The Productive Operating Theatre
Building teams for safer care[TM]

Knowing How We Are Doing

Version 1
This document is for theatre managers, theatre matrons, theatre coordinators, theatre staff, anaesthetists, surgeons, information analysts and improvement leads

The Productive Operating Theatre
Knowing How We Are Doing

Purpose of this module

This module is intended to help you build your process for identifying, using and evaluating measures for your theatre at each appropriate level in the organisation. It is a key foundation module within the Productive framework and helps you to monitor improvements accurately, and share them with the theatre team.

As a result working through this module, measures will be an asset to your team and the driving force behind your improvements. You will be able to use data to inform your decision-making and to prove that the changes the team is making are having an impact on the service they provide.

Key performance indicators, targets, dashboards and reports may seem daunting or it may feel you are doing them just to 'feed the beast'. Many staff are fed up with collecting data as they never get to see or use the information they help create. Data is often not used to inform the way they work but measurement does not have to be this way.

By implementing Knowing How We Are Doing you will introduce a balanced measurement system that is useful to theatre-based staff because it is relevant, close to real-time and the team can see the impact of the changes they make.

Knowing How We Are Doing is often one of the most challenging modules to implement. It can initially require a great deal of investment in time and effort to produce and analyse the data. However, implementing this module is probably the most powerful thing you can do to set theatres on a course of long-term sustainable improvement.

These modules create The Productive Operating Theatre

The Productive Operating Theatre

Process	Session Start-up	Patient Preparation	Patient Turnaround	Handover	Consumables and Equipment	Recovery	Toolkit
Enablers	Team-working			Scheduling			
	Knowing How We Are Doing		Well Organised Theatre		Operational Status at a Glance		
Foundation	Programme Leader's Guide						
	Executive Leader's Guide						

Contents

1. What is Knowing How We Are Doing?

This module is an approach to help your team choose the right measures to track how your theatre suite is doing against the core objectives of The Productive Operating Theatre. It will help you and your team to see:

- that the changes you are making are helping you achieve your vision
- how the service and care you give in theatres contribute to your trust's strategic aims.

Why do it?

- To demonstrate that the changes you are making really are improvements.
- To understand how you are doing against the overall objectives of improving safety and reliability, patient experience and outcomes, value and efficiency, effective team-working and staff wellbeing.
- To positively recognise the impact of changes made.
- To promote the use of facts and data to drive continuous improvement.
- To understand and resolve issues in a team environment.
- To engage with management to help you achieve your goals.

What it covers

- An explanation of measurement for improvement.
- How to generate your team's measurement set.
- How to hold a workshop to decide on the measures that are important to your team.
- How the data will be collected, analysed and displayed.
- How to display the measures set.
- How to set up measure review systems to drive improvement.
- How to understand what the data is telling you.

What it does not cover

- Measurement policy, eg 18-week clock stop definitions.
- Other measures dictated by your organisation's policies.
- Specific details about what should and should not be included on your Knowing How We Are Doing board.
- This module does not recommend specific actions to improve the performance of a particular measure.

Learning objectives
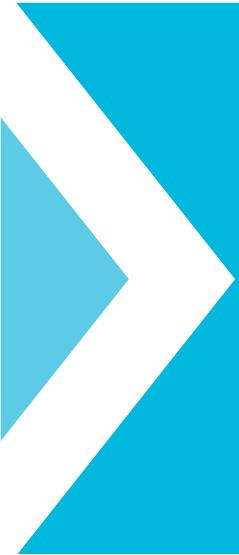
After completing this module it is expected that the team will understand the following:

- why measurement is important

- how measurement drives better decision-making

- how to use data to drive continuous improvement (the seven step model)

- engaging staff in creating and reviewing a set of balanced measures which work for you and your theatre team (through the measures workshop)

- how to set up a Knowing How We Are Doing board

- how to establish an effective progress review system.

Module roles and responsibilities

You will need to brief your team to ensure all members are fully aware of their role and why the team is doing this module. It can sometimes be a good idea to bring in trust leaders to help in this briefing, such as the medical director.

To help you set up briefings we have outlined the roles and responsibilities for the different staff groups in your team. It can be a real advantage to hold these briefings in person and individually, instead of in large groups.

Focus on the opinion leaders in each group and target them as they can help you to influence their peers; this is vital to ensure broad representation at the measures workshop and ongoing involvement and support for the programme.

Theatre staff in general:

- willing participants in the new techniques
- take an active part in discussing theatre performance
- suggest new ideas to the issues exposed
- take away improvement actions and investigate issues further

Team leader:

- take the lead for implementing a visual theatre-based measurement system
- communicate clearly the goals and objectives to be achieved
- encourage and support the theatre team throughout the implementation
- lead theatre performance review meetings
- keep the focus on positive opportunities for improvement

Anaesthetists and surgeons:

- support and encourage the theatre team leaders during implementation – time, space and coaching
- take open and active interest in the team's progress
- review and audit the measures board on a regular basis
- monitor and assess skill gaps made apparent through implementing this module

Theatre manager:

- support and encourage the theatre team leaders during implementation – time, space and coaching
- take open and active interest in the team's progress
- review and audit the measures board on a regular basis
- monitor and assess skill gaps made apparent through implementing this module

Executive leader:

- escalate organisation wide issues to the appropriate forum, allowing the theatre team to focus on issues within the scope of the programme
- benchmark data coming from different theatres or teams and challenge variation
- ensure analytical support is in place
- take an active interest in the measures set

Programme leader / project facilitator and implementation team:

- assist the theatre team leader and team by providing guidance and extra support in the initial stages
- use wider experience to point (but not lead) the team in the right direction
- organise and lead the measures workshops

Information team:

- commit sufficient time and resource to provide the programme team with timely data
- work with the team to find ways to display data graphically so that it can be easily understood

800

1000

1200

1400

1600

ml
APPROXIMATE
VOLUME

Measurement for improvement

Before developing your set of measures it is important to understand what measurement for improvement is. The following section gives an overview of measurement for improvement and why it is so important.

How do we know a change is an improvement?

The Productive Operating Theatre involves you and your team making many changes to the way you currently work. To demonstrate if the changes you are making really are improvements, you need to be able to measure their impact as all improvement will require change, but not all change will result in improvement.

Measurement can show you a number of important pieces of information:
- how well your current processes are working and what could be improved
- whether you have achieved your goal
- how much variation is in your process
- whether a small change is an improvement
- whether the changes are being sustained.

'Without data it is just a change; with data you can prove it is an improvement.'

Julie Brough – clinical link facilitator, Central Manchester University Hospitals NHS Foundation Trust

Driver diagrams

Throughout the programme your theatre teams will spend a lot of time and energy, testing and implementing changes that they may perceive to have only a small impact. It is understandable that your teams want to look for the 'big win': the one change that will ensure they achieve their overall vision.

Driver diagrams are helpful in showing how the work staff are doing not only links to the organisation's strategic aims but how all of the smaller changes add up to achieve it. This will help motivate teams by demonstrating the importance of their role in the overall programme.

Driver diagrams display your changes in three ways.

1. **Interventions:** these are the practical things you will do on a day-to-day basis. They are the type of improvements that your teams will be making with the help of the modules. For example, changing your briefing and debriefing procedures.

2. **Drivers:** if the team interventions are successful this is what your theatre management expect the result will be. For example, if briefings happen for every operation you will avoid mistakes.

3. **Aims:** once you have created improvements through interventions within the operating theatre, creating improvement in the driver, collectively these will deliver a significant improvement in the overall programme aims and trusts objectives.

Safety and reliability driver diagram

The driver diagram demonstrates how you can think about and decide what changes you may want to test.

Aim	Driver	Intervention
		Conduct team brief
		Conduct team debrief
	Avoid mistakes	**Conduct time out**
		Produce accurate lists
Problem-free surgery	**Avoid complications**	**Implement SSI bundle**
		Implement VTE bundle
	Avoid delays	**Have correct kit to hand**
		Ensure staff are adequately trained
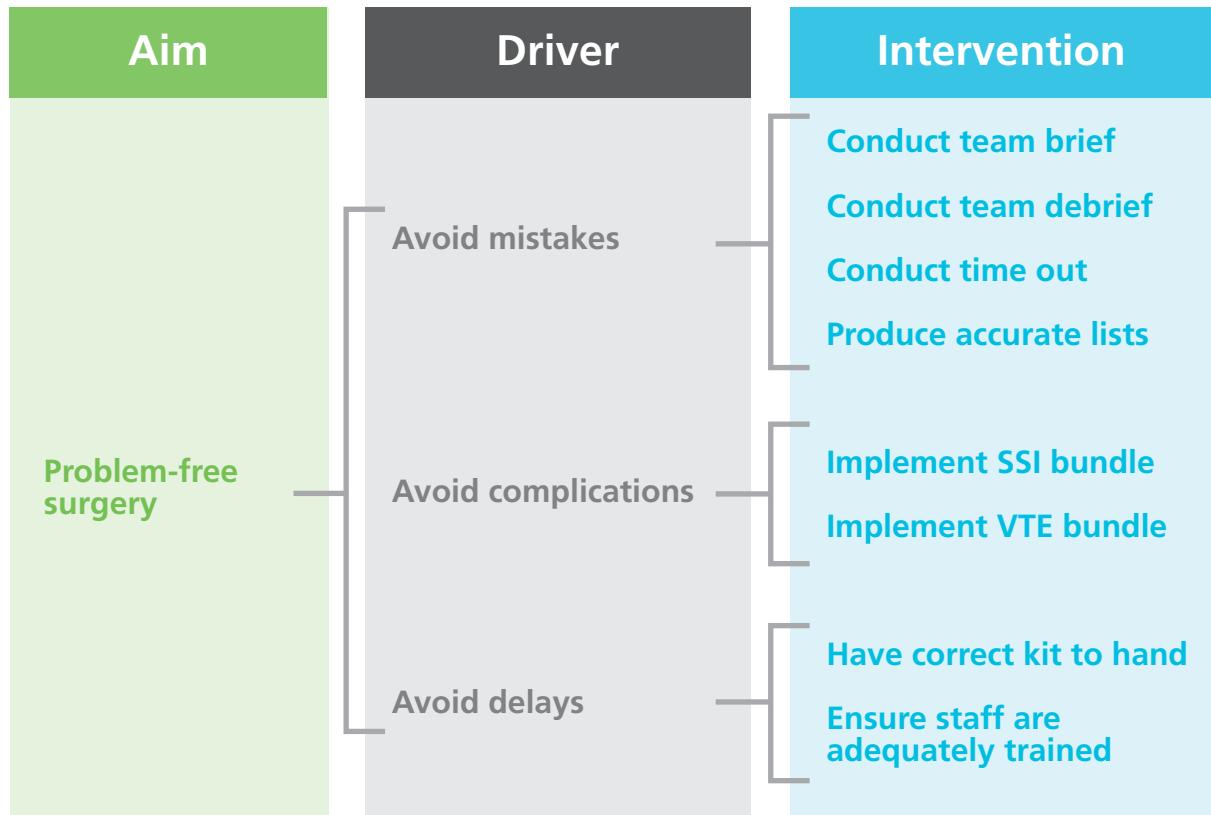
Balanced set of measures

By implementing Knowing How We Are Doing you will introduce measurement systems that are timely, accurate and, most importantly, useful to you and the theatre staff. The measures will help you understand your theatre's performance and make decisions on what to do to improve.

To help you further in the decision-making process it is useful to group similar measures into the four domains: patient's experience and outcomes, safety and reliability of care, value and efficiency, and team-work and staff wellbeing. This is presented as a 'balanced set of measures'.

We recommend that you select at least one measure from each of these four domains.

Example set of balanced measures

Patients experience and outcomes
- Patient satisfaction survey
- % patients complication free in recovery
- Pain score
- Average time patient starved

Safety and reliability of care
- Clinical incidents
- Readmissions
- Exceptions from time out checklist
- % correct equipment to hand

Value and efficiency
- Turnaround time
- % theatre utilisation
- Cancellations
- Delays (late starts / finishes)

Effective team working and staff wellbeing
- Staff survey
- Training and development
- Staff turnover
- Staff absence

The different groups within your theatres can use balanced measures. Although they should use the same four domains, the number and type of measures will be different to reflect their different needs.

1. **Executive:** this set of measures usually relates to the overall aim; they are 'strategic' and help management understand how theatre performance contributes to the overall vision for the trust.

2. **Operational:** the operational set will include more in-depth measures than the executive set of measures as it will be monitoring the performance across a range of different activities.

3. **Team:** this will help theatre teams monitor the performance of their activity based changes.

This module, focuses on the **operational set of measures** which are displayed on the Knowing How We Are Doing board.

**Strategic objective:
to be provider of choice**

Executive scorecard

Safety and reliability of care

Measure owner

Executive leads
Director of surgery

Problem-free surgery

Operational scorecard

Theatre managers

Avoid mistakes

Avoid complications

Avoid delays

Change initiatives

Team leaders

Conduct team brief and debrief

Conduct time out

Produce accurate lists

Implement SSI bundle

Implement VTE bundle

Have correct kit to hand

Ensure staff are adequately trained

Tip: Key things to remember when starting to measure

- Seek usefulness not perfection – measurement should be used to focus and speed improvement up not to slow things down.
- Measure the minimum. Only collect what you need; there may be other information out there but the aim is to keep things as simple as possible.
- Remember the goal is improvement and not a new measurement system. The data does have to be robust enough to deflect criticism but don't get sidetracked and focus mainly on improving data quality.
- Aim to make measurement part of the daily routine. Where possible use forms or charts that are already routinely used, this minimises the burden on staff.
- Make sure the data collection is easy and quick to complete. The explanation given to staff about why we are collecting the measure is very important so that they can understand and engage in the activity.
- If a member of a team is resistant or finding it difficult to understand the measurement aspects of the programme, try explaining it in terms of evidence-based practice. You are doing nothing more complicated than collecting data to see how you are doing and whether the changes you have made have been beneficial.

The model for improvement
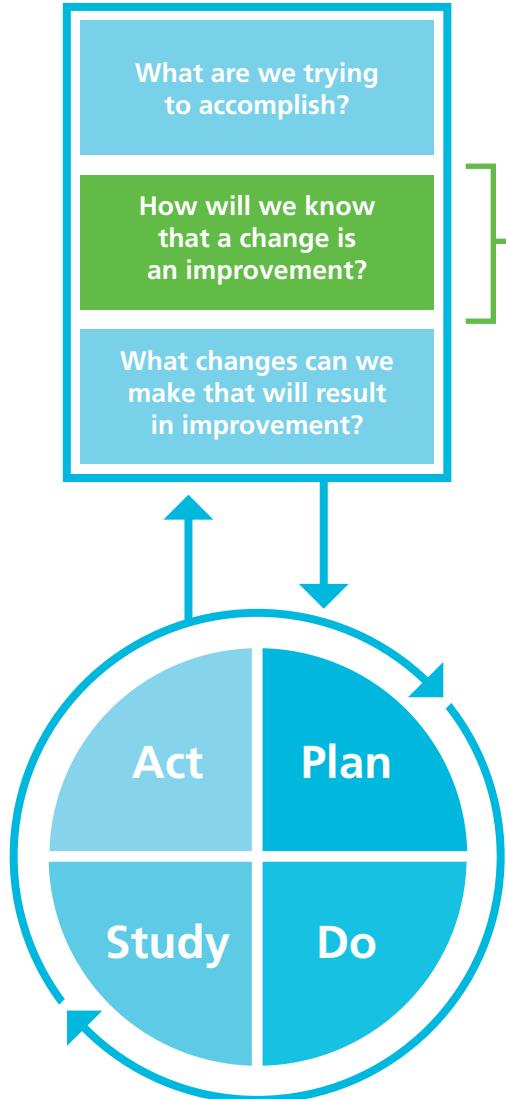
The Productive Operating Theatre modules are structured around the plan, do, study, act model for improvement.

Knowing How We Are Doing focuses on measurement, which is fundamental in answering the second question of the model 'how do we know that a change is an improvement?'

Your work in this module is fundamental in helping you to think about and answer this question for all of the other modules and for the programme overall.

To work through this question we use the measurement for improvement seven step model that focuses purely on measurement; this is explained in detail on the following page.

What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

Act

Plan

Study

Do
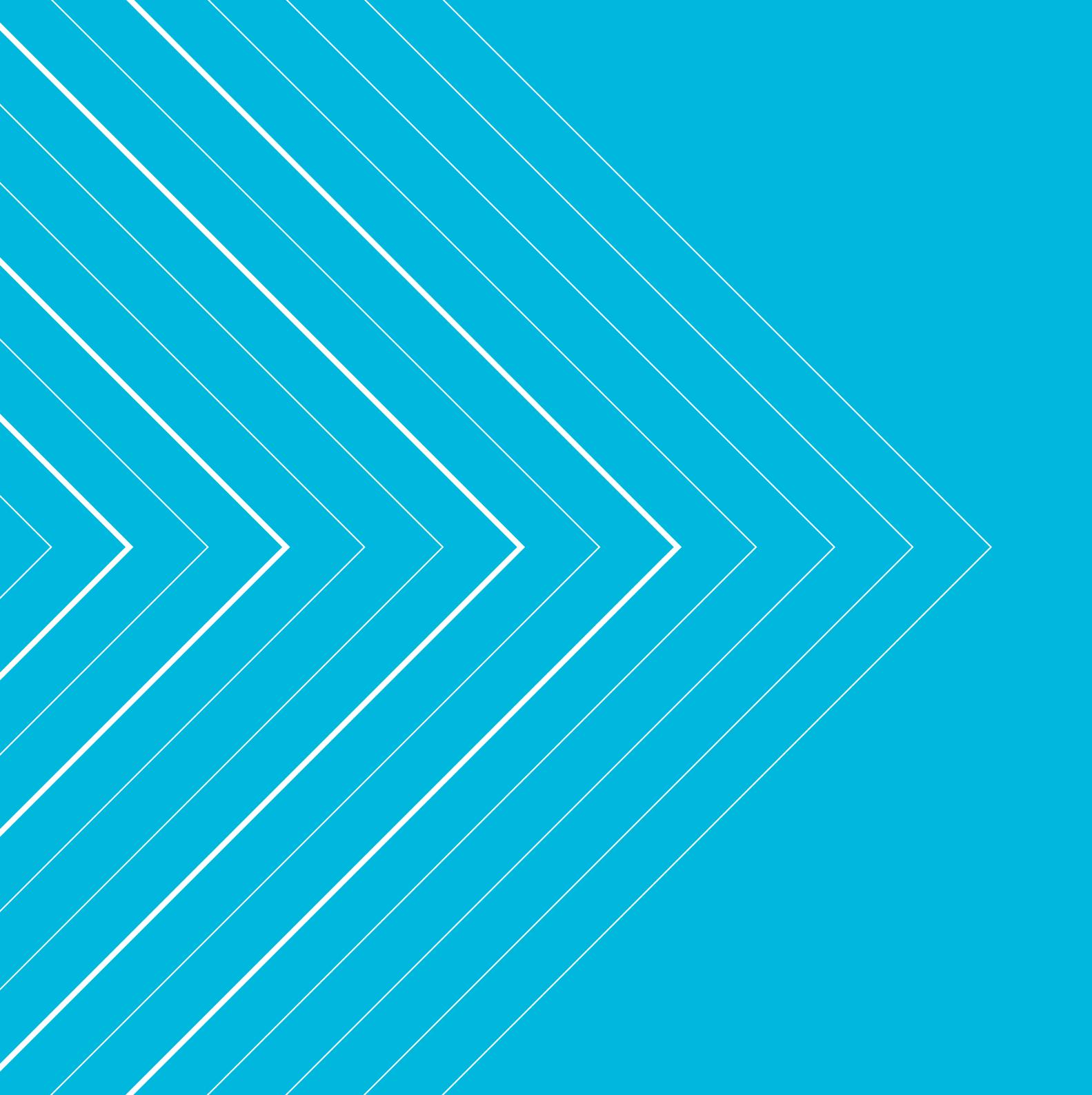
## 2. Introduction to the seven step model
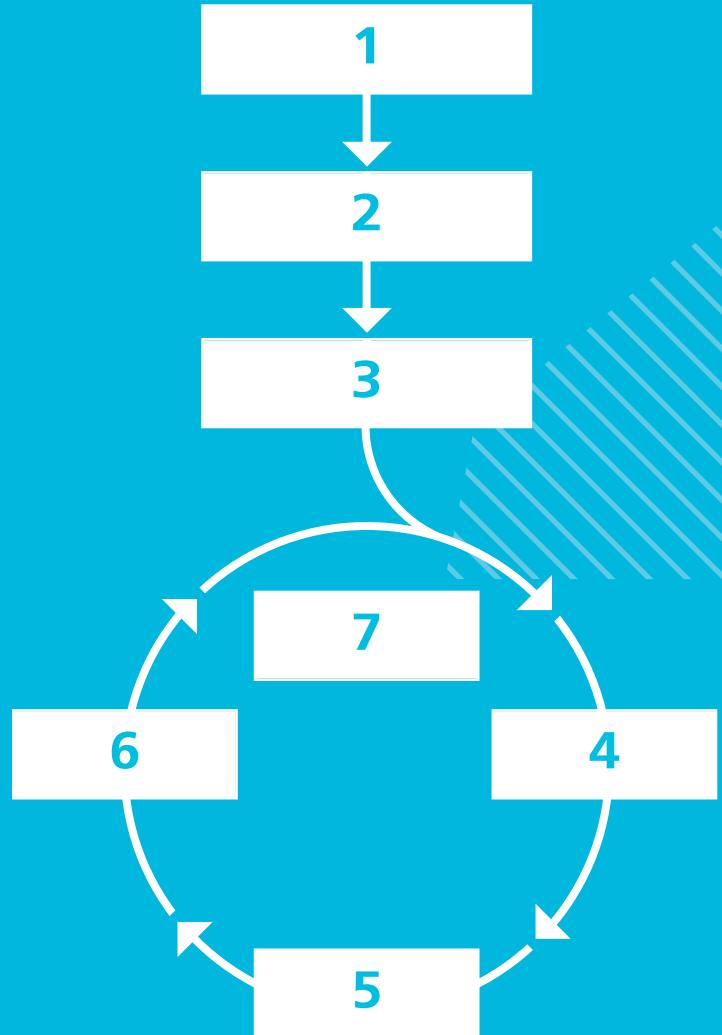
How will you do it in your theatre?
The seven step model

1. Decide aims

2. Choose measures

3. Confirm collection and display

4. Collect data

5. Analyse and present

6. Review measures

7. Repeat steps 4 to 6

Act / Plan / Study / Do
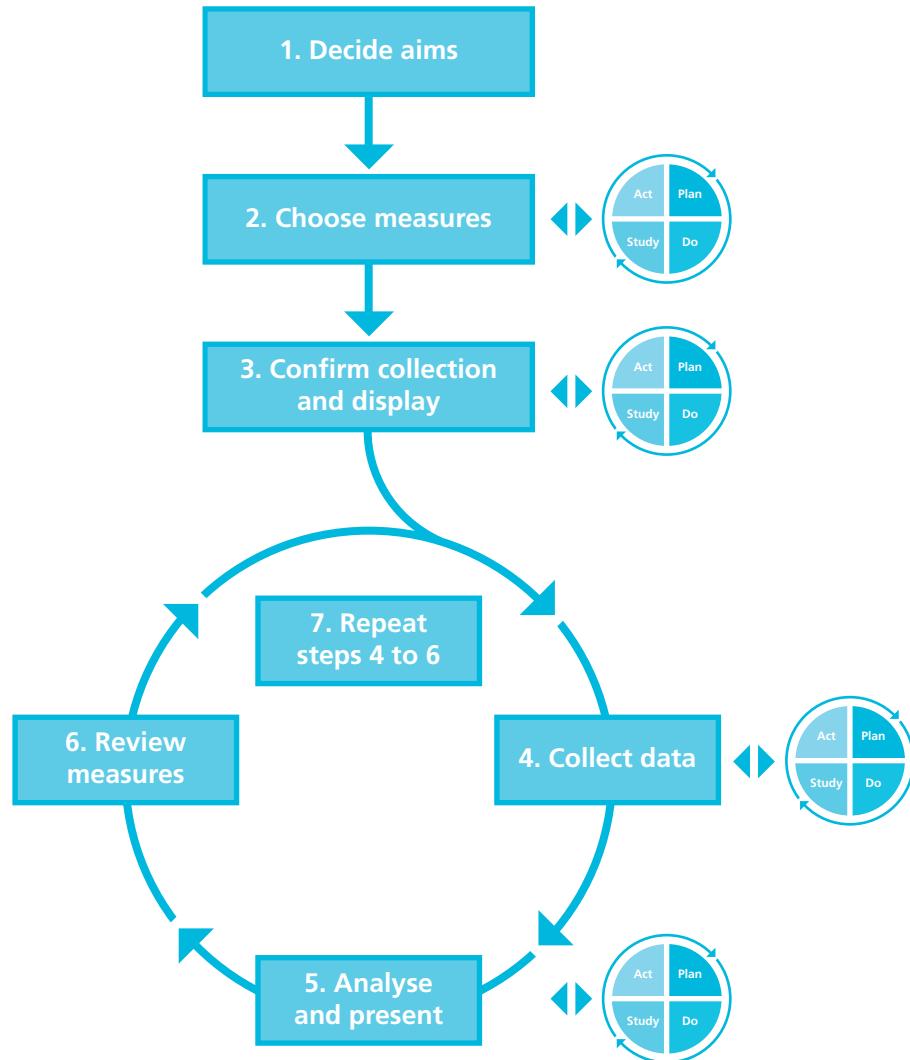
1. Decide aims
- Create a vision at the visioning workshop.
- This is what you are aiming to achieve. This may be a programme aim or an intervention aim.

2. Choose measures
You need to decide how to measure whether you have achieved your aim. Run a measures workshop to:
- explore principles of a balanced set of measures
- explore principles of driver diagrams
- explore theatre vision against measures and information system capability
- identify new balanced set of measures
- identify and agree people required to take the system forward.

3. Confirm collection and display
Using the outputs from the measures workshop complete a measure checklist for each measure and confirm:
- the measure definition
- the collection and analysis process
- length and frequency of reviews
- set SMART goals
- decide on size, location and layout of display board
- develop prototype board and trial it.

4. Collect data
This takes time and effort. It can become frustrating but the second data collection will be easier.
- Collect your first set of data, this will act as your baseline. You can then measure your improvements against this.

5. Analyse and present
- Decide how you will analyse your data and the best way to present to the team.
- Update your board.

6. Review measures
Run a measures review session to see what the data / graphs are telling you, so as to:
- study initial impact of actions on data trends
- review data availability
- take action on what the data tells you
- evaluate effectiveness of review system and improve.

7. Keep going - repeat steps 4 to 6
Keep collecting, analysing and reviewing your measures until you achieve your goals. Put useful measures into routine practice in your department.
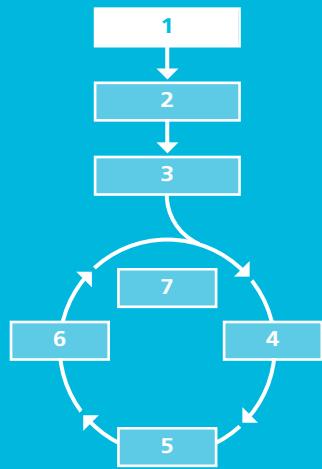
Step 1 – Decide aims

Create a theatre vision

As part of the Programme Leader's Guide you will have run a visioning session with the multidisciplinary team, and created a vision to reflect what you want to achieve through The Productive Operating Theatre programme.

This vision, developed together with the theatre teams, represents your ultimate goal but how will you know when you have achieved it?

For a vision to be useful it needs to be measureable, rather than simply words. It should provide a top-level measurement reference for the programme, enabling you to track progress against the goals agreed with the team. How you achieve your vision will be assessed by measures using the key domains of the programme:
- patient experience
- safety and reliability of care
- value and efficiency
- effective team-working and staff wellbeing.

Team performance and staff wellbeing

Patient's experience and outcomes

Safety and reliability of care

Value and efficiency

If you don't measure how can you prove, to yourselves and others, that you have achieved your vision and the improvements have been realised?

This module helps you to transform your vision into measures and shows you how to develop a review system to help your theatre team track their progress towards achieving it.

Decide your aims – milestone checklist

Move onto **Step 2 – Choose measures – the measures workshop** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Held a visioning session	
Developed a clear shared vision for what you want to achieve through the programme	
Identified potential barriers to the vision	
Raised awareness of the programme	
Identified champions to actively support the programme	
Briefed the team to make sure they are aware of their role and why the team is doing this module	

Effective team-work checklist	Tick if yes
Did all of the team participate?	
Was the discussion open?	
Were the hard questions discussed?	
Did the team remain focused on the task?	
Did the team focus on the area / process, not individuals?	
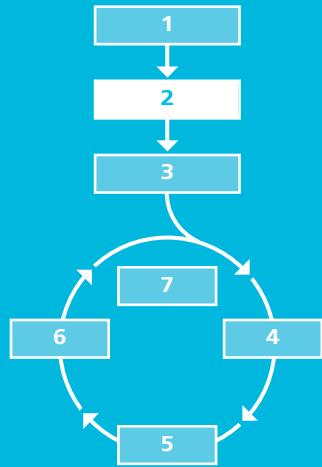
Step 2 – Choose measures:
the measures workshop

It is essential that you start collecting data as early as possible in your programme, so the sooner you can hold this workshop the better.

The measures workshop is the second large group event of The Productive Operating Theatre. It will provide an introduction to measures covering what they are and why they are needed. This workshop builds on the outputs from the visioning session. As a group the participants will choose how to measure each element of their vision. This will allow you to see whether the improvements you are making are delivering the outcomes required.

The workshop will take half a day (three hours). It is important that notice of the workshop is given at least six weeks before.

Aim:
To create a set of measures, linked explicitly to interventions, which can be tracked over time to help you and your team transform your theatre department.

To do this over the course of the workshop your team will take your theatre vision and create a driver diagram for each of the four domains of The Productive Operating Theatre. This will identify the interventions that need to happen to reach your vision, and what measures are required for each intervention to ensure we know that the desired effect is happening.

Objectives:
- familiarise participants with the benefits and important concepts of 'measuring' in order to know how we are doing
- identify programme measures for each component of the vision
- to further engage the wider theatre team, particularly with the measurement element.

'It was very helpful, if not essential, to have the information team at the measures session as they brought all their data experience and knowledge of the capabilities of the current information systems.'
Claire Bradford – programme leader and theatre matron, Royal Devon and Exeter NHS Foundation Trust

Key steps in planning your workshop

Set the date

- Book the event early – remember clinicians will need a minimum six weeks notice to be released from clinical sessions.
- Check the availability of key people you feel are essential to the day before deciding on the date.
- Once agreed ask people to hold the date in their diaries pending a more formal invitation.
- You may have to make a judgement call if availability of some of the identified participants is pushing the date of the workshop back too far.
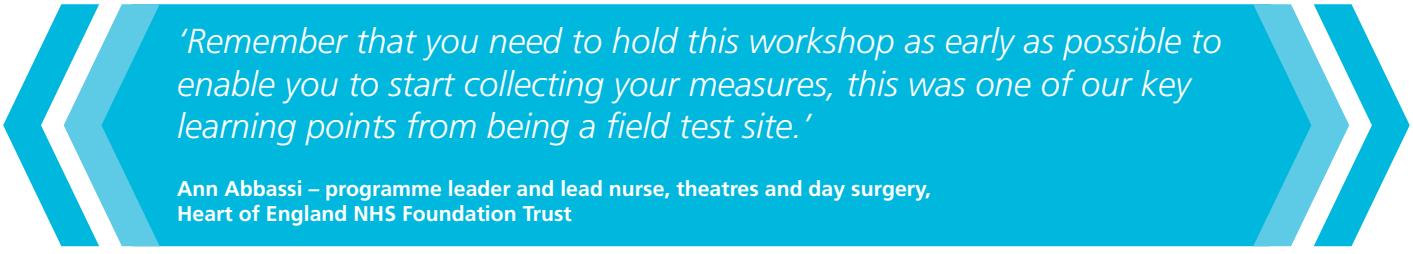
'Remember that you need to hold this workshop as early as possible to enable you to start collecting your measures, this was one of our key learning points from being a field test site.'

Ann Abbassi – programme leader and lead nurse, theatres and day surgery, Heart of England NHS Foundation Trust

Identify speakers and facilitator

Speakers
- Getting executive level sponsorship for your event is essential and will raise its profile. Ask your chief executive, executive leader or clinical director if they can open the workshop.

Facilitators
- Identify a facilitator who will present and lead the workshop. The person should be a good communicator and able to explain the concepts and importance of measurement to the group in addition to managing the workshop and ensuring that all the outputs are achieved.
- This could be you, as the programme leader. However, if you wish to participate in the sessions yourself ask someone else.
- Think about asking someone from your service development department, or perhaps someone who has been involved in a different Productive programme within your organisation such as The Productive Ward.

Identify participants
Decide who will participate in the workshop. We suggest getting a multidisciplinary team of 15 – 20 people made up of the following roles:
- at least one executive director (essential)
- anaesthetists
- healthcare assistants
- information analysts
- nurses
- operating department practitioners
- surgeons
- theatre manager.

Further attendees who would be a great advantage:
- executive leader
- operations director
- director of information.
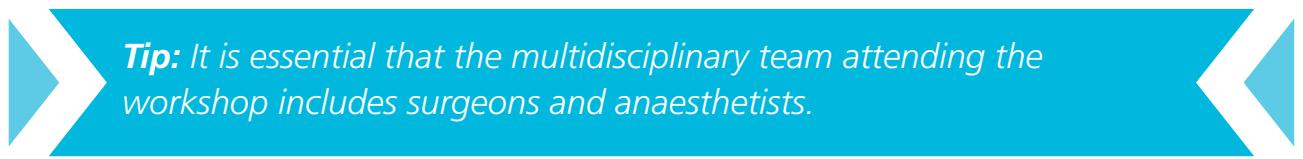
Tip: *It is essential that the multidisciplinary team attending the workshop includes surgeons and anaesthetists.*

Invite the workshop attendees and communicate the aims

Prepare staff for the measures workshop

What works best?
- Face-to-face communication.
- Theatre meetings / handover.
- Get senior support: tell them – this really is important to our staff, to our trust and its patients and it should be to you.
- Provide material to take away from the module – something that staff can digest and then respond to.

What doesn't really work
- Emailed invites alone.
- Lack of context – not setting the scene.
- Making it mandatory – try to generate enthusiasm rather than compulsion.

Things you may include in your invite / discussions
- What you're trying to achieve.
- What's in it for staff, patients, etc?
- How this will move the theatre forward?
- What staff need to do:
  - contribute, consider, come up with ideas and take on action
  - proposed agenda and timing.

Tip: *Communicating to your participants what is expected from them is essential in getting their support before they walk through the door.*

Book the venue, equipment and refreshments

When booking the venue make sure you have plenty of room for the participants to break out into smaller working groups that will not disturb each other when working.

- Lay the room out so that you have four tables for the groups to work around.
- If possible get a venue off-site as this will help the participants to focus and not be distracted by the day-to-day pressures of operational life.
- Check rules about sticking things on the walls.
- Arrange for the following equipment to be available:
  - projector
  - laptop / computer
  - screen or suitable surface to project on to
  - flipcharts, pens and sticky notes.
- Arrange refreshments for the participants to have during the session.

Pre-work

Trust policy and strategy

To help your team understand your trust's current thinking around measurement it is useful to collect the following documents (they may be called different names) before the workshop:
- trust policy on displaying information
- trust information strategy
- trust performance management strategy.

Review driver diagrams and suggested measures

Familiarise yourself with the driver diagrams in appendix 1 and the suggested measures in appendix 2. Think about which ones could fit with your vision. Consider other information that may not be on the list.

Review what you currently do

Reviewing what you currently do will give an insight into what currently exists which could be used as part of your Knowing How We Are Doing measures. However, do not let your current information systems restrict what you want to measure. Ask the following questions about the information you currently use:

What do you currently measure?	• Is there any performance data displayed in the theatre? • Incident rates, infection rates, etc.
Why do you measure it?	• Have you been asked to measure these? • Was there a problem in this area? • Is the information displayed for all the theatre staff to see?
What do you do with it?	• Do you use the data to help you figure out why something has gone wrong? • Do you keep the old information? • Is it collected by the theatre staff?
Where does the data come from?	• Is it collected by the trust and handed to the theatre manager? • What other sources can you find?
Who is responsible for it?	• Who collects it? • Who displays it? • Who is responsible for good or bad performance?

Make the workshop your own

Suggested slides, including speaker and facilitator's notes for this workshop can be downloaded from The Productive Operating Theatre website www.institute.nhs.uk/theatres_resources

Before the workshop familiarise yourself with this material and customise your workshop pack.

Use the speaker notes that accompany the slides as a general guide but tailor them to reflect your own style and the context of your organisation. Your team will expect to hear *you* not *us* and your own words will be easier to remember.

You will need to customise the following slides at least:
• slide 1 – Insert your trust name
• slide 4 – Context – insert contextual information about the programme at your organisation
• slide 6 – Context – insert your vision.
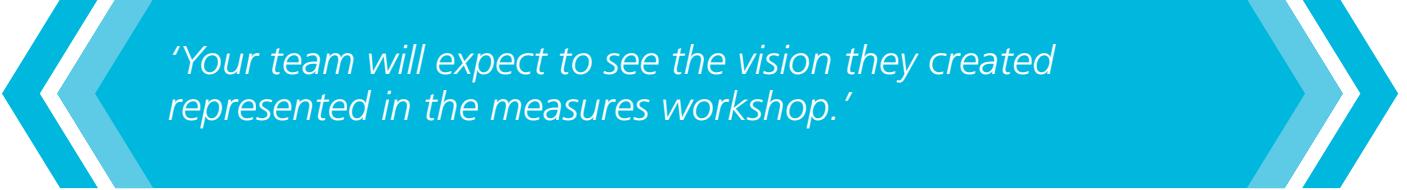
'Your team will expect to see the vision they created represented in the measures workshop.'

Agenda

This is a suggested agenda for a three-hour measures workshop. The supporting slides with speaker and facilitator notes can be downloaded from The Productive Operating Theatre website
www.institute.nhs.uk/theatres_resources

Approx time		Who
15 mins	**Welcome and context for the day**	Executive leader
20 mins	**Why do we measure?** • Introducing driver diagrams – linking aims to intervention	Facilitator
1 hour	**What are we going to measure?** • Customising the driver diagrams for your programme	Group work
10 mins	• Feedback	
10 mins	**Break**	
25 mins	**How are we going to measure?** • Seven steps to making measurement work for you	Facilitator
20 mins	**Completing the measures checklist**	Group work
5 mins	• Feedback	
15 mins	**Action Planning** • Planning our next steps including a draft Knowing How We Are Doing board	Facilitator
	Close	

Preparing the room

- Think about the layout of the room because you will need four tables so that four groups can work on the four driver diagrams.
- Set up your laptop projector and screen and make sure everyone can see the screen.
- Display large copies of the following documents (available at www.institute.nhs.uk/theatres_resources) on the wall and have copies available on each table:
  - outputs from the visioning session
  - The Productive Operating Theatre house
  - the four dimensions of quality.
- Print out copies of the driver diagrams (available in Appendix 1 at www.institute.nhs.uk/theatres_resources) and have copies available on each table. These should be as big as possible, at least A3, as the teams will be writing their ideas on them.
- Get printed copies of the slides to hand out to each delegate to take away at the end. This is very important so they can reflect on the session and discuss it with people who were not there.

Capturing the outputs

Make sure you collect all of the outputs from the workshop including the customised driver diagrams, completed or partly completed measures checklists and action plan.

All of the ideas generated should be reviewed in detail as part of *confirm collection* and *display,* to decide what is both practical and valuable and therefore which measures you wish to test first.

Make sure you have identified and agreed people to take the process forward.

Choose measures – milestone checklist

Move onto **Step 3 – Confirm collection and display** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Identified executive and analytical support for the module	
Explored and understood the principles of a set of balanced measures	
Explored and understood the principles of driver diagrams	
Understood the importance of measurement for improvement	
Gathered and reviewed data that is currently collected and used	
Reviewed the suggested measures	
Arranged and held the measures workshop	
Identified measures to review	
Identified and agreed people to take the system forward	

Effective team-work checklist	Tick if yes
Did all of the team participate?	
Was the discussion open?	
Were the hard questions discussed?	
Did the team remain focused on the task?	
Did the team focus on the area / process, not individuals?	
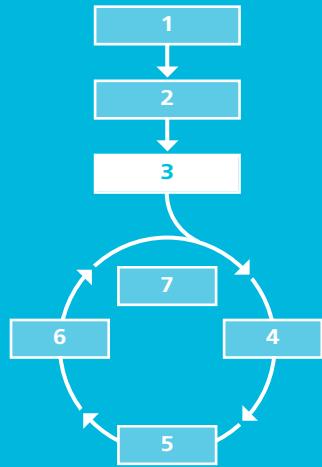
Step 3 – Confirm collection and display

As an output of the workshop you will have collected a number of measures from across the four domains that could go into your final measures set. For each of these you will need to complete a measures checklist. This is an important part in taking your workshop outputs and identified measures to the next step. The measures checklist can be found in appendix 3, and at **www.institute.nhs.uk/theatres_resources**

By completing a checklist for each measure you will be able to review the suggested measures in greater detail. This will help you to decide what is both practical and useful, and define which measures you wish to test first on your Knowing How We Are Doing board and in your measures review meetings.

Tips: *As you work through the checklist you will identify where the data comes from; sometimes it is already collected but often you will have to collect it yourself.*

As you begin to define exactly what it is you are measuring you may find it is so complex that you have to rethink ways to measure it so that you can collect the data reliably.

How will you do it?

Arrange a meeting for the group identified at the measures workshop to take the measures forward.
The objective of the meeting will be to review the suggested measures from the workshop, agree which
ones will be tested further and agree on the exact definition and the collection analysis and review process.

- Initially, select two or three measures per domain.

- Complete a measures checklist for each measure. This will prompt you to agree and confirm:
  - the exact measure definition
  - who is responsible for collecting the data and how they will go about it
  - who is responsible for the analysis of the data, how they will present it and how often
  - what forum will the information be reviewed at and who is responsible for taking action.

- Agree what measures you will use and when you will begin using each measure.

- Communicate your agreed measures set to those who participated in the workshop and those who were
  unable or chose not to attend. You could include them in your Productive Operating Theatre newsletter,
  as an agenda item at a theatre meeting, or put them on your Knowing How We Are Doing board.
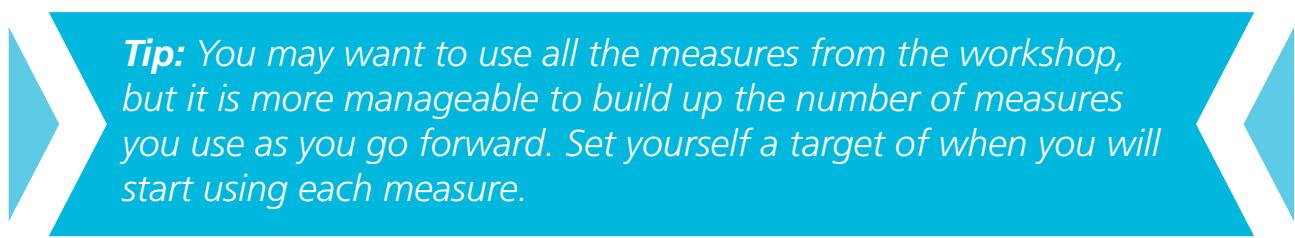
> **Tip:** *You may want to use all the measures from the workshop,
> but it is more manageable to build up the number of measures
> you use as you go forward. Set yourself a target of when you will
> start using each measure.*

What are you aiming for?

As part of the measures checklist you were prompted to think about what goal to set for each of the selected measures. What is the level of performance you want to achieve for each measure? As introduced in the measures workshop, remember to set SMART goals.

Setting a SMART goal
There are four steps to setting your goals:
1. collect data for each measure to create a baseline
2. gather data from similar theatres to see what they have achieved
3. look at the benchmark to see what is best or you may have some locally agreed goals or standards which go beyond these
4. set an aim for each measure according to **SMART** principles:

   Simple – give the aim a clear definition, eg reduce turnaround time

   Measurable – ensure that data is available

   Aspirational – set the aim high to provide a challenge to the team

   Realistic – take into consideration factors beyond your control which may limit your impact

   Time bound – set a deadline.

**Examples of SMART (and not so SMART) goals**

✗	We will eliminate incidents!
✔	We'll reduce incidents to two or less per month, and serious incidents to one quarter by 31 December
✗	All sessions will finish on time
✔	We will reduce the number of late finishes by 50% by 31 August

Tip: *Persevere! You may not get it right first time.*

Baseline measurement

This is a measure of your current theatre performance before any changes are made. Repeating the measurement after you have made a change allows you to measure the impact of what you have done.

Be clear about what you want to measure and why. This will help you work out whether you need to count something, calculate a percentage or report against a set goal. Think about how you might present the data so that it is easily understood, eg run charts, pie charts, bar charts or headlines.

Information Board

5s What is it?

5s What are the steps?

5s Who is involved?

RULES FOR THE STORE
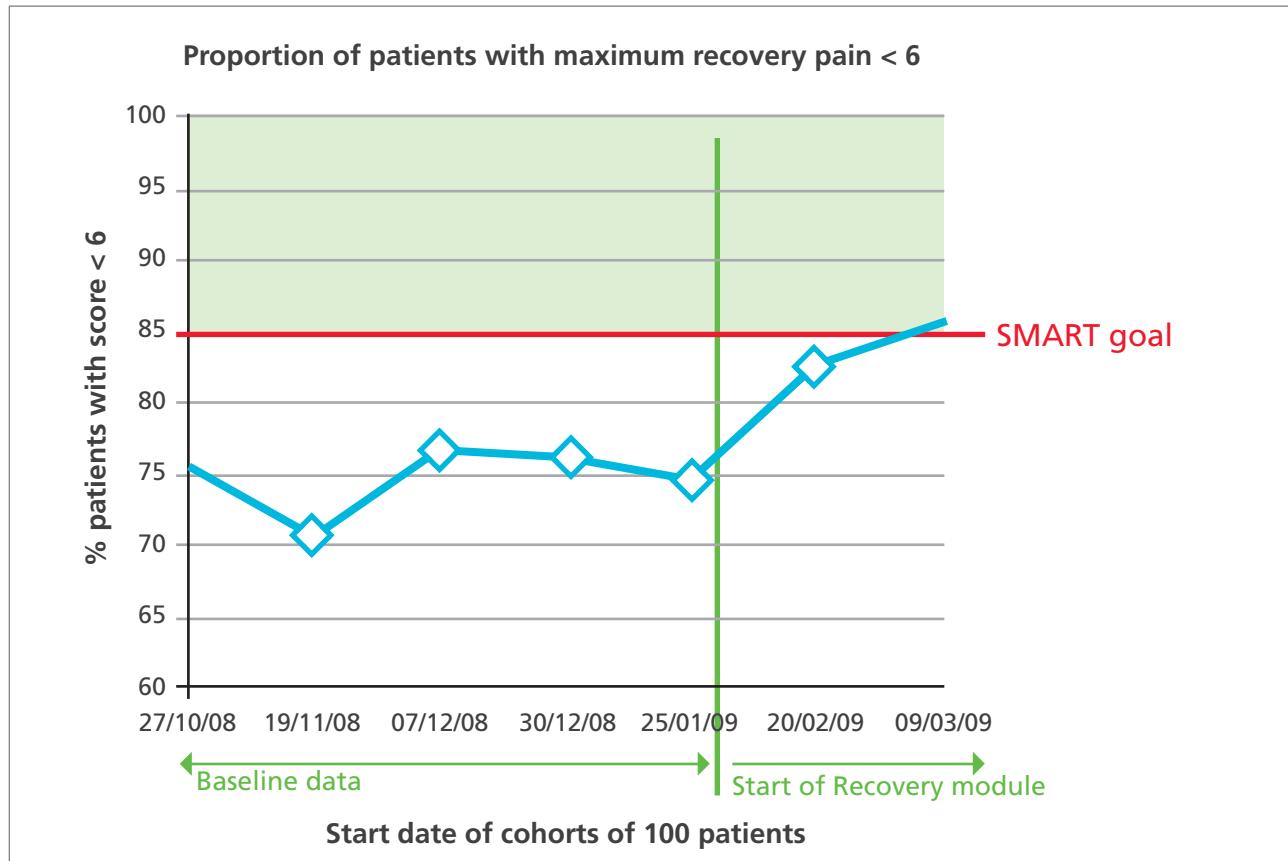
Present the measures on a Knowing How We Are Doing board

With your initial measures agreed, the next stage is to plan your Knowing How We Are Doing board.

Why do this?
The Knowing How We Are Doing board displays useful information for the theatre team to help them improve their theatre. It is a great way to showcase your commitment to improving care and safety and the plans your team has developed together. Even if you feel your results are below par, don't be tempted to hide it! Evidence that the team recognise issues and is taking actions will inspire greater confidence.

Look for inspiration
Get ideas for the content and presentation of the measures board by looking for good examples of information boards in your theatre suite and in the wider trust. If your organisation has Productive Wards visit them and look at their Knowing How We Are Doing board. Build on these ideas to make your measures board work for your local theatre team.

The next pages show examples of Knowing How We Are Doing boards. The principles and structures are good guidelines for creating your own but should not be copied. Use them to stimulate growth and creativity within your team to create your own version to reflect your requirements.

Go through the examples with your team and use them to help stimulate your own ideas. Think about what you are trying to do with the board and what messages you want to convey. This board needs to concentrate on demonstrating that all the work you are doing is making a difference. You should have a separate board for project communications such as events, newsletters and general information about how to get involved.

Ideas that have worked

Example 1 – Set of balanced measures
West Middlesex University Hospital NHS Trust

Split into for four sections; each section represents a programme aim; patient experience, staff wellbeing, value and safety and reliability.

Colours of the board are changed every month to attract attention to the board and to emphasise that the data has been updated.

1 Patient satisfaction survey data sourced from clinical governance.

2 Data represented in column charts and pie charts.

3 Good visualisation: clear labels show which month the data relates to.

4 Glitches grouped according to categories such as theatre, flow, time, documentation, staff.

5 Top 10 glitches for the previous two months.

6 Recent Productive Operating Theatre newsletters are displayed here which include staff stories.

7 'Late finish' and 'on time finish' sessions by speciality.

8 'Late start' and 'on time start' sessions by speciality.

9 Month-by-month data is displayed, could also be displayed in run charts.

By displaying measures in staff areas, it becomes easy for them to follow the links between the processes they have control over, and the influence this has on outcome measures reported at trust level.

Ideas that have worked

Example 2 – Knowing How We Are Doing Board
Central Manchester University Hospitals NHS Foundation Trust

1   Clear headline showing latest week's achievement. A good example of visualisation. Staff can see the status within three seconds of looking.

2   Run charts that are updated weekly, show progress over time which monitors sustainability of this change.

3   Measures are shown as a dashboard and updated weekly.

4   Vision statement clearly communicated.

5   Clear aim for each module.

6   SMART target clearly communicated where appropriate.

7   Measures for each module inserted into The Productive Operating Theatre House.

8   Achievements clearly highlighted.

9   Actions identified where further improvement is needed.

Good use of colour helps draw attention to key information.

All the data is reviewed by a multi-disciplinary team at the monthly measures review meeting. This group discuss the data and agree if any further action is required.
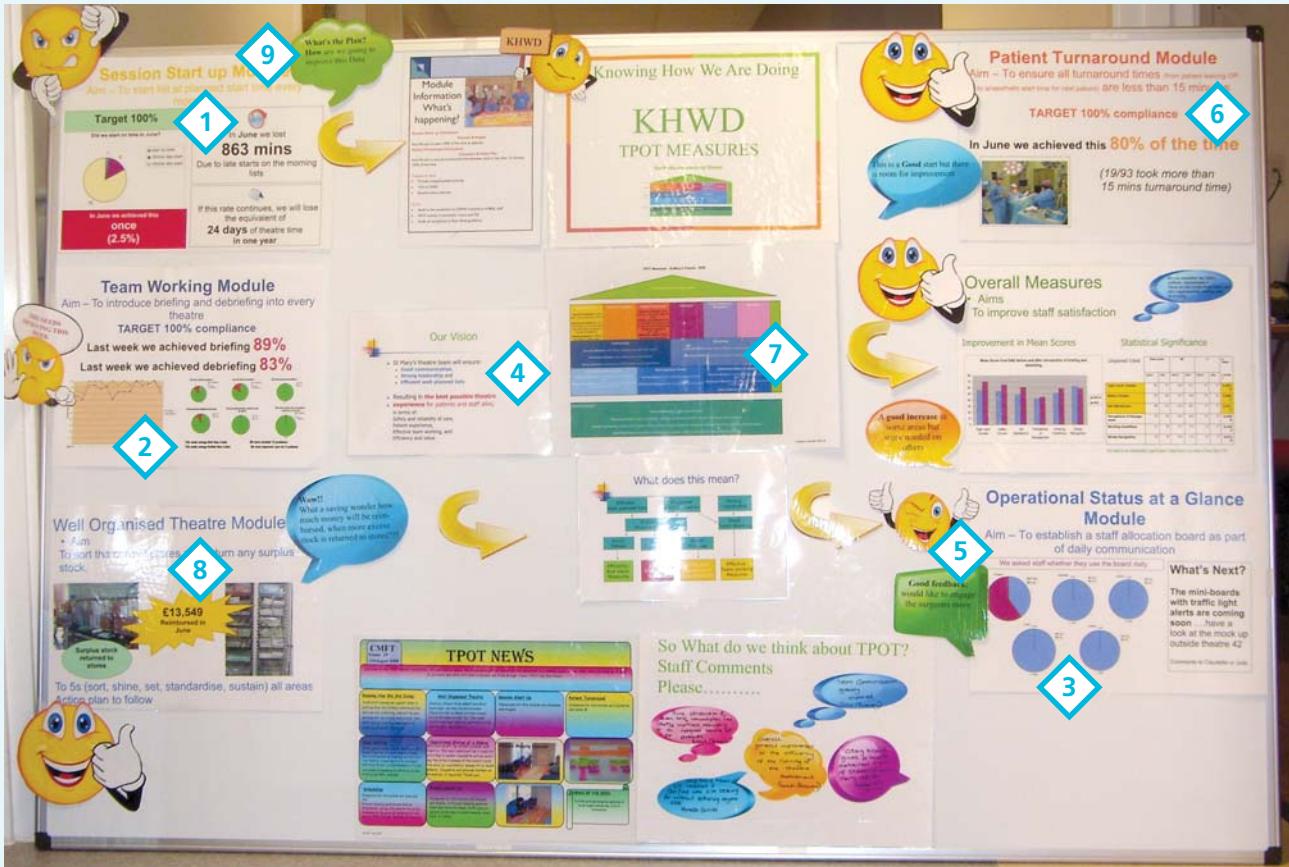
Ideas that have worked

Example 3 – Communicating a balanced set of measures
Central Manchester University Hospitals NHS Foundation Trust

Before the team start a new module, they have a measures review session and agree how to create a baseline and begin to measure their progress in the new area.

As the measures are agreed, they add them to their measures house, which is displayed on their Knowing How We Are Doing board so everyone knows what they are.

The team is still building their house and has just started working on two of their process modules.
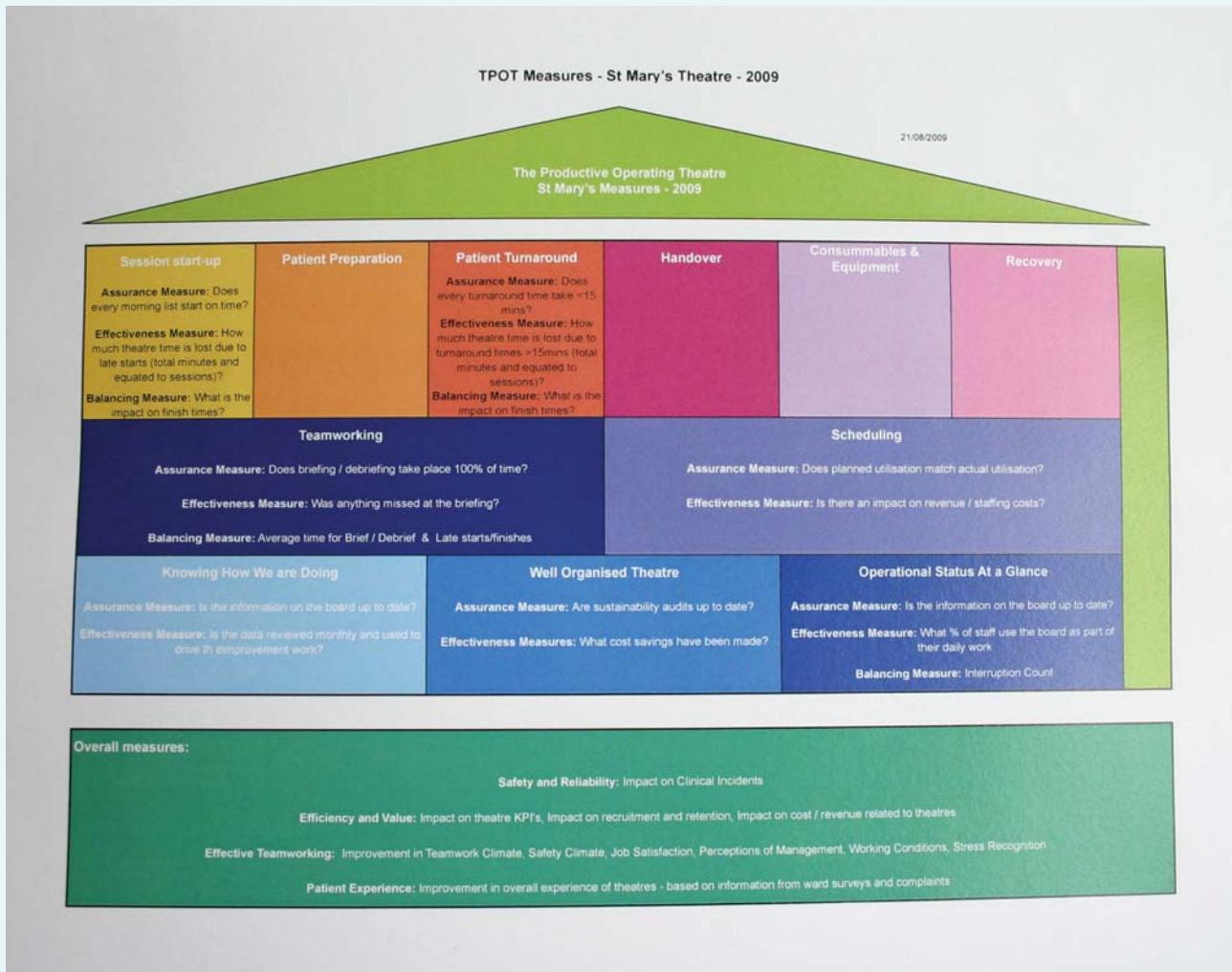
Ideas that have worked

Example 4 – Use of visualisation and the three-second rule

Visual management and the three-second rule help simplify complex measures to a level whereby everyone understands what the situation is and how they should react to the result.

Focusing on making this visual communication as clear and simple as possible will help you get the most out of the Knowing How We Are Doing system.

This example shows an exchangeable status tag with a red cross, green tick or orange circle to indicate performance at a glance.
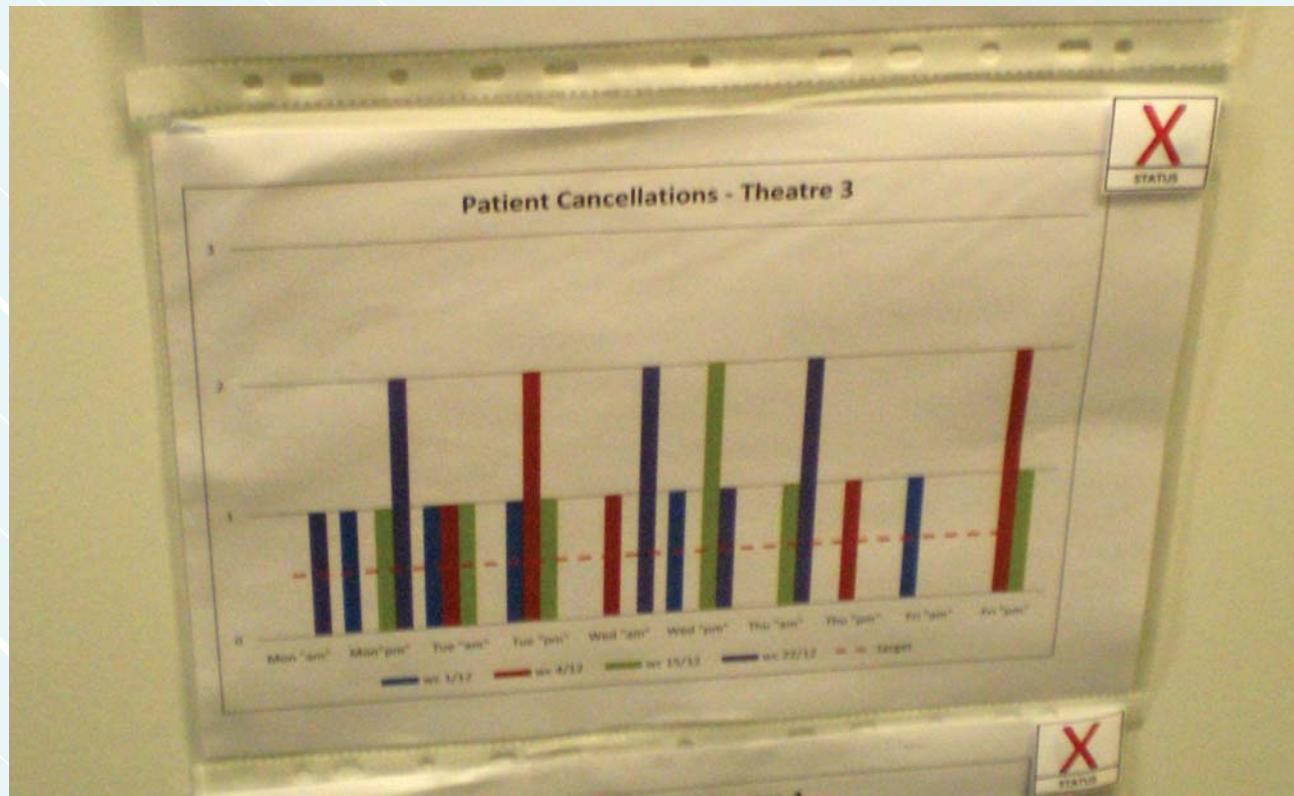
Ideas that have worked

Example 5 – Begin with temporary boards and use continuous improvement to evolve to an agreed standard

If a board is not available or it is necessary to wait for estates to mount it on the wall, try taping out a suitably sized area and using the wall in the mean time. It is important to get the system working effectively; the aesthetics can be improved along the way!

It will take a number of attempts and trials to perfect the board size, style and layout. Use temporary solutions such as magnets, or sticky tack while you trial your ideas. Once agreed invest in more permanent solutions.
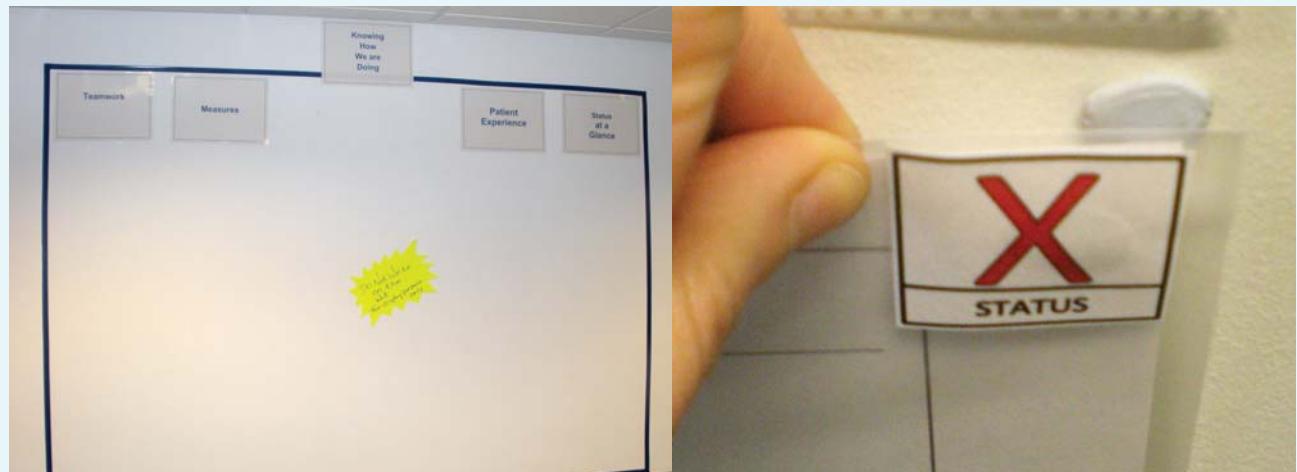
Where to locate your board?

Things to consider:
- Open and transparent management of information:
  - locate in a general theatre area and not in an office or other restricted area – having this out in the open shows your commitment.

- Functional:
  - supports a theatre meeting in terms of space. Is it easy to view and is there space around it to have a team discussion?
  - not in a place where people looking at it will be in the way
  - encourage teams to look at the information at least once a week.

- Integrated with other theatre data:
  - no duplication / conflict with other theatre data.

- Health and safety:
  - check with infection control to agree what materials can be used, eg stickers, tape.

Tip: *Displaying data is new to many of us, just take a leap of faith and make it visible.*

How to make it easy to use

- Plan out the likely dimensions of your board by laying out the data you want to display on a large surface and measuring the perimeter.
- Remember to think about:
  - making it easy to update the information
  - can the board be fixed to the wall that you have chosen?
  - keep it visual, use easy to understand visual indicators to show when performance is good or bad, eg simple run charts, traffic lights systems.

What should be included on the display board?
- The agreed measures displayed in run charts.
- Agendas and timetables for measure review meetings.
- Action lists and notes from measure review meetings – problem and countermeasure sheet.
- Flow chart to show where the data comes from (so that the team can keep the board updated when you are not available).
- Clear identification of responsibility for updating measures.
- The date the board was last updated.

Who is responsible for the upkeep?
- Involve different people for different sections – spreading the load will make it more likely that the updates will be completed.
- Be clear about how often the data is updated.
- Both of these will have been identified on the measures checklist.
- Make sure you have permission for the data to be displayed.

Prototype board
- Create your prototype board and trial it.
- The information you display will continue to evolve as you progress through The Productive Operating Theatre modules.

Communicate your measures

Understand who the key stakeholders are: you will need to engage and involve them at each level.

Communicate to all clinicians, theatre staff and management the content and outcomes of the measurement workshop, the follow-up meeting and how this will be taken forward using the Knowing How We Are Doing board and the collect, analyse and review (CAR) cycle, steps 4 to 6 of the seven step model.

Pay particular attention to the opinion leaders in each of these groups as they will influence their colleagues.

What is engagement?
- Involvement.
- Participation.
- Interest.
- Commitment.

Why spend time trying to engage and communicate with colleagues?
- They provide a source of support throughout the project (and beyond).
- To bring a different perspective to your challenges – new insights.
- To increase the likelihood of sustainability – people take ownership of what they help to create.
- To demonstrate commitment of the trust and reinforces the importance of the project and theatres.

How to get the engagement?
- Communicate all activities – including evidence from Knowing How We Are Doing about improvements made.
- Make your improvement activity a standard part of the management and staff agenda.
- Ensure improvement and its measurement is routinely talked about in theatre and management meetings.
- Communicate the improvements you have planned – and shout about it when you deliver them!
- Invite an executive to your next review meeting.
- Get a manager to audit your team board and make sure it is regularly updated.

Confirm collection and display – milestone checklist

Move onto **Step 4 – Collect data** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Agreed as a team initial measures set to trial	
Worked through the measures checklist for each measure	
For each measure identified and agreed:	
• measure definition	
• who is responsible for collecting the data and how they will go about it	
• who is responsible for the analysis of the data and how to present it	
• who will review the information and who is responsible for taking action	
Set SMART goals	
Reviewed example measures boards and review systems for ideas	
Asked the staff for their ideas, building on all examples seen	
Decided on size, location and layout of board	
Developed the prototype board	
Communicated your measures set and how you will take the process forward	

Effective team-work checklist	Tick if yes
Did all of the team participate?	
Was the discussion open?	
Were the hard questions discussed?	
Did the team remain focused on the task?	
Did the team focus on the area / process, not individuals?	

Step 4 to 6 – CAR measurement cycle

Measurement itself is a process. In its simplest form it consists of three stages.

4. Collect – collect data
5. Analyse – analyse and present data in an appropriate way to convert it into useful information
6. Review – review your information to see what decisions you need to make

The Collect – Analyse – Review (CAR) cycle then starts all over again. This cycle is explained in detail over the next pages.
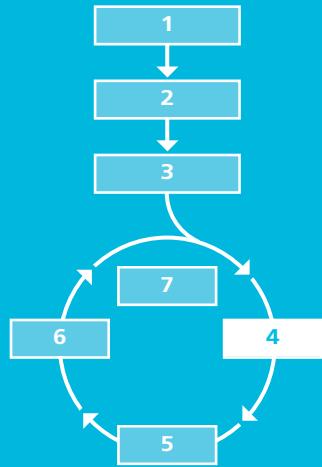
Step 4 – Collect data

Collecting the data is all about implementing what you have already defined at the measures workshop and then in more detail through the measures checklist. Using the definitions described in your measures checklist you are now ready to begin to collect data about your theatre.

Most hospitals have some form of theatre management system. Work with the analyst who manages and creates reports from the system to:
- help you create a baseline of your current position
- identify aspects of the system that can produce update reports on an ongoing basis.

Many theatre information systems (not the analyst) take time to produce outputs. Think about how you can collect real-time data. Could staff members keep direct visual records of performance that is live on a daily or sessional basis? This can be a much more effective, timely and accurate way to monitor performance than to wait one month for a computer-generated report.

Simple paper-based systems can be great for collecting the data at source, but you need to think about who will enter this onto a computer, if that is how you intend to analyse it. Work with the analyst team to develop easy-to-use spreadsheets for this sort of work.

How to go about collecting your data

- Make sure you have completed and agreed as a team a measures checklist for each measure (see appendix 3 or www.institute.nhs.uk/theatres_resources). This will tell you how to collect the data, who will collect the data and how frequently.
- For each measure get all the people involved together. As a minimum you will need the people responsible for:
  - the data collection
  - the analysis
  - taking action.

One person may be responsible for a number of roles and / or for a number of measures.

- Review how the process will work and make sure that everyone understands their role. Pay particular attention to:
  - making sure the definition is clearly understood
  - the frequency of collection
  - how the data gets to the person who will analyse it
  - the deadline for getting it to the analyst
  - the way it will be reported
  - where it will be reviewed.

- Now begin collecting.
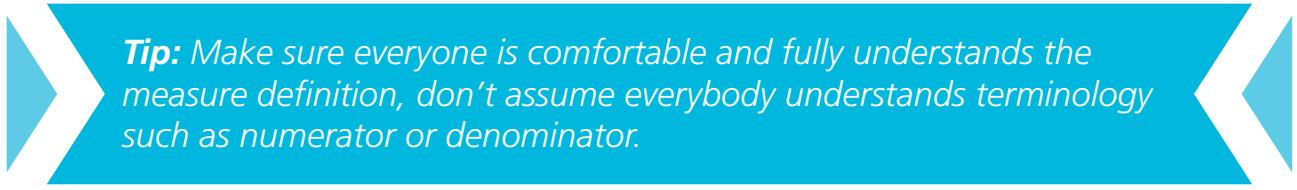
Tip: Make sure everyone is comfortable and fully understands the measure definition, don't assume everybody understands terminology such as numerator or denominator.

What to do if...

you have the data for a measure but it is not defined in quite the same way as your definition?

Use the data you have if you are happy it will tell you what you need to know about your theatre's performance and allow you to reach conclusions that drive activity and improvement. Modify your definition if appropriate.

you have no data for a measure and don't know where to start collecting it?

Talk with your project facilitator and senior managers. You may have to enlist the support of the finance team or information department to help you.

you can get the data but it does not come to you regularly?

Agree with the people concerned that the data must come to you in a timely way. You may need to enlist executive support to do this.

Tip: *Timely monitoring allows timely intervention!*

Glitch Type	Common Cause	Number
Staff Related	• Surgeon / Anaesthetist Late • Understaffed • Unanswered Bleep • No Porter • No Surgeon Available • No Anaesthetist Available • Staff from other Theatre seeking Equipment/Advice	
Patient Related	• Patient not Admitted • Patient not Arrived • Patient Location Unknown • Patient waiting for Diagnostics • Patient not Ready – Clinical Reasons • Patient DNA	
Flow Related	• Recovery Full	
Time Related	• Late Start • Late Finnish • Waiting for Patient	
Documentation Related	• Site of Surgery not Documented • Patient not consented • Theatre List Incorrect/Incomplete • Missing notes • Documentation Not Complete • List Order Changed on Day	
Theatre Related	• Disposable Items Opened and Not Used • Missing / Unavailable Equipment • Change to Standard Op • Instrumentation Contamination	

Collect data – milestone checklist

Move onto **Step 5 – Analyse and present** only if you have completed **all** of the items on this checklist

Checklist	Completed?
All those responsible for parts of the measurement cycle have met	
All those responsible for parts of the measurement cycle are clear of the process and definition	
All those responsible for parts of the measurement cycle are clear of their role	
All those responsible for parts of the measurement cycle have started to collect their data	

Effective team-work checklist	Tick if yes
Did all of the team participate?	
Was the discussion open?	
Were the hard questions discussed?	
Did the team remain focused on the task?	
Did the team focus on the area / process, not individuals?	
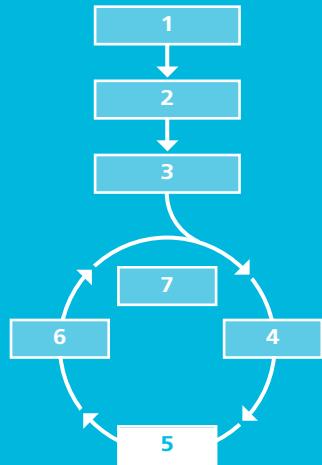
Step 5 – Analyse and present

Once you have collected your data you are ready to analyse and present it.

Analysing and presenting your data transforms the data you have been collecting into meaningful information, eg run charts which will help you determine whether the changes you have made are improvements and how well your theatres are progressing towards achieving the goals.

As part of your measures checklist you should have already agreed the process for presenting your results. This process will need to be repeated depending on how often you decided to monitor and review your measures. You will need to update your charts regularly as you continue to collect more data.

How to start analysing your data

Analyse and present your data as agreed on the measures checklist, consider using run charts where possible (see next page).

- Annotate any charts, highlighting what changes were implemented that resulted in any changes seen in the data.
- Share the analysis with some of the wider team to make sure everyone is able to interpret what it is showing. You may need to modify your presentation or labelling if they cannot.
- Once you are happy with the analysis display it on your Knowing How We Are Doing board.

Example: **run charts** used to analyse and present data in a field test site:

Proportion of patients with delayed transfer recovery

% patients delayed

40
35
30
25
20
15
10
5
0

27/10/08 19/11/08 07/12/08 30/12/08 25/01/09 20/02/09 09/03/09

Start date of cohorts of 100 patients

Axillary temperature on arrival in recovery

% patients > 35.4°C

100

95

90

85

27/10/08 19/11/08 07/12/08 30/12/08 25/01/09 20/02/09 09/03/09

Start date of cohorts of 100 patients
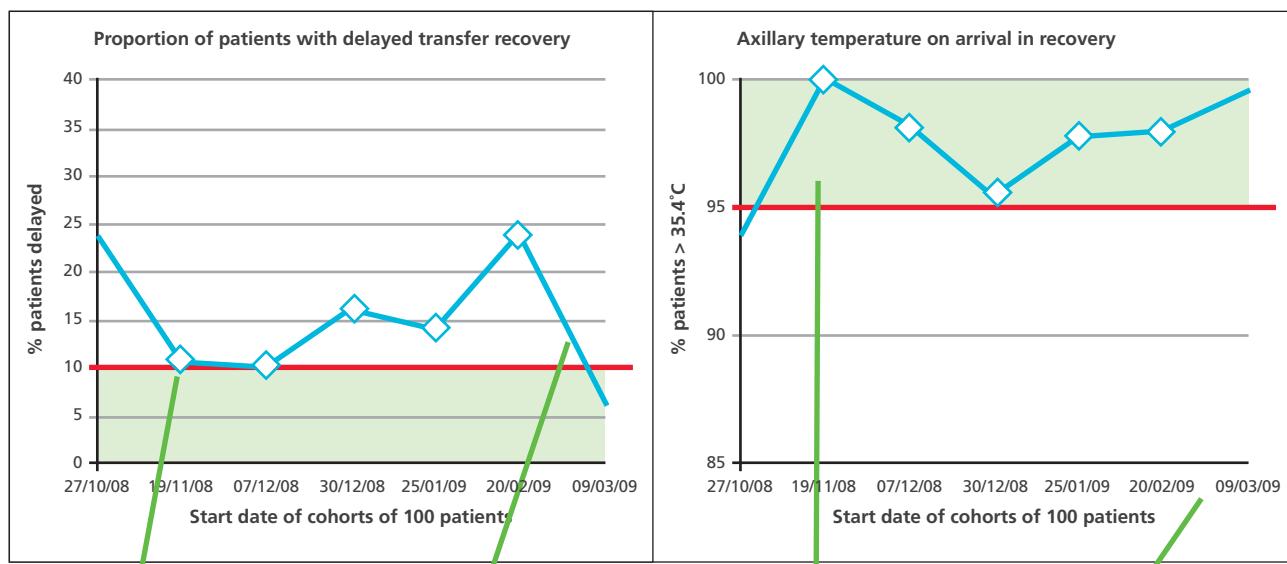
Reasons are recorded for any points that are not in the green zone

Run charts show the amount of variation in a process

The goal is to achieve the green zone; once it is consistently being achieved the threshold is reviewed

Plotting data over time shows whether the changes are leading to improvements

Why use run charts?

If you only compare two data points, for example start time in theatre one on Monday compared to the start time in the same theatre the following Monday, you cannot say for sure whether things have improved; even if the second week's performance was higher than the first.

If you had the data for every Monday for the past year and the performance was increasing weekly, then you could confidently say things have improved and they are likely to stay that way.

Plot data on a run chart over time. It is a simple and effective way to determine whether the changes you are making are leading to improvements. Run charts also show how much variation there is in your process from one date to the next.

Because you can pinpoint exactly when you made a change, the run chart can clearly show which interventions had an impact and which ones did not. This is important to know – you don't want to waste time and energy pursuing something that is not going to deliver.

One more thing that will help you to use run charts. Add a goal or target line that represents where you are trying to get to. Keeping the goal line on every graph ensures everyone viewing the graph can see at a glance where the work is in relation to achieving the aim.

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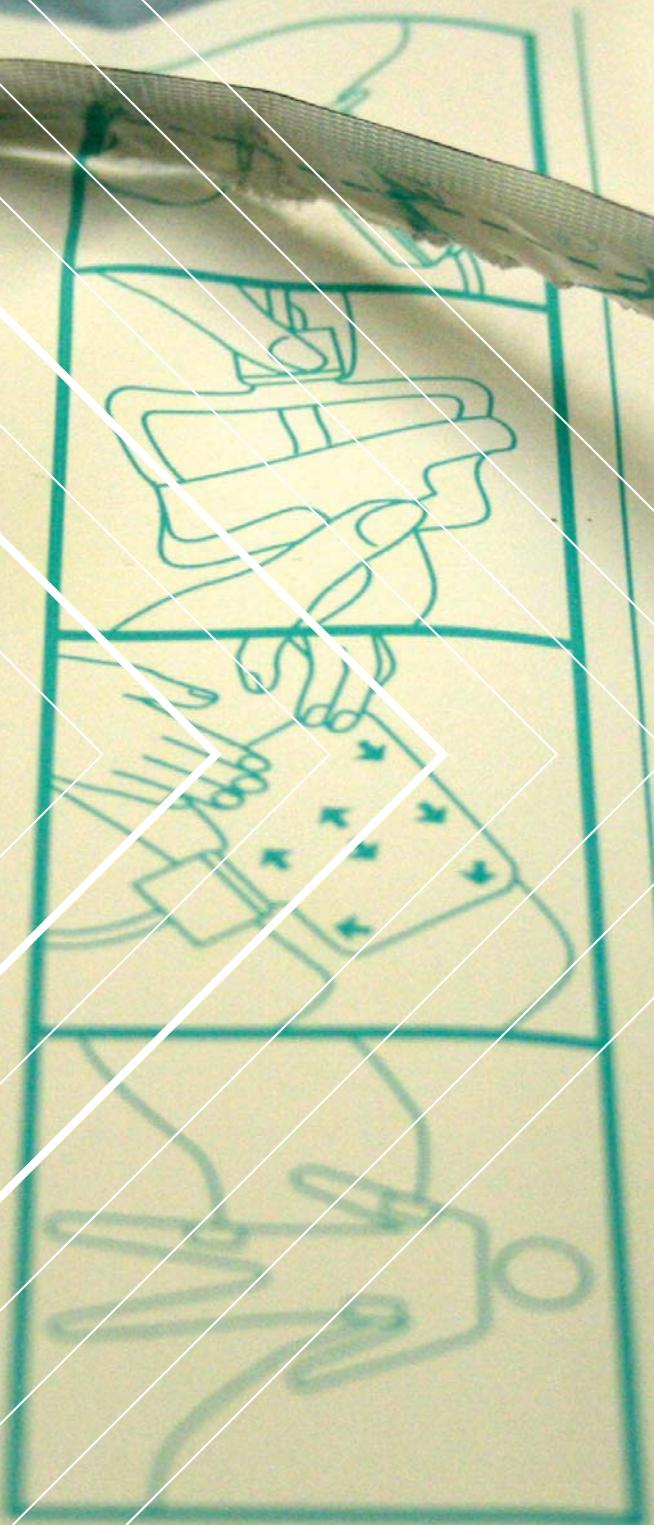
# Analyse and present - milestone checklist

Move onto **Step 6 – Review measures** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Analysed and presented your data as agreed on the measures checklist	
Shared the analysis with the wider team to make sure they can interpret it	
Modified presentation based on feedback	
Annotated any charts, highlighting when changes were implemented	
Displayed analysis on visual measures board	

Effective team-work checklist	Tick if yes
Did all of the team participate?	
Was the discussion open?	
Were the hard questions discussed?	
Did the team remain focused on the task?	
Did the team focus on the area / process, not individuals?	
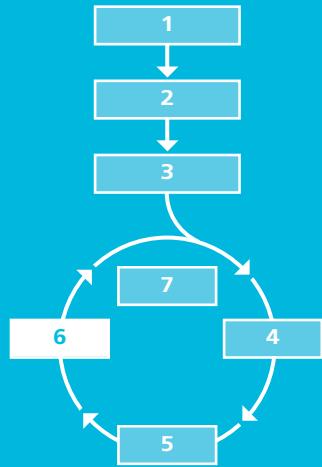
Step 6 – Review measures

Reviewing your measures is the most important part of the whole measurement process.

The purpose of measurement is to act upon the results. It is vital that you put time aside to review the measures as a team at a progress review meeting.

What is a progress review meeting?

What is it?	• a regular, routine meeting to:
	  – discuss progress against goals
	  – plan actions against issues

Why do it?	• everyone has a stake in how theatres perform • promotes improved and consistent communication between theatre staff • promotes cohesive team-work to achieve theatre objectives • encourages ownership and responsibility for problems and solutions
Suggested agenda See review meeting template in appendix 4	• welcome / update on actions from previous meeting • review charts and discuss changes – congratulate on good performance and move quickly to areas where improvement is required • agree actions required / update on actions from previous meeting • assign new actions and deadline • confirm next scheduled meeting

Questions to ask

By reviewing the measures you will learn about how your theatre is performing. You will analyse the information and develop conclusions about whether you are measuring the right things. You will begin to understand the reasons behind what the information is telling you and identify the actions you need to take.

The following questions can help guide your discussions at your progress review meeting.

What outcomes did we expect (our vision)?	eg if we improve our pre-op assessment process (change) we will have fewer cancellations (efficiency) which will lead to higher patient satisfaction (patient experience)
Do the results indicate we are achieving those outcomes?	eg cancellations are down and patient satisfaction scores are up
Are we confident we have made the correct conclusion?	eg patient satisfaction scores up because of other changes we have made or an event that has occurred
Do the results indicate that we should be doing something else?	eg cancellations haven't changed so maybe the pre-op process wasn't the cause
Are the measures useful?	You may also need to ask whether we have measured for long enough to draw conclusions
Would some other measures tell us more?	

Guide to a successful progress review meeting

The progress review meeting needs structure to be successful.

Agree:
- who will attend?
- the frequency of meetings
- to set a time limit for the meeting
- to use a visible agenda to keep the meeting on track
- a system to communicate outputs with members who are not available
  (hint: use your Knowing How We Are Doing board).

The review meeting needs **defined responsibilities** to be successful.

You will already have agreed the following in your measures checklists. Ensure everyone is clear who will:
- collect data
- update the charts
- be responsible for performance
- chair the meeting and keep it on time.

Communicate
- Complete the progress review meeting template. See appendix 4 or
  www.institute.nhs.uk/theatres_resources which captures all the key information about your review.
  Put the completed templates on your display board, so everyone is clear of who and what is involved and
  the structure of the meetings.

Habits of successful progress reviews

Six principles will help you get the most out of your meetings

Be on time	• show respect for colleagues
Be factual	• base discussions on what you know to be true, not what might have happened • look at the measurements to determine whether you are improving
Be prepared	• update the board prior to the meeting • let someone know beforehand if it can't be done
Be concise	• don't go into details – get to the point • keep the meeting short!
Drive to action	• don't move on until you know what needs to be done and who will do it
Be prepared to go and see	• if it is important enough to be discussed in the meeting, then it is important enough to go and see the problem!

Communication before meeting

Before you hold your first meeting it is a good idea to let the team know what is going to happen and what you expect of them. This will:
- help ensure your first progress review is successful
- set the standard for how you want the meeting to run
- build enthusiasm.

Why bother?
- Preparation is key to success…
- Good communication will reduce anxiety about attendance and participation in the workshop.
- Ensure the right staff attend, prepared and with a positive attitude, ensuring more time to focus on the outputs.

What are you trying to achieve?
- Stimulate staff engagement and interest.
- Set the context – Knowing How We Are Doing is the cornerstone of The Productive Operating Theatre.
- Smooth running of meeting by planning ahead.
- Focus on meeting outputs by setting your expectation of a participative 'action' meeting.
- Build desire within the team to try and stick at it.

Ideas on how to prepare staff for their first progress review meeting

What works best?
- Face-to-face communication.
- Incorporate into an existing meeting rather than create a new one
- Get senior support. Tell them *this really is important to our staff, to our trust and its patients and it should be to you.*
- Provide handouts to takeaway – something that staff can digest and then respond to.

What doesn't really work?
- Email invites on their own.
- Lack of context – not setting the scene.
- Making it mandatory – try to generate enthusiasm rather than compulsion.

Things you may want to include in your briefing / discussions
- What you are trying to achieve?
- What is in it for staff, patients, etc.
- How this will move the theatre forward?
- What staff need to do:
  - contribute, consider, come up with ideas, take on actions
  - propose agenda and timing.

How will you know if your team is ready?
Talk to your team. Ask them how they feel and if they know what will happen at the meetings.

Everyone involved should know:
- the objective of the meeting
- venue and time of the meeting
- their role
- what they need to do beforehand
- what will be covered in the meeting
- what they need to do afterwards
- who to contact if they can't make the meeting or finish the preparation.

With everything in place begin your progress review meetings!

Clinical Incidents

EMBER

Incident free day	Clinica Inciden

1	2
3	4 dag
5	6

7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
		25	26		
		27	28		
		29	30	31	

NHS

Review measures – milestone checklist

Move on to **Step 7 – Keep going: repeat steps 4 to 6** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Confirmed the agenda and time for your progress review meeting	
Confirmed roles and responsibilities	
Communicated the process using the progress review meeting template	
Understood how to hold a successful progress review meeting	
Prepared the team for the meetings	
Started your progress review meetings	

Effective team-work checklist	Tick if yes
Did all of the team participate?	
Was the discussion open?	
Were the hard questions discussed?	
Did the team remain focused on the task?	
Did the team focus on the area / process, not individuals?	
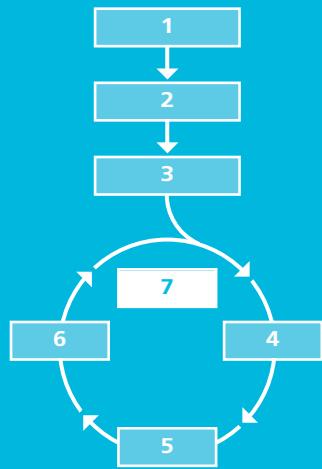
Step 7 – Keep going: repeat step 4 to 6

Repeat steps 4 – 6 (the **Collect**, **Analyse**, **Review** measurement cycle) to the frequency outlined in your measures checklist and progress review meeting template. You are aiming to meet consistently or exceed your goal. Keep making changes until your data tells you this is so.

Treat the first few times through the cycle as a trial.

Ask the following questions
- Is the board in the correct location? Is there enough room for review?
- Is the board laid out in the correct way?
- Are the measures useful?
- Are the measures represented in the right way to drive the expected actions?
- Are the charts easy to understand?
- Are the SMART goals appropriate?
- Is the agenda and format of the meeting appropriate?
- Is the data collection and board updating process easy to use?

The board should be used as a display tool and the review as the vehicle for change. If you cannot see a process you cannot measure it. If you cannot measure a process, you won't know if you are improving it.

The progress review meeting should result in actions for the team or wider theatre group, with follow-up responsibility within the team. Knowing How We Are Doing boards should be updated in advance; meetings should be short and effective, and actions progressed between meetings. If this is not the case, the answers will provide direction for making improvements.

When do you stop measuring?

You don't!

If you are consistently meeting your goal you should strive for more or associated improvements. If you aimed for 100% or 0% and are meeting this consistently, you could measure less frequently. You can pick up and act on any deviations that threaten sustainability.

Be aware that the process of measuring has a positive effect in keeping awareness high. It demonstrates the goals you are measuring are important to the organisation.

You will abandon some measures eventually: for example when the changes you made are firmly embedded as daily practice (eg when everybody is conducting team brief). You will also abandon or revise measures that do not drive the improvements you are making.

At the same time you will also add extra ones, especially as you begin new modules.

You may find it useful to have periodic measures review sessions, where a team take time to look at your whole balanced set of measures and the process around them. Suggested slides, speaker and facilitation notes for this session can be found at www.institute.nhs.uk/theatres_resources

Module measures

Knowing How We Are Doing is a foundation module that underpins The Productive Operating Theatre. The principles about measurement for improvement need to be embedded in all of the modules you work through.

At the start of each module run a mini measures workshop with the team that is going to be involved with that module, a suggested set of slides for this session is available at www.institute.nhs.uk/theatres_resources

The aims of this session are to:
- refresh the team's understanding of how to use measurement to drive improvement
- identify measures for the module
- work with the team to decide how they will collect, analyse and review their information
- complete a measures checklist for the module.

Ensure new measures are included in your progress review meetings and on the Knowing How We Are Doing board.

Hints and tips

To renew enthusiasm, visit another theatre in the hospital to see how far you have come. Alternatively if your trust has been involved in The Productive Ward, there will be wards you can visit to compare their progress and goals with your own.

Once you have a system that works, look for more ways to improve it. Don't get stuck – ask for help from your support team or management. For inspiration, visit a theatre or organisation that has finished the Knowing How We Are Doing module.

Remember to celebrate your success!

Problem solving

What if this happens?

- The data is not available:
  - check with the trust – they should provide this information
  - use the nearest available data source.

- No one wants responsibility for the data updates:
  - rotate board update weekly
  - assign one chart per person for update – this will spread the work between the team and encourage active involvement outside the meeting
  - incorporate the task in job plans.

- The meeting is not being taken seriously:
  - invite visitors from senior management as appropriate to view the board and participate in the review meeting.

- Issues causing measure to decline are outside theatre control:
  - talk to the other people or department influencing the performance of the measure
  - invite them to the review meeting to discuss ways to resolve the issue.

- Chart updates begin to fall behind:
  - check that availability of data is not hindering chart update
  - rotate responsibility for chart update – this will also encourage more staff involvement
  - agree disciplinary measures with team.

- Your review meeting gets cancelled:
  - plan ahead
  - seek resources to ensure adequate cover
  - share your concerns with management.

Keep going: repeat steps 4 to 6 – milestone checklist

Checklist	Completed?
Continued to collect, analyse and review (CAR) your data on an ongoing basis	
Reviewed the CAR process and modified if necessary	
Held periodic measures review session if necessary	
Developed measures for each module you work through	

Effective team-work checklist	Tick if yes
Did all of the team participate?	
Was the discussion open?	
Were the hard questions discussed?	
Did the team remain focused on the task?	
Did the team focus on the area / process, not individuals?	
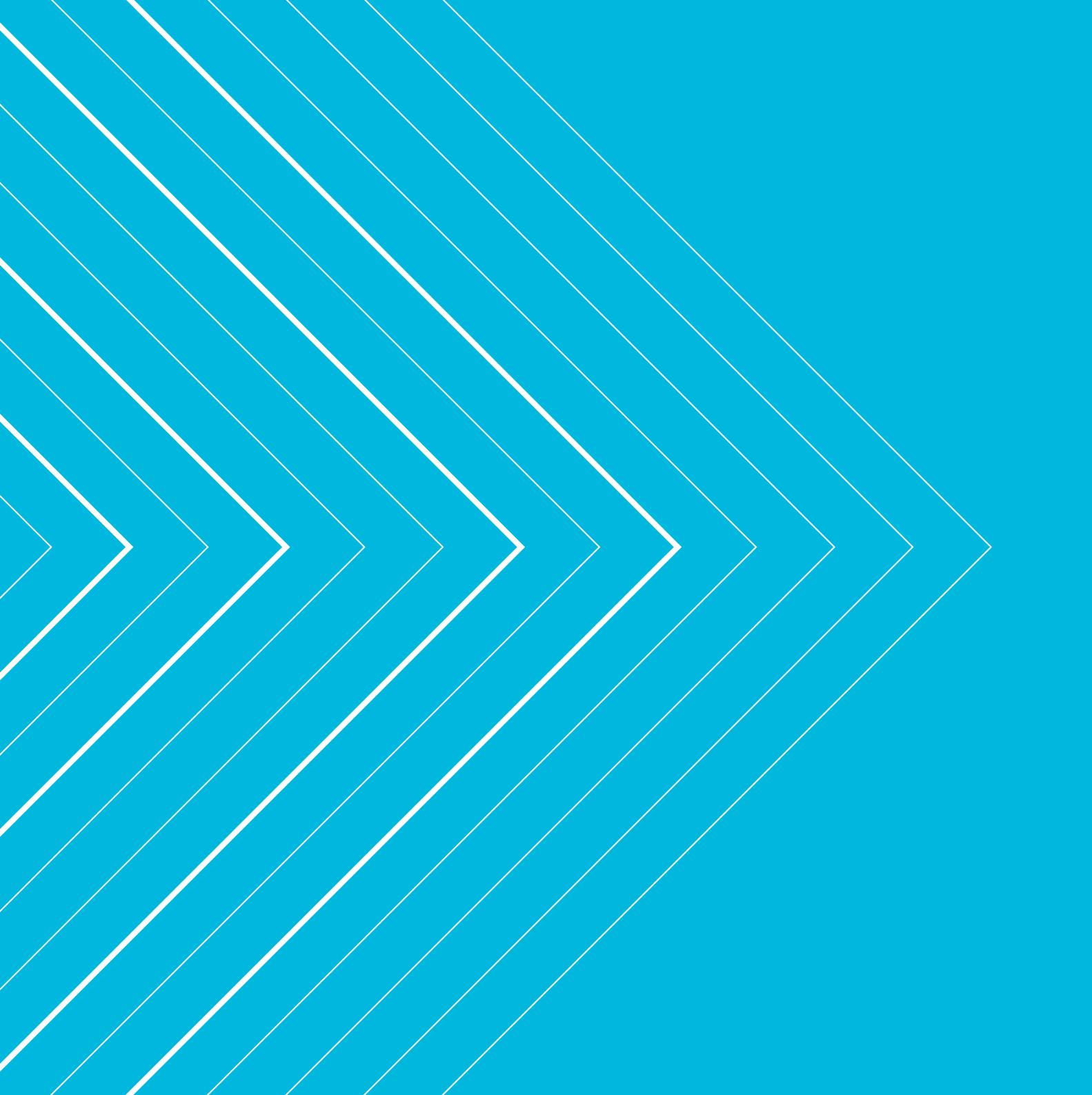
3. Learning objectives complete?

A set of learning objectives were set at the start of this module.

Have you met the learning objectives?

Do all staff understand:
- why measurement is important
- that measurement drives better decision-making
- how to use facts and data to drive continuous improvement using the seven step model
- that they created their own balanced set of measures
- what their balanced set of measures are and how they relate to their work
- how to set up a visual Knowing How We Are Doing board
- how to establish an effective progress review system.
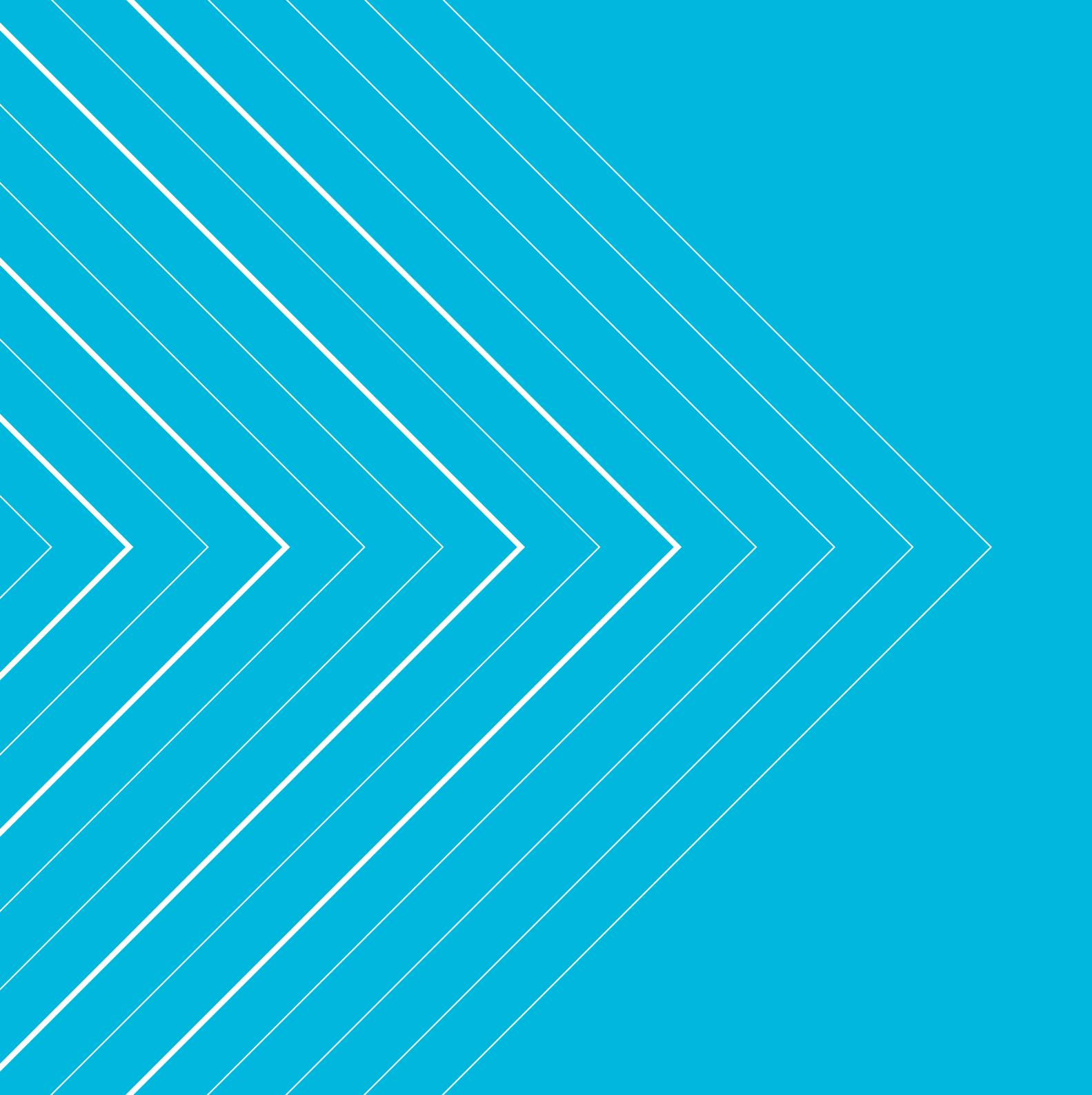
Appendices

1 – Driver diagrams

2 – Suggested measures

3 – Measures checklist

4 – Review meeting template

Avoid mission

Avoid complications

| 12 | 13 | 14 | 15 |

Avoid

Defect-free
surgery

S0 S1

Appendix 1 – Driver diagram

The following measures have been displayed in four driver diagrams, one for each of the programme domains: safety and reliability of care; team-working and staff wellbeing; value and efficiency; and patient's experience and outcomes. Driver diagrams show the link between the overall goal and the specific actions or initiatives that are needed to achieve it.

We have included a lot of measures – but you shouldn't attempt them all at once. Experience with the field test sites has shown you should track the measures linked to the overall aim in each domain. There are seven of these; you should select from the rest depending on the areas you have decided to work on. You may also want to create further measures of your own.

Work on the principle that every intervention you work on should have some measurement attached to it.

Safety and reliability driver diagram

Aim	Driver	Intervention
		Conduct team brief ◇1
	Avoid mistakes	**Conduct team debrief** ◇2
	◇9 ◇10 ◇11	**Conduct time out** ◇3
		Produce accurate lists ◇4
Defect-free surgery ◇S0 ◇S1	**Avoid complications** ◇12 ◇13 ◇14 ◇15	**Implement SSI bundle** ◇5
		Implement VTE bundle ◇6
	Avoid delays	**Have correct kit to hand** ◇7 ◇8
		Ensure staff are adequately trained ◇34
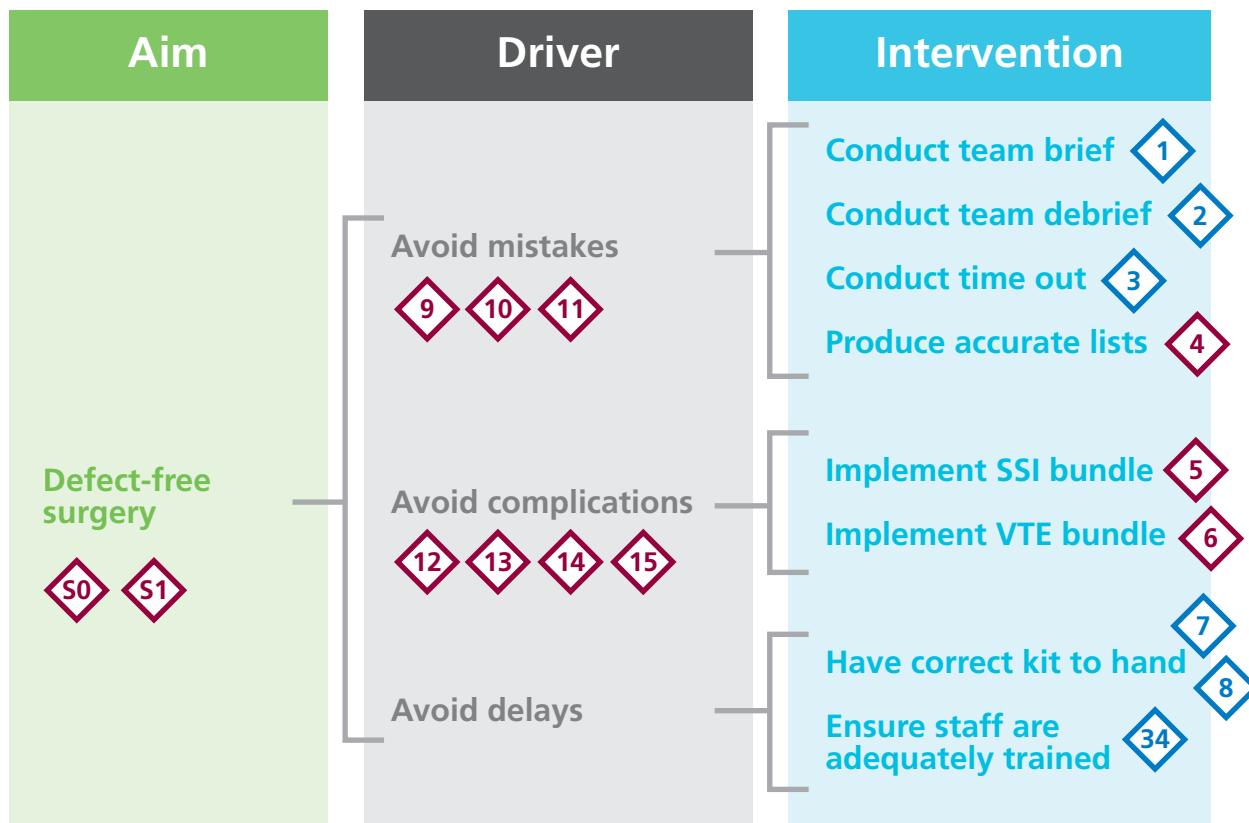
S0 Overall glitch count
S1 Adverse surgical events
1 % lists with team brief (or # team briefs)
2 % lists with team debrief (or # team debriefs)
3 % lists with time out (or # time outs)
4 % lists performed as listed
5 % compliance with SSI bundle
6 % compliance with VTE bundle
7 % correct kit to hand
8 % usable kit
9 retained objects

10 Wrong site surgery
11 Wrong procedures
12 Readmissions
13 Number of unplanned returns to theatre
14 Number of SSIs
15 Number of VTEs
34 Compliance with mandatory training and appraisals

Measure used only in this aim ◇

Measure shared with another ◇

Team-working driver diagram

Aim	Driver	Intervention
A well-functioning theatre team ◆T0	**Communications**	**Team brief** ◆1 **Team debrief** ◆2 **Report all incidents** ◆3 **Do executive safety walk-rounds**
	Competence ◆16	**Ensure staff adequately trained** ◆34 **Ensure staff have regular experience** ◆17
	Consistency	**Form consistent teams** ◆18
	Confidence ◆19	**Minimise staff turnover** ◆20 **Tackle unplanned absence** ◆21

Do regularly with three minute survey. Need randomisation.

T0 Team working scores using naive observer report forms
1 % lists with team brief (or # team briefs)
2 % lists with team debrief (or # team debriefs)
3 % lists with time out (or # time outs)
16 Proportion of staff with HF/team skills training (by discipline)
17 Proportion of time was spent working in normal area
18 Number of different staff worked in theatres per list

19 Staff survey
20 Staff turnover
21 Sickness absence
34 Compliance with mandatory training and appraisals

Measure used only in this aim ◇
Measure shared with another ◇

Patient experience and outcome driver diagram

Aim	Driver	Intervention

A good patient experience
P0 P1

Avoid unnecessary delay
- Minimise pre-op time ◇28
- Minimise starvation time ◇29
- Avoid cancellation ◇30
- Provide timely recovery ◇31

Keep the patient informed
- Provide relevant information
- Provide information in timely fashion

Avoid unnecessary discomfort
- Control pain effectively ◇32
- Implement SSI bundle including control body temperature ◇6
- Minimise complications in recovery ◇33

P0 Overall patient experience score (from survey)
P1 Patient recorded outcome measures (PROMs)
28 Average time from admission to anaesthetic start
29 Average time patient starved
30 % patients who got their original TCI date
31 Average recovery delay
32 Average pain score in recovery
6 % patients with normal body temperature (part of SSI bundle)
33 % patients complication free in recovery

Measure used only in this aim ◇

Measure shared with another ◇

Efficiency driver diagram

Aim	Driver	Intervention

Aim | **Driver** | **Intervention**

Deliver plan to budget
E0 E1

Run lists you plan
- Ensure correct staff available
- Ensure correct kit available 7 8
- Ensure correct patients available 22

Run lists to time 23
- Ensure start on time 24
- Ensure list filled appropriately 25

Minimise delay between cases
- Have reliable process for fetching patients
- Minimise theatre turnaround 26

Make similar procedures more consistent
- Minimise interruptions 27
- Ensure right kit to hand 7

E0 % value added time
E1 Lost income
7 % correct kit to hand
8 % usable kit
22 % patients lost from theatre list (all reasons)
23 Direct care time (needle to skin => in recovery)
24 Late starts
25 Early finishes
26 Turnaround time (in recovery => needle to skin)
27 Number of glitches (interruptions, messages, phone calls)

Measure used only in this aim ◇

Measure shared with another ◇

How to prioritise interventions in efficiency and value

This flow diagram suggests how you can prioritise your improvement efforts to get the biggest impact depending on your current local situation.

Q1 *Is there an approximate match between demand (cases being booked) and scheduled operating capacity?*

No → *Calculate list capacity needed (by consultant or specialty) to deal with volume and variation in demand*

Yes ↓

Q2 **Are planned staffed lists taking place?**

No → *Take steps to fill all available staffed lists*

Yes ↓

Q3a **Are lists running to time?**

No → *For late start / finish do root cause analysis. For early finish look at scheduling and cancellations*

Yes ↓

Q3b **Is turnaround efficient?**

No → *Work on turnaround (SMED)*

Order interchangeable

Yes ↓

Analyse procedure times and do activity follows to see if there are glitches holding up care

Appendix 2 – Suggested measures

This table shows the measures that were developed and used by the test sites during the testing of The Productive Operating Theatre. The measures are ordered according to the aim they relate to, they also show which module they were used in.

They provide you with examples and ideas of measures that you could collect; you could use some of the suggested data or completely develop your own set. Although we do not dictate which measures you should collect, we do suggest that within your set of measures you include at least one executive level measure and one other measure for each of the four domains of quality.

Appendix 2 – example measures (quick reference table)

The table below shows the measures that were developed and used by the test sites during the testing of The Productive Operating Theatre. The measures are order according to the domain they relate to, they also show which module they were used in. They provide you with examples and ideas of measure that you could collect; you could use some of the measures below or completely develop your own set. Although we do not dictate which measures you should collect, we do suggest that within your set of measures you include at least one Executive level measure and one other measure for each of the four domains of quality.

Key
Executive level measures
Measures shared by more than one domain

Domain	Measure	Impacts on the overall aim of…	What module it relates to	Reported as… Operational Definition	Data source	Who for	Who collects	Frequency	Trend	Display as
Safety	Overall glitch count	Problem free surgery	KHWD/ Team-working	No per day/wk. No of each type per day/wk.	Paper/electronic	Theatre management	Theatre manager	Periodic	Downwards	Run/control chart
	Safety attitudes questionnaire	Problem free surgery	Exec Leaders	Every six – twelve months	National tool	Exec	Programme leader	Yearly		
	Adverse surgical events	Problem free surgery	KHWD/Team-working. Exec Leaders	No/100 ops	National tool	Exec	Surgeon/governance	Periodic	Downwards	Run/control chart
	Team brief	Avoiding mistakes	Team-working Session Start-up	% lists	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
	Team debrief	Avoiding mistakes	Team-working	% lists	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
	Time out	Avoiding mistakes	Team-working Session Start-up	% operations	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
	Knowledge and use of SBAR	Avoiding mistakes	Team-working	% of staff who know what SBAR is and can give an example of use	Sample of staff interviews	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Knowledge and use of PACE	Avoiding mistakes	Team-working	% of staff who know what PACE is	Sample of staff interviews	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Lists performed as listed	Avoiding mistakes	Scheduling	% lists	Theatre Management System	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Compliance with WHO surgical checklist	Avoiding mistakes	Team-working Session Start-up	% lists	Paper/electronic	Theatre management	Team leader	Daily	Up then steady	Run/control chart
	SSI bundle	Avoiding complications	KHWD/ Exec Leaders/Patient prep	% compliance	National tool	Theatre team	Anaesthetist	3 Monthly	Up then steady	Run/control chart
	VTE bundle	Avoiding complications	KHWD/ Exec Leaders/Patient prep	% compliance	National Tool	Theatre team	Anaesthetist	3 Monthly	Up then steady	Run/control chart
	Correct kit	Avoiding delays	Consumables	% operations	Paper/electronic	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Usable kit	Avoiding delays	Consumables	% operations	Paper/electronic	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Retained objects	Avoiding mistakes	Team-working/Exec Pt prep	No ops	Daytex/IRIS reports	Theatre management	Governance	6 months	Downwards	Run/control chart
	Wrong site surgery	Avoiding mistakes	Team-working/Exec Pt prep	No ops	Daytex/IRIS reports	Theatre management	Governance	6 months	Downwards	Run/control chart
	Wrong procedure	Avoiding mistakes	Team-working/Exec pt Prep	No ops	Daytex/IRIS reports	Theatre management	Governance	6 months	Downwards	Run/control chart
	Readmissions	Avoiding complications	Scheduling	No ops	PAS	Theatre management	Infection control	Monthly	Downwards	Run/control chart
	Hand hygiene	Avoiding complications	KHWD	% compliance	National tool/NMAS	Theatre team	Infection control	Monthly	Up then steady	Run/control chart
	Staff accidents	Avoiding complications	KHWD	No per week	Daytex	Theatre management	Governance	Monthly	Downwards	Run/control chart
	Peripheral Venous Canulation	Avoiding complications	KHWD	% compliance	National tool/Saving Lives audit	Theatre team	Infection control	3 months		Run/control chart
	Unplanned returns to theatre	Avoiding complications	Scheduling	No ops	Theatre Management System	Theatre management	Directorate		Downwards	Run/control chart
	Mandatory training and appraisals	Avoiding delays	Team-working	% compliance	Database	Theatre team	Theatre manager	3 Monthly	Up then steady	Run/control chart
Team	Team working scores	Well functioning theatre team	Team-working			Exec		Periodic	Up then steady	Run/control chart
	Staff survey	Well functioning theatre team	Team-working		National Tool	Exec	Training and development	Periodic	Up then steady	Run/control chart
	Team brief	Good communication	Team-working Session Start-up	% lists	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
	Team debrief	Good communication	Team-working	% lists	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
	Time out	Good communication	Team-working Session Start-up	% operations	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
					Sample of staff interviews	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Knowledge of SBAR	Good communication	Team-working	% of who know what SBAR is	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
	Is KHWD up to date	Good communication	KHWD	Is the data used monthly to drive improvement?	Paper/electronic	Theatre team	Team leader	Weekly	Up then steady	Run/control chart
	Is OSAG up to date	Good communication	OSAG	% staff using, number of interruptions	ESR	Theatre management	Theatre/manager	Periodic	Up then steady	Run/control chart
	Staff with team skills	Good competency levels	Team-working	% staff	Off duty	Theatre team	Theatre co-ordinator	?	Up then steady	Run/control chart
	Time working in normal area	Good competency levels	Team-working	% time	HR / NMAS / Dashboards	Theatre management	Theatre manager	Weekly	Downwards	Run/control chart
	Vacancies	Consistency/confidence	Team-working	no	Paper/electronic	Theatre management	Programme Leader	Periodic	Up and Steady	Run/control chart
	SBAR	Good competency levels	Team-working	% staff trained	ESR / NMAS / Dashboards	Theatre management	Line manager	Monthly	Up and Steady	Run/control chart
	Personal Development Reviews	Good competency levels	Team-working	%	Off duty / allocation	Theatre team	Theatre manager	Daily	Up and Steady	Run/control chart
	No staff per list	Consistency/confidence	Team-working	No	HR / NMAS / Dashboards	Theatre team	Theatre manager	Monthly	Downwards	Run/control chart
	Staff turnover	Consistency/confidence	Team-working	%	ESR / NMAS/ Dashboards	Theatre team	Theatre manager	Monthly	Downwards	Run/control chart
	Sickness/absence	Consistency/confidence	Team-working	No of days/week	Database	Theatre team	Theatre manager		Up then steady	Run/control chart
	Mandatory training and appraisals	Good competency levels	Team-working	% compliance		Theatre team	Theatre manager			Run/control chart

Please turn over for full table

Notes: Many measures can be shown on a run chart but would benefit from a supplementary Pareto chart e.g. we can show how many late starts each week on a run chart but we would have a better understanding of how to improve this if we had a Pareto chart showing the biggest reasons for those late starts.

	Key
	Executive level measures
	Measures shared by more than one domain

Domain	Measure	Impacts on the overall aim of…	What module it relates to	Reported as… Operational Definition	Data source	Who for	Who collects	Frequency	Trend	Display as
Value	% value added time	Delivering plan to budget	Scheduling			Exec		Periodic	Up then steady	Run/control chart
	Session utilisation	Delivering plan to budget	Scheduling	% funded sessions run	Excel / Galaxy / Theatre Management System	Exec				
	Lost income	Delivering plan to budget	Scheduling	Loss of revenue	Theatre Management system / PAS	Exec	Theatre manager	Periodic	Down then steady	Run/control chart
	Correct kit	Running the list as planned	Consumables	% operations	Paper/electronic	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Usable kit	Running the list as planned	Consumables	% operations	Paper/electronic	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Are sustainability audits up to date	Delivering plan to budget	Well Organised Theatre	% up to date	Paper/electronic	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Patients lost from list	Running the list as planned	Patient Preparation		Paper/electronic	Theatre team	Theatre manager	Periodic	Down then steady	Run/control chart
	Contact time/list utilisation	Running the list to time	Scheduling	% time available in session used	Theatre Management System	Theatre management	Team leader	Daily	Up then steady	Run/control chart
	Late starts	Running the list to time	Session Start-up Scheduling	Mins late/reasons	Theatre Management System	Theatre team	Theatre co-ordinator	Daily	Down then steady	Run/control chart
	Early finishes	Running the list to time	Scheduling	Mins early/reasons	Theatre Management System	Theatre team	Theatre co-ordinator	Daily	Down then steady	Run/control chart
	Late finishes	Running the list to time	Session Start-up Scheduling	Mins late/reasons	Theatre Management System	Theatre team	Theatre co-ordinator	Daily	Down then steady	Run/control chart
	Validation of lists	Avoiding mistakes	Scheduling	% lists validated by 2 or 3 staff groups	Theatre Management System	Theatre team	Team leader	Monthly	Up then steady	Run/control chart
	Turnaround time	Minimising delay between cases	Patient Turnaround	Minutes	Theatre Management System	Theatre team	Theatre co-ordinator	Daily	Down then steady	Run/control chart
	Performance against budget	Providing service within budget	KHWD/ Exec Leaders	Variance against Budget	Finance	Finance/theatre management/Svc dirs	Finance	Monthly	Steady	Run/control chart
	Theatre Cost per hour	Providing service within budget	Exec Leaders	Cost per hour	Finance	Executive/Svc dirs/ finance/theatre management	Finance	3 Monthly	Steady	Run/control chart
	HRG Income per procedure per session	Providing service within budget	Exec Leaders	Income per procedure	Finance	Executive/Svc dirs/ finance/theatre management	Finance	Monthly	Increasing	Run/control chart
	Bank	Providing service within budget	KHWD/ Exec Leaders	Hours per week/% wte	Finance	Executive management /Svc dirs/finance/ theatre management	Finance	Monthly	Steady - decreasing	Run/control chart
	Agency	Providing service within budget	KHWD/ Exec Leaders	Hours per week/% wte	Finance	Executive management /Svc dirs/finance/theatre	Finance	Monthly	Steady - decreasing	Run/control chart
	Stock take	Providing service within budget	Consumables	Stock take for Operating Theatre £££	Supply	Finance/supply/ theatre management	Supply	2 per year - virtual if a closed store	Down and then steady	Run/control chart
	Consignment stock take	Providing service within budget	Consumables	Consignment Stock £££	Companies/Supply	Finance/supply/ theatre management	Supply	twice a year	Steady	Run/control chart
	Weekly consumable spend	Providing service within budget	Consumables	£££ spent per week	Supply	Finance/supply/ theatre management	Supply	Weekly	Decrease variation then steady	Run/control chart
	Items on Shelf > than 30 days	Providing service within budget	Consumables	% Items held greater than 30 days	Supply	Finance/supply/ theatre management	Supply	Monthly	Decrease in items on shelf > than 30 days then steady	Run/control chart
	Backorders	Providing service within budget	Consumables	Number of items on backorder per week	Supply	Supply/finance/ theatre management	Supply	Weekly	Downwards	Run/control chart
	Contract Measures	Providing service within budget	Consumables	Contract Breaches per month	Supply	Supply/finance/ theatre management	Supply	Monthly	Downwards	Run/control chart
	Prostheses spend	Providing service within budget	Consumables	Prostheses spend per month	Op. Theatre	Executive/service managers/theatre managers	Orthopaedic nursing staff/procurement	Monthly	Within budget	Run/control chart
	Orthopaedic Prostheses spend	Providing service within budget	Consumables	Prostheses spend per month	Op. Theatre	Executive/service managers/theatre managers	Orthopaedic nursing staff/procurement	Monthly	Within budget	Run/control chart
	Prostheses cost per episode	Providing service within budget	Consumables	Prostheses cost per individual episode	Op. Theatre	Finance/supply/theatre management	Orthopaedic nursing staff	Daily	Steady	Run/control chart
	Prostheses usage per surgeon	Providing service within budget	Consumables	Prostheses spend per episode allocated to surgeons	Op. Theatre	Finance/supply/theatre management	Orthopaedic nursing staff/procurement	Daily	Steady	Run/control chart
	Funded Session Hours	Providing service within budget	Scheduling	No of funded sessions available per week	Theatre Management	Theatre management	Theatre management	Weekly	Steady	Run/control chart
	Unused Sessions Hours	Providing service within budget	Scheduling	No of funded sessions used per week	Theatre Management	Theatre management	Theatre management	Weekly	Steady	Run/control chart
	Contact Session hours per working date	Providing service within budget	Scheduling	Session hours used per working day	Op. Theatre	Executive/theatre management	Theatre management	Monthly	Up then steady	Run/control chart
	After hours surgery	Providing service within budget	Scheduling	After hours surgery used per month	Op. Theatre	Executive/theatre management	Theatre management	Monthly	Steady and then down	Run/control chart
	Time taken to reschedule an operation	Making procedures consistent	Scheduling	Minutes	Theatre Management System	Managers/theatre managers	Theatre management	Periodic	Down then steady	Run/control chart
	No of interruptions	Making procedures consistent	Team-working/KHWD	No of interruptions	Paper/electronic	Theatre team	Team leader	Weekly	Down then steady	Run/control chart

Domain	Measure	Impacts on the overall aim of…	What module it relates to	Reported as… Operational Definition	Data source	Who for	Who collects	Frequency	Trend	Display as
Patient	Patient survey	A good patient experience				Exec	Wards	Every patient	Up then steady	Run/control chart
	Patient PROMs	A good patient experience				Exec	Programme leader	Periodic	Up then steady	Run/control chart
	Emotional mapping	A good patient experience	KHWD/Patient Preparation /Handover		Experience based design questionnaires	Theatre teams / executive leader	Programme leader / champion	Periodic	Word size	Wordle www.wordle.net
	Time – admission to anaesthetic	Avoiding unnecessary delay	Patient Preparation	Weekly or 100 pts	PAS	Theatre team	Theatre analyst	Monthly	Down then steady	Run/control chart
	Time starved	Avoiding unnecessary delay	Patient Preparation	Weekly or 100 pts	PAS	Theatre management	Theatre analyst	Monthly	Down then steady	Run/control chart
	Patients who got TCI date	Avoiding unnecessary delay	Scheduling	% patients	PAS	Theatre team	Theatre analyst	Monthly	Up then steady	Run/control chart
	Cancellations on the day	Avoid unnecessary discomfort	Scheduling	% Pts	Theatre Management System	Theatre management	Theatre co-ordinator	Daily		
	Recovery delay	Avoiding unnecessary delay	Recovery	Weekly or 100 pts	Theatre Management System	Theatre team	Recovery co-ordinator	Weekly	Down then steady	Run/control chart
	Pain score in recovery	Avoid unnecessary discomfort	Recovery	Weekly or 100 pts	Paper/Electronic	Theatre team	Recovery co-ordinator	Weekly	Down then steady	Run/control chart
	Normal body temp (SSI bundle)	Avoid unnecessary discomfort	Recovery	Weekly or 100 pts	Paper/Electronic	Theatre team	Recovery co-ordinator	Weekly	Up then steady	Run/control chart
	Complication free recovery	Avoid unnecessary discomfort	Recovery	Weekly or 100 pts	Paper/Electronic	Theatre team	Recovery co-ordinator	Weekly	Up then steady	Run/control chart
	Patients whose op was rescheduled	Avoid unnecessary discomfort	Scheduling	Number of patients	PAS/Theatre Management System	Theatre management	Recovery co-ordinator	Weekly	Down then steady	Run/control chart

Appendix 3 – Measures checklist

Measures checklist

Part 1: Measure setup and linkage

Name of the measure:
Does it fit with an organisational objective? If yes, how?
Does it relate to one of the driver diagrams? If so from what level?
Does it relate to one of The Productive Operating Theatre modules? If so which?
How does it fit with the outputs from the visioning workshop?
Who is the person responsible for ensuring that the data is collected, analysed and reviewed?

Part 2: Measure definition

Measure definition	What is the definition? *(Spell it out very clearly in words)*
	What data item comprises the numerator *(the top number in a percentage calculation)*?
	What data item comprises the denominator? *(the bottom number in a percentage calculation - some measures do not require one)*
	What is the calculation to be done? *(some measures do not require one)*
	Which patient groups/theatres are to be covered?
Goal setting	Are you setting yourselves a numerical goal? If so what is it?
	Who is responsible for setting this?
	When will it be achieved by?

Part 3: Measurement process

Collect	Is the data available? *(Currently available / available with minor changes / prospective collection needed)*
	Who is responsible for data collection?
	What is the process of collection?
Analyse *Calculate measure and present results*	What is the process for presenting results? *eg enter data in extranet, create run chart in appropriate software, generated automatically from theatre management system*
	Will you present this data as a run chart or a Pareto/bar chart?
	Who is responsible for the analysis?
	How often is the analysis completed?
Review	Where will decisions be made based on results? *(ie at what meeting or forum)*
	Who is responsible for ensuring action is taken to implement those decisions?
	Who is responsible for taking action?

Appendix 4 – Review meeting template

Review meeting guidelines	
Where:	**When:**
Objectives • Follow-up actions from previous meeting • Understand changes in performance since last meeting • Discuss issues, identify next steps and assign responsibility Who do I contact if I won't be here or I can't update my chart?	**Participants and roles** Chair Others
Inputs • Agreed aims • Updated measures data • Actions from previous week	**Outputs** Agreed actions and responsibilities
Agenda 1. Welcome 2. Update on actions from previous week 3. Review charts and discuss changes since last week 4. Agree what actions to take to improve the measure 5. Decide who will take each action and by when 6. Confirm attendance for next meeting	1 min 5 min 5 min 5 min 5 min 4 min

Acknowledgement