

- Increase provider awareness of POC A1C testing

- Implement study of POC A1C testing across the practice over a longer period of time

- Compare diabetes outcomes of patients who received POC A1c testing vs traditional laboratory testing

- Look at the effect of adding more POC A1C machines on office flow and ability to obtain A1C.

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