Improving insulin administration at mealtimes for people with insulin-treated diabetes in hospital

Working with staff on the diabetes ward at Sunderland Hospital

by the South Tyneside and Sunderland Diabetes Team

About Us

Our working group was made up of two diabetes consultants, a senior clinical pharmacist, diabetes specialist nurse and clinical specialist podiatrist, with a range of expertise across inpatient diabetes care.

The Challenge

During mealtimes, wards are often chaotic, and staff are under pressure to deliver food and medicines at the same time. We found that often insulin is not delivered to people with insulin-treated diabetes on time, increasing their risk of hypo- or hyperglycaemia.

We sought to work collaboratively with ward staff to break down barriers and develop a better approach to delivering insulin at mealtimes. By doing this, we aimed to reduce fluctuations in blood glucose levels and minimise the risk of harm to people with diabetes in hospital.

The Approach

Our approach was focused on two key areas:

1. 'Slowing down' mealtimes to give ward staff the time and space to administer insulin correctly.
2. Developing a self-administration policy that will help alleviate pressure on staff and empower people with diabetes to self-care while in hospital.

Collaborative Working

We worked most closely with:

1. Nurses on the diabetes ward
2. Head of Nursing
3. Medicines Management Team
4. Patient Safety Team
5. Diabetes UK Health Systems Change Team

Research & Methods

- We spoke to staff on the diabetes ward to identify barriers to administering insulin on time. We found that staff had competing priorities, were often interrupted during mealtimes and believed that they needed to complete food orders first so they could focus on insulin administration safely and properly after, which often meant it was given too late.
- We gathered insights on insulin self-administration from teams across the hospital including patient safety, quality improvement, medicines management and nursing. We found that there is a strong appetite and support for a robust self-administration policy but there are concerns regarding insulin storage and access, what 'fit to self-administer'

really means and how staff are expected to assess this appropriately.

Prototyping and Implementation

For our initial prototype we worked closely with staff on the diabetes ward to develop a process at mealtime that would help them deliver insulin on time, while managing the food round.

We aimed to focus on lunchtime, but as the busiest time of the day staff were more stretched than usual and we quickly found it wasn't the best starting point. We began with breakfast at weekends which was less chaotic and gave the nurses time and space to test and become confident with the new approach, before progressing to other mealtimes across the whole week. We gathered insights and learnings along the way so that we could adapt and refine our approach.

Insights

1. We need to start small and build from there, embrace quick wins.
2. Patient safety is a priority for everyone so this is a useful lever to engage ward staff and demonstrate the benefits to them and their patients.
3. Staff need to understand that hypos aren't simply the norm and why insulin must be administered at the correct time and the advantages this has for patients.
4. We've only tested this work on the diabetes ward where we have strong relationships – we need to build these relationships with other wards.
5. We need to let go of our assumptions and the need to over-manage; empowering others is more effective, when combined with regular feedback.
6. One of the biggest barriers to self-administration is senior sign-off; there are concerns about safety and access to insulin.

The Outcome

Overall, we worked closely with staff on the diabetes ward to 'slow down' mealtimes. We did this by giving staff ownership of how the process works and provided them with support rather than micromanaging and dictating what they did.

Example: Improving mealtime process

- Nursing staff take part in a daily ward 'huddle' to focus on clinical activity, team priorities and safety, which created a self-sustaining educational and supportive environment.
- The catering trolley arrives on the ward and the nurse in charge takes 5 mins before distribution to identify:
  - Most vulnerable patients (frail, have a learning disability, need assistance with feeding)
  - Patients with diabetes on insulin
- The food orders are taken for those people above first.
- Insulin administration takes place at the same time as ordering.

We have been collaborating with other teams and senior management to develop an effective self-administration protocol. This work is ongoing and although there are challenges, there is a strong drive to make this happen across the trust.

The Impact

1. Over the last year we've seen a consistent reduction in the percentage of missed doses of insulin on the diabetes ward, where we tested our prototype (see Figures 1 and 2).
2. Improved insulin delivery means people with diabetes are less likely to become hyper- or hypoglycaemic, reducing the

risk of harm and improving their overall experience in hospital.

3. We've seen increased engagement and involvement from the nursing team in improving diabetes care. They've appreciated the practical nature of the project and the direct impact it's had on patient safety and care.
4. Overall, we've improved our working relationships with staff on the diabetes ward. They feel empowered to make change happen and are committed to the new process, which is crucial to sustaining the work long-term.

What next?

We will use our learnings and evidence of change in the diabetes ward to begin expanding this work onto other wards so that with time, all people with insulin-treated diabetes receive their insulin correctly at mealtimes across the hospital.

We will continue to work with teams across the hospital to develop a robust self-administration protocol that is implemented across the trust. This will empower people with diabetes while in hospital and support staff.

Key Learnings

1. Start small but have a vision
   Be clear and believe in what you want to achieve especially if this will improve patient safety. Dedicate time to engage with the hospital/trust's developmental or quality improvement team and organisations like Diabetes UK to support and work with you.

2. Patience is key in systems change
   Change takes a long time, so we need to be patient and not be disheartened when things don't happen overnight. Small changes are shifts in the right direction and should be celebrated as these eventually lead to big changes.

3. Build good relationships, work collaboratively and empower staff so that solutions are more likely to be effective
   Good relationships are vital to success. If these do not exist, it does not matter how great the solution, you will most likely be met with resistance. Empowering others and listening to them increases capacity, confidence and commitment.

4. Avoid making assumptions about why things aren't working, go and find out
   Sometimes what you think is going on, isn't really what's happening. This means the solution you develop might not be quite right. By speaking to people, asking questions, and gathering different perspectives of why things are the way they are, you can find out the root causes of challenges. This is the foundation of long-lasting change.

5. Don't replace something with something even more complicated
   It's easy to overcomplicate things in an already complex system. This can be overwhelming and difficult to implement. Sometimes a simple change or adaptation can make all the difference.

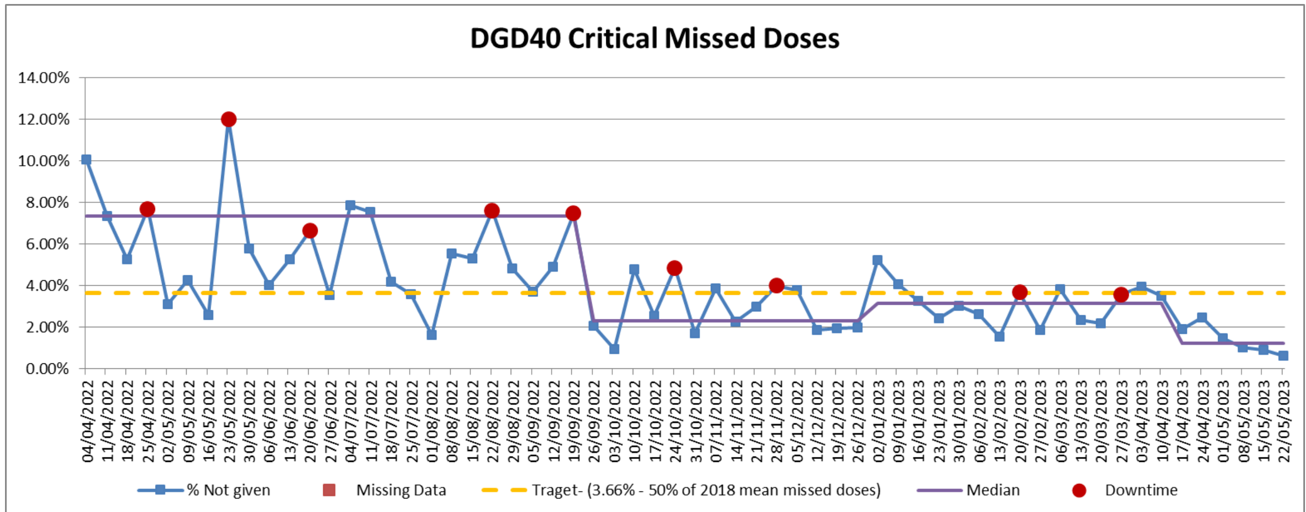

Figure 1. Missed doses of insulin on the diabetes ward (DGD40) over the last year (4th April 2022 – 12th May 2023).

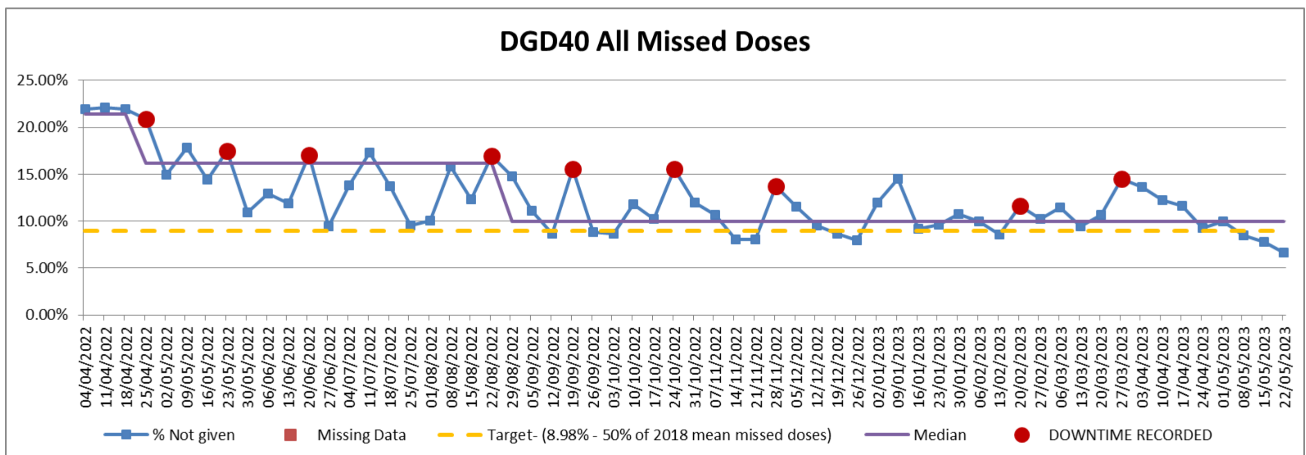

Figure 2. Missed doses of all medicines on the diabetes ward (DGD40) over the last year (4th April 2022 – 12th May 2023).