

Improving inpatient diabetes care in Scotland – challenges and unmet needs

Diabetes SBRI Launch Event

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Inpatient diabetes care

- 10 years ago 1 in 10 hospital inpatients had a diagnosis of diabetes. It is now 1 in 6.
- 10 years ago £301million pounds was spent on inpatient care for patients with diabetes. This is likely to be higher now.
- The vast majority of patients are not admitted due to a glucose related problem. Patients are admitted to ALL hospital areas, not a specialist diabetes ward

WHAT DO WE CURRENTLY KNOW?



The 2017 snapshot NaDIA showed that during their hospital stay around:

1 IN 80

inpatients with diabetes require **hypoglycaemic rescue**

1 IN 25

inpatients with **Type 1** diabetes **develop DKA**

1 IN 800

inpatients with **Type 2** diabetes **develop HHS**

1 IN 100

inpatients develop a diabetic **foot ulcer**

Key challenges

- Ensuring all health care professionals have key skills to provide robust core diabetes inpatient care
- Medication prescribing (primarily insulin) and decision support with a changing clinical picture
- Management of glucose emergencies
 - hypoglycaemia (low blood glucose)
- It is of widespread opinion that many medication and management errors are preventable



CHI: |||||
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MR J BLOGGS



GLUCOSE MONITORING: WARD OVERVIEW

This dashboard presents wards with metrics from the Roche glucose monitors in their wards and compares the ward figures to the directorate and hospital. Directorate and Hospital will be automatically displayed based on the ward(s) chosen. Only WGH Wards have been mapped to directorates at the moment. Hover over figures to get more information.



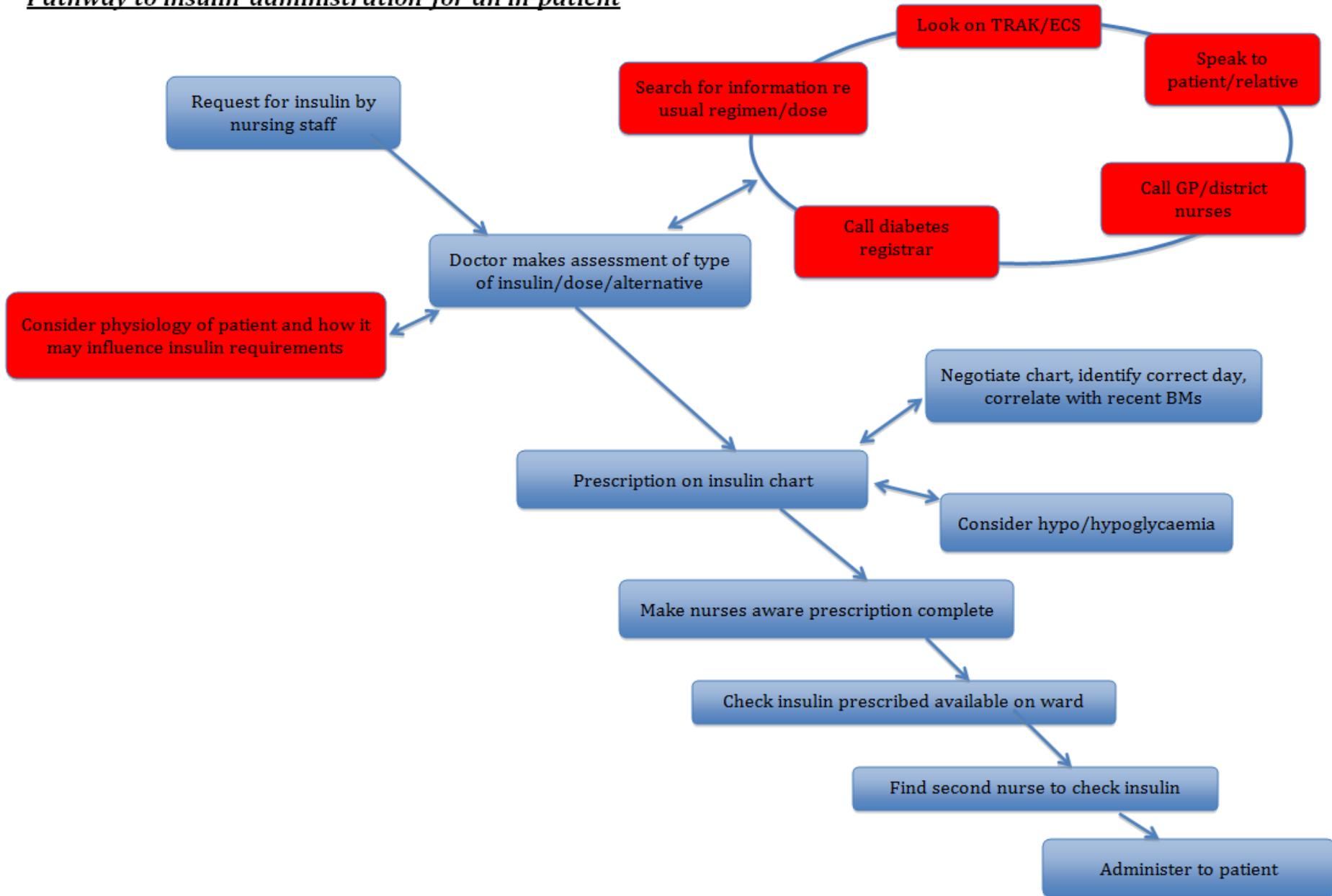
SELECT TIME PERIOD: Last 30 days |
 HOSPITAL: (All) |
 WARD(S): WGH - WARD 23

The table below shows glucose monitoring data for: WGH - WARD 23, part of the SURGERY directorate at the Western General Hospital between 29/10/2018 00:28:45 and 27/11/2018 08:58:29

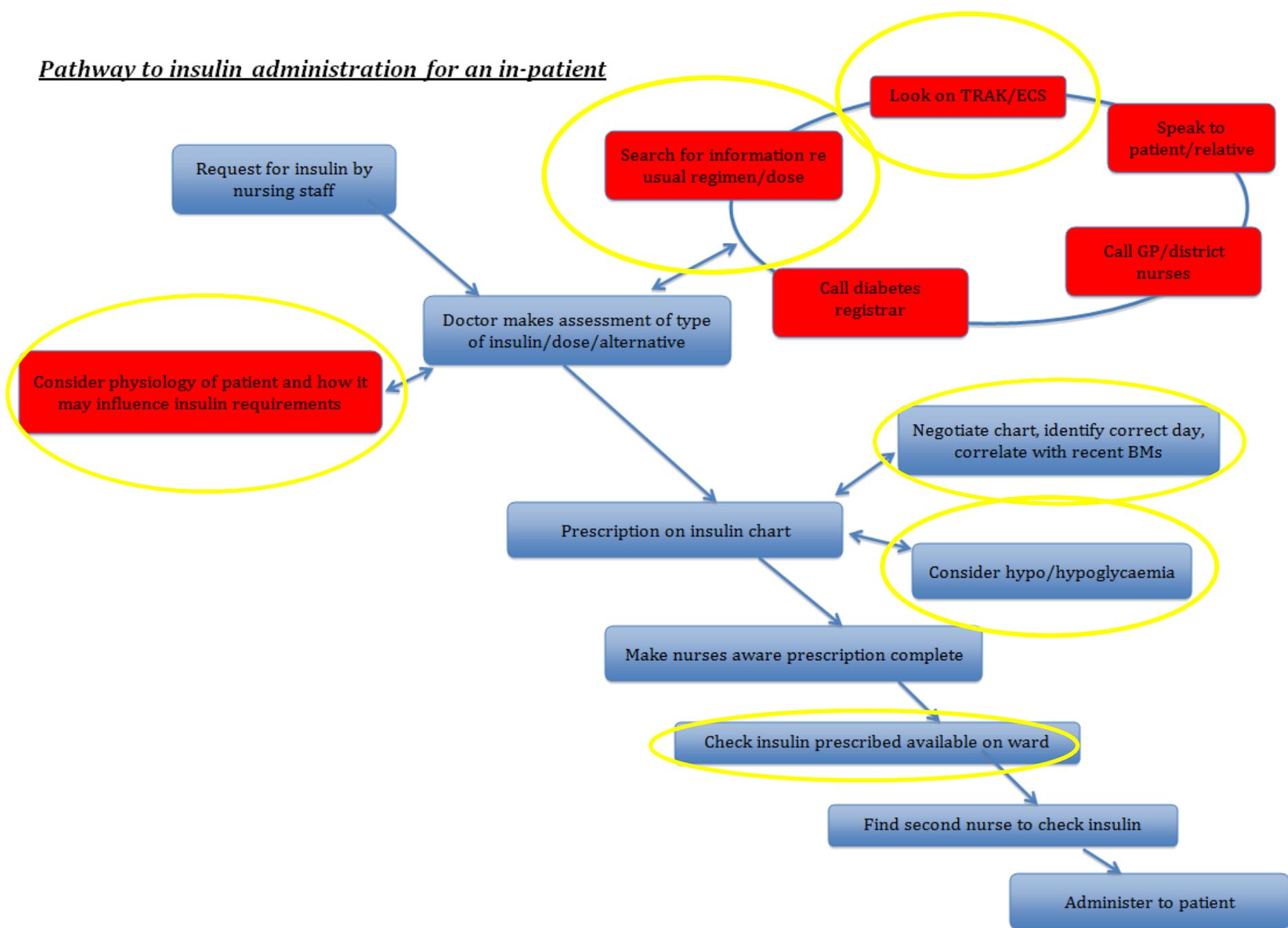
QUESTION	HOSPITAL	DIRECTORATE: SURGERY	WARD(S)	CHART
HOW MANY TESTS DID WE TAKE?	11,129	697	162	Calendar charts show ward data M T W T F S S Week 44 ● ● ● ● ● ● Week 45 ● ● ● ● ● ● Week 46 ● ● ● ● ● ● Week 47 ● ● ● ● ● ● Week 48 ● ●
WHAT % OF OUR TESTS HAD VALID PATIENT IDS? Target is 100%	93.2% 10,376 OUT OF 11,129 TESTS TAKEN WERE INVALID	96.8% 675 OUT OF 697 TESTS TAKEN WERE INVALID	98.8% 2 OUT OF 162 TESTS TAKEN WERE INVALID	SITE 93.2% DIR 96.8% WARD 98.8%
HOW MANY HYPOGLYCAEMIC EPISODES DID WE HAVE?	204 OUT OF 11,129 TESTS TAKEN	2 OUT OF 697 TESTS TAKEN	0 OUT OF 162 TESTS TAKEN	M T W T F S S Week 44 ● ● ● ● ● ● Week 45 ● ● ● ● ● ● Week 46 ● ● ● ● ● ● Week 47 ● ● ● ● ● ● Week 48 ● ●
WHAT % OF OUR HYPOGLYCAEMIC EPISODES WERE CORRECTLY TREATED?	50.5% 103 OUT OF 204 HYPO EPISODES	100.0% 2 OUT OF 2 HYPO EPISODES	OUT OF 0 HYPO EPISODES	SITE 50.5% DIR 100.0% WARD
HOW MANY 'GOOD DAYS' DID WE HAVE? A GOOD DAY IS A DAY WHEN NO PATIENTS HAD A TEST RESULT <4 AND NO PATIENT HAD MORE THAN ONE	0	28	27 OUT OF 30 DAYS	M T W T F S S Week 44 ★ ★ ★ ★ ★ ★ Week 45 ★ ★ ★ ★ ★ ★ Week 46 ★ ★ ★ ★ ★ Week 47 ★ ★ ★ ★ ★ ★ Week 48 ★ ★

- 2 out of 5 patients will experience a medication error whilst in hospital.
- Not all hospital sites have direct access to diabetes specialist advice.
- Trainee doctors, the major prescribers of diabetes medications, can often lack confidence in the management of diabetes and may be unlikely to take the initiative in glycaemic control.
- A better educated workforce can lead to improved patient experience and shorter lengths of stay – with workload better prioritised towards those with most need.

Pathway to insulin administration for an in-patient



Pathway to insulin administration for an in-patient



Electronic Inpatient Systems Linkage for patients with Diabetes SCI-Diabetes

Inpatient Overview
[? Help](#)

Filter options:

Length of stay <= days

Hospital is

Ward is

Inpatient status is

Show

Only inpatients with confirmed diabetes

All inpatients on the SCI-Diabetes register

Check to create a temporary sub-list of patients - use checkboxes below to select patients first

Check to show patients with a Ward BG result < 4.0 in the most recent 4 recordings

Check and you can manually discharge patients

No ADT message has been received.

Show selected patients only

Show patients with low blood glucose

Manual discharge mode

Click on the icon to view the admission and transfer history of a patient's inpatient episode

Patient ID/CHI	Name	Age	Diabetes Type (duration)	Admission Date	Hospital	Ward (Since)	Length of Stay	HbA1c (mmol/mol)	eGFR (ml/min)	Creatinine (umol/L)	Foot Risk	Eye Screening	Ward BG (mmol/L)	<input type="checkbox"/>
2703830162	ANDREWS, CATHERINE	33y	Type 1 Diabetes Mellitus (6y 11m)	25-Jul-2016 14:28	Ninewells Hospital, Dundee	Ward 12	34.8d	19 (01-Feb-2016)		22 (27-Jun-2016)	Active Foot Ulcer (10-Jun-2016)		(26-Jul-2016) 4.7 - 06:15 (25-Jul-2016) 5.2 - 20:45 1.5 - 20:30 3.1 - 20:15	<input type="checkbox"/>
3107640020	YUSEF, MIKE	52y	Type 1 Diabetes Mellitus (6y 7m)	24-Jul-2016 12:34	Perth Royal Infirmary	PR 15	35.9d	45 (07-Aug-2016)						<input type="checkbox"/>
1808460073	BALL, CLAIRE	70y	Type 2 Diabetes Mellitus (6y 7m)	27-Apr-2016 11:53	Ninewells Hospital, Dundee	23	123.9d	99 (23-Jan-2014)	39 (15-Mar-2016)	54 (15-Mar-2016)	Active Foot Ulcer (21-Jan-2015)		(25-Jun-2016) 12.9 - 16:30	<input type="checkbox"/>

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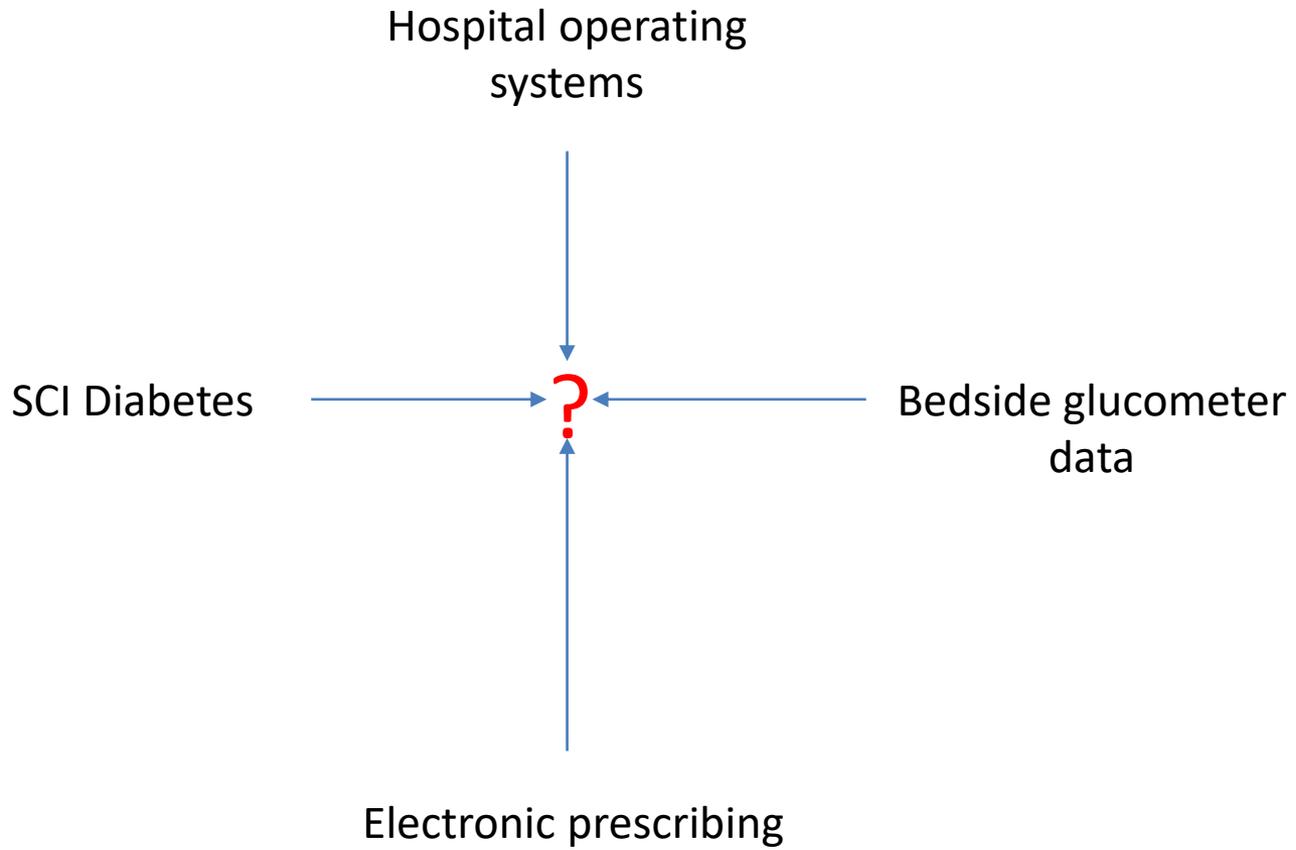
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Initial Challenge Description

- To improve the clinical care of patients with a pre-existing diagnosis of diabetes when admitted to hospital by developing a real-time decision support and alerts to improve triage, prevent medication errors, identify emergencies and streamline diabetes care pathways.
- Benefits: improving patient experience, quality care, and realising potential quality and efficiency savings.