

**Project Title**

Reduce Incidence of Wrong Insulin Dose Being Prescribed

**Project Lead and Members**

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**Organisation(s) Involved**

Ng Teng Fong General Hospital

**Healthcare Family Group(s) Involved in this Project**

Medical, Nursing, Pharmacy

**Applicable Specialty or Discipline**

Endocrinology SOC

**Project Period**

Start date: Jan 2019

Completed date: June 2019

**Aim(s)**

To aim 100% of the latest (most current) titrated insulin maintenance dose by DNE to be reflected in the most current prescription in EPIC.

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Conclusion**

See poster appended/ below

## **Project Category**

Care & Process Redesign

Quality Improvement, Workflow Redesign

## **Keywords**

Insulin Titration Documentation

## **Name and Email of Project Contact Person(s)**

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# LATEST (MOST CURRENT) TITRATED INSULIN MAINTENANCE DOSE WERE NOT UPDATED INTO THE PRESCRIPTION POST CONSULTATION WITH DNE AT CLINIC A43

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TEAM MEMBERS: SNM TAY LEE HIANG(SOC A43), NC PRAVEEN KAUR (SOC A43), SSN ANGIE LEE PENG HOON (SOC A43), ADJ. A/P LEE SEE MUAH (EMERITUS CONSULTANT, MEDICINE, ENDOCRINOLOGY), TAN YUEN MING (PRINCIPAL PHARMACIST)

- ✓ SAFETY
- ✓ PATIENT QUALITY
- EXPERIENCE
- ✓ PRODUCTIVITY
- COST
- ✓ TEAMWORK
- ✓ COMMUNICATION

## Define Problem, Set Aim

### Opportunity for Improvement

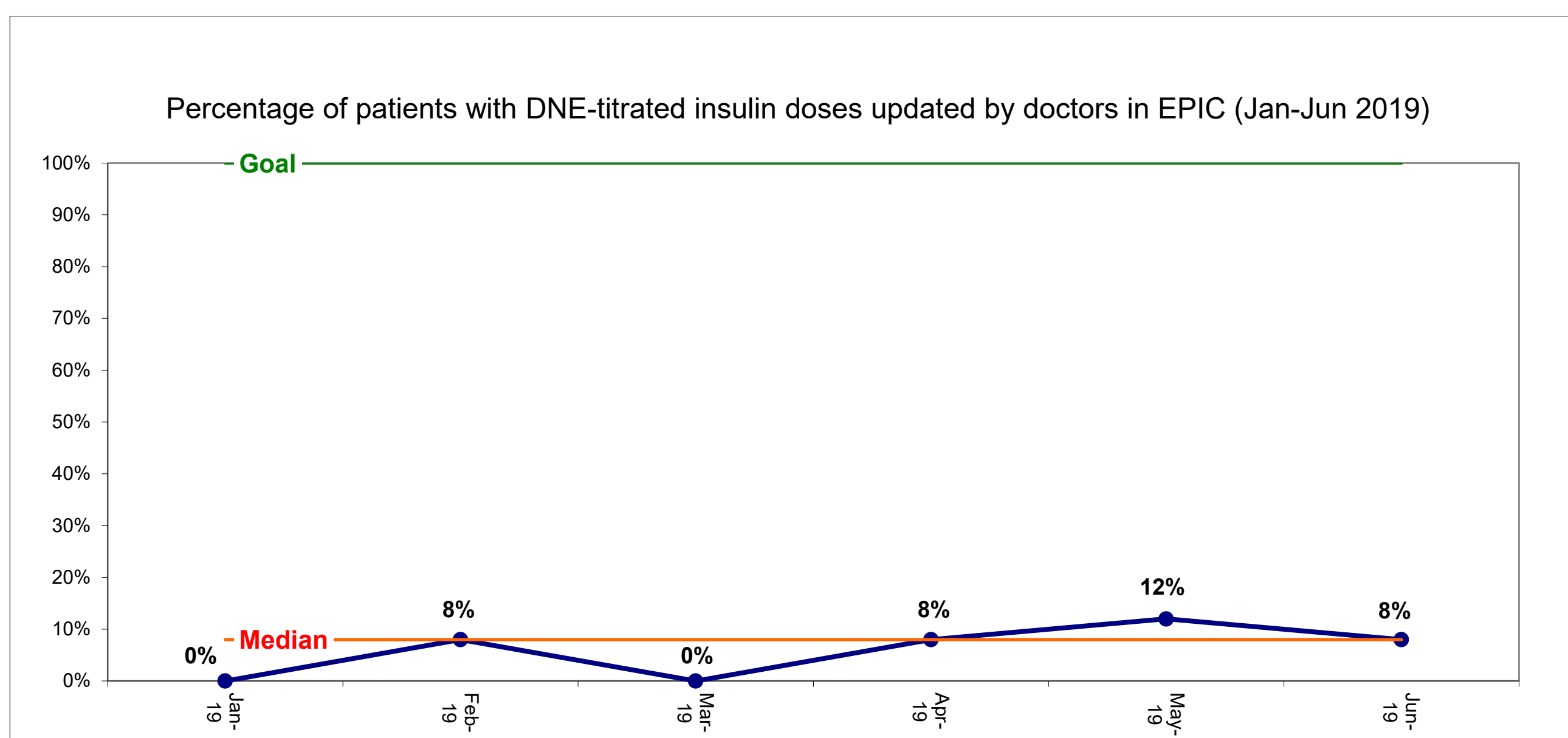
From January to June 2019, there were 113 (93.3%) patients whose latest (most current) titrated insulin maintenance doses determined at DNE visits, were not entered/updated into the prescription in EPIC.

There is a risk that health care providers might subsequently rely on the previous outdated dose to manage the blood glucose levels. This can lead to confusion and predispose to suboptimal glucose control in patients.

**Aim**  
100% of the latest (most current) titrated insulin maintenance dose by DNE to be reflected in the most current prescription in EPIC.

## Establish Measures

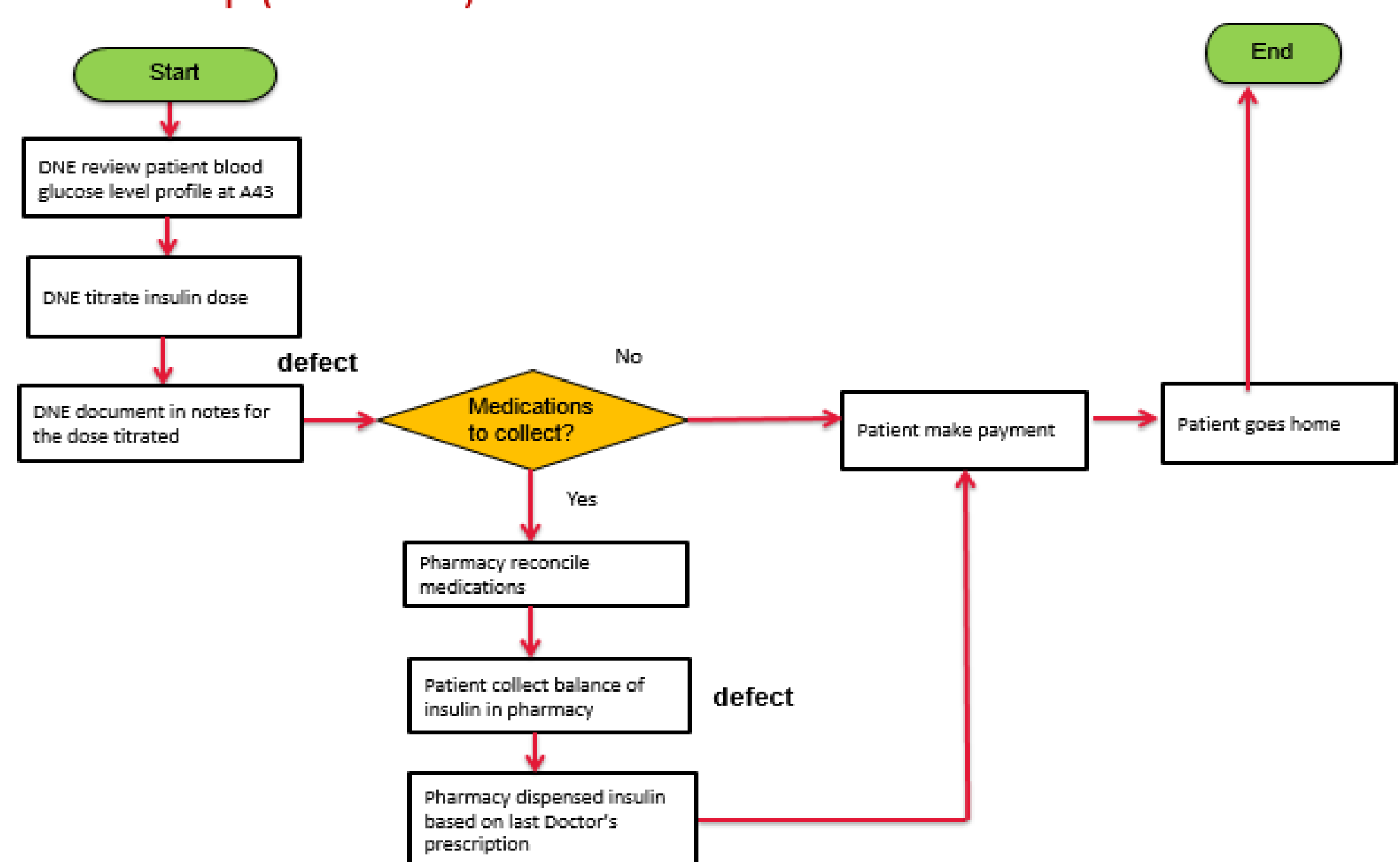
Percentage of patients' insulin prescriptions updated by doctors post-consult with DNE at SOC A43 (Jan-Jun 2019)



## Analyze Problem

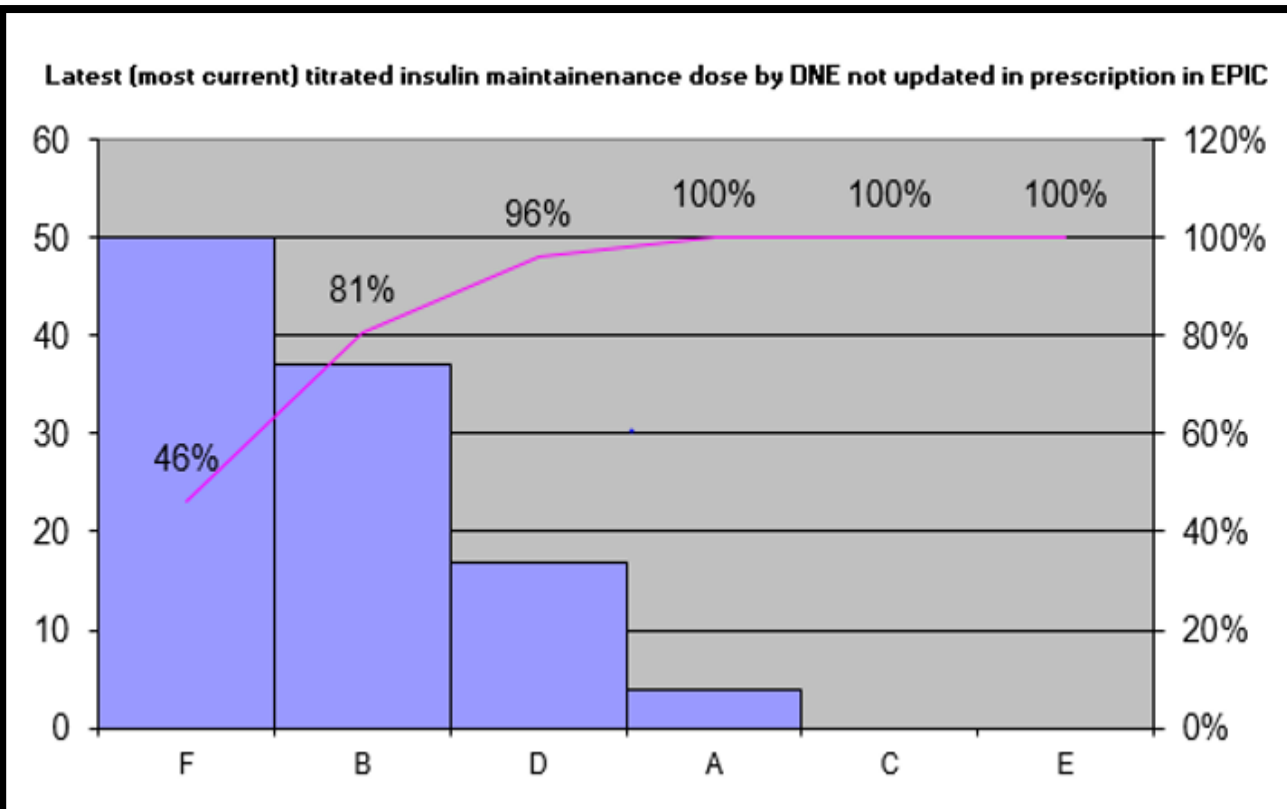
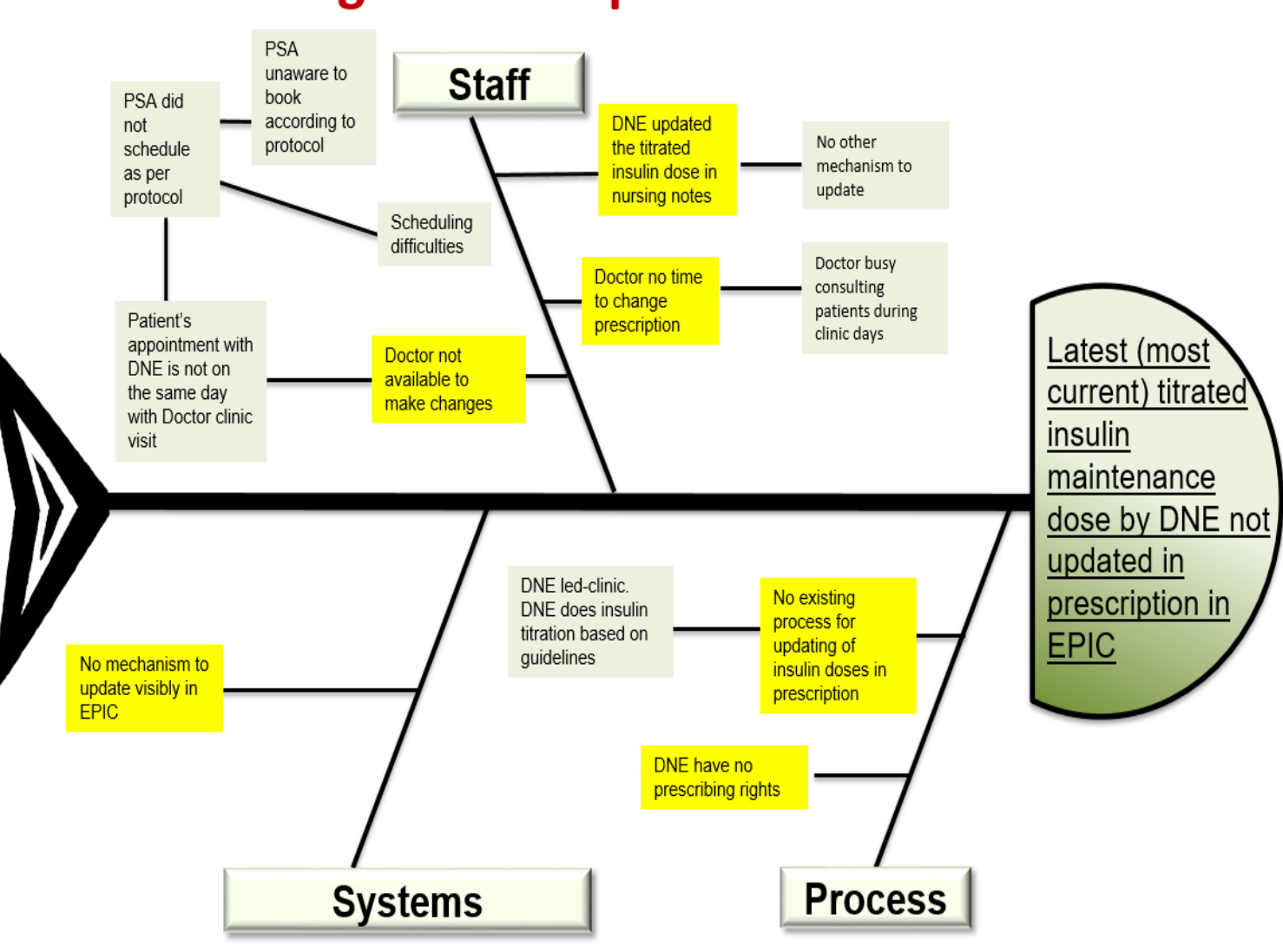
### Process before improvement

#### Process Map (Flowchart)



### Probable root causes

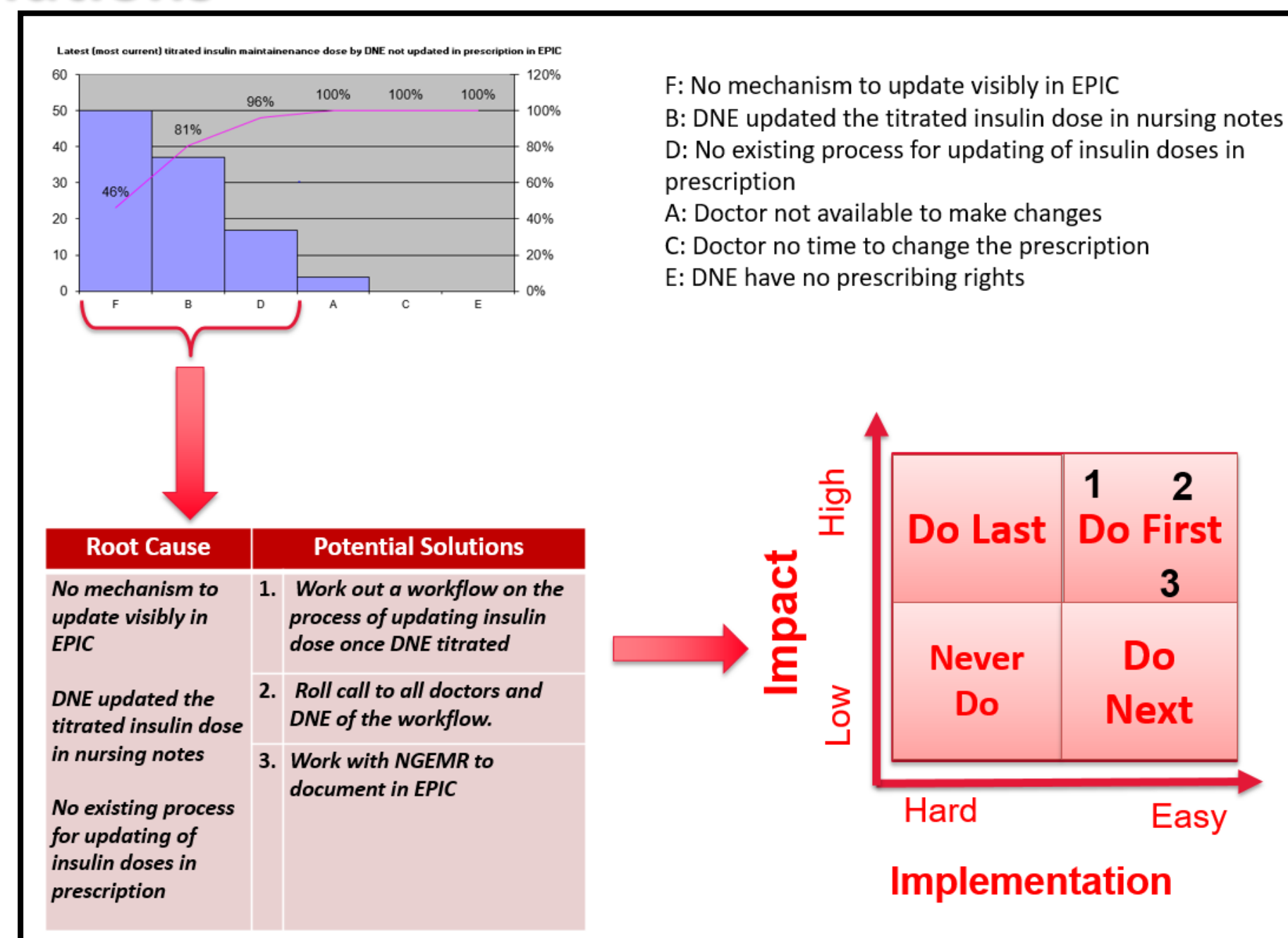
#### Fishbone Diagram Example



F: No mechanism to update visibly in EPIC  
B: DNE updated the titrated insulin dose in nursing notes  
D: No existing process for updating of insulin doses in prescription  
A: Doctor not available to make changes  
C: Doctor no time to change the prescription  
E: DNE have no prescribing rights

## Select Changes

### Probable solutions

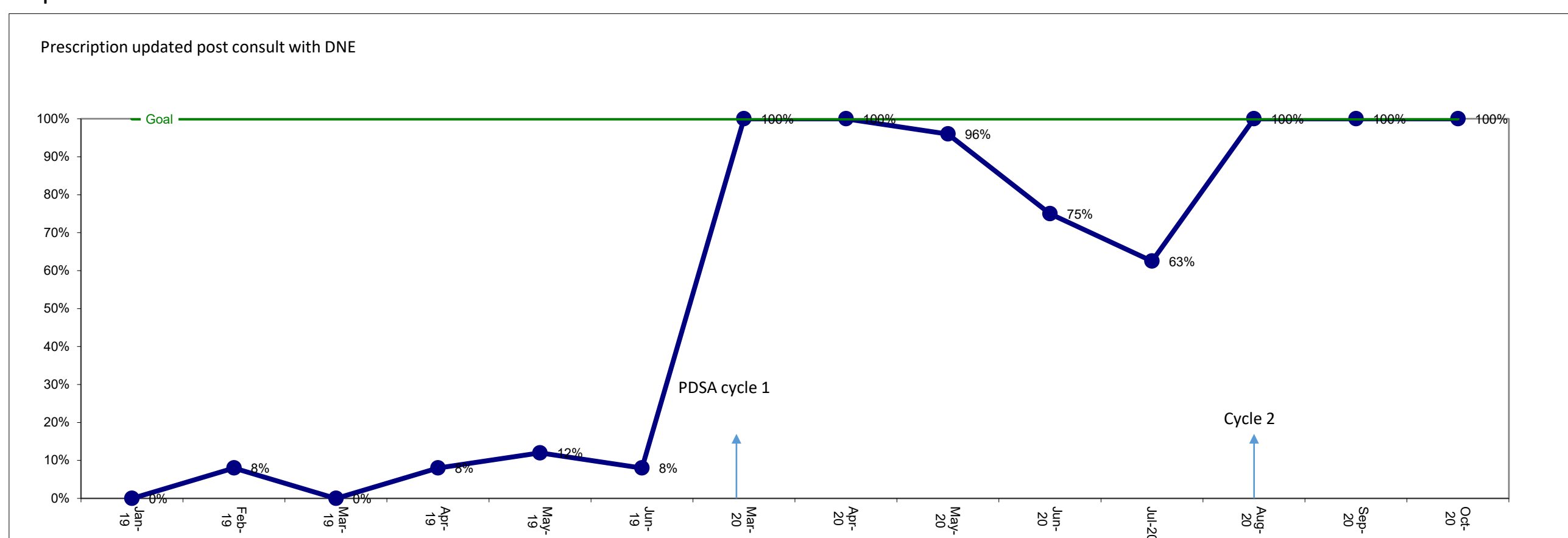


## Test & Implement Changes

### How do we pilot the changes? What are the initial results?

Cycle #	Brief Description	PLAN	DO	STUDY	ACT	Start Date	End Date
1	To test whether the work flow created helps to improve the adherence to prescribing the latest (most current) titrated insulin maintenance dose in EPIC.	1. Work with NGEHR team to identify an activity tab to document the latest insulin titrated dose. 2. Create a workflow for insulin titrated cases. 3. Roll call to DNE and DM doctors of the workflow.	The plan was carried out on March-July 2020 at Clinic A43  DNE encounter a problem when they follow up patient for home blood glucose level readings via telephonic. They are unable to document the latest insulin dose changes in the medication reconciliation activity tab as the tab is not available at telephone encounter visit.  Feedback and observations from the participants: DNE noted above problem and discuss with NGEHR team. Work on other solution to document the latest insulin dose changes for telephonic home blood glucose review.	Initial data collected shows that: 1. DNE are able to document the changes made to the latest (most current) titrated insulin maintenance dose when patient have a visit encounter. 2. The documentation are visible to the doctor and pharmacist. 3. However, DNE are unable to document telephonic consult for titration of insulin dose under medication reconciliation tab.	To Adapt the change	March 2020	June 2020
2	To test whether the work flow and NGEHR medication reconciliation tab created at telephonic encounter helps to reflect the latest (most current) titrated insulin maintenance dose in EPIC.	1. Work with NGEHR team to create the medication reconciliation tab at telephone encounter to document the latest insulin titrated dose.	The plan was carried out on July 2020 at Clinic A43	After 2 <sup>nd</sup> cycle, 1. DNE are able to document the changes made to the latest (most current) titrated insulin maintenance dose for visit and telephonic consult. 2. The documentation are visible to the doctor and pharmacist	To Adopt the change	Aug 2020	Oct 2020

After the 2<sup>nd</sup> cycle, DNE are able to document the latest titrated insulin dose in EPIC. The documentation is visible to doctors and pharmacists.



## Spread Changes, Learning Points

We disseminated the changes to the doctors and inpatient pharmacists. Insulin titration guidelines were updated after discussion with the Endocrine team. The insulin titration guidelines included the need for doctors to amend the prescription when the dose of insulin has been adjusted more than 20% from the original prescription. Inpatient pharmacist team was informed that the latest titrated insulin dose by Diabetes Nurse Educator is documented in medication reconciliation tab.

**Learning points:**  
Insulin is a high alert medication. Clarity about doses is important. DNE does insulin titration but are unable to document the latest titrated insulin dose in EPIC. This can cause confusion and wrong dose to be ordered by the doctor and inaccurate medication reconciliation by pharmacist during the patient's next visit.

This project helps to reduce medication errors by having a mechanism to allow DNE to document the latest insulin dose post-consult, that is visible to other healthcare professionals. The workflow have eased pharmacist's medication reconciliation activity. It also allowed doctors to receive an alert of the latest insulin dose when they prescribe insulin in EPIC.