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From Bed to Table – The Minutes that Matter

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Introduction

- In major hospitals all over the world, the Operating Theatre (OT) has always been an important resource.
- Besides the hardware, various mechanisms and processes are put in place in the OT to achieve the universal aim of cost-effectiveness while maintaining high quality of care¹. These work processes are first trialled, errors reworked, re-trialled and then finally implemented.
- One of the key challenges is maintaining efficient OT utilization. Without efficient OT utilization, many precious man-hours are lost and productivity is reduced.
- We devised a new workflow process aimed at reducing time taken for a patient to arrive at the OT.
- The aim of this project is to evaluate the influence of this new process on time taken for a patient to arrive at the OT.

Methods

- This prospective study was designed with 2 groups of patients undergoing orthopaedic procedures in the Emergency OT of a major tertiary hospital.
- For the control group, the existing workflow process (Fig. 1) was utilized.
- For the second group, the new workflow process was implemented. The new workflow process (Fig. 2) involved assigning a healthcare personnel to the patient. This personnel administered an electronic checklist (Fig. 3) which tracks the patient along all the mandatory checks and processes from the ward to the OT reception to the Emergency OT induction room and onto the OT table, ending the workflow by doing the first time-out necessary for the surgical procedure.
- Duration was measured from the time the patient is called for to the time of first time-out. The average duration was then calculated and compared between the two groups.
- A simple satisfaction survey was conducted at the end of each patient encounter for both the staff conducting the workflow as well as the patient.

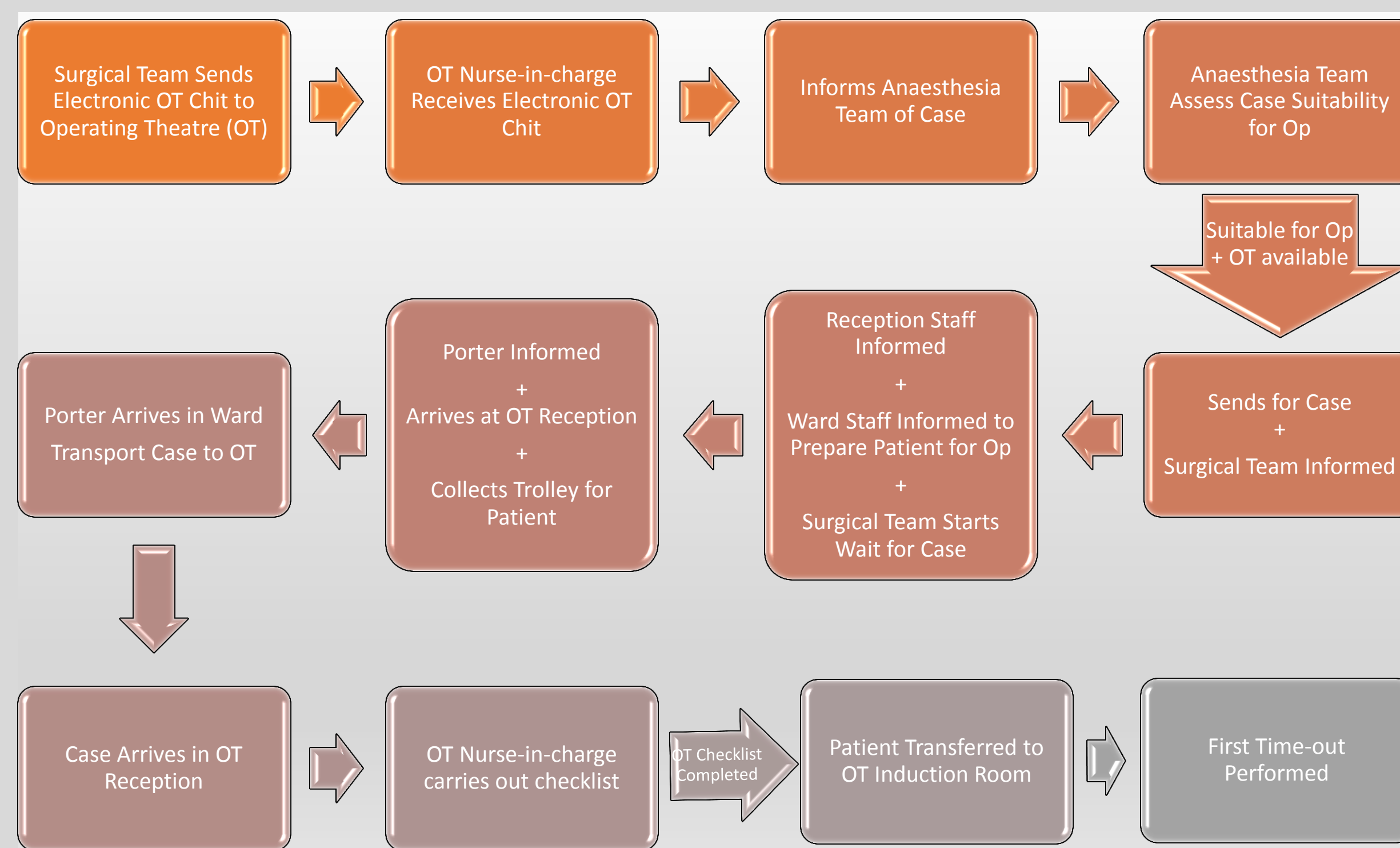


Figure 1. Existing OT Workflow Process.

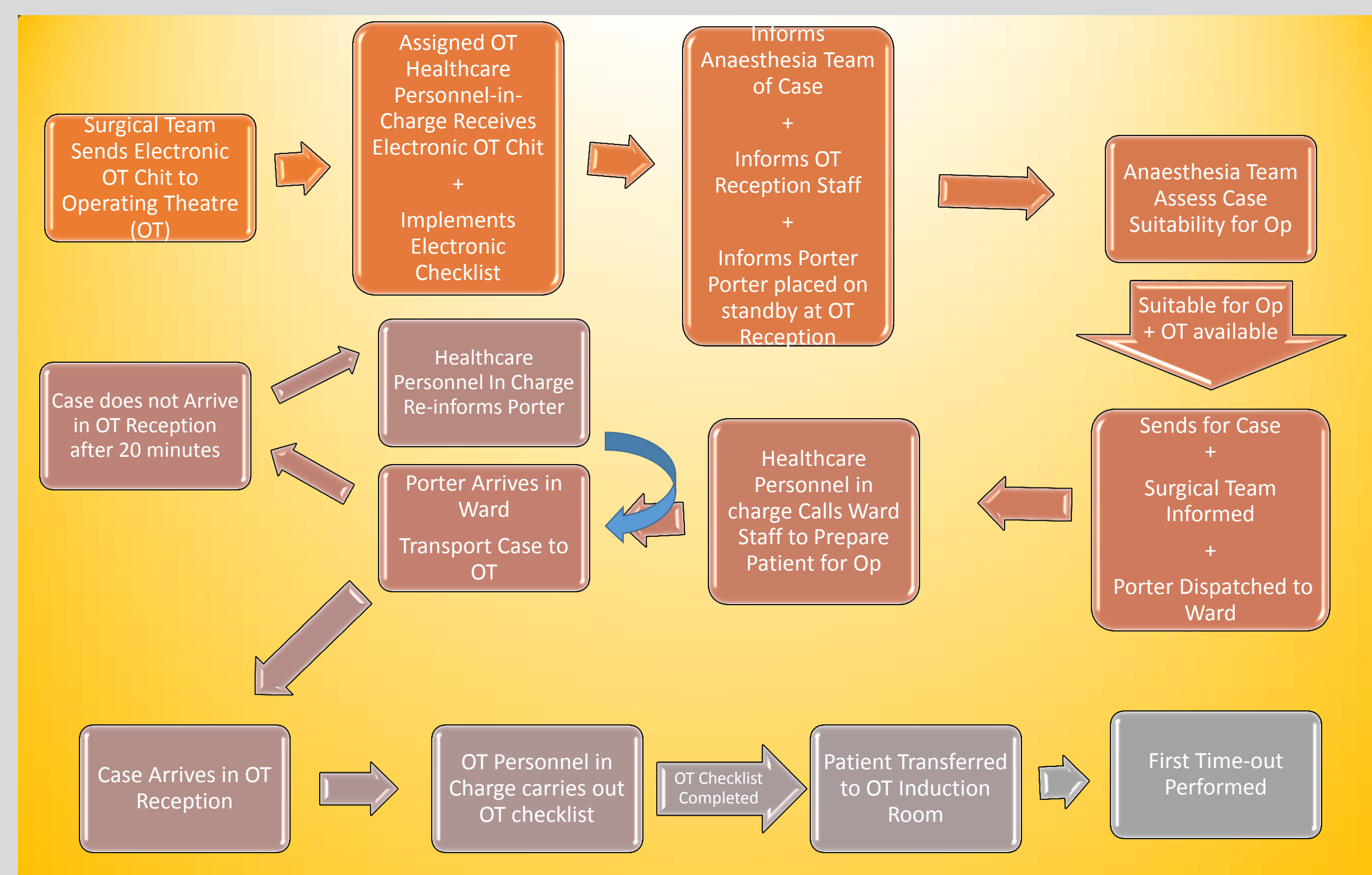


Figure 2. New OT Workflow Process.

Results

- 10 patients were recruited in each group.
- The mean age, body mass index (BMI) and gender proportion were similar in both groups.
- Existing workflow patients – mean age: 64±12, gender; 60% female; BMI: 27.1±8.3 kg/m²
- New workflow patients – mean age: 66±18, gender; 50% female; BMI: 28.6±5.2 kg/m²
- The mean duration for the existing workflow process was 49.6 ± 7.8 minutes.
- The mean duration for the new workflow process was 40.7 ± 5.5 minutes.
- The difference in duration for the two groups was statistically significant with a p-value of 0.009.
- 90% of the staff felt that the new workflow process was easy to utilize and revealed that they were satisfied with it.
- 100% of patients were satisfied between the time taken from being informed that they were being sent for to the time they had arrived in the OT.

Satisfaction survey for OT Healthcare Personnel-in-charge

- Is the new workflow process easy to utilize?
- Are you satisfied with the new workflow process?

Satisfaction survey for patients

- Are you satisfied with the time taken from being informed that you were going to be sent to the OT?

Discussion

- The OT of a busy tertiary hospital is often a premium space as there are usually a long queue of surgeries waiting to be completed both in the elective as well as emergency setting.
- Time is therefore an important resource that needs to be managed prudently to improve utilization of the OT.
- Poor time management leads to poor system efficiency and may affect the morale of both patients as well as healthcare workers which eventually may translate into poorer patient outcomes.
- Our study shows that a simple protocol for fetching patients for emergency surgery significantly reduces time taken.
- The Limitations of this study include a small number of patients, selection bias and effects of confounders as no randomization was done.
- However to our knowledge, this is the only study that has studied in influence of a protocol on time management in the OT.

Conclusion

- A dedicated healthcare personnel assigned to a patient scheduled for emergency surgery reduces the time taken from the moment that patient is called for to the time of first time-out for the surgical procedure.
- This will eventually reduce the time in between surgeries and improve utilization of OTs in busy tertiary hospitals.

References

- W.W. Ang, S. Sabharwal, H. Johannsson, R. Bhattacharya, and C.M. Gupte. The cost of trauma operating theatre inefficiency. *Ann Med Surg (Lond)*. 2016 May; 7: 24–29.

Upon receiving OT chit:

- Inform Anaesthesia Medical Officer/Registrar of OT chit and need for anaesthesia screening
- Call Ward Nurse-in-charge to prepare patient for OT
- Call Ward Nurse 15 – 20 minutes later to check if patient is ready
- Send Porter to ward to fetch patient
- Track where the porter is 15 – 20 minutes after sending for patient

Upon patient arriving in OT reception:

- Inform Anaesthetist to speak to patient and take consent for anaesthesia
- Inform Orthopaedic Medical Officer rostered for OT duty
- Check with Orthopaedic Medical Officer for any special considerations for the procedure (positioning, special equipment, implants etc.)
- Push patient into induction room
- Ensure Circulating and Scrub Nurses informed of case
- Prepare first time-out checklist

Figure 3. Electronic Check-list implemented by OT Healthcare Personnel In Charge.

Figure 3 [continued].