Improving Safety of Insulin Administration

Melissa Tucker
DeSales University, Melissa.Tucker@lvhn.org

Joyce Najarian MSN, RN, CDE
Lehigh Valley Health Network, Joyce.Najarian@lvhn.org

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Improving Safety of Insulin Administration

Melissa Tucker, Joyce Najarian RN, MSN, CDE

Lehigh Valley Health Network, Allentown, Pennsylvania

Background

Inpatient glycemic control is challenging. As of the CDC's 2014 Statistics report, there are over 29 million people in the United States diagnosed with diabetes. An insulin regime is vital to management of Type 1 diabetes and often useful for management of Type 2. With this knowledge, there is a rising importance for health care professionals to understand and have competency in treatment for this chronic disease. Inpatient use of insulin can be more difficult to manage due to acute illness while in the hospital. Insulin is the preferred glucose management while people with Type 2 diabetes are in the hospital. Because of the acuity of patient in the hospital, dosage and timing of insulin as well as oral intake matter more. All members of the healthcare team can make a difference in treatment with the proper knowledge and practice. Continuity of care is a main concern for patients post-discharge. Some programs are in place to provide guidance, but there is a need to address the special population of patients who have gone home with the addition of insulin to their medication regimen.

Purpose

The overall purpose of this project is to assist in improving the safety of insulin administration. There are three sub-projects that aim at more specific goals.

1. **To provide insight from RNs as to the barriers they face when insulin cannot be administered in an appropriate time frame.**
2. **To provide updated and vital information on each type of insulin to healthcare providers via pocket cards.**
3. **To assist in the transition from hospitalization to home for patients who need insulin added to their home medication regimen after being discharged.**

Methodology

- **Evaluation of the survey results through quantitative analysis provided the top barriers overall to RNs in the Lehigh Valley Health Network. Additional breakdown aimed to determine a correlation between location, experience, or perceived ability to delivery insulin on time did not reveal any significant relationships. Themed analysis occurred of the written-in responses for additional barriers as well as suggestions to reduce barriers.**
- **An assessment was given to a total of 10 medical students and 30 residents to determine their baseline knowledge of diabetes and insulin. The results indicate a knowledge deficit and a need for additional education. Creation of a reference card included interviews, review of resources and package inserts for each insulin product.**
- **Utilizing previous teams that have conducted post-discharge follow up phone calls, as well as literature reviews, the creation of the follow up phone call questionnaire for patients discharged new to insulin transpired. The questions are tailored to safe diabetes management for the patient who is transitioning from inpatient to outpatient care. During the phone call, the algorithm delineates actions for the caller based on the patient's current situation. Collected information was reported and documented following the phone call.**

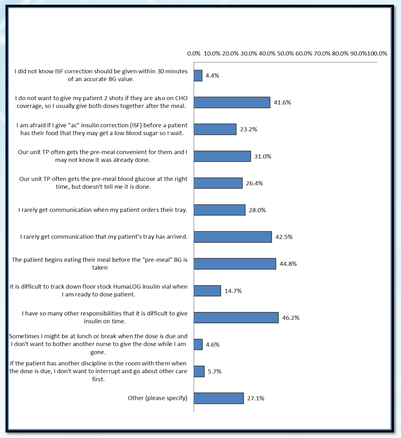


Figure 1: Perceived Barriers to Timely Delivery of Insulin Survey. Percent based on 461 responses.

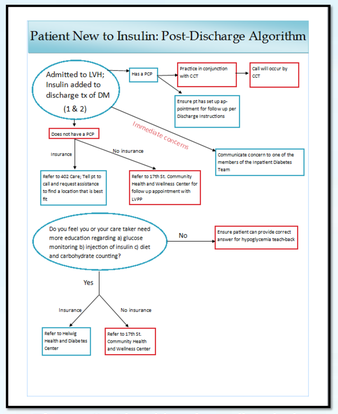
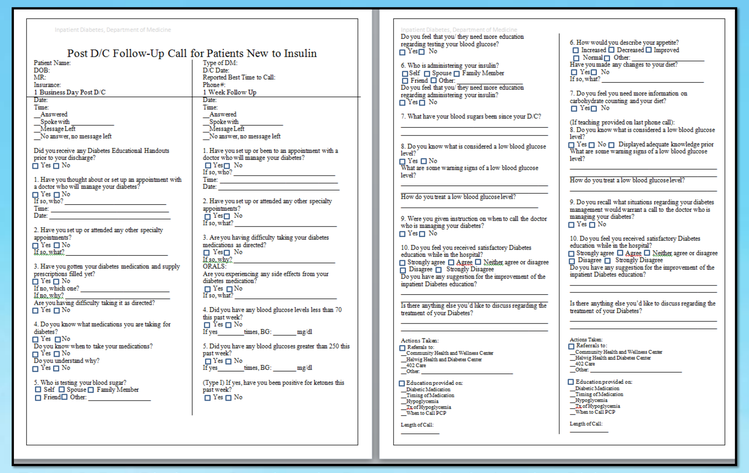


Figure 2: Algorithm for caller during post- discharge phone follow up.



Post D/C Follow-Up Call for Patients New to Insulin

Patient Name:
DOB:
MR:
Insurance:
1 Business Day Post D/C

Date:
Time:
__Answered
__Spoke with
__Message Left
__No answer, no message left

Did you receive any Diabetes Educational Handouts prior to your discharge?
☐ Yes ☐ No

1. Have you thought about or set up an appointment with a doctor who will manage your diabetes?
☐ Yes ☐ No
If so, who?
Time:
Date:

2. Have you set up or attended any other specialty appointments?
☐ Yes ☐ No
If so, what?

3. Have you gotten your diabetes medication and supply prescriptions filled yet?
☐ Yes ☐ No
If so, which one?
If no, why?
Are you having difficulty taking it as directed?
☐ Yes ☐ No

4. Do you know what medications you are taking for diabetes?
☐ Yes ☐ No
Do you know when to take your medications?
☐ Yes ☐ No
Do you understand why?
☐ Yes ☐ No

5. Who is testing your blood sugar?
☐ Self ☐ Spouse ☐ Family Member
☐ Friend ☐ Other: _____

Type of DM:
D/C Date:
Reported Best Time to Call:
Phone #:
1 Week Follow Up

Date:
Time:
__Answered
__Spoke with
__Message Left
__No answer, no message left

1. Have you set up or been to an appointment with a doctor who will manage your diabetes?
☐ Yes ☐ No
If so, who?
Time:
Date:

2. Have you set up or attended any other specialty appointments?
☐ Yes ☐ No
If so, what?

3. Are you having difficulty taking your diabetes medications as directed?
☐ Yes ☐ No
If so, why?
ORALS:
Are you experiencing any side effects from your diabetes medication?
☐ Yes ☐ No
If so, what?

4. Did you have any blood glucose levels less than 70 this past week?
☐ Yes ☐ No
If yes _____times, BG: _____ mg/dl

5. Did you have any blood glucoses greater than 250 this past week?
☐ Yes ☐ No
If yes_____times, BG: _____ mg/dl

(Type I) If yes, have you been positive for ketones this past week?
☐ Yes ☐ No

Do you feel that you/ they need more education regarding testing your blood glucose?
☐ Yes ☐ No

6. Who is administering your insulin?
☐ Self ☐ Spouse ☐ Family Member
☐ Friend ☐ Other:
Do you feel that you/ they need more education regarding administering your insulin?
☐ Yes ☐ No

7. What have your blood sugars been since your D/C?

8. Do you know what is considered a low blood glucose level?
☐ Yes ☐ No
What are some warning signs of a low blood glucose level?

How do you treat a low blood glucose level?

9. Were you given instruction on when to call the doctor who is managing your diabetes?
☐ Yes ☐ No

10. Do you feel you received satisfactory Diabetes education while in the hospital?
☐ Strongly agree ☐ Agree ☐ Neither agree or disagree
☐ Disagree ☐ Strongly Disagree
Do you have any suggestion for the improvement of the inpatient Diabetes education?

Is there anything else you'd like to discuss regarding the treatment of your Diabetes?

Actions Taken:
☐ Referrals to:
__Community Health and Wellness Center
__Helwig Health and Diabetes Center
__402 Care
__Other

☐ Education provided on:
__Diabetic Medication
__Timing of Medications
__Hyperglycemia
__Hypoglycemia
__Rx of Hypoglycemia
__When to Call PCP

Length of Call:

6. How would you describe your appetite?
☐ Increased ☐ Decreased ☐ Improved
☐ Normal ☐ Other:
Have you made any changes to your diet?
☐ Yes ☐ No
If so, what?

7. Do you feel you need more information on carbohydrate counting and your diet?
☐ Yes ☐ No

(If teaching provided on last phone call):
8. Do you know what is considered a low blood glucose level?
☐ Yes ☐ No ☐ Displayed adequate knowledge prior
What are some warning signs of a low blood glucose level?

How do you treat a low blood glucose level?

9. Do you recall what situations regarding your diabetes management would warrant a call to the doctor who is managing your diabetes?
☐ Yes ☐ No

10. Do you feel you received satisfactory Diabetes education while in the hospital?
☐ Strongly agree ☐ Agree ☐ Neither agree or disagree
☐ Disagree ☐ Strongly Disagree
Do you have any suggestion for the improvement of the inpatient Diabetes education?

Is there anything else you'd like to discuss regarding the treatment of your Diabetes?

Actions Taken:
☐ Referrals to:
__Community Health and Wellness Center
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☐ Education provided on:
__Diabetic Medication
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__Rx of Hypoglycemia
__When to Call PCP

Length of Call:

Figure 3: Post-Discharge Questionnaire Documentation for Inpatient Diabetes use.

Future Implications

- **A comprehensive report with additional analysis of perceived barriers to timely delivery of insulin have been distributed with intention to implement strategies to alleviate barriers.**
- **The Insulin Reference pocket card will be distributed among Residents and RNs as a educational tool for clinical use. Case-based educational meetings will continue and knowledge level will be reassessed.**
- **The post-discharge phone survey continues to develop based on needs of patients during the sensitive transition home while adding insulin to their diabetes management. The intent remains to assist the patient with any diabetes related concerns post discharge.**

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