

Striving for a Better Operating Theatre Environment

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From health systems to hospital departments, healthcare leaders are under increasing pressure to tackle multiple challenges

How to best balance cost, quality, and access in a manner that is both sustainable and consistent with social values and political goals?

- Managing rising numbers of chronic disease patients
- Reducing variations in clinical practice
- Adopting evidence-based care



Delivering high quality

- Defining "right" level of care and coverage
- Defining role of private and public sectors
- Ensuring equity across the system



Providing access

- Improving value for spending
- Ensuring rational adoption of new drugs, devices, and technologies
- Creating value conscious patients and cost competitive providers



Responding to rising costs

Performance of the system is under increasing public scrutiny



Delivering high quality



Providing access



Responding to rising costs



McKinsey has supported hospitals globally to address the challenge of balancing quality, access, and cost

Transform surgical pathway and major specialities that are stakeholders in OT for major NHS hospitals

Diagnose operating theatre process for a major academic medical centre to benchmark productivity, quality and identify improvement initiatives

Liberate effective capacity to enable growth in cardiovascular surgical services for a 900-bed urban hospital affiliated with a major medical school

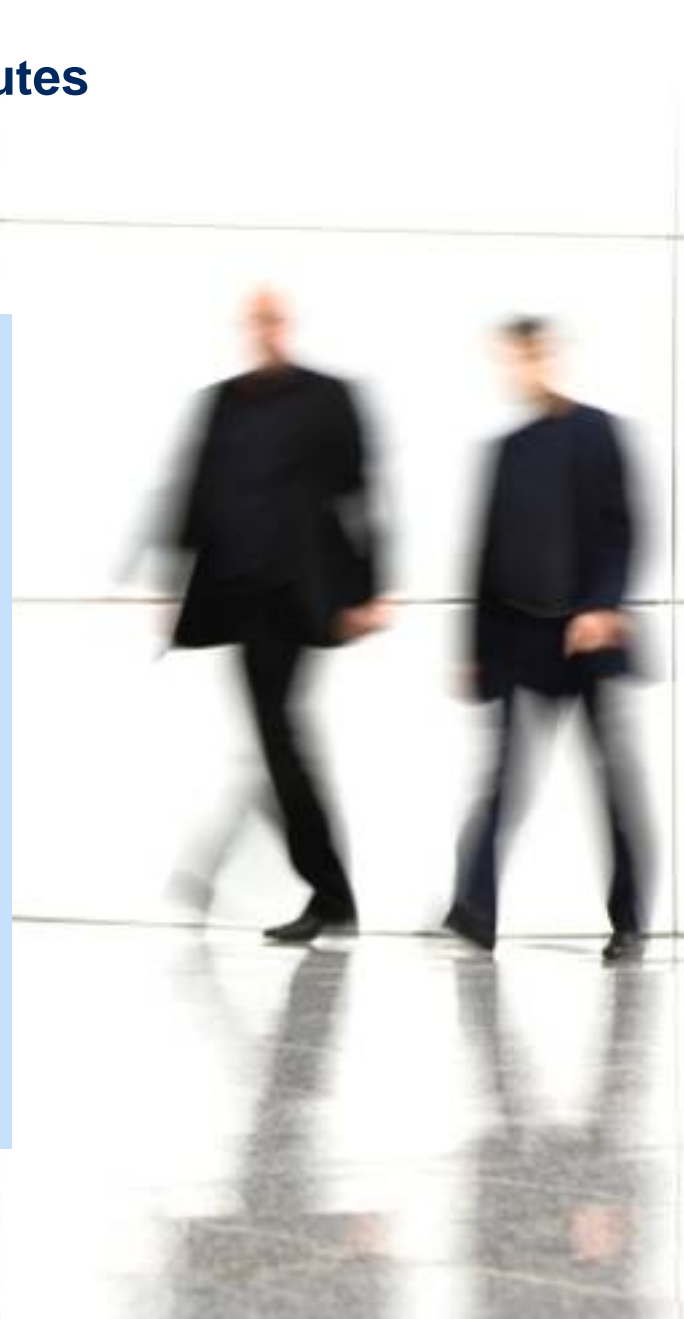
Turn around a university hospital around of ~1,500 beds and more than 40 clinical facilities including reorganizing operating theatre, intensive care, and emergency room

Improve surgical service operations for large 1,500-bed hospital

Let's walk through one of our projects in 20 minutes

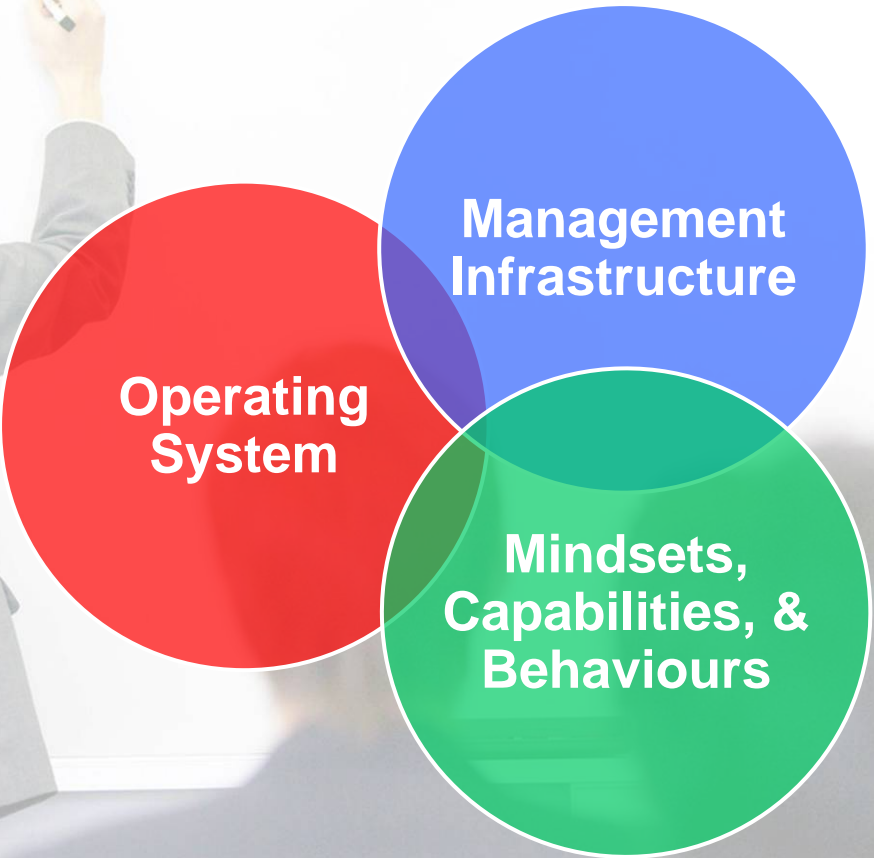
A hospital is looking for ways to improve its capacity and financial position which has frustrated both management and frontline staff

But it wanted do so in a sustainable way grounded in productivity improvements rather than one-off measures that do not address staff's core concerns



To deliver performance, we focused on building strengths in 3 areas as the cornerstones of our approach

“The way assets and resources are configured and optimized to create value and minimize losses”

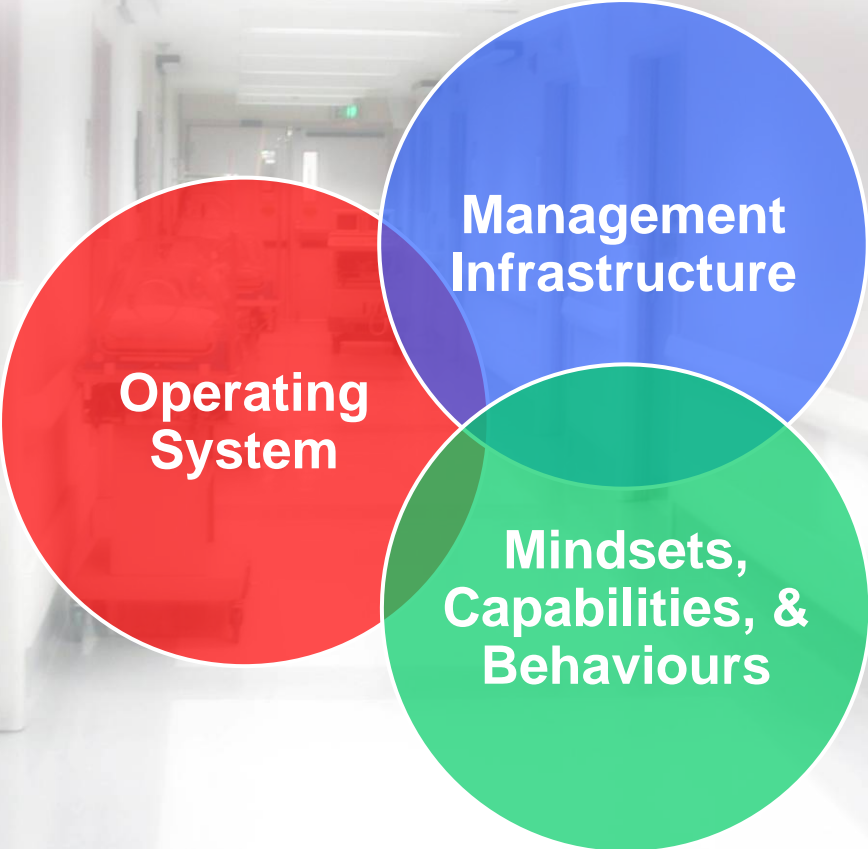


“The formal structures, processes, and systems through which resources are managed in support of the operating system”

“The way people think, feel, and conduct themselves in the workplace, individually and collectively”

How this translates to hospital operations

The way beds, operating theatres, and medicines are deployed to treat patients and improve satisfaction



The formal structures, processes, and systems through which doctors, nurses, professionals, and medical goods are deployed and utilised

The way nurses, doctors, and professionals work together and conduct themselves, individually and collectively

The project focused on the elective knee replacement as a start

Define

Create an overview of the pathway and problem areas

Prioritise

Focus on 1-2 problems to solve

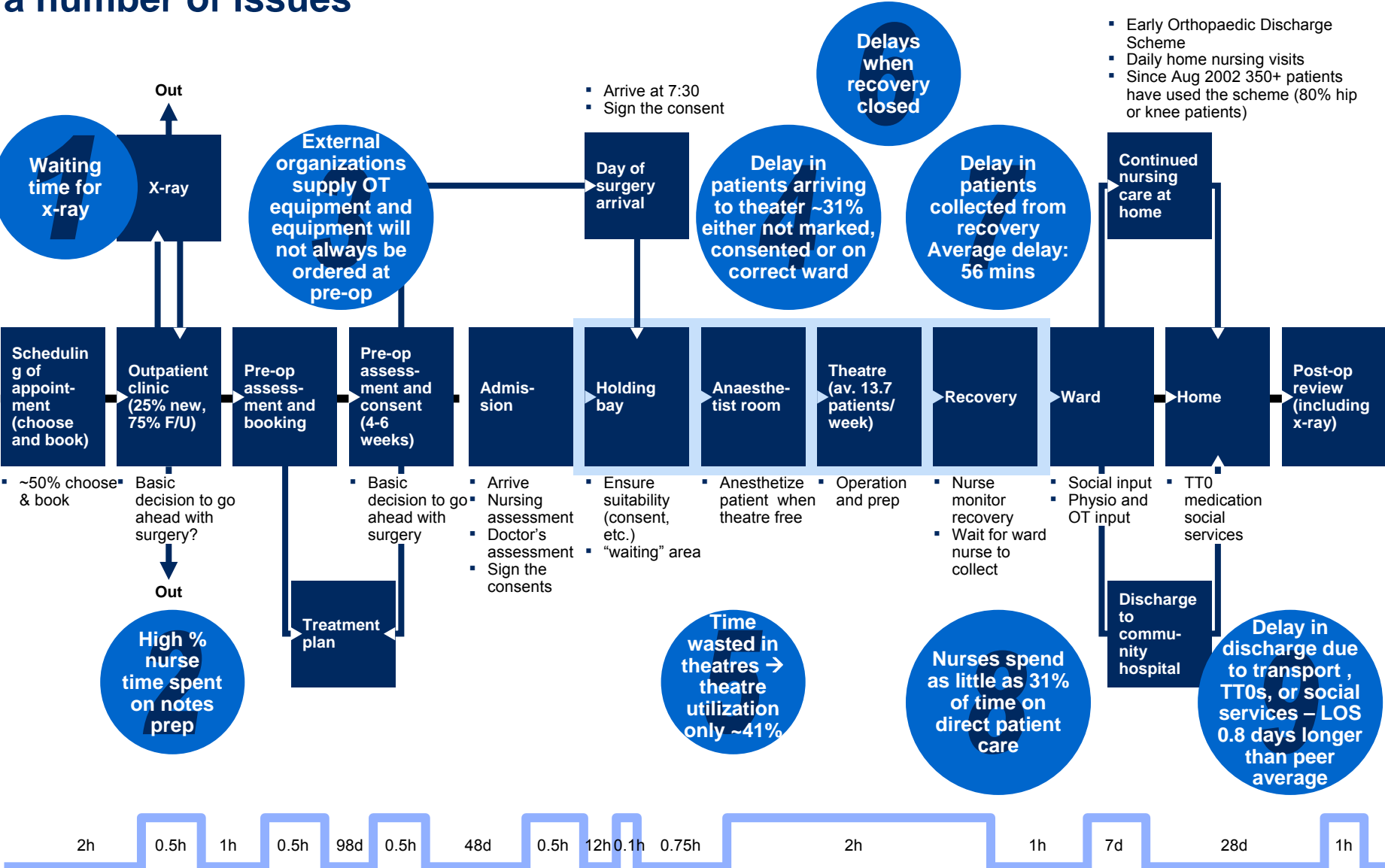
Problem Solve

Generate solutions, agree on changes, and implement

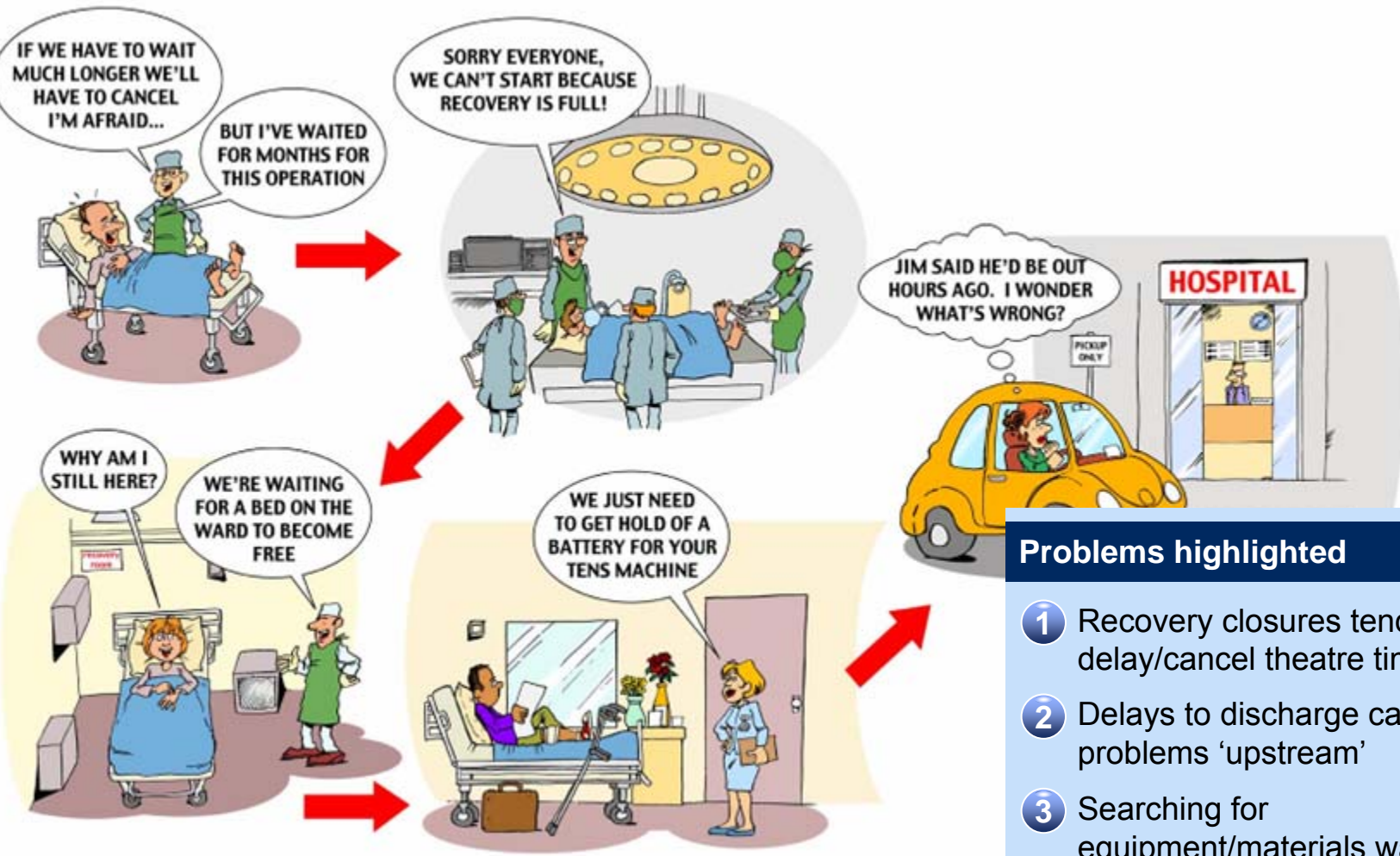
Review

Review results, sustain improvements, celebrate success and agree on next areas to focus on

Patient journey for primary knee replacement highlighted a number of issues

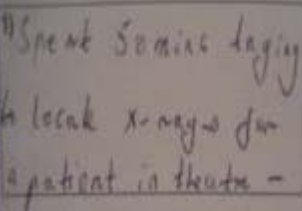

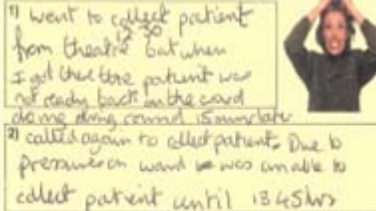
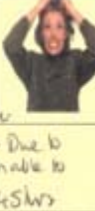
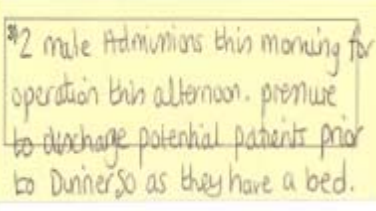
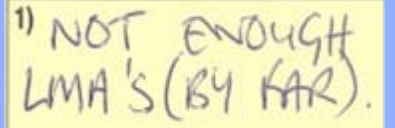
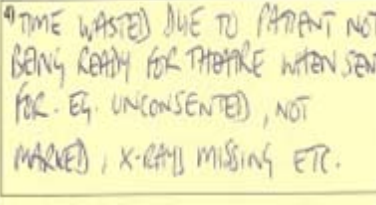
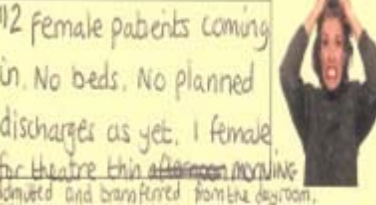

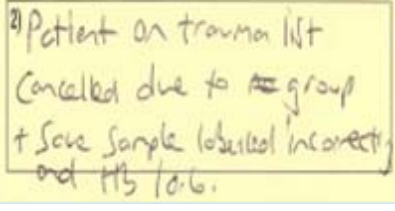
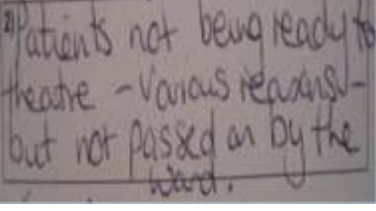
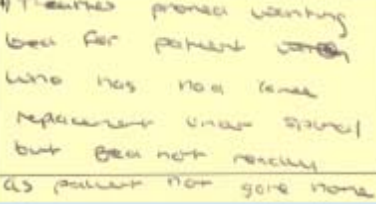
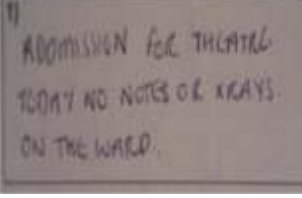



Observations also highlighted specific problem areas and showed how the whole process is interconnected



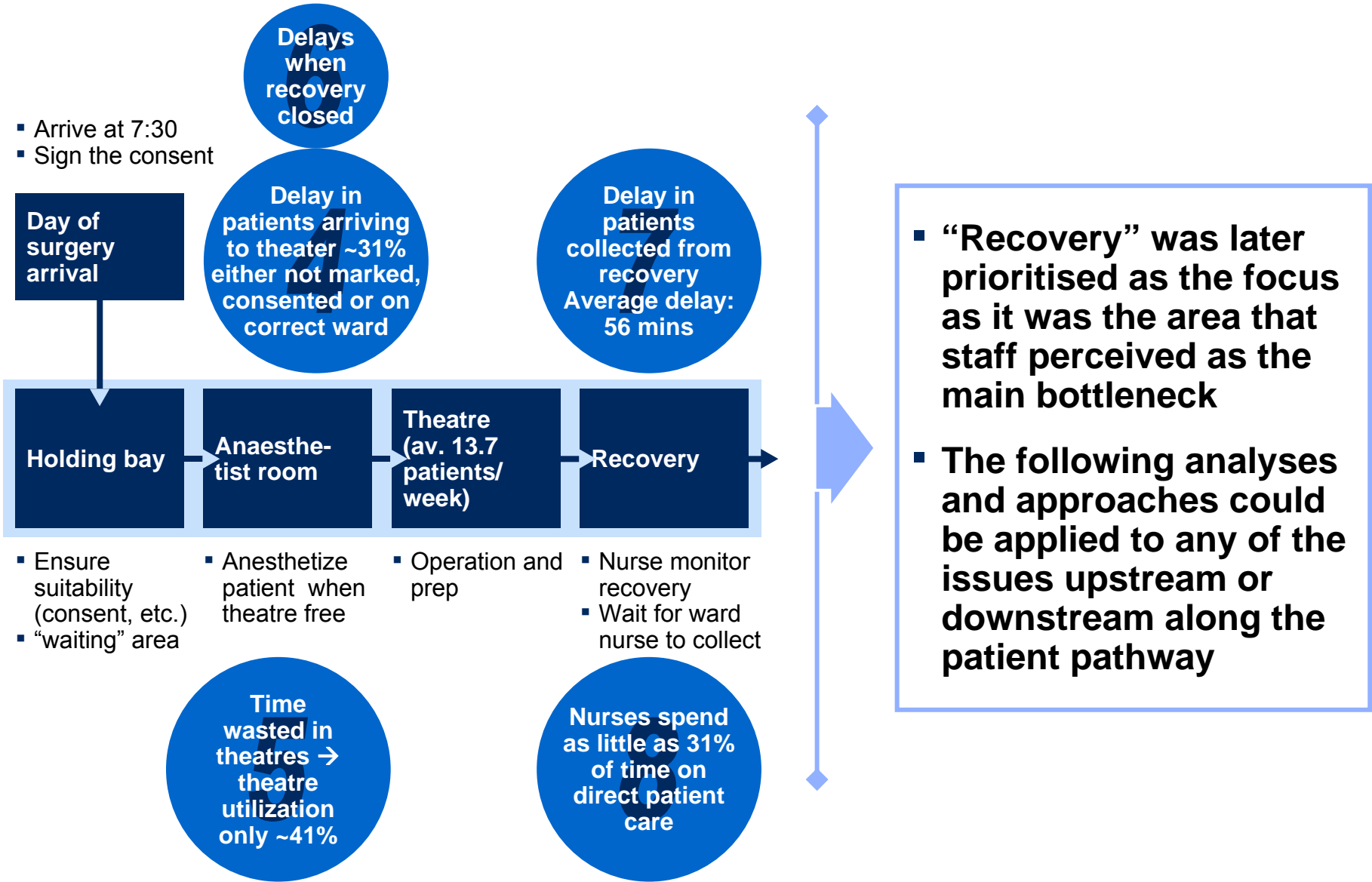
- ### Problems highlighted
- 1 Recovery closures tend to delay/cancel theatre time
 - 2 Delays to discharge cause problems 'upstream'
 - 3 Searching for equipment/materials wastes time

Process issues are frustrating staff both on wards and theatres

Time wasted, 10 mentions	Delays in and out of theatres, 7 mentions	Problems in discharging, 6 mentions
 	 	
<p>Time wasted searching for LMAs in the morning</p> 		 
		
 	<p>Patients getting to holding bay after their trolleys have been here 15 mins or more</p>	<p>Family came to collect Rx which arrived on ward but not signed off (staff nurse, Ward 11)</p>

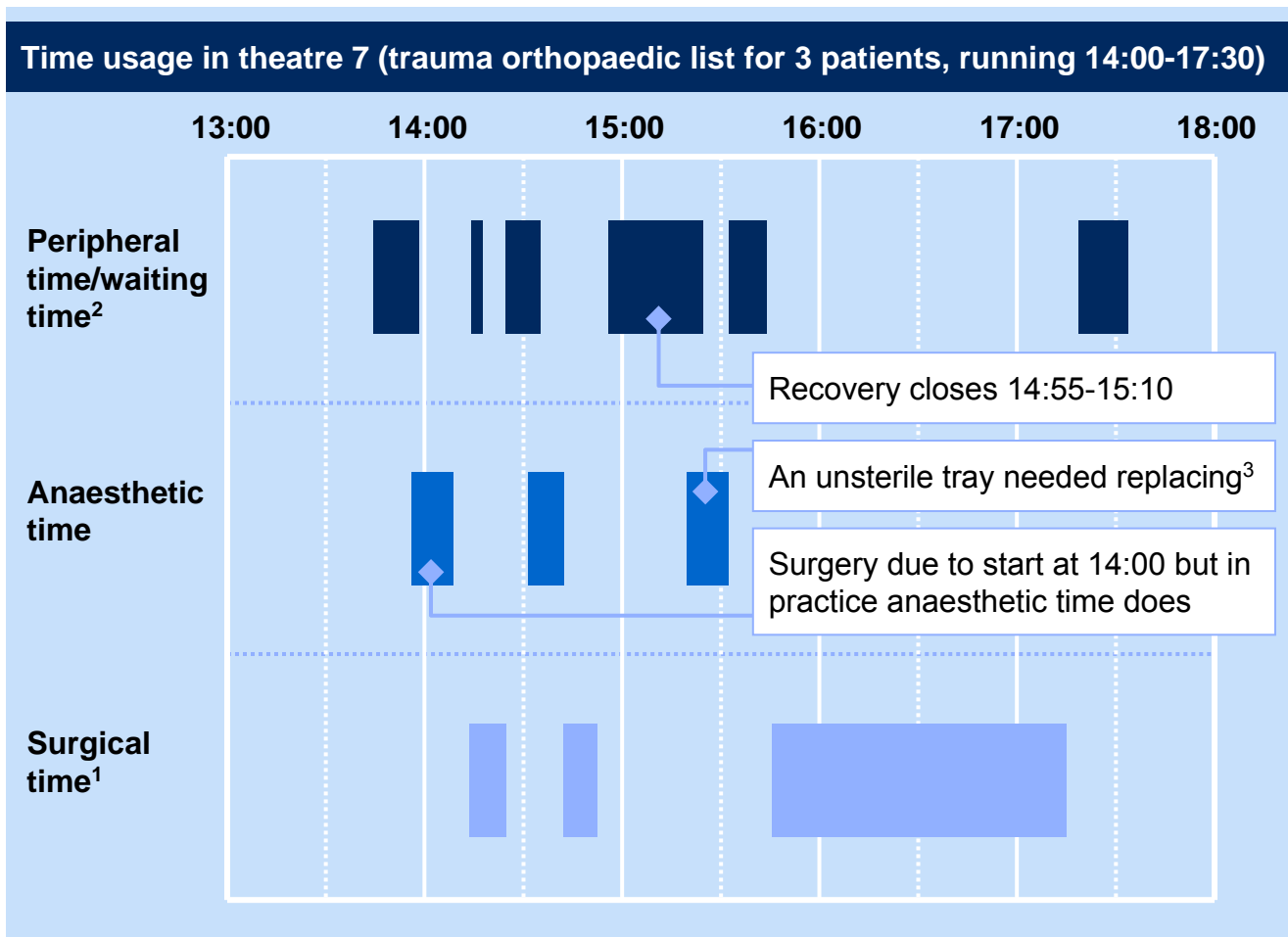
- The problems most cited by orthopaedics staff were time wasted due to process glitches, delays in and out of theatres & delays to discharge
- Discharge planning will reduce LOS and lower bed occupancy. This would reduce the time spent 'chasing' beds
- Focusing on ensuring patients get down to theatre and leave recovery when ready will increase theatre utilization

Improving operating theatre environment was made a priority

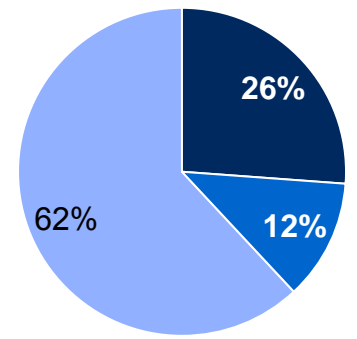


Detailed observations of one session provides further insight into how time is lost

■ Surgical time¹
■ Anaesthetic time
 ■ Peripheral time/waiting time²



Summary of time use: (100% = 3.5 hours)



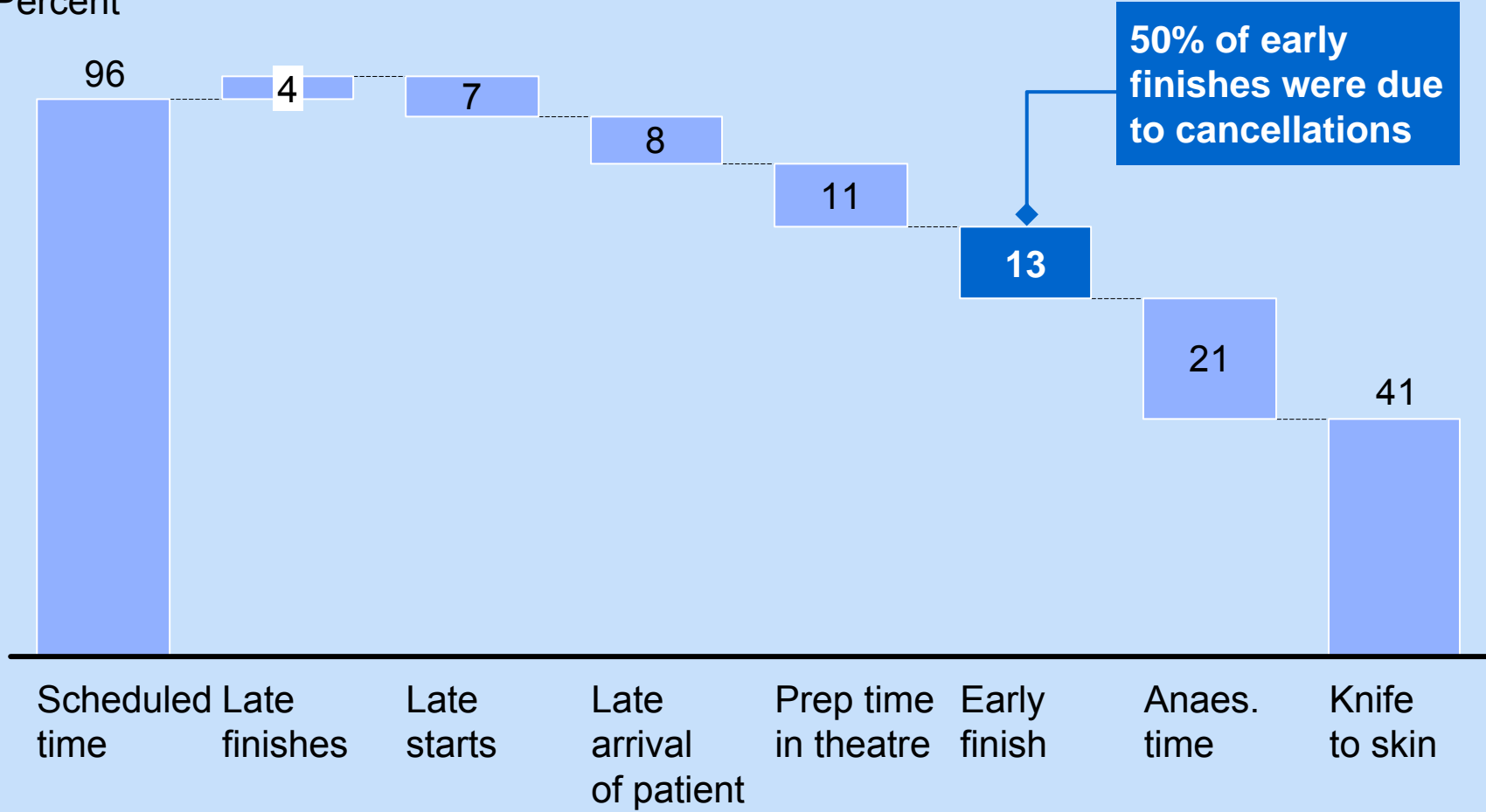
“Today was a very good day” (theatre 7 surgeon)

¹ Knife to skin
² Includes setting up equipment movement of patients & waiting
³ On occasion up to 75% of trays have been unsterile and some packs have no replacement stocks

Around 38% of theatre time is identified as not value-adding

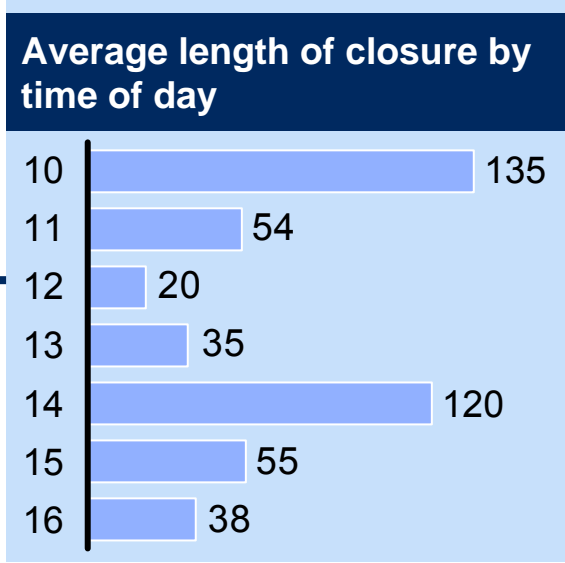
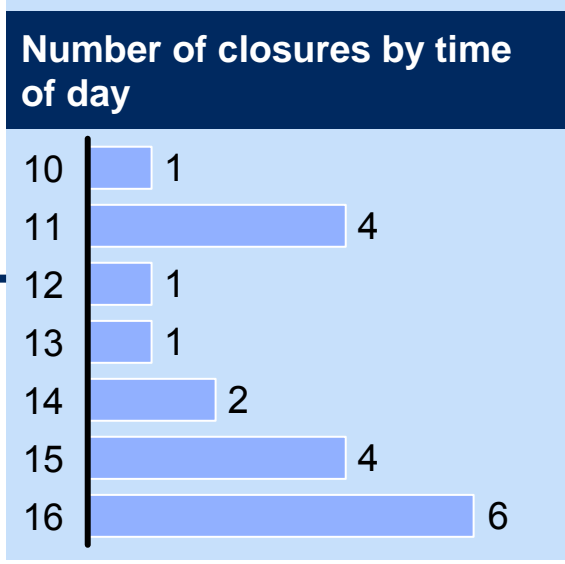
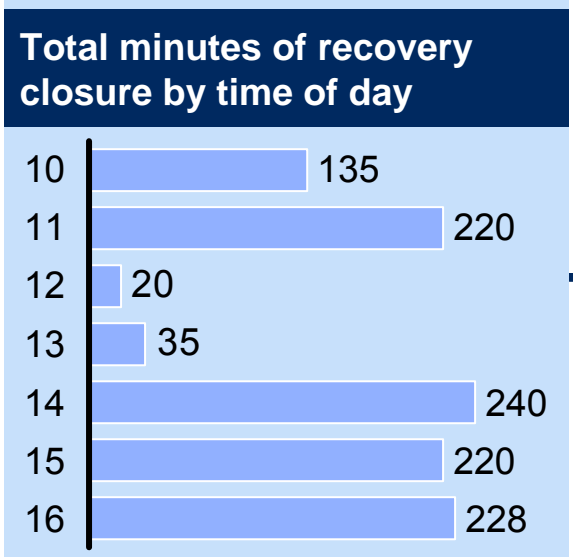
Overall theatre utilisation 6 & 8 based on 9 days of data

Percent



50% of early finishes were due to cancellations

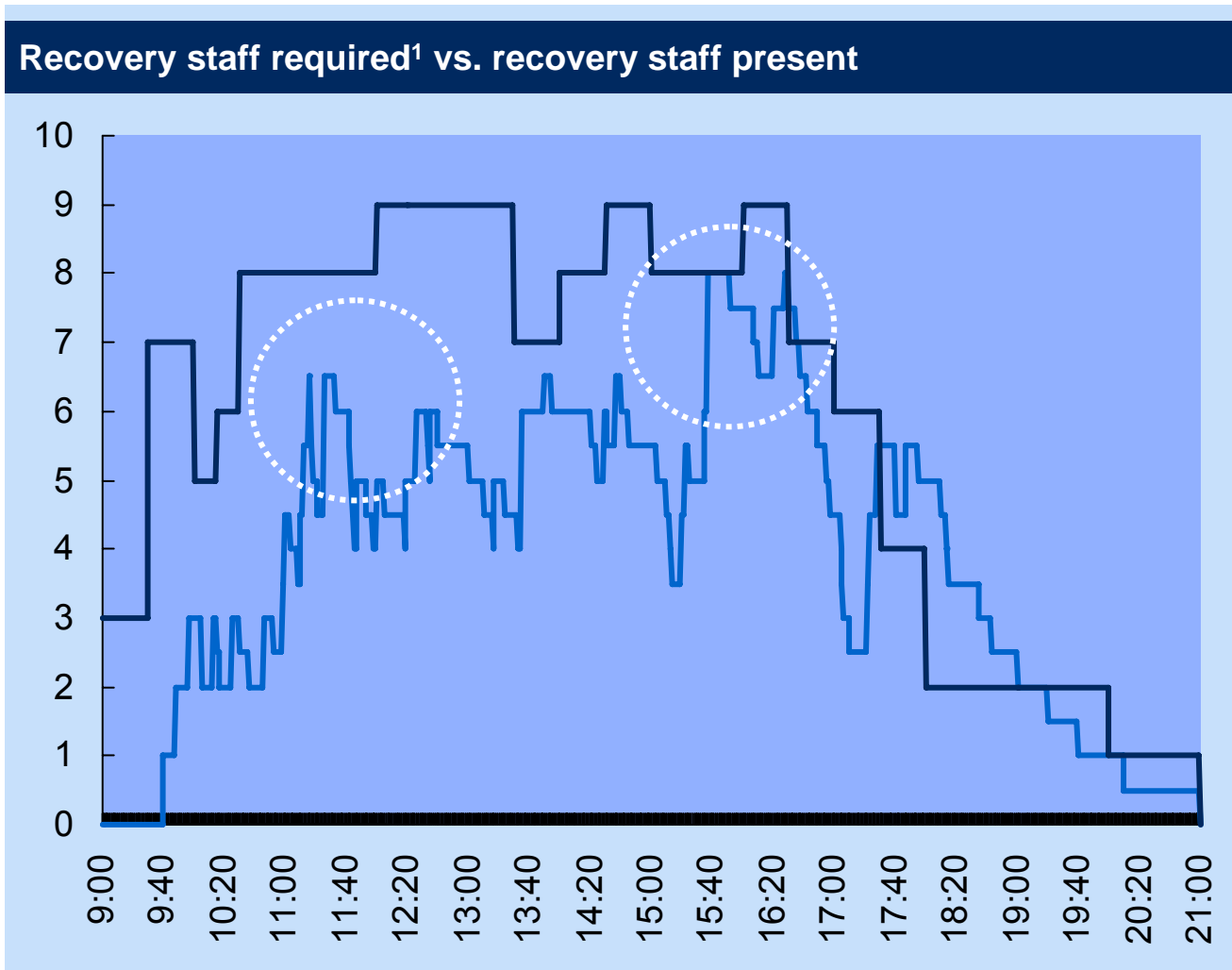
Full recovering bay is closed to new patients, leading to cancellations or late finishes



As well as cancellations and late finishes, the **expectation of closures** in recovery is factored into scheduling by surgeons and the theatre manager, leading to **lower numbers of patients per list** and contributing to **early finishes**

While staggered shifts in recovery help to make the best use of available capacity ...

○ Peak periods
 — Recovery staff required¹
 — Recovery staff present



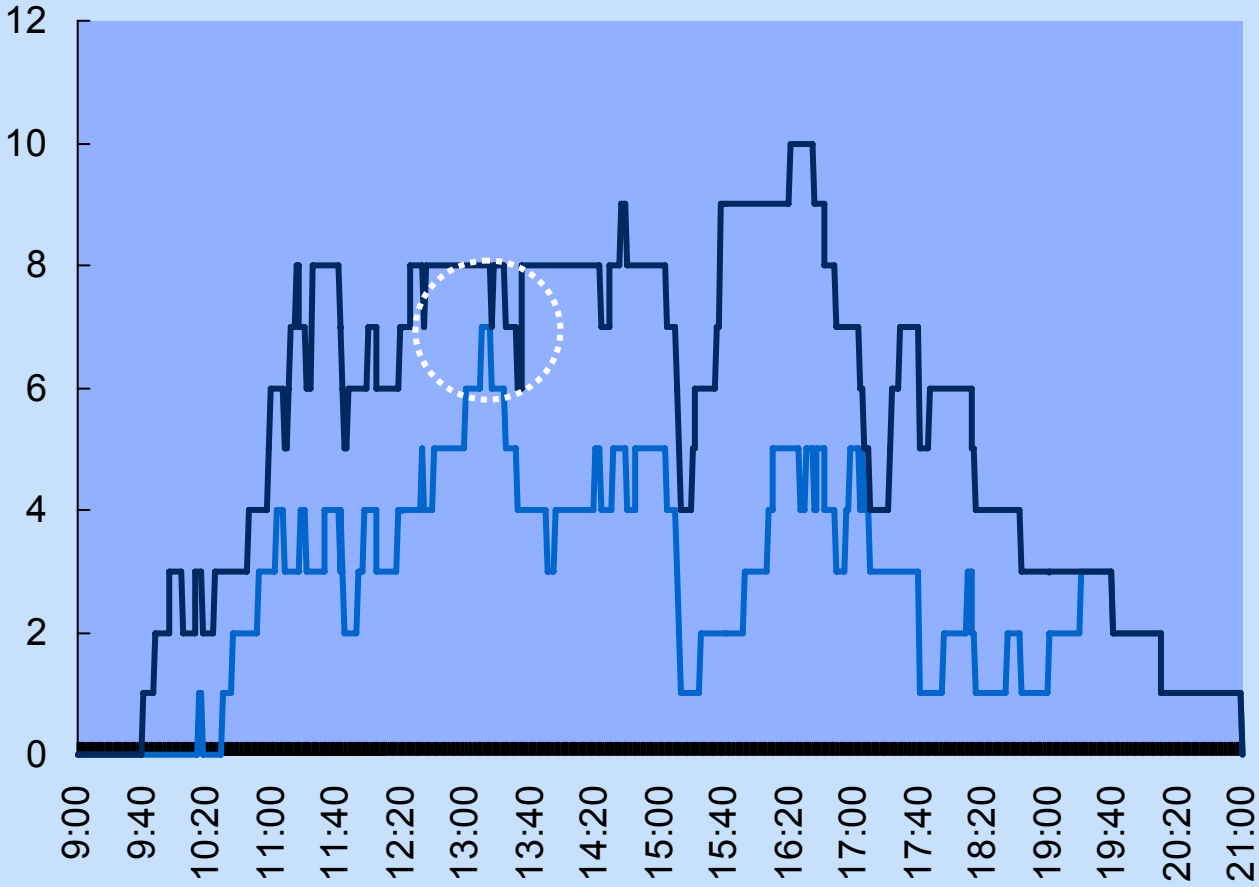
- **Staffing levels generally track patient demand levels**
- **Late morning and afternoon and 'crunch times' when recovery is sometimes forced to close**
- **This was a 'light day' with 5 cancellations and 2 theatres closed**

¹ Based on 1:1 nursing for patients who are recovering and 1:2 nursing for patients who are recovered but waiting for collection

... recovery nurses can spend more time looking after recovering patients than recovered patients ...

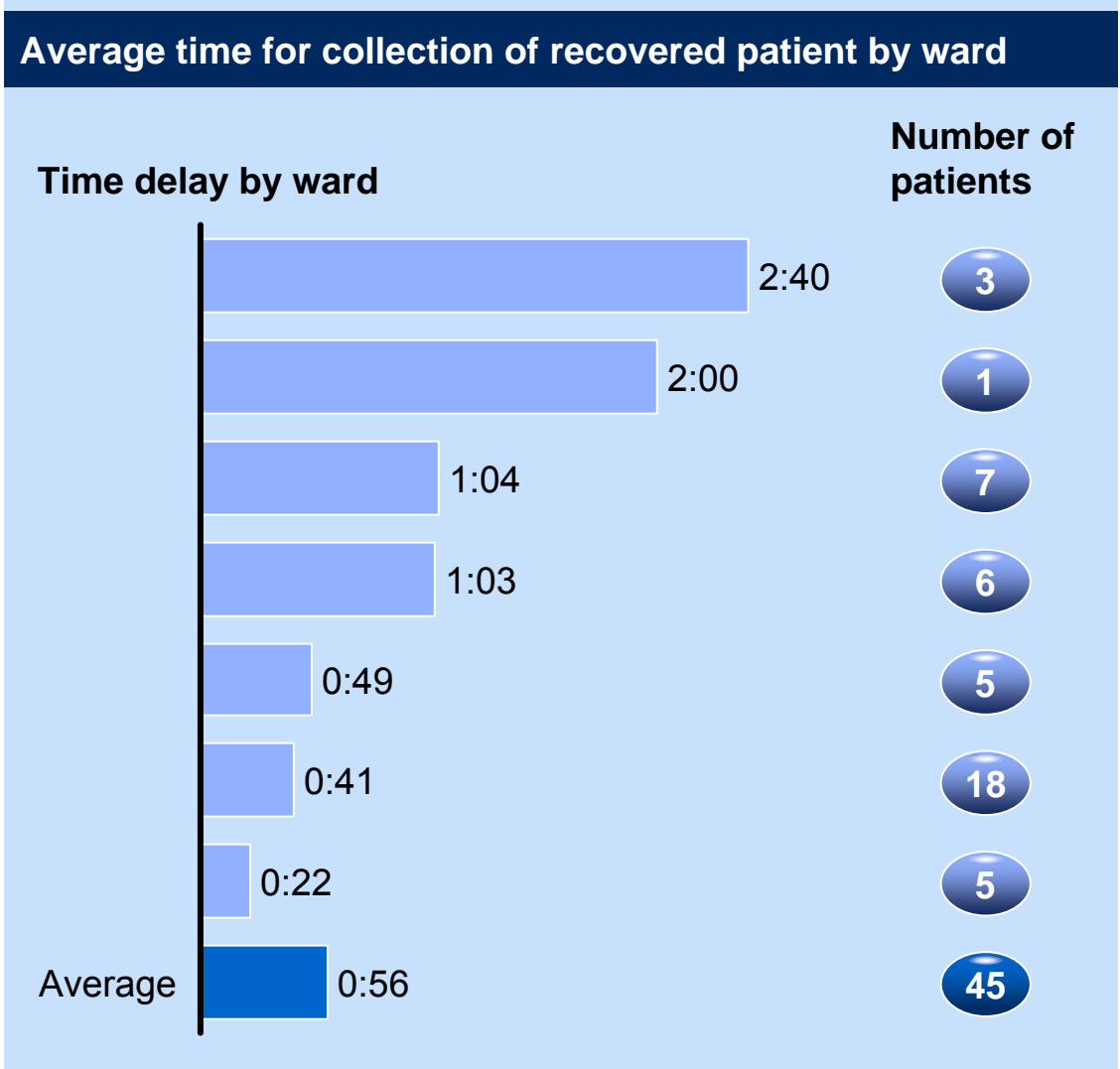
— Recovered patients — Recovering patients

Recovered patients vs. total patients



- On average, **half of patients** in recovery were fit to leave
- At approx 13:15, **almost all patients** in recovery were recovered (i.e. fit enough to return to the ward)

... which is often due to delays in collection of patients to return them to wards



- On average, each day recovered patients used 21 hours of bed time in recovery
- At a ratio of one nurse looking after two recovered patients, this equates to 10 hours 30 minutes of recovery nurse time – occupying over one recovery nurse full time
- Eliminating this problem would allow recovery to cope with one to two additional recovering patients at any one time, which would much reduce the incidence of closures

Based on the analyses performed with frontline staff, we agreed on a number of improvement ideas during a workshop

AIM OF IMPROVEMENT WEEK: Make changes to ensure (1) patients can access and leave recovery without delay and (2) to ensure that patients are in theatres on time

Idea	Description
<ul style="list-style-type: none">Change escorting policy for patients to be brought back to ward	<ul style="list-style-type: none">Health-care workers (HCW) can take low-criticality patients back to the wards
<ul style="list-style-type: none">Recovery staff to bring patients back	<ul style="list-style-type: none">Recovery staff to bring patients back rather than waiting for collection
<ul style="list-style-type: none">Measure key indicators	<ul style="list-style-type: none">Record time between “patient ready to leave” and “actually left recovery bay”Record times that recovery closes
<ul style="list-style-type: none">Recovery staff to help holding bay and open reception earlier	<ul style="list-style-type: none">One recovery nurse to assist holding bay 8.30 until 9.30 am and allow second person to use phone in reception
<ul style="list-style-type: none">Measure key indicators	<ul style="list-style-type: none">Record delays in patient arrival vs. target time and note reasons for delays

The average delay between recovered patients leaving recovery fell 80% from 56 minutes to 11 minutes

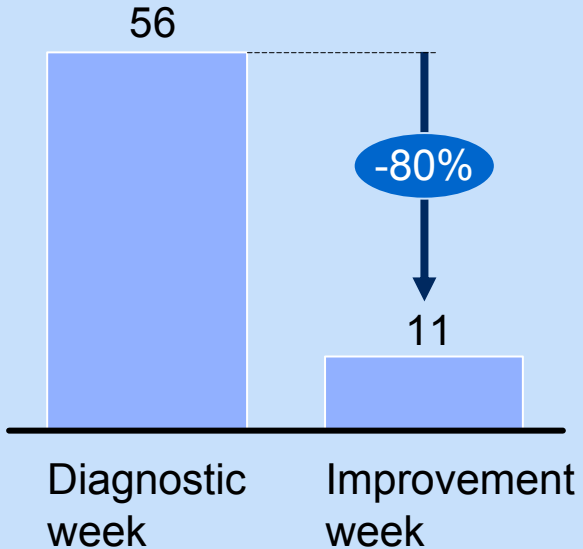
Changes

- Change in escorting policy to allow health-care workers (HCW) to escort patients
- Recovery nurses taking patients back to wards
- No local anaesthetic patients to go to recovery
- Theatre nurses to help take last patients of day back to wards



Impact

Average 'waiting time' in recovery¹
Minutes



The recovery team & wards were pleased with the changes

Staff comments

We had these ideas for a long time. I just don't think our voice was quite loud enough, but now everyone has taken an interest. **I feel further changes we suggest will be supported**

– Recovery nurse



It was a great help having our patients brought back and **gave us some time back**

– Ward leader



There have been **no delays in handover of patients** to the wards

– Recovery nurse



The team is pleased with the changes, they like taking back **as they can then concentrate on their next patients**



We definitely **would have been closed** if we weren't taking back

– Recovery leader

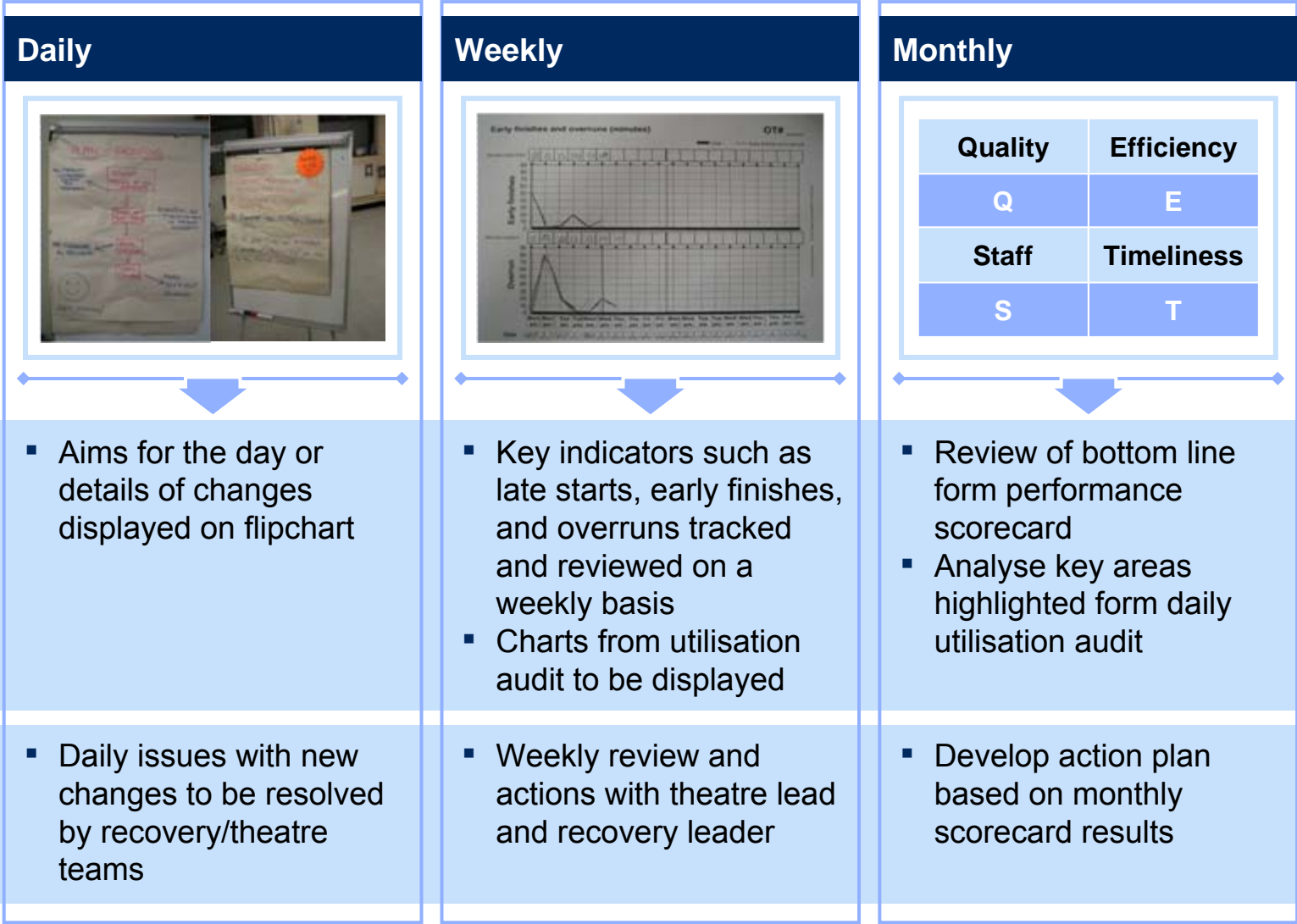


It really helped to **keep patients flowing through**

– Recovery nurse



Visual management of objectives and results helped to track and embed changes



Sustaining momentum for improvement was crucial in the long run

Embed changes trialled

- Refine ward guidelines on changes
- Agree detail of policy
- Ensure expectations of wards and recovery are aligned, i.e., when is it ok for wards to say they are not ready, when can recovery still ask for timely collection by wards
- Monitor weekly time patient waiting once fit, recovery closures and theatre minutes lost due to this and display to the team weekly

Develop and implement new changes

- Work on solving other blockages to the recovery system, i.e., ward pre-discharge system
- Consider the use of a focused 1-week improvement initiative in other areas of the theatre action plans
- Visual management: Use theatre utilisation data to highlight problems and progress visually on boards in theatre areas

Final thoughts



- **Improving recovery processes have also improved theatre utilisation and gradually shortened the waiting list**
 - Less recovery closure time
 - Less buffer built into theatre scheduling
 - More efficient transfers between theatre and recovery
- **Staff is happier and more satisfied after removal of frustrating bottlenecks in processes**
- **Working/training frontline staff with new skills to problem solve was a critical part of the McKinsey support, leading to staff feeling empowered to capture ongoing improvement opportunities**
- **Getting quick wins early during the improvement week was instrumental to boosting staff's morale, and made tackling subsequent issues a lot easier**

Questions?



Thank You

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