

Improving the Insulin and Diabetes Supplies Discharge Experience

Roselyn Mateo, Abrar Al-Faraj, Hila Calev, Lauren Gilbert, Megan Lipcsey

TAP TO GO BACK TO KIOSK MENU

Introduction/Problem

An estimated 30.3 million people of all ages—or 9.4% of the U.S. population—had diabetes in 2015. Patients with diabetes have higher rates of hospitalization compared with people without diabetes for all age-groups than the general population. Diabetes is the fourth leading comorbid condition associated with any hospital discharge in the U.S. In 2014, a total of 7.2 million hospital discharges were reported with diabetes as any listed diagnosis among U.S. adults aged 18 years or older.

The transition from inpatient to outpatient presents opportunity for prescribing errors that could lead to avoidable patient harm, especially when insulin is involved. Medication errors are attributed to several factors including complexity of insulin regimens, the number of different insulin preparations and concentrations, and pen needle/syringe compatibility. This complexity is further compounded by a wide variety of blood glucose self-monitoring equipment including monitors, test strips, and lancets/lancet devices that are not cross-compatible. Another layer that adds to the intricacy of the discharge process includes the changing prescription coverage based on the insurance plan's formulary and cost variation by tier, by pharmacy, and pharmacy type (mail order or retail). Depending on patients' health care plan, generic medications and biosimilar insulins may be less expensive than the original formulation.

Aim/Goal

In our institution, we aim to improve the discharge experience of house staff who are discharging patients with diabetes with insulin, blood glucose self-monitoring equipment and supplies. We want to evaluate the time required to discharge a patient with diabetes, assess the satisfaction of our house staff with the current electronic medical record, and determine current knowledge of insulin and blood glucose self monitoring equipment and supplies.

The Team

- Roselyn Cristelle I Mateo MD MS, Department of Internal Medicine
- Abrar Al-Faraj MD, Department of Internal Medicine
- Hila Calev, MD Department of Internal Medicine
- Lauren Gilbert MD, Department of Internal Medicine

- Megan Lipcsey MD, Department of Internal Medicine
- Housestaff QI Council 2018-2019
- Nuha El Sayed, Joslin Diabetes Center
- Thecla Gordon, Joslin Diabetes Center
- Alissa Segal, Joslin Diabetes Center

The Process

- **Process Mapping using Flowchart** : We identified different areas of potential difficulties in insulin flow from admission to the inpatient stay to discharge.
- **Root Cause Analysis using Fishbone Diagram** : We identified the main factors involved in difficulties and challenges when it comes to ordering insulin. We met with pharmacy, nursing leaders, house staff, Information Technology staff and we identified the **discharge process** as a problematic area where we can intervene areas and where we can make the most impact.
- **Specific Aims / Project Charter** : We identified exact elements of our project including sponsors, our problem statement, our aim statement, effected areas, exact scope, boundaries, and a combination of outcome, process, and balance measures
- **RAIL (rolling action item list)** : We identified specific team responsibilities and timelines.
- **Questionnaire** : We designed and developed a self-administered surveys, according to guidelines from Association for Medical Education in Europe and administered it to our house staff

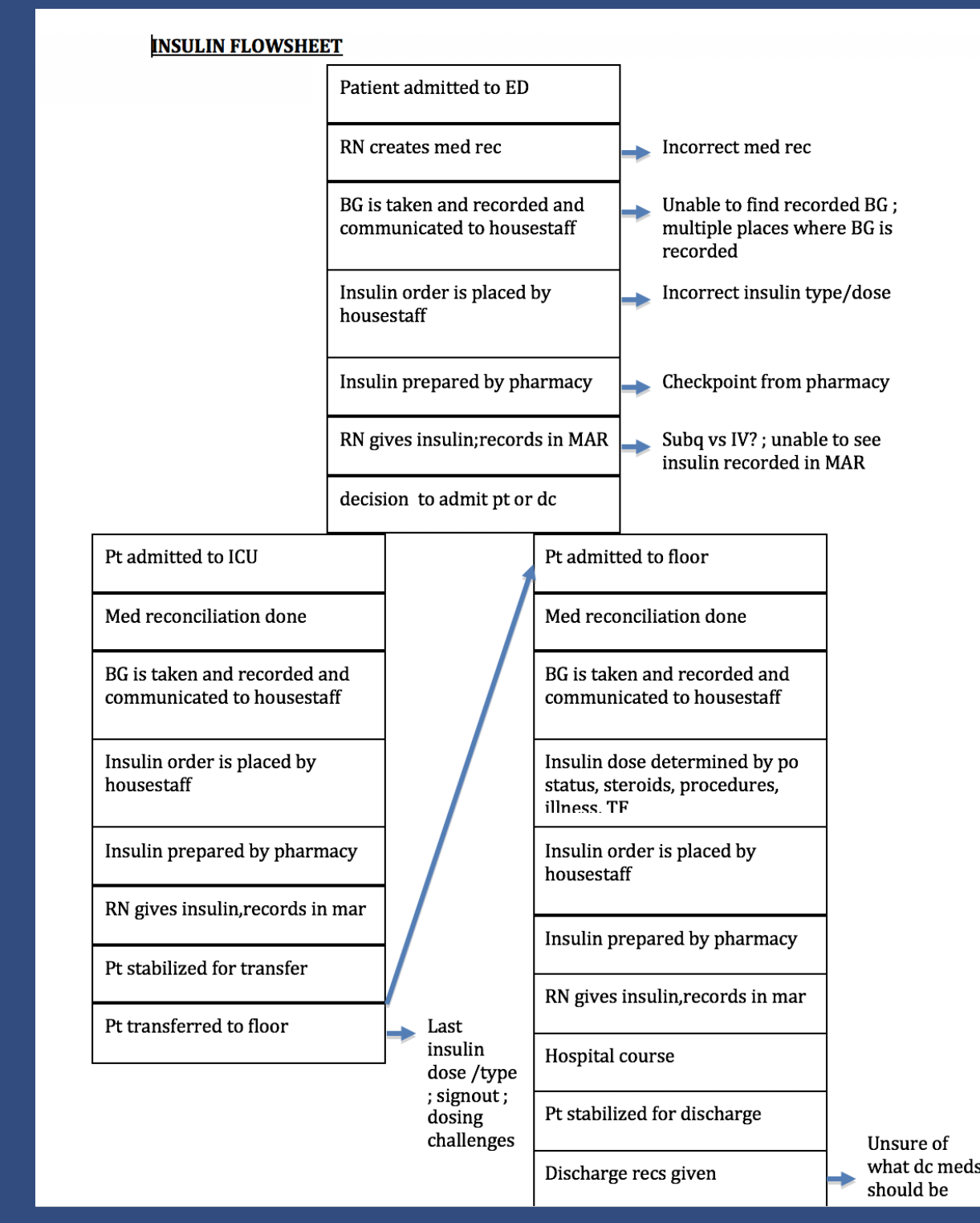


Figure 1 : Flowchart

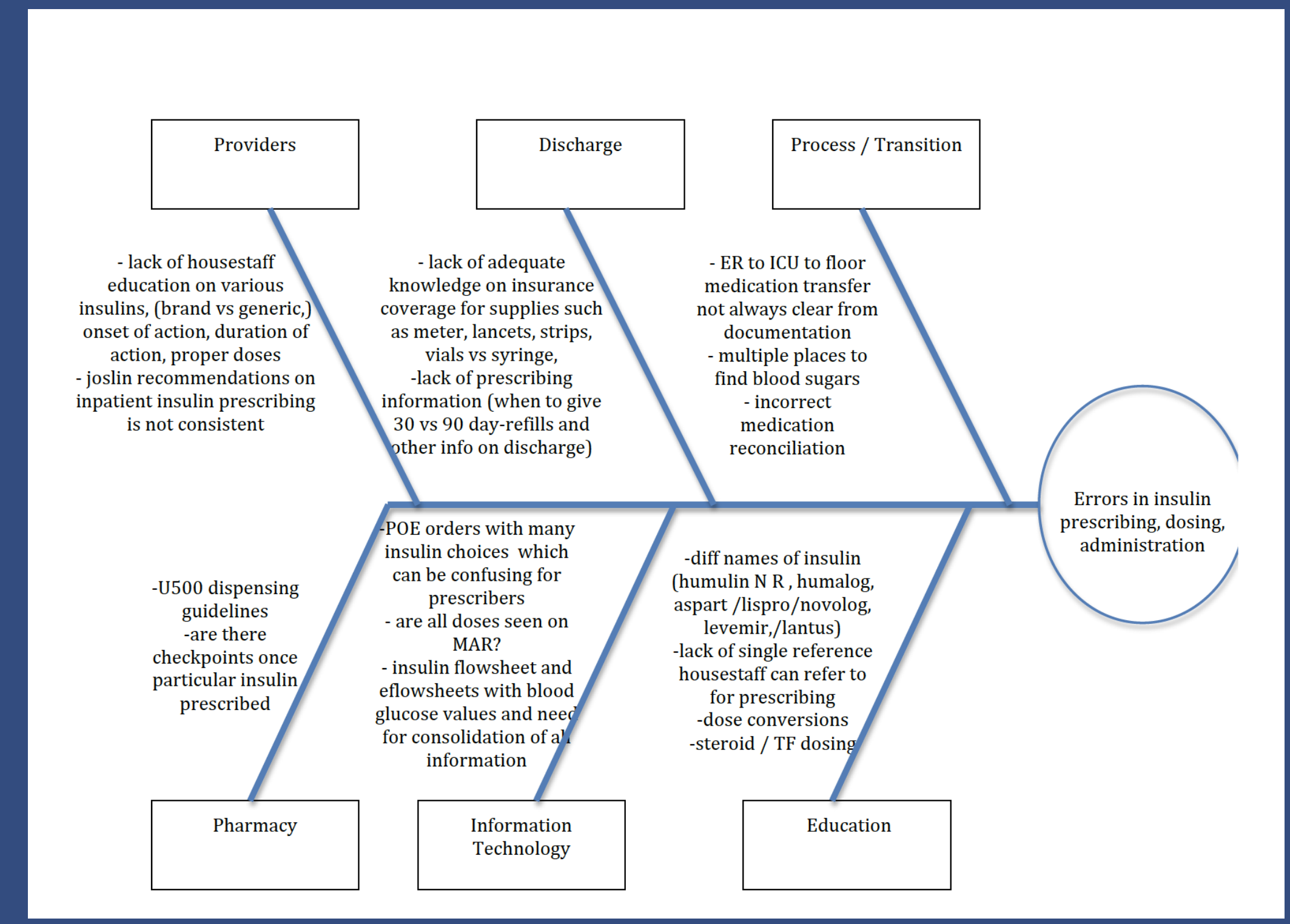
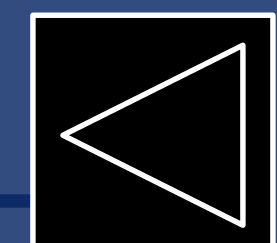


Figure 2 : Fish Bone Diagram

For more information, contact:
Roselyn Cristelle I Mateo MD MS, Clinical Fellow, Endocrinology, BIDMC



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More Results/Progress to Date

Lauren Gilbert / Hila Calev / Abrar Faraj / Megan Lipcsey

•Sponsors
Pharmacy/ Nursing / DM Educator / LT.

•Problem statement – What are we changing
Discharging a patient with DM has increasingly been taking up a lot of the discharge time ; due to multiple brands of insulin pens and vials, syringes, lancets, test strips, and glucometers

•Aim statement –What is our objective (what change and by when)
By June 2019, we will come up with a document to facilitate the discharge process We will aim to increase housestaff awareness of the different diabetes supplies We will aim to make the discharge screens simpler

•Affected areas – what people or departments could be affected
IT – restructuring the insulin order set
Residency
Fellows

•Scope – what process is the focus, what is not the focus
Wiki document
Survey of what we need
Order set changes

•Boundaries – what limitations? Money? Time?
Time
IT limitation
Changing insurances (different brands covered)

•Measure – how will we know if we have made an improvement
•Outcome measure •Survey increased awareness
•Process measure •time to discharge a patient
•Balance measure ?

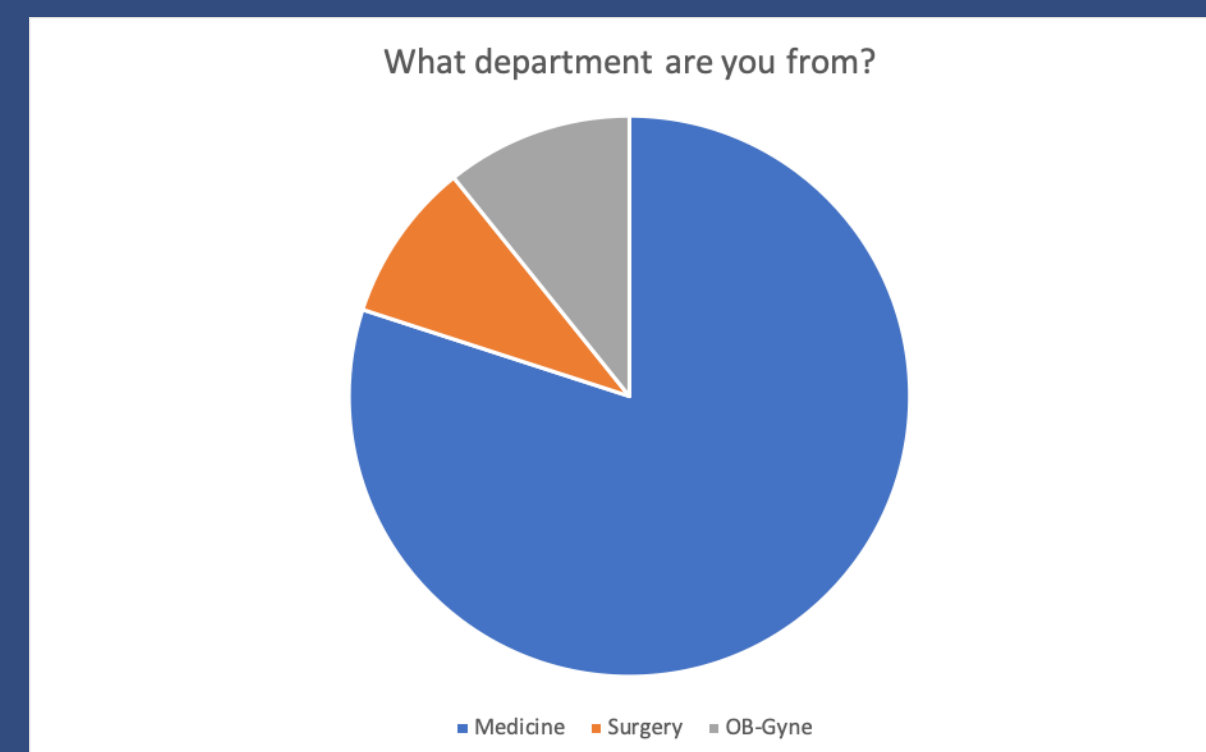


Figure 4 : Distribution of responses by Department

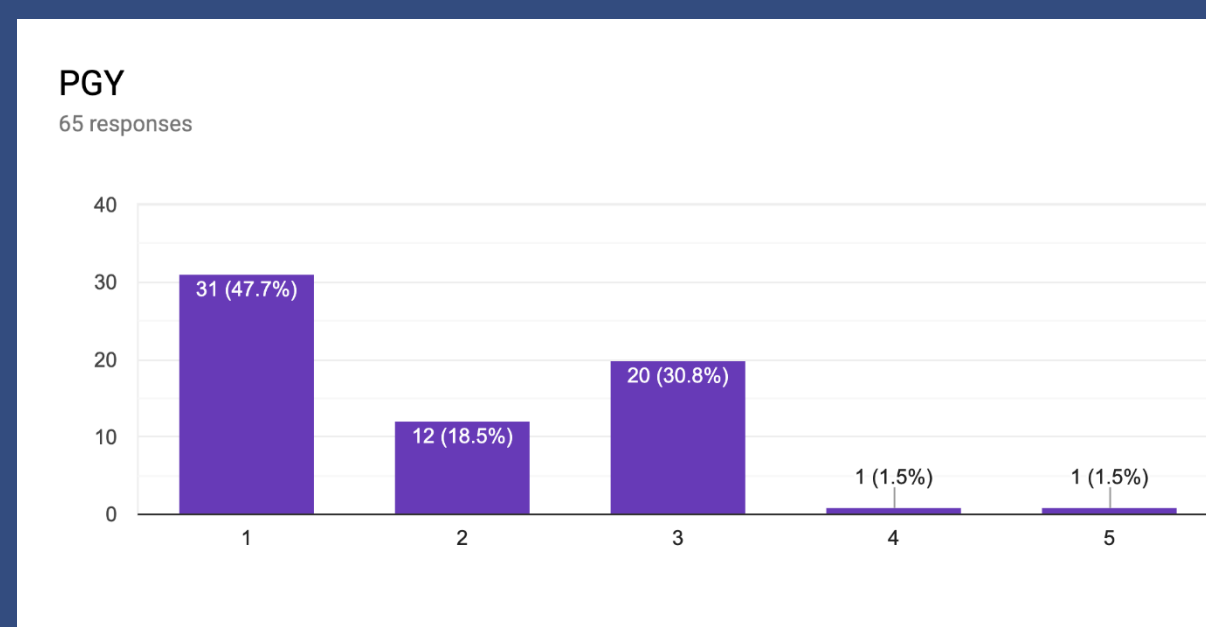
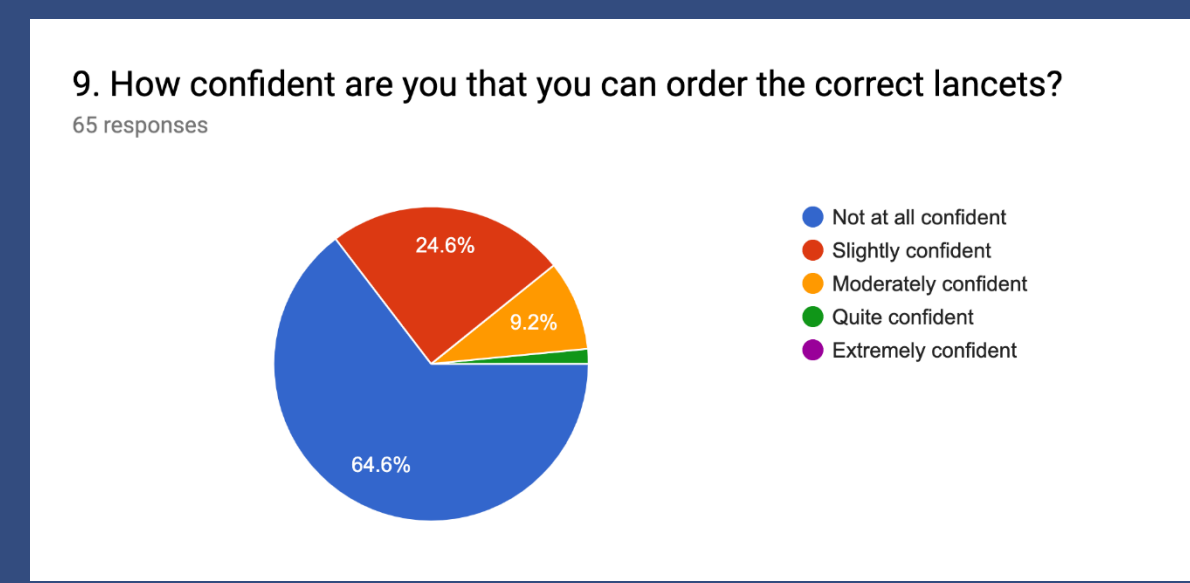
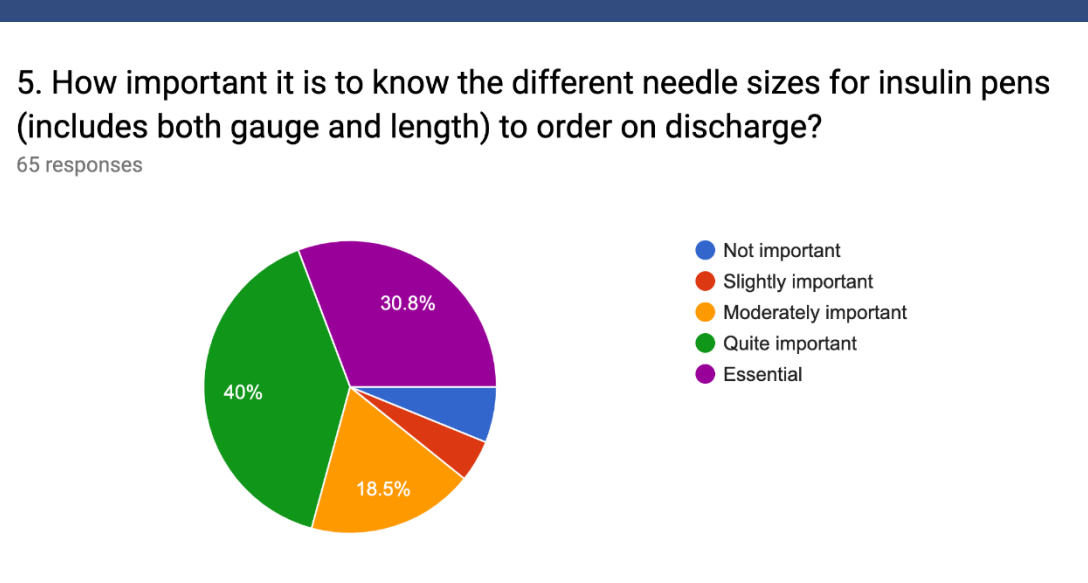
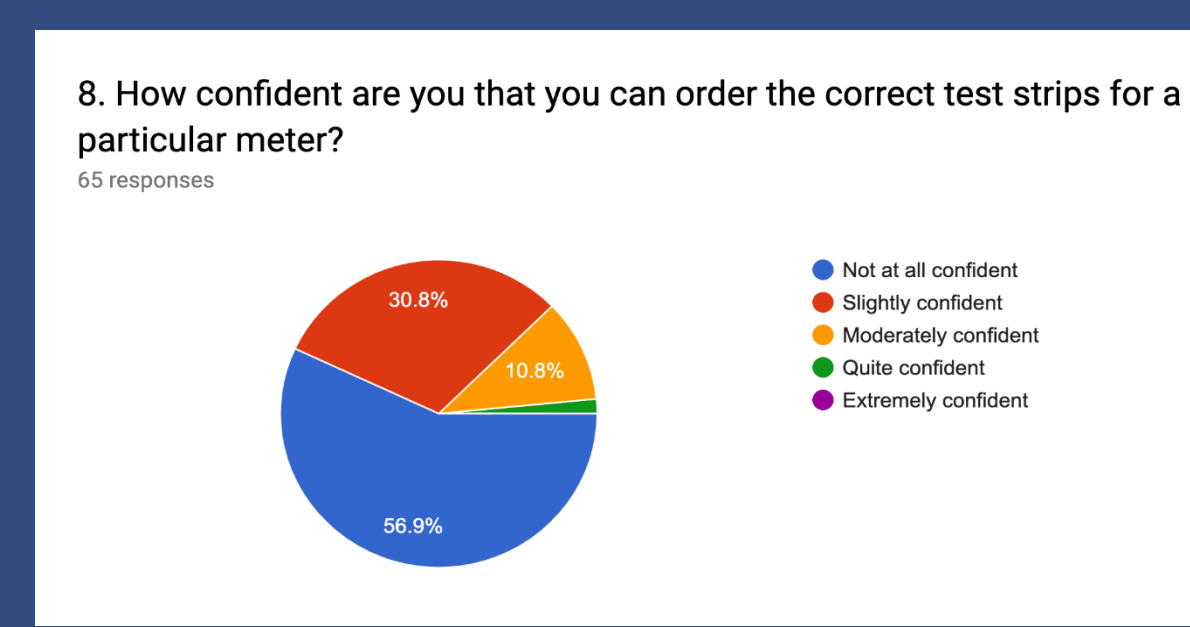
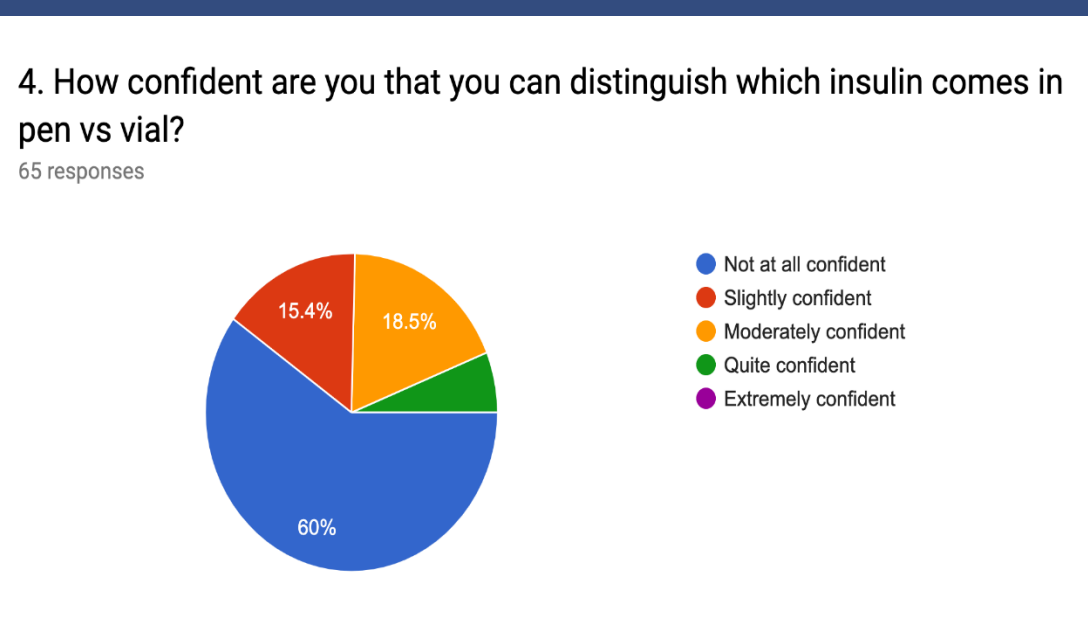
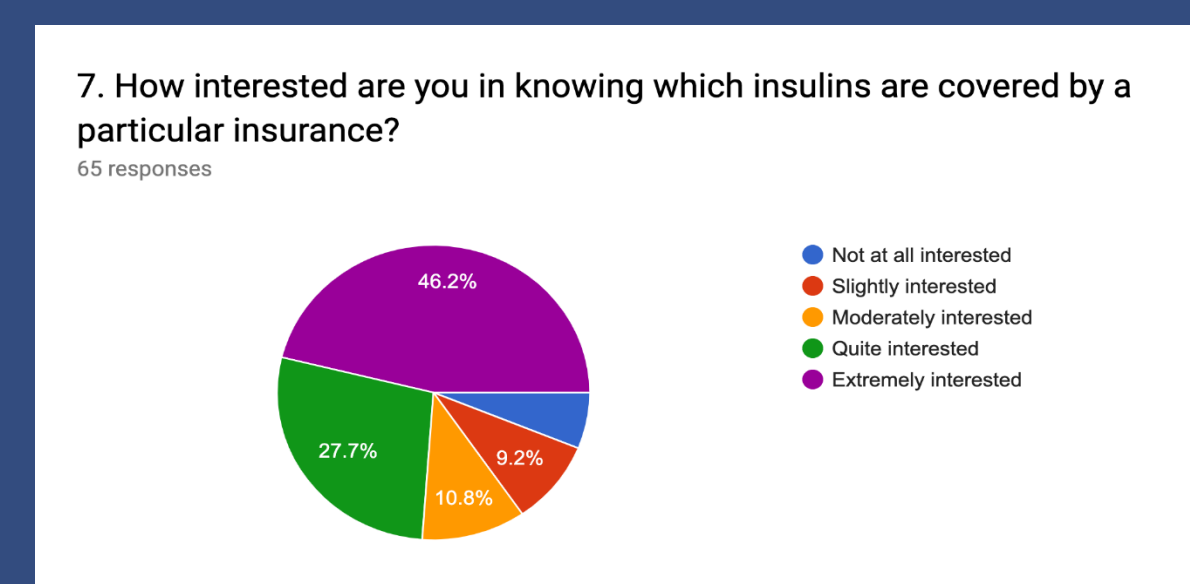
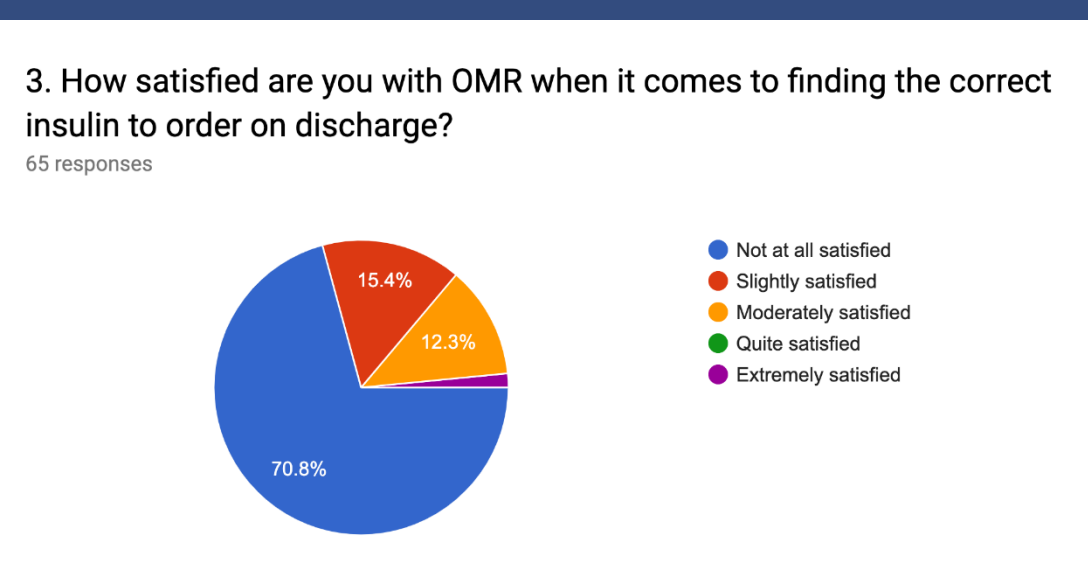
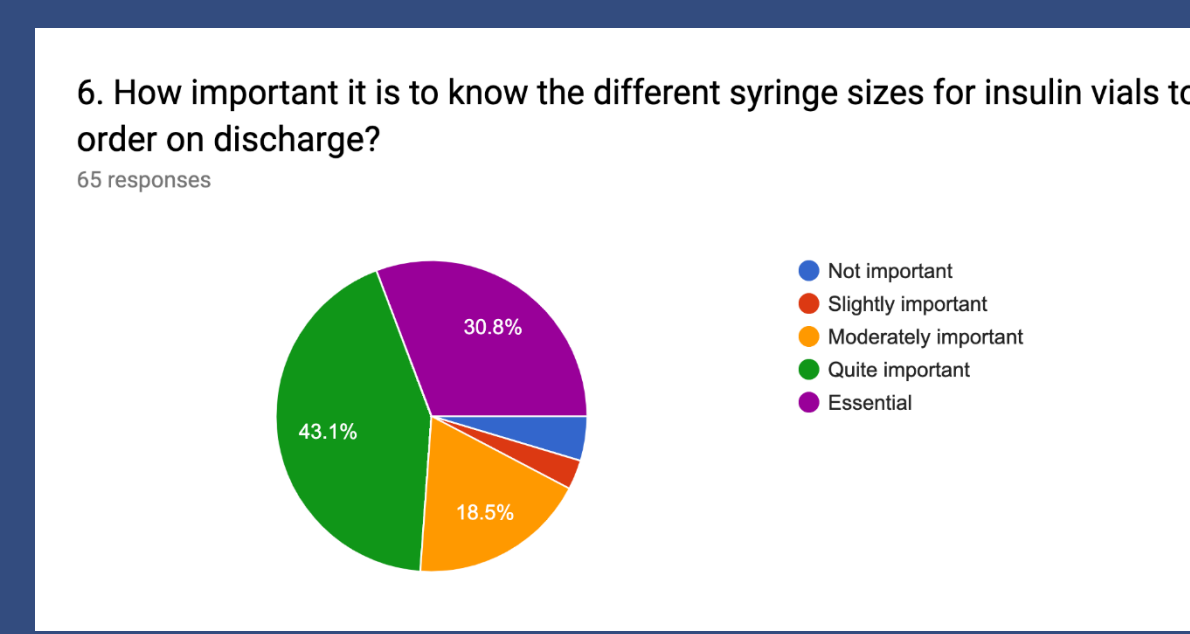
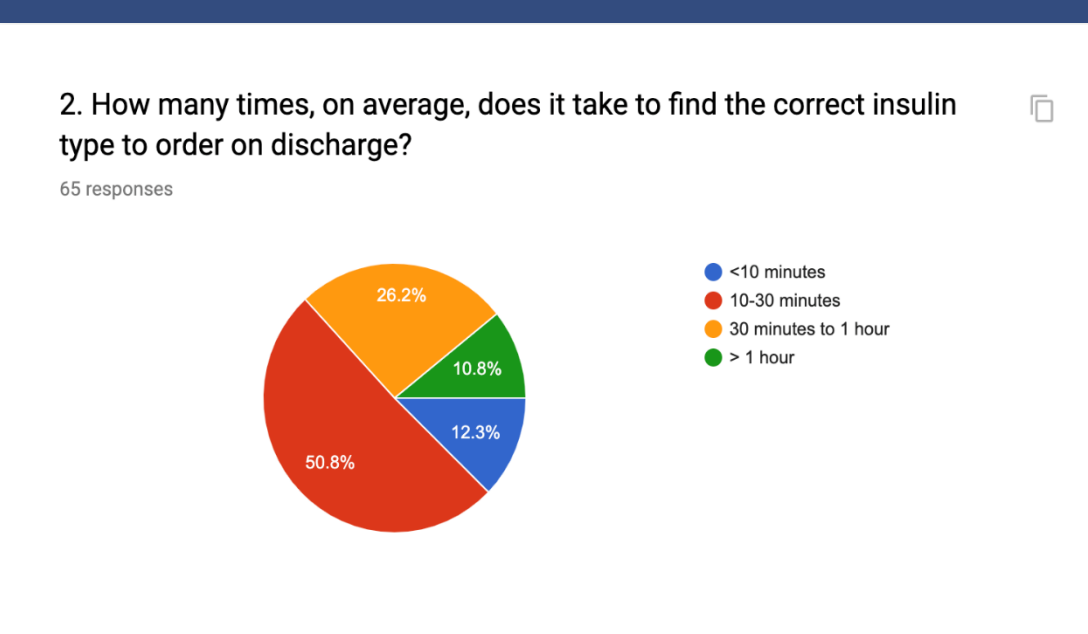
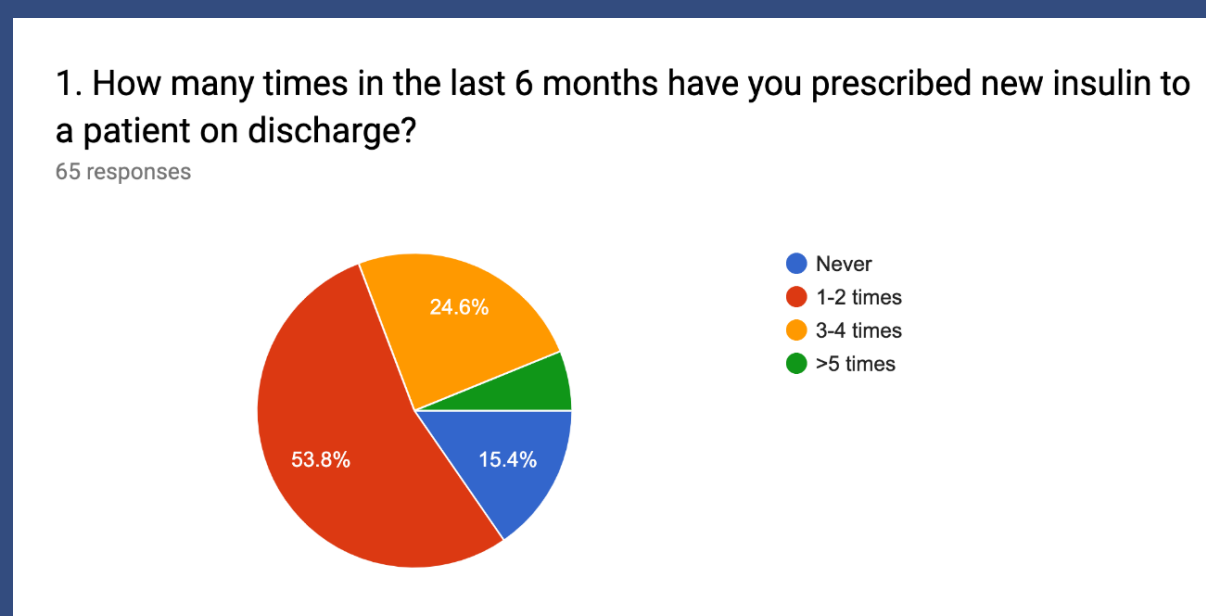


Figure 5 : Distribution of responses by post graduate year (PGY) level

QUESTIONNAIRE.. Continued



QUESTIONNAIRE



10. Resources Used At Discharge

- Joslin Wiki
- Google
- Pharmacy
- HCA Diabetes handbook

- Other coresidents
- Discharge planner
- DM nurse
- Endocrine Fellow

Lessons Learned

- Finding the right insulin supplies (including medication, syringe, insulin pen needle) to discharge a patient with diabetes is time consuming.
- Finding the right blood glucose self-monitoring equipment and supplies (including glucometer, lancets, test strips) to discharge a patient with diabetes is time consuming.
- Our current electronic medical record makes it tedious to discharge a patient with diabetes and house staff are not satisfied with the current system.
- There is no centralized resource that house staff can use to discharge a patient with diabetes
- Determining insurance coverage for insulin and diabetes is an integral part of the discharge process.

Next steps

- Establish a centralized, simplified, resource to aid in the discharge process.
- Incorporating electronic medical record changes (such as, quick picks and order sets).
- Conducting a series of house staff educational lectures
- Create educational videos on insulin and blood glucose self-monitoring equipment

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