Transforming Theatre

LEAD, MEASURE, IMPROVE, SUSTAIN

Using the Theatre Resource to Better Serve our Patients

Standardised Operating Theatre Time Stamps Guidelines

Version 001

Date: 24th March 2021

Anaesthesia
National Clinical Programme for Anaesthesia

NCPS
NATIONAL CLINICAL PROGRAMME IN SURGERY

RCSI

Standardised Operating Theatre Time Stamps Guidelines

Transforming Theatre: Standardised Operating Theatre Time Stamps
National Clinical Programme in Surgery, National Clinical Programme in Anaesthesia.

Introduction

The Transforming Theatre programme is an integrative approach to identifying and improving patient flow through the operating theatre. The aims of the programme are as follows;

1. Embed a **system of standardised theatre metrics** enabling both locally led (tactical & strategic) improvements and high-level Hospital Group development opportunities.
2. Align a **process for routine review and action of these metrics** locally by Theatre staff and Hospital Theatre Governance Group, and collectively by a Hospital Group Theatre Governance Group.
3. Provide a structured Quality Improvement methodology to achieve **tangible improvements through a multidisciplinary teams** (MDT) approach.
4. **Advance QI capability for all** by providing training, facilitation and coaching at all stages of the programme.

Why Standardise Operating Theatre Terminology?

Standardisation of terms used to document critical points in the patient's journey through the operating theatre department enables consistency across hospitals, facilitates training, improves efficiency and reduces cost. It avoids wasted effort arising from repeated and variable definition at multiple sites across public hospitals and enables successful quality improvement initiatives to be shared within and between hospital groups. It also ensures consistent definitions of operationally important process measures, like 'possible time' and 'ring-fenced time', and of derived measures, such as 'available time'. As our health service moves to greater use of electronic records, clarity of definitions becomes increasingly important.

The Patient's Journey through the Operating Theatre Department: five key time stamps

A key principle of healthcare quality improvement is ensuring the improvement team focuses first on areas within their control. The time stamp definitions describe five critical points in the surgical patient's theatre journey (see Figure 1): anaesthetic start, surgery start, surgery finish, anesthetic finish and 'left theatre' times. These times were selected to focus on time points entirely within the control of the operating department team; each represents a clearly defined transition of care where data capture can be easily recorded in the course of standard theatre work.

In developing these five key timestamps, a number of alternative time points have been considered. The time a patient is sent for and when they arrive to the theatre department; the interval between arriving in theatre reception and entering the area where the anaesthetic is to be administered; and the time interval between when a patient is ready to leave and *actually* leaves the recovery room all have potential impacts on patient flow and efficiency of care. These time points are dependent not just on the theatre team but to a very great extent on the hospital's operational management, patient flow and bed availability. Local variation is common and the team of stakeholders is considerably larger. As a result, while each of these intervals is a potential target for improvement activity, standardization is more challenging. For that reason, use of these additional time points is more suitable for sites with advanced improvement capability where recording of the five key time stamps is already standard practice.

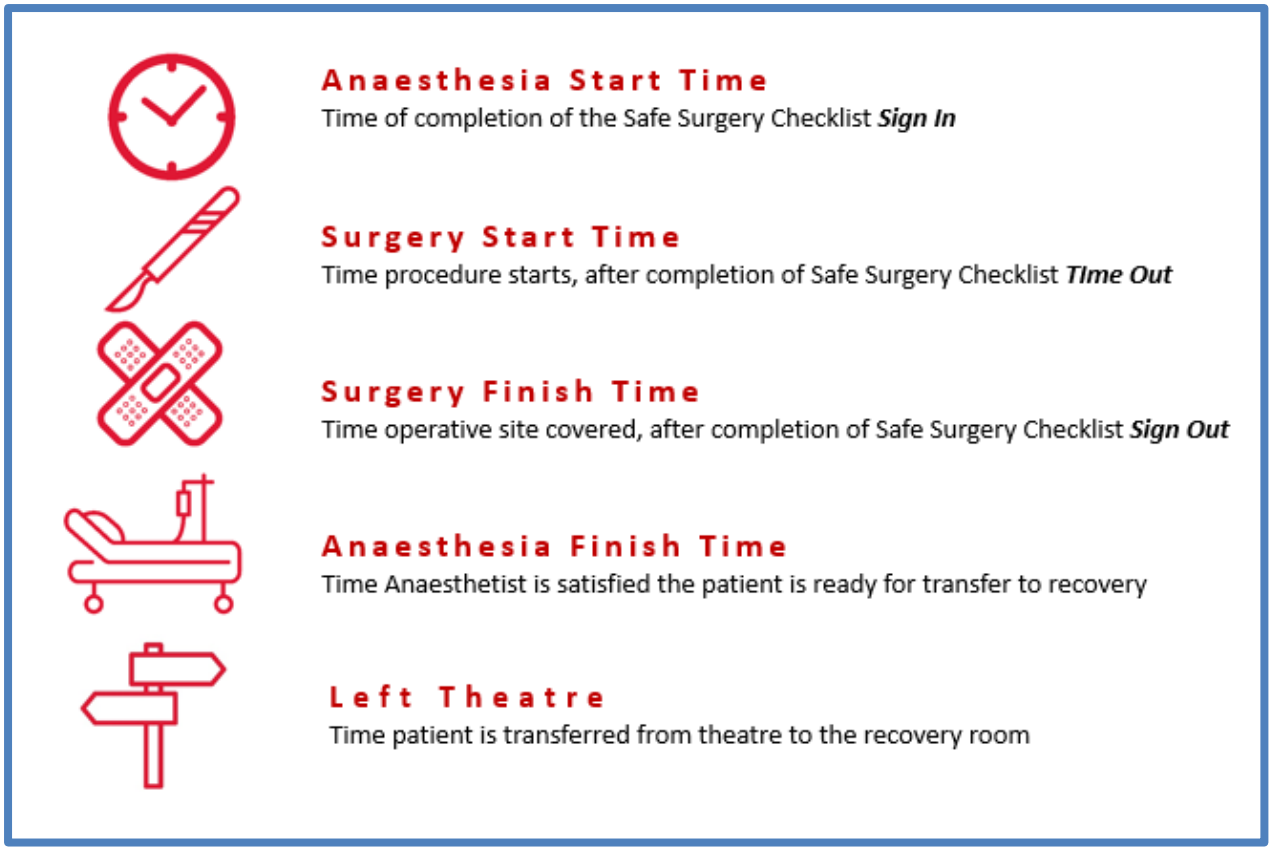

Figure 1: Five Key Timestamps

Time Stamps and the Safe Surgery Checklist

Time stamp definitions are consistent with and reinforce national policy relating to implementation of the Safe Surgery Checklist. The **anaesthetic start time**, therefore, requires both completion of the **'Sign In'** of the Safe Surgery Checklist as well as the patient being under the continuous management of the Anaesthetist in either the Anaesthetic Room or the Operating Room. Similarly, the **surgery start time** documents the so-called 'knife to skin' time[1] after completion of the Safe Surgery Checklist's '**Time Out'.** Lastly, the **surgery finish time** is defined as the time the operative site is covered, after completion of Safe Surgery Checklist '**Sign Out**'

[1] The surgery start time refers to the time the surgeon commences the operation, whether using a scapel, trocar, needle, cannula or scope.

Theatre Definitions

The operating theatre is a complex, high risk, resource-intensive environment. Careful stewardship of our theatre capacity is important to ensure that we use this scarce resource to optimal effect. A properly functioning operating theatre requires more than just infrastructure and equipment; it requires appropriate levels of staffing of different disciplines and skill mix. Importantly, each surgical patient requires facilities to enable safe pre- and post-operative care.

Visual Representation of Patient flow through the Theatre

A graphical representation of the patient flow is shown in Figure 2, showing the five key timestamps with additional theatre parameters including Theatre Open Time and Theatre Close Time.

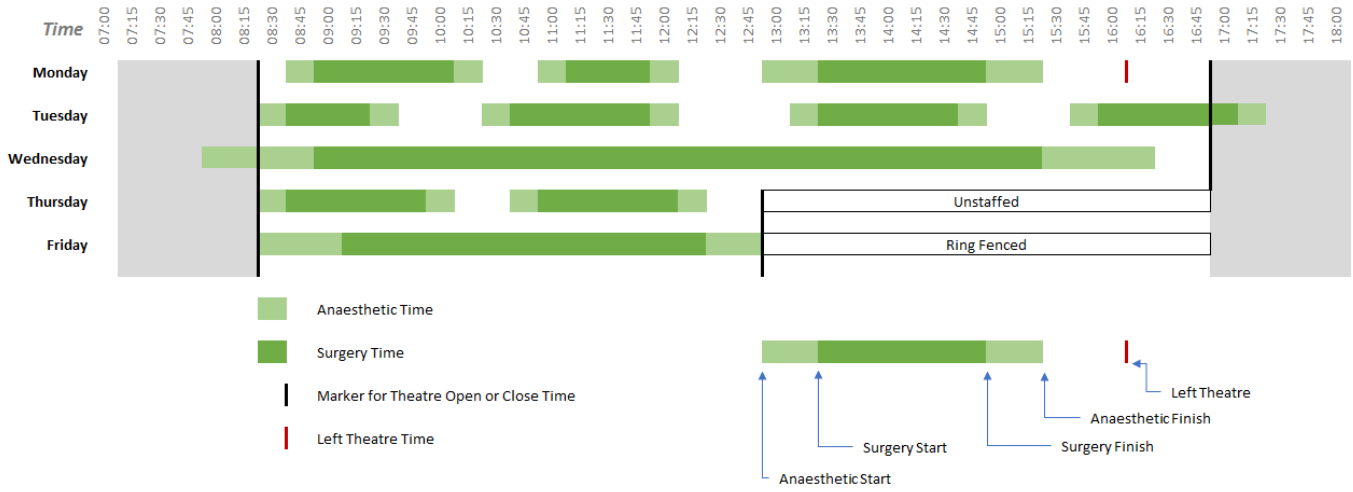

Figure 2: Patient Flow Through Theatre using the Five Key Timestamps

The Theatre Open time is the 'planned start time' of theatre session (list) as defined by local Management e.g. 08:30. The Theatre Close time is the 'planned finish time' of theatre session (list) as defined by local Management e.g. 17:00. The 'Possible Time' is the total theatre time planned from Theatre Open to Theatre Close working across a full week or time period for all theatres. The 'Available Time' is the time for patient surgical activity once 'Ring-Fenced' time, 'Planned Closure' time, 'Cancelled List' time, 'Other Use' time and 'Unstaffed' time have been removed from 'Possible Time'. A description of each of these categories is summarized in Table 1.

Possible Time	Is the total theatre time planned using local default Theatre Open to Theatre Close times, working across a full week or time period for all theatres
Ring-Fenced Time	This time is taken out of the Possible Time and is set aside for contingency operational or clinical reasons for a specific purpose e.g. protected access for emergency level 1 Caesarean sections.
Planned Closure	This time is taken out of the Possible Time and represents Theatre time that is not planned to run e.g. Bank Holidays, planned theatre maintenance etc.
Cancelled List	This is a Theatre list/time that was scheduled to run but has been cancelled and the Theatre is unused. This time is taken out of Possible Time.
Other Use	This is the time the theatre was dedicated for use by another service e.g. Endoscopy/Critical care and therefore not available for surgery and anaesthesisa procedures. This time is taken out of Possible Time.
Unstaffed/Un-resourced Time	Excluding Ring-Fenced, Planned Closure, Cancelled List and Other Use, how much time were the theatres NOT staffed/resourced and therefore could not operate. Staffing includes medical, nursing and other healthcare staff necessary to run the service.
Available Time	Available Time = Possible Time – (Ring-Fenced Time + Planned Closure Time + Cancelled List Time + Other Use Time + Unstaffed Time).

Table 1: Breakdown of Possible Time and Available Time

A graphical representation of ‘Possible Time’ and ‘Available Time’ is shown in Figure 3.

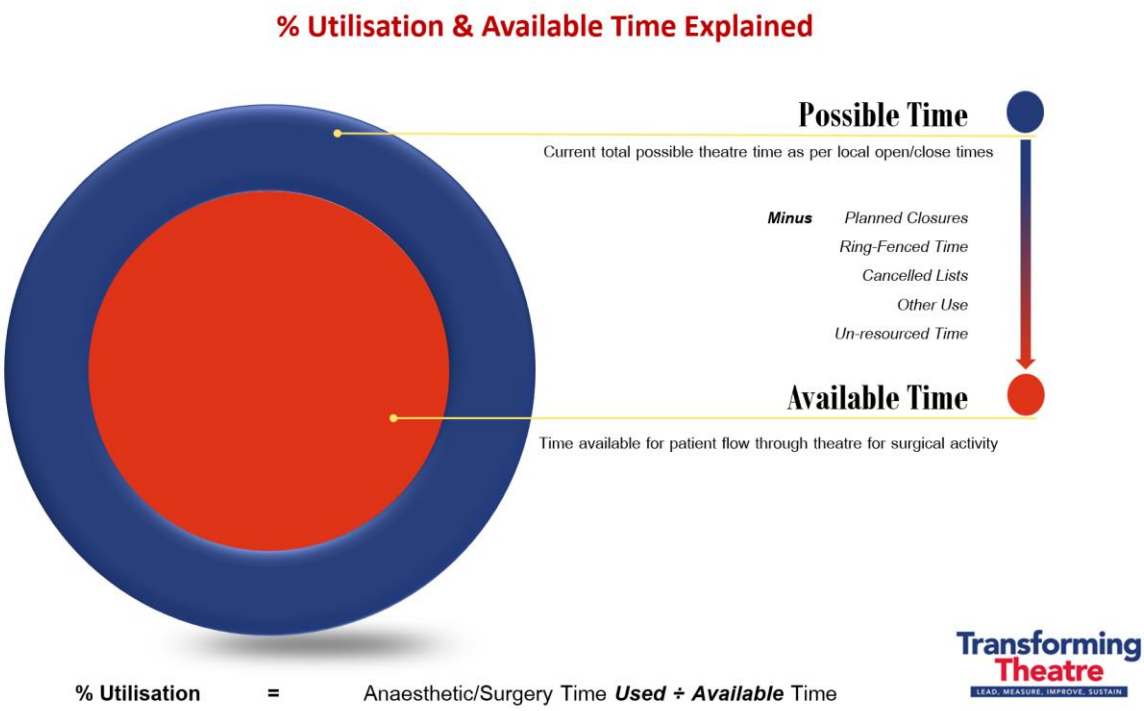

Figure 3: Graphical Representation of Possible Time and Available Time

Theatre Metrics derived from the Five Key Time Stamps

A suite of metrics of Theatre key performance indicators (KPIs) are derived by using the five key time stamps and 'Available Time' as follows in Table 2;

Early / On Time Start	This is when the Anaesthetic Start of a case commences on or before the planned Theatre Open Time and it continues into Available Time.
Inter Operative Interval	This is the time from Anaesthetic Finish of previous case to Anaesthetic Start of the next case. This time include Anaesthetic Finish to Left Theatre of one case, until the Anaesthetic Start of the next case.
Early Finish	If the last case finishes early within Available time, it is the time from the Anaesthetic Finish for that case to the planned Theatre Close time.
Over Run	(When a case overlaps Theatre Close Time) The time from Theatre Close to Anaesthetic Finish time.
Available Time Used	Any time taken up by a case(s) for Anaesthetic/Surgery within Available Time. This time is calculated from Anaesthetic Start to Anaesthetic Finish (or part thereof) for each case.
% Utilisation	'Available Time Used' divided by 'Available Time'
Additional Time Used	Any time taken up by a case(s) for Anaesthetic/Surgery outside of Available Time.

Table 2: Theatre Metrics (KPIs) derived from the Five Key Time Stamps

Figure 4 displays a graphical representation of the above Theatre key performance indicators (KPIs)

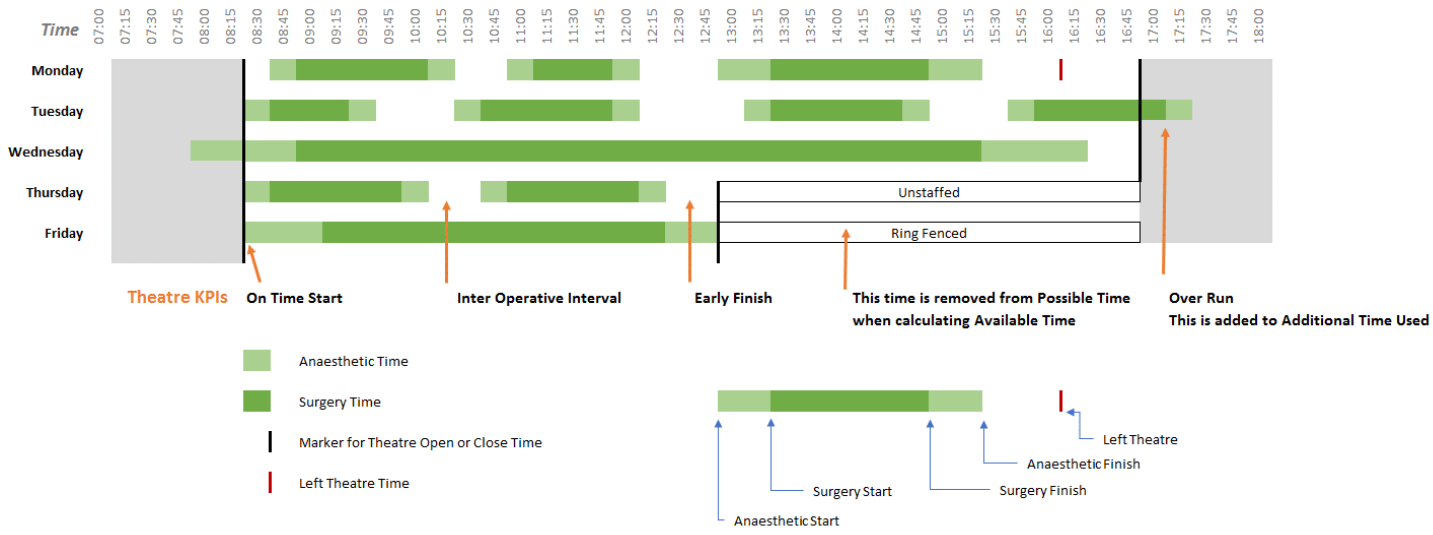

Figure 4: Graphical Representation of Theatre KPIs

Conclusion

Using standardised operating theatre time stamps allows for universal understanding of patient flow effectiveness through the Theatre resource. This enables identification of areas of opportunity to pursue using a structured Quality Improvement approach, by the Theatre Multidisciplinary Team (MTD).

Version Control Log

Version	Date	Description of Change	Changed By
001	24th March 2021	Initial Release	Prof Debbie McNamara / Charlie Dineen

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