

Optimising peri-operative sugar control in gynaecological patients with Type 2 Diabetes Mellitus (T2DM) in KK Women's and Children's Hospital

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INTRODUCTION

- Diabetes is a very common medical condition
- It affects 1 in 9 Singapore residents aged 18 to 69 years old
- Peri-operative sugar management is important
- Diabetic patients undergoing surgery have greater complication rates such as postoperative infection, mortality rates and length of hospital stay
- Optimisation of glucose levels can minimize poor sequelae and promote better outcomes.
- Tight glycaemic control before, during and after surgery is an important perioperative goal.

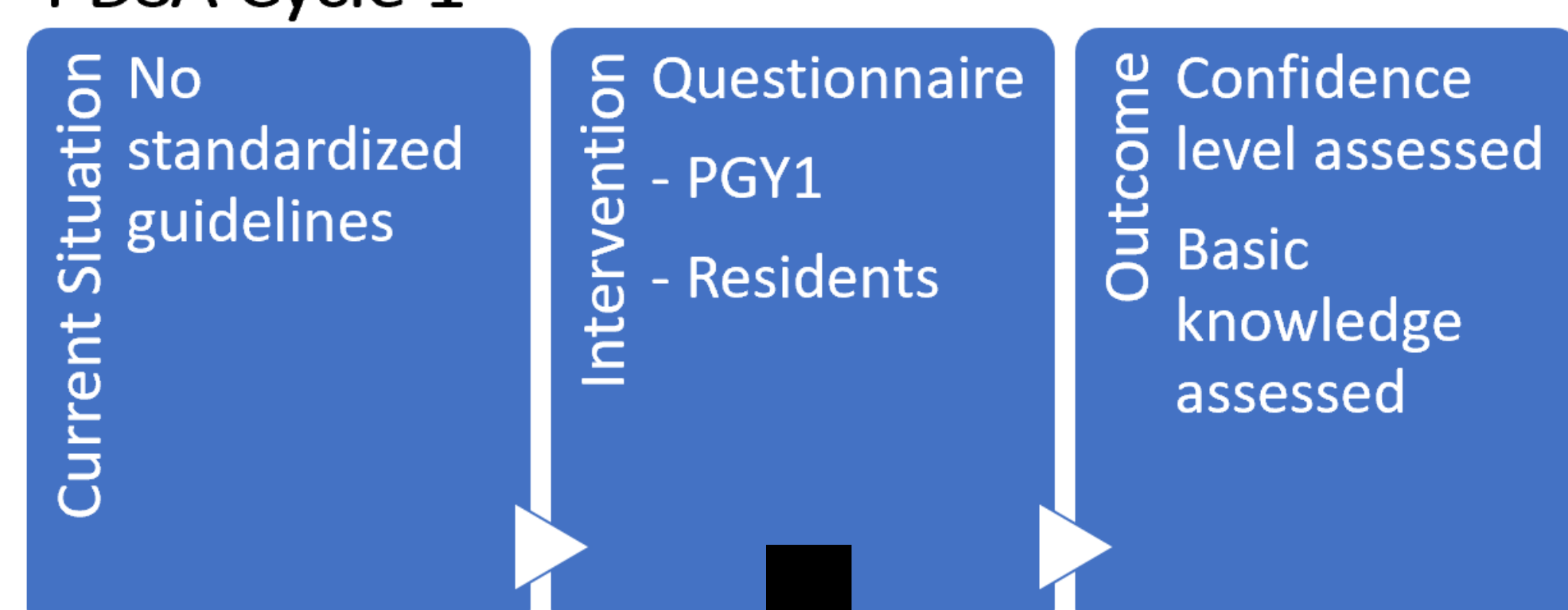
AIMS

- To ensure appropriate management of diabetic gynaecological patients who are kept fasted for surgery
- To reduce cancellations of surgeries and improve surgical outcomes

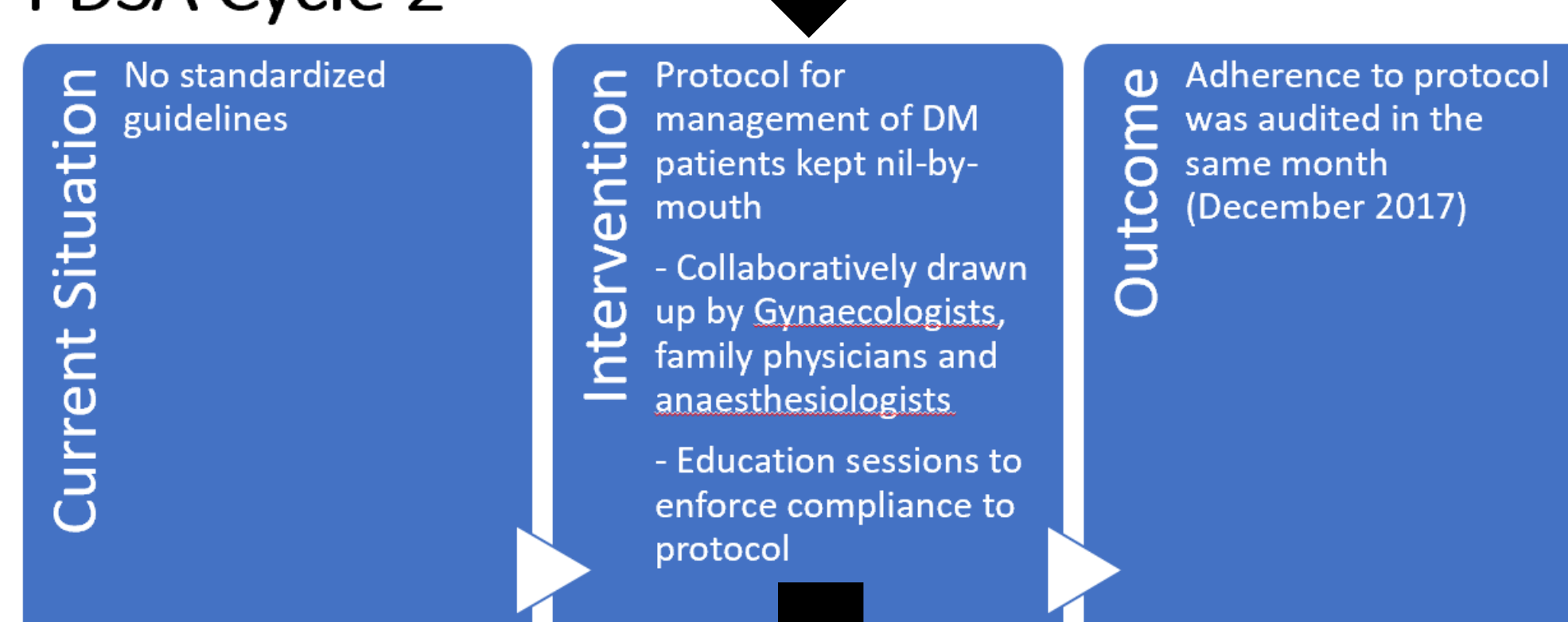
METHODS

- The PDSA (Plan-Do-Study-Act) Cycle of improvement was employed

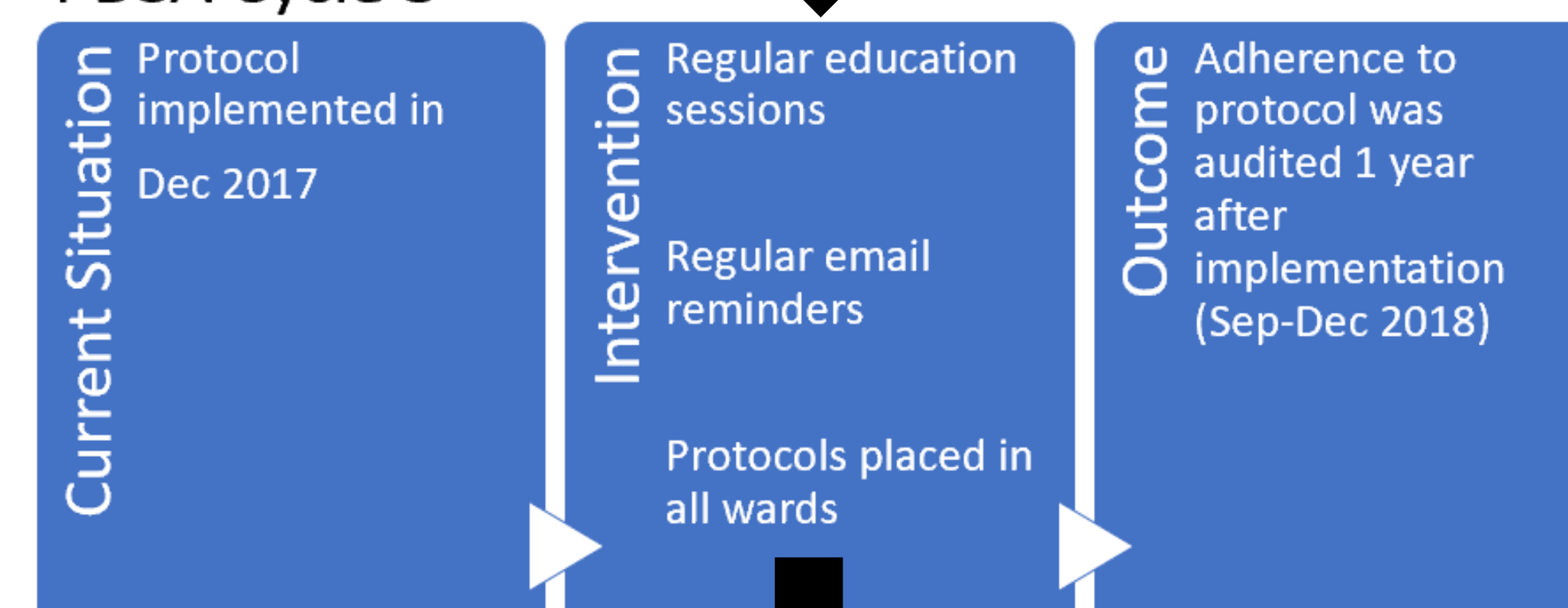
PDSA Cycle 1



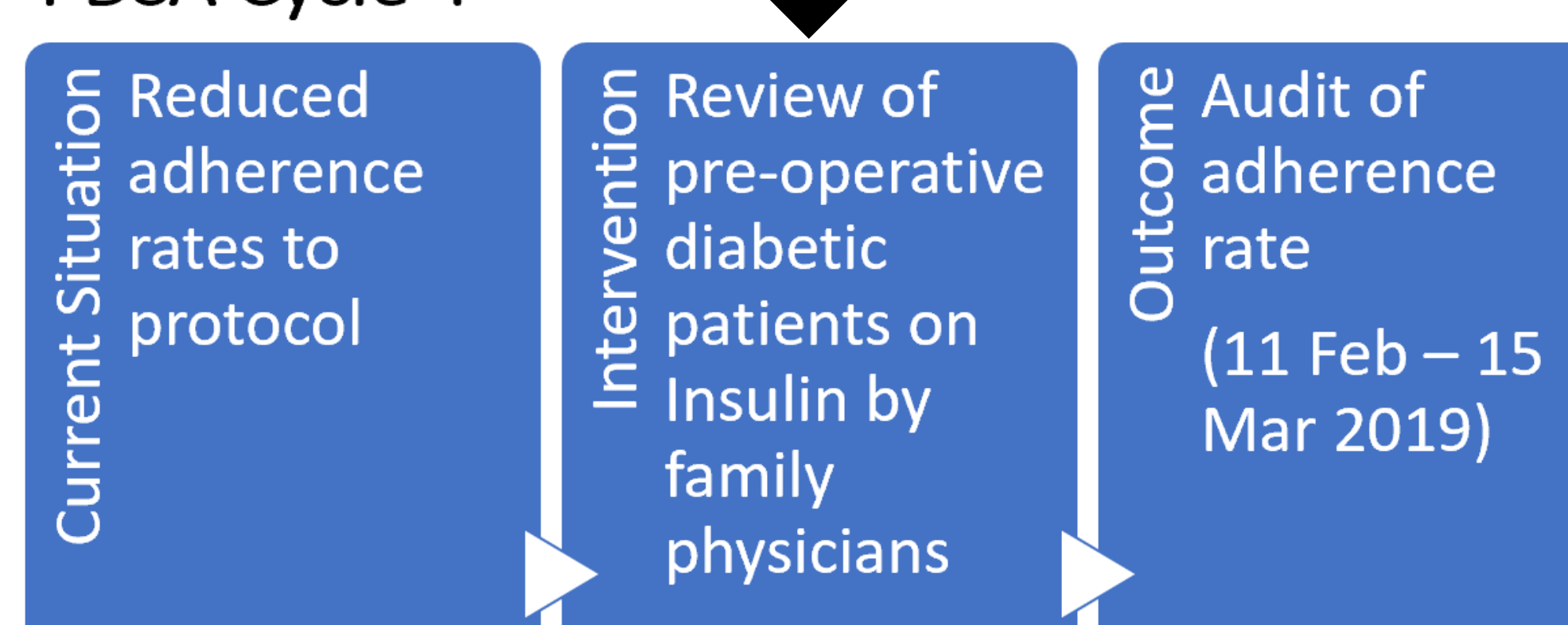
PDSA Cycle 2



PDSA Cycle 3



PDSA Cycle 4

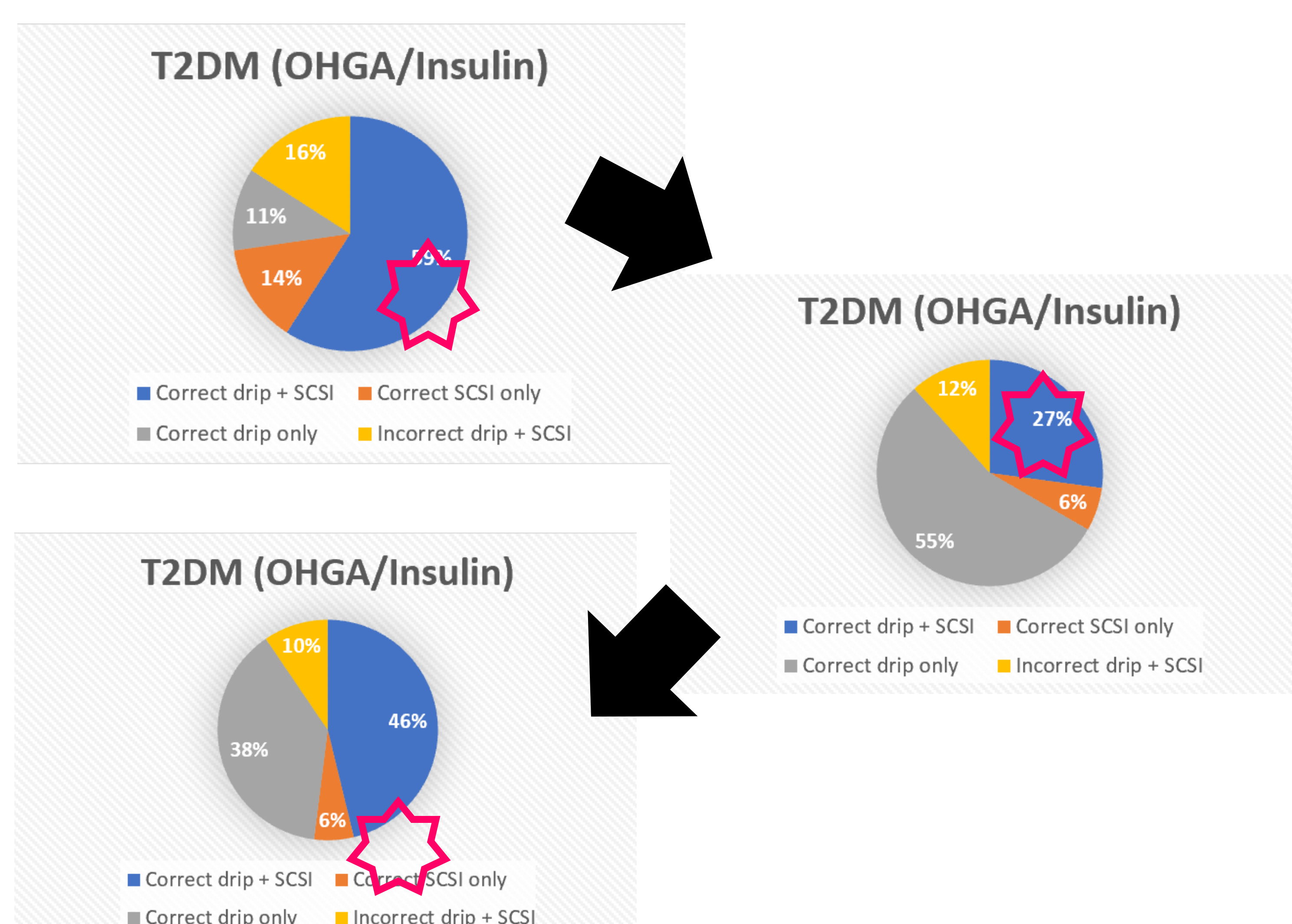


PROTOCOL

- A protocol was introduced for all inpatients with T2DM admitted for elective gynaecological surgeries. This was jointly drawn up with our Family Medicine and Anaesthetic colleagues.
- Patients were divided according to their use of oral hypoglycaemic agents with or without insulin.
- Glucose monitoring is done regularly at 4-6 hourly intervals with a standardized insulin sliding scale for optimization of sugars.

RESULTS

- Only 67% of PGY1s and 64% of residents were confident in managing pre-operative DM patients.
- In the month of implementation of the protocol, only 59% of the diabetic patients who were kept fasted had the correct drip and insulin sliding scale prescribed.
- Adherence rates to the protocol further decreased to 27%, a year after implementation. A possible reason for the reduction in adherence rates is that new batch of PGY1s rotated to their O&G posting may be unfamiliar with the protocol. They rotated every 4 monthly.
- We enlisted the help of family physicians to review pre-operative patients with T2DM who were on Insulin to optimise sugar and fluid management in these high risk patients.
- 88% of pre-operative patients with T2DM on Insulin were reviewed preoperatively by either family physicians or Endocrinologists in PDSA Cycle 4. Adherence rates to the protocol increased from 27% to 46%.



CONCLUSION

- A standardised guideline to optimise blood sugar control in pre-operative fasting diabetic patients is important.
- However, the challenge is in maintaining compliance to the protocol with time.
- Our centre has implemented several measures to ensure pre-operative patients with T2DM are appropriately managed.
- Further PDSA cycles need to be conducted to assess the effectiveness of these measures.