

Case Study

Analysis of an Endoscopy Unit.

The current situation:

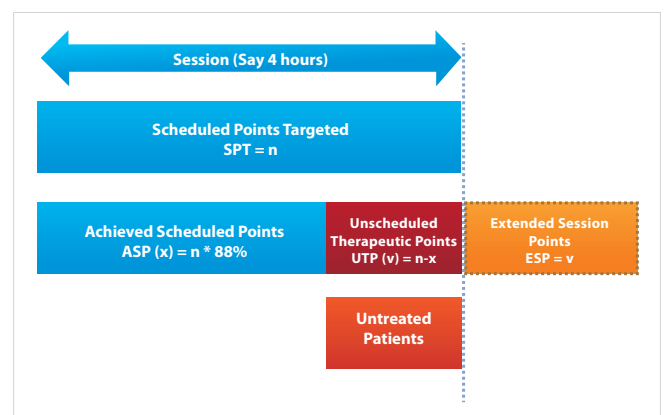
- The current Endoscopy Unit is operating under some stress. Scheduled treatments are often delayed, resulting in some patients waiting for large parts of a day before they can be attended to.
- The process is anything but predictable. A significant proportion of patients scheduled for a diagnostic procedure will require a therapeutic procedure. This results in delays to the processing of patients scheduled for following appointments.
- Patient demand is forecast to grow over the next 3 years to in excess of 100% of the current demand.
- Recovery bed capacity is considered to be inadequate, but there is also concern that there are insufficient scopes to meet the demand of each consultant's List. The client is unsure as to the impacts that these constraints have on the process.
- The change over time between appointments is also variable. It can be a little less than 10 minutes and can be in excess of 30 minutes. Change over time is significantly impacted by resource constraints and inadequacies in the management process, such as delays in obtaining patient's consent and access to patient record information.

The Client's requirements:

- Are more Endoscopy Treatment Rooms required? If so how many are required?
- What would be the optimum capacity of the current Unit if the current resource constraints were not present?

The Conclude Consultancy's analysis of the current situation:

- A simulation model of the existing Unit was developed, based on our standard departmental simulation model. The model identifies all resources, resource constraints and the patient pathways for different procedures types. This model was then configured for the specific situation.
- Data analysis was carried out, where each part of the process was analysed in some detail. Summary datasets were produced which formed the basis of the simulation model.
- The Health Activity Model database was then populated with these datasets and these were then used to run the simulation.
- The purpose of the initial simulation was to answer the question: 'What is the potential capacity of the current unit?' We found that a major issue concerned the number of scheduled procedures for each List. Given the number of unscheduled therapeutic procedures, we found that this had a direct consequence on the number of untreated patients. Consequently as over scheduling increased so did the number of untreated patients. We were able to replicate the current situation, which involves consultants having to work into evenings and at weekends.



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Creating scenarios for what 'could-be'.

- From our model we were also able to predict the optimal number of patients for each consultant List, such that there would be a reduced risk of untreated patients.
- We were also able to clearly demonstrate the impact of different change over time between procedures.
- The 'Could- be' model demonstrated how the Unit's management team could understand the key risks that impacted the Unit. The risk of:
 - Unacceptable waiting time for patients.
 - Untreated patients at the end of each session (the Unit operates two sessions each day – one morning and one afternoon session).
 - Consultant idle time. We studied the Endoscopy Room utilisation and were thus able to predict how efficient the room utilisation could be.
- We were also able to forecast how many patients could be treated each week, based on different assessments of the above-mentioned risks. For example: If patient waiting time were to be substantially reduced, how would the process need to be managed to achieve this?
- We also explored the impact of an evening Session so that better utilisation of the Endoscopy Rooms could be achieved. We found that this offered significant operational benefits.
- Finally we modeled the impact of different numbers of Endoscopy rooms combined with different numbers of sessions.

Conclusions

- The study demonstrated conclusively the viable options for the expansion of capacity of the existing Unit. It demonstrated the impact of issues within the current process and the impact on productivity if these constraints were to be removed.
- The model provided a sound basis for the management team to consider a variety of management options and 'what-if' scenarios. Using the analysis and data provided by The Conclude Consultancy, the Trust could then decide which option would provide the optimal operational, and commercial benefits.
- The model now provides a sound basis for future informed decision making by the Trust – which is the underlying value of our work.

