

The Productive Operating Theatre

Building teams for safer care™

Well Organised Theatre

Version 1

This document is for theatre managers, theatre matrons, theatre coordinators, theatre staff, anaesthetists, surgeons and improvement leads



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ISBN: 978-1-907045-06-6





The Productive Operating Theatre

Well Organised Theatre

Purpose of this guide

As theatre staff, you may face daily frustrations; wasting your time searching for equipment and supplies that are not where they should be; cluttered and untidy store rooms that make it difficult to find anything, and a shortage of storage space within your department. All these factors can make carrying out even the simplest of tasks far more difficult than it should be.

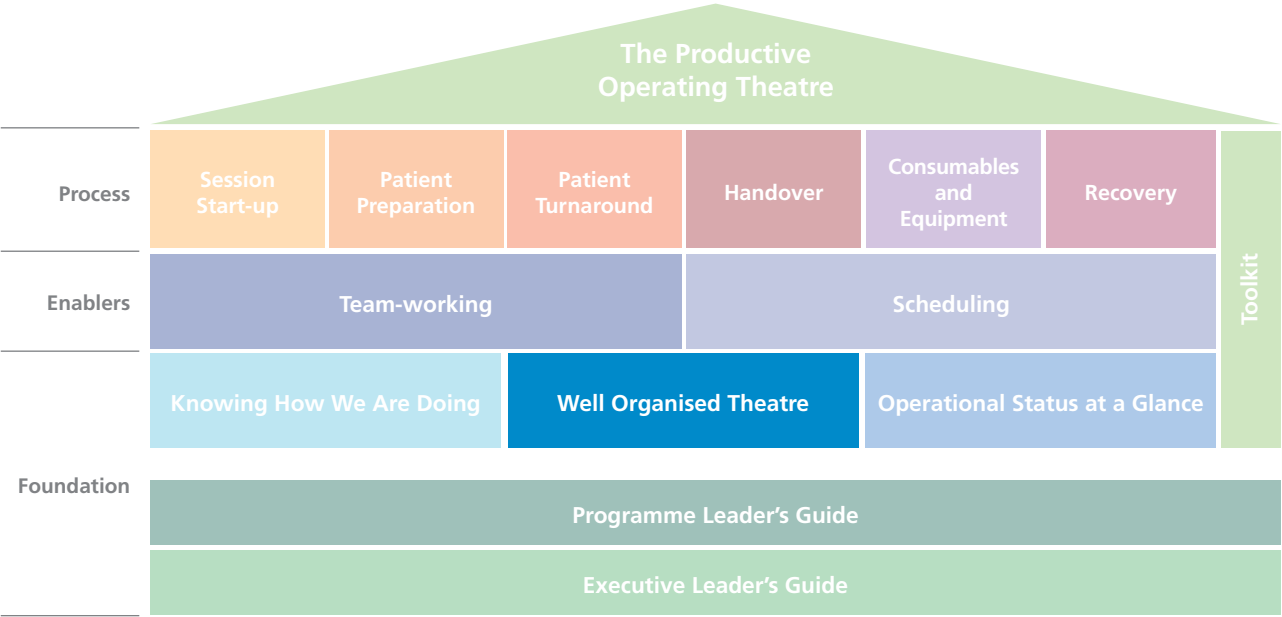
Imagine a theatre department where the environment supports you to do your job rather than hinders you, where things are easy to find and there is room to store everything you need where you need it.

The Well Organised Theatre module will empower you and your theatre team to achieve this goal and sustain the improvements they make.

'The Well Organised Theatre is the most exciting module in the house. It achieved instant engagement with the theatre staff and provided quick improvements.'

Janet Henry – theatre manager/matron, West Middlesex University Hospital NHS Trust

These modules create The Productive Operating Theatre



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1. What is the Well Organised Theatre?

What is it?

The Well Organised Theatre is an approach to simplify your workplace and reduce waste by having everything in the right place at the right time and ready to go.

It will help you and your team see that:

- areas should be organised to support people and the processes they carry out
- immediate changes can be made to the workplace which rapidly result in visible improvements
- commitment is required to maintain the agreed standards.

Why do it?

- Time will be saved
Reduce the time spent looking for things, having to ask for things and moving things out of the way. This will increase the time you can spend with patients and focus on delivering the *perfect operating list*.
- Things will be easier for staff
Daily tasks will be supported by the environment in which they are carried out, rather than having to work around the existing environment.
- The theatre department will look and feel better
Space will be created, increasing staff satisfaction and reducing their frustrations; it will provide a more reassuring environment for patients by being a well organised, clutter and chaos-free environment.
- Mistakes and errors will decrease – near misses will be reduced
The right equipment and consumables will be in the right place at the right time, items will not be mistakenly stored or labelled, enabling safer delivery of care and more efficient use of staff time.

What it covers

This module describes how to create a Well Organised Theatre using the 5S approach. 5S is a methodology involving the structured implementation of five key steps to help create an ideal workplace through organising, cleaning and removing the seven wastes. This will reduce the time and effort required by staff to perform tasks in the area.

What it does not cover

This module does not tell you what to change; it takes you through a process to identify improvements that can be made in your department.

What is 5S?

It shows you how to make significant improvements in your working environment using a structured process to help you eliminate waste in all its forms. See seven wastes table opposite for more detail.

The 5S process

1. Sort

- Remove anything from the area that is not essential

2. Set

- Organise all the necessary materials and equipment
- Assign each object an ideal area in the room

3. Shine

- Regularly clean and maintain the workplace and equipment

4. Standardise

- Develop and agree procedures to maintain an orderly, clean and functional work area
- Decide how similar areas can be arranged in the same way, eg anaesthetic rooms
- Agree standard conventions for colour codes throughout the department, eg blue for airway management

5. Sustain

- Implement audits to ensure the workplace standard is maintained and improved and 5S becomes part of the everyday routine

'It is very easy to complete the first three steps, however it is important to complete all five steps if the change is to be continuously maintained.'

Claire Bradford – programme leader and theatre matron, Royal Devon and Exeter NHS Foundation Trust

The seven wastes

1. **Defects and rework** – due to faulty processes, repeating things because correct information was not provided in the first place
2. **Motion** – unnecessary people movement, travel, walking and searching. Things not within reach, things that are not easily accessible
3. **Overproduction** – producing more than what is needed or earlier than needed by the next process
4. **Transportation** – moving materials unnecessarily
5. **Waiting** – staff unable to do their work because they are waiting for something such as people, equipment or information
6. **Inventory** – too much stock, work in progress or patients waiting in a queue
7. **Over-processing** – performing unnecessary steps that do not add value

5S is not about sorting and cleaning!

5S is **NOT** just about cleaning an area on a regular basis. It **IS** about having a theatre where:

- things are immediately made ready for the next person
- the process for making things ready for the next person is agreed and understood by everyone in the theatre
- changes are maintained once they have been implemented until they become second nature
- there is the option to go back and make changes when things still aren't quite right
- everyone understands why things are done the way they are done.

'You may remember the old-style theatre manager (night sister) who regularly checked the theatre department they were responsible for. It became second nature to keep the area in pristine condition. What the theatre manager (night sister) was doing was conducting regular audits in order to sustain their expectations.'

'Think of 5S as similar. The difference is, in 5S the solution is designed around the processes and the people involved with a view to eliminating wastes: the whole team decides what to do and owns it!'

'By starting with 5S you will be able to see visible changes in your theatre and staff will see that they are empowered to make changes to their workplace.'

Janet Henry – theatre manager/matron, West Middlesex University Hospital NHS Trust

Learning objectives

After completing this module it is expected that the team will:

- understand the importance and application of 5S
- know how to use 5S to eradicate the seven wastes
- understand what visual management is and how it is used in your Well Organised Theatre
- define what standardised work is, how it saves time and makes things easier
- make better use of theatre space and systematically reduce the amount of stock stored
- understand why standards and audits are necessary to sustain the improvement.

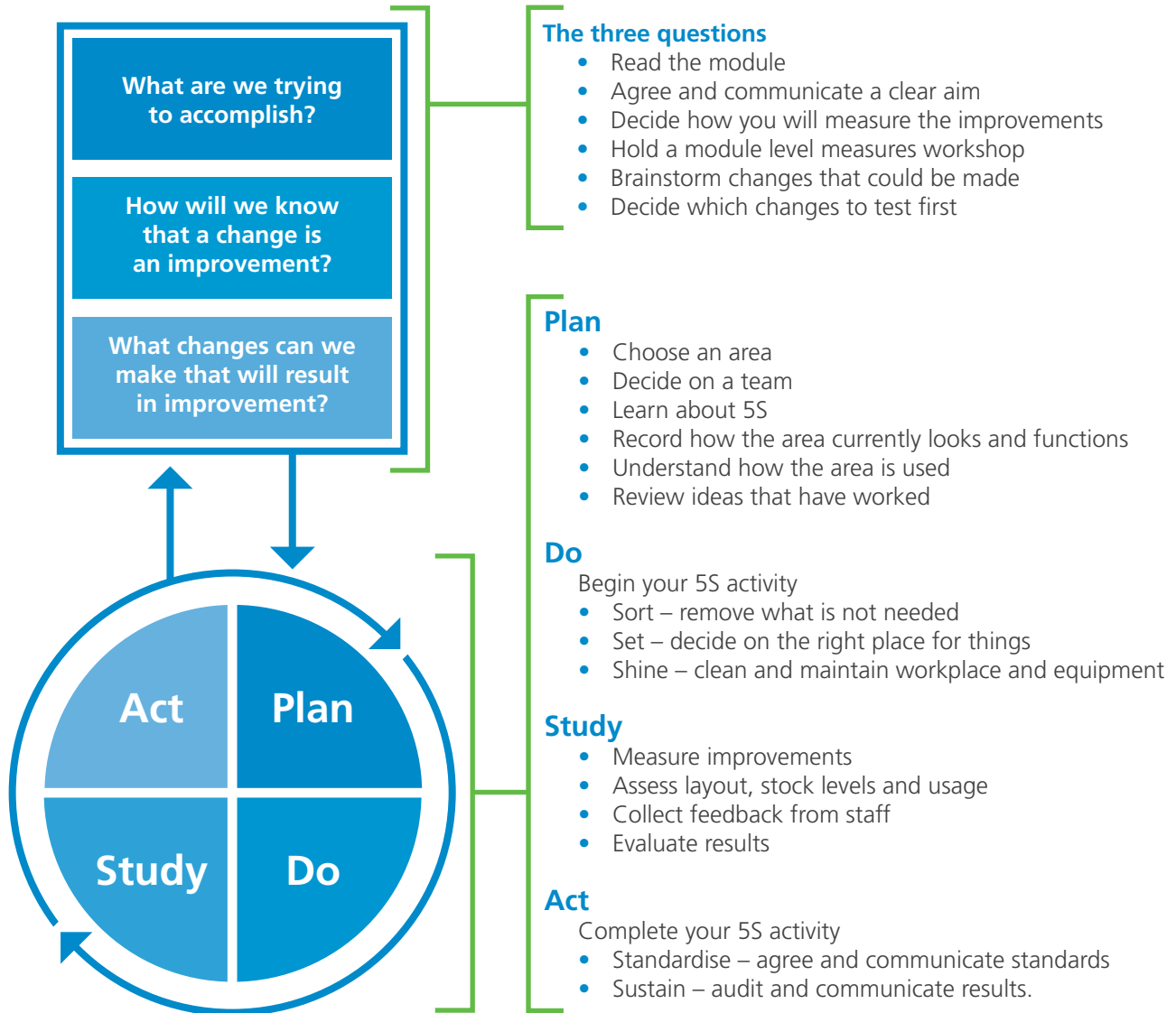
What tools will you need?

Tool
5S game
Photographs
Video waste walks
Interviews
Video
Timing processes
Spaghetti diagrams
Audit planner
Dot voting



How will you do it in your theatre?

The model for improvement





2. *The three questions*

Before you start creating your Well Organised Theatre, make sure you are clear about the approach you are going to take.

Take time to read the module fully, so that you understand the full scope of what is involved. Then ask the team to work through the following questions. Many ideas that will help are given throughout the module.



1. What are we trying to accomplish?

Improvement requires setting aims, you will not improve without a clear and firm intention to do so. Your aim for the Well Organised Theatre module should be time-specific and measurable.

You have already developed a vision for your programme, ask the team how the Well Organised Theatre module will contribute to achieving your vision.

Record your thoughts on a flipchart. Once agreed communicate the module aim on The Productive Operating Theatre notice boards showing how it links to your vision.

2. How will we know that change is an improvement?

As part of Knowing How We Are Doing, you will have agreed a balanced set of measures across the four programme aims.

How will your improvement from the Well Organised Theatre be represented in the balanced set of measures?

If it is not explicit you will need to include an 'intervention' level measure that will capture the impact of this module. The suggested measures sheet and driver diagrams in Knowing How We Are Doing will give you some ideas of how to do this.

Remember your measures can be both qualitative such as asking staff their opinions, and quantitative such as how much time, space or money you save.

To explore this further run a mini measures workshop with the team for this 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
- understand how the Well Organised Theatre fits into your agreed balanced set of measures
- identify measures for the module
- decide how they will collect, analyse and review their information regularly
- complete a measures checklist for the module.

Once agreed start collecting, analysing and reviewing your data.

3. What changes can we make that will result in improvement?

Having read the module and agreed on a clear aim, start to think about the changes you could make within your department that will result in improvement.

You will now have an overall idea of what you want to achieve from the Well Organised Theatre module. With your team, work through a number of **Plan Do Study Act** cycles carrying out 5S activities across the whole department.

Lots of examples of changes that have been shown to work are given in the next section – Plan.

'When we completed our Well Organised Theatre and the changes we made were still in place months later we felt so proud of ourselves.'

Janet Henry – theatre manager/matron, West Middlesex University Hospital NHS Trust

'Whilst emptying the room, hundreds of unsterile screws still in the original wrappers were found along with an empty, unused instrument container. They were returned to the company who scanned each item and have credited us with £10,000. We will be receiving 2 state-of-the-art combination fragment sets used to repair small broken bones.'

Janet Henry – theatre manager/matron, West Middlesex University Hospital NHS Trust

Drainage Bags x 2

Size

12 x 2

14 x 2

16 x 2

Sump Tube x 2

Nasal gastric Tubes

The three questions – milestone checklist

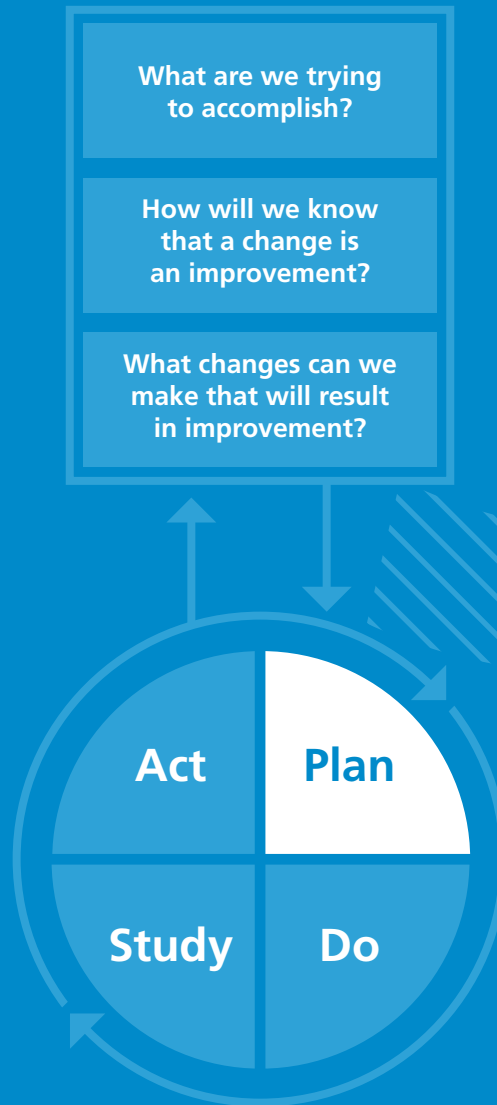
Move on to **Plan** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Read the module	
Decided and communicated a clear aim for the module	
Held a mini measures session	
Agreed how you will measure your impact	
Thought about what areas you would like to change	

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. Plan



There are a number of steps required to prepare for a 5S activity

1. Choose an area

The decision about which area to start with should be based on two factors.

Impact

Is there an area that has to be addressed immediately because of safety issues?

- Look through your last 20 incident reports to see if there are any trends in location or accident type.

Is there an area that causes the most frustration for staff?

- Use the interviewing tool from the Toolkit combined with dot voting to find the top frustrations.

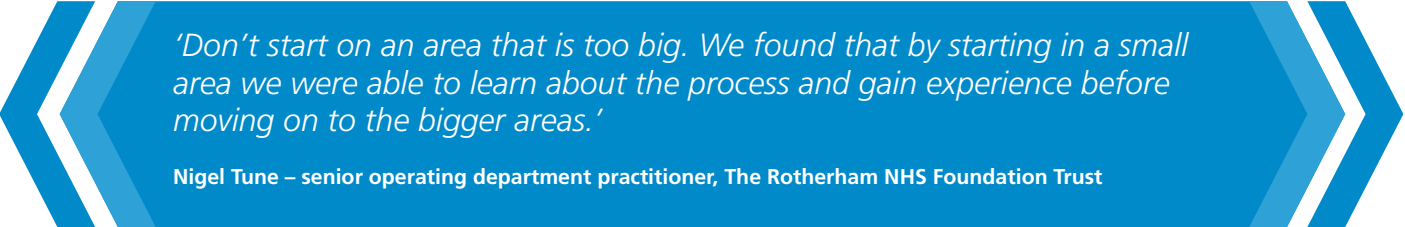
Where can you have the most impact on your measures?

- Use activity follow and waste walk activities to see what areas staff are spending time in and where there are areas of waste which can be tackled.

Resources and experience

Do you have enough staff experienced in 5S to start with something big, eg surgical kit store room, a place used by many people. If not it is better to start with a smaller area, which will let the team develop their 5S skills, eg theatre sluice or anaesthetic storeroom.

Use your champions to lead the changes.



'Don't start on an area that is too big. We found that by starting in a small area we were able to learn about the process and gain experience before moving on to the bigger areas.'

Nigel Tune – senior operating department practitioner, The Rotherham NHS Foundation Trust

2. Decide on a team

The programme team need to identify a team for this module. This should include champions identified in your visioning workshop, but they will need support from the programme leader and service improvement expert.

Consider the following roles:

- theatre manager
- theatre sister
- improvement facilitator
- other available staff depending on the area:
 - theatre nursing staff
 - anaesthetic practitioners
 - operating department practitioners
 - auxiliary staff
 - materials management
 - pharmacy
 - porters.

3. Learn about the Well Organised Theatre principles

Introduce 5S to the team using the 5S game (see the Toolkit). Playing the 5S game with all staff involved will give them a better understanding of what 5S is, why you are doing it and what you will get out of it. Repeat the game if new staff join the team.

Understand the three-second rule.

- Storage and equipment should be arranged and signposted so that anyone can find what they need within three seconds. This can be done through colour codes, prominent labels, photographs, etc.

4. Talk to the executive leader and other departments

- Ensure executive support for this area of work.
- If required, discuss a budget for any work needed to be done by the facilities department, eg moving shelves.
- Involve estates in your planning so they are aware you may need their services and understand why.

'Our executive leader came to support our first 5S project: this really motivated our staff to complete the job.'

Janet Henry – theatre manager/matron, West Middlesex University Hospital NHS Trust

5. Record how the area currently looks and its function

- Use photographs and video as described in the Toolkit.
- Film the area being used as early as possible to capture it in the present state.
- Use spaghetti diagrams as described in the Toolkit to identify wasted motion.

6. Identify the main process performed in the area (the area should be designed to support the process – NOT the other way around)

- Time the process using the timing tool (see the Toolkit), eg how long it takes to lay up a trolley or to find stock and equipment.



'From the volunteers that attend our first 5S session, we identified champions who took active roles in the exercise. They have now gone on to lead 5S sessions, identify other areas to 5S, recruit the teams to do the exercise and lead on the audits.'

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

7. Understand how the area is used

With the team, review the information (videos, photos, timing of processes you have collected) to help you understand how the area is used before you begin your 5S.

As a team consider the following questions:

What is the intended purpose of the area?	<ul style="list-style-type: none"> • Is this the best use of the area? • Is it being used for something different?
Are things easy to find?	<ul style="list-style-type: none"> • Do you see risks to patient and staff safety? • Are staff struggling to carry out a particular task? • What does our environment say about us? • How long does it take to find an item? • How often is an item found in the wrong place?
Does the layout of the area make things easy for the staff?	<ul style="list-style-type: none"> • Is the area set out to make it easy to use? • Are high usage items located together in the most accessible place? • Are staff walking the most efficient route when doing the most common tasks?
What is stored in the area?	<ul style="list-style-type: none"> • Do you have overflowing stock on top shelves or floors? • How much stock do you have and what is its value? • How often do you find out-of-date products?

Tip: Write your answers on a flipchart so everyone's thoughts can be seen. The page can be posted in the 5S area to remind the team where they started.

8. Agree a clear goal / aim for your activity

Now you understand how the area is really used, decide what you are going to improve:

- stock reduction
- time taken for common tasks
- eliminate stock-outs
- improve manual handling
- improve housekeeping.

What are you going to measure so that you know if your changes are an improvement?

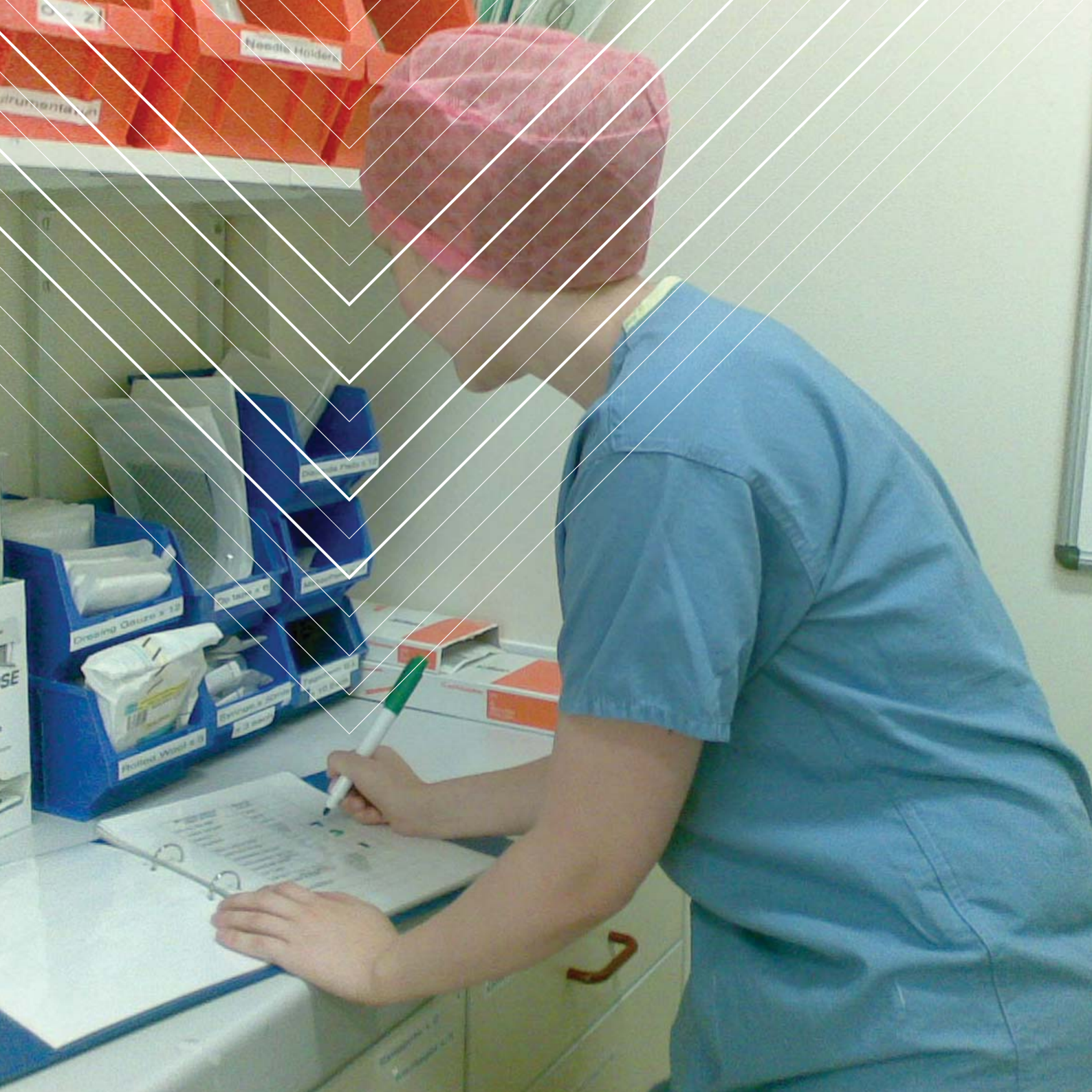
9. Communicate to all staff who use the area

Make sure everyone in the department and those in associated departments who use the area are aware of your planned 5S activity. Tell them why and when you will be doing it. This will give them the opportunity to get involved or at least be aware of potential disruption while you implement 5S.

10. Review ideas that have worked

The following pages show examples of Well Organised Theatre activities carried out by trusts implementing The Productive Operating Theatre. Look through them with your team and use them to stimulate discussion and ideas about how you can improve your own area.

Look for good examples of well organised environments already in place within your theatre suite and in your wider organisation. Consider visiting wards that have undertaken work in The Productive Ward as some of their ideas for general storage areas may be transferable to your theatre.



Examples of 5S

Example 1: confined storage area – anaesthetic storeroom

West Middlesex University Hospital NHS Trust

Aim: stock reduction, improved manual handling and improved layout.

Before:

- boxes piled high on the floor and on top of cabinets
- regularly used items often difficult to reach
- items overstocked, drawers full
- some key items out of stock
- no clear labelling
- rubbish on the floor.



Sort – remove unwanted and out-of-date stock



'More than £500-worth of out-of-date items were removed from this tiny storeroom. Other items were given to other areas or returned to the company in order to reduce the stock level.'

Set and shine – clean the area and use visual management to support the *three-second rule*.



'It is important you work closely with procurement to agree new stock levels as all your hard work will be undone if the old stock levels are still in place.'

Standardise – use visual management to support the *three-second rule* and to show how the room should be maintained.

Colour code	Meaning/ Category
Yellow/ Green	IV products
Blue	Respiratory Products
Red	Blood Products
Yellow	Sundries



Standard

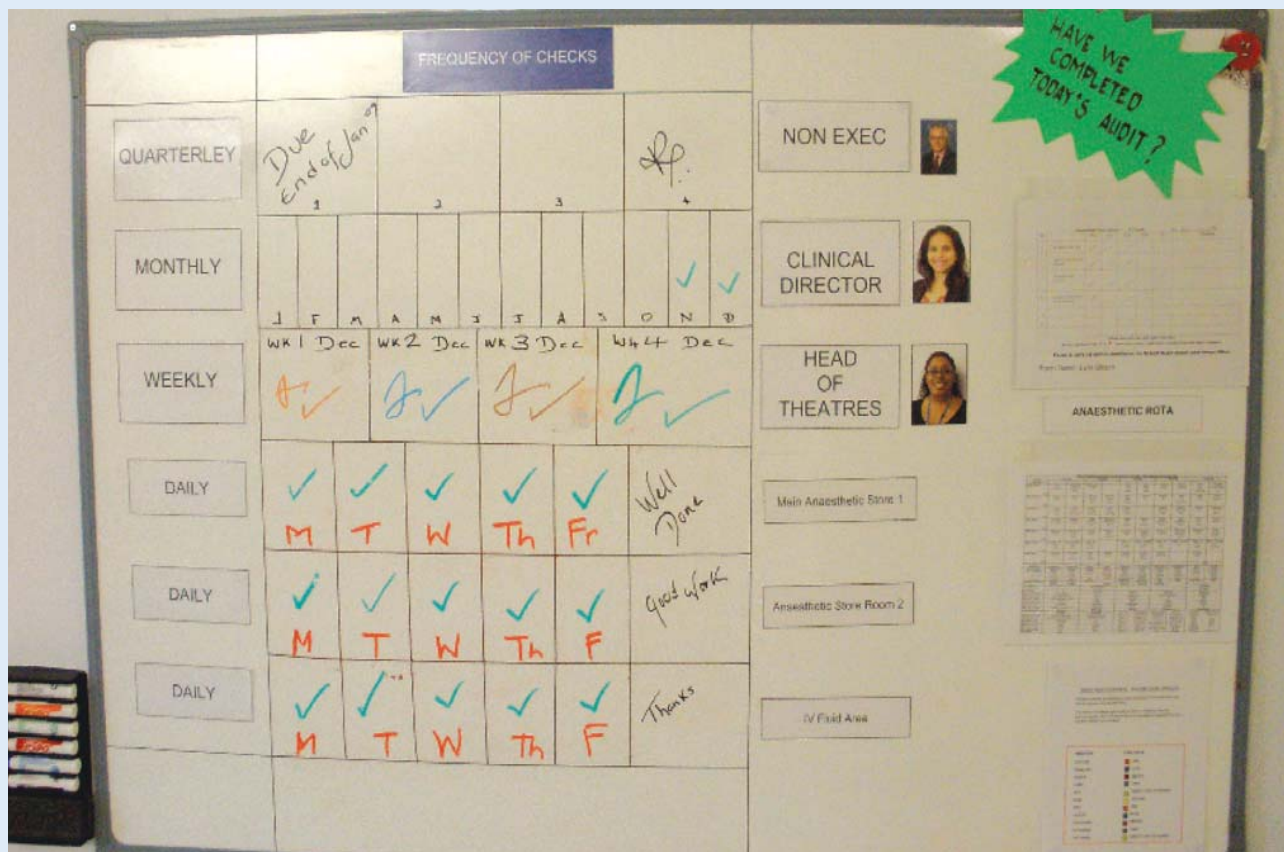
Anaesthetic Store Room 2

- No boxes on the floor
- Open box must have lid removed
- All empty boxes removed
- Complete notice board of missing items

Room Owner: Lynn Gibson

Last Updated 27/11/2005

Sustain – maintain the new improved organisation, measure the improvement.



'The board was placed in a high profile place close to the theatre manager's office. It constantly showed whether the daily audits were being carried out.'

Example 2: Sterile pack storage room

Heart of England NHS Foundation Trust

Aim: reduce clutter, improve lay up time, reduce motion and transport and improve layout.

Before:

- items hard to find
- general clutter
- items overstocked.



'This room had always been chaotic causing frustration to the staff...'

Sort – remove unnecessary items.





Set and shine – clean the area and lay it out to support common tasks.



Standardise – colour code sections and number / label sections of shelving to create a standard and communicate it to staff.



Sterile Pack Room – 5S Standard (DRAFT 2)



Standards:

- The pack room must be left clean at all times
- All items in the room have an identified space and must be placed directly in that place
- Any new items will need to be added to the inventory and a specific storage place identified
- No additional items will be left in the room
- All packaging will be disposed of by the person who unwraps an item
- Cardboard must be flattened and placed directly in the disposal room by the person who empties a box
- If you observe a colleague failing to follow the standard – please diplomatically point this out to him/her
- The pack room will be audited on a regular basis by members of the team
- There is an alphabetical list at the front of the room as a guide if the location is not immediately obvious.

Visual Colour Standards

	General
TBC	Day case
	Urology
	Orthopaedic
	Emergency

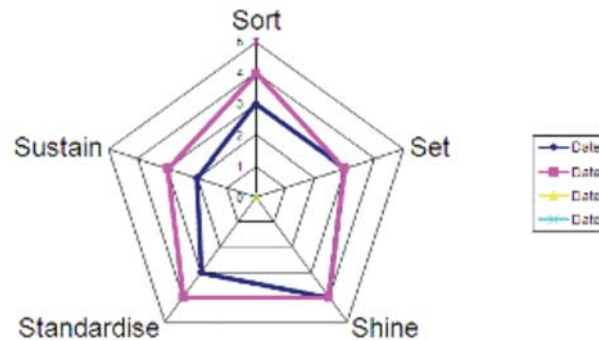
Sterile Pack Room standard_061104
13-01-2009

'This was impressive to see. The three-second rule was in place and it was obvious where the trays were to be stored due to clear labelling and numbered racking.'

Sustain – conduct regular audits and decide who is responsible for maintaining the area.

THEATRES 5S AUDIT SHEET											
Element	Responsible Name	Area	Waste	Order	Shine	Set					
No.	Audit Item	Score	Score	Score	Score	Score	1	2	3	4	5
1S - SORT											
1	Is working area clear?	5	5								
2	Are obstructions, waste, tools and others, with no use, removed from area?	5	5								
3	Are tools, materials and equipment with obsolescence, removed from area?	5	5								
4	Are all excess or obsolete material and equipment, removed from the area?	5	5								
5	Are wasted materials, removed from the area with all out of date material removed?	5	5	5	5	5	5	5	5	5	5
2S - SET											
1	Are there clear standards (labels, photos, stock levels) etc?	5	5								
2	Are regularly used items of equipment kept in an orderly, standardised and labelled manner?	5	5								
3	Are items identified and labelled with the name of the item, the date of the next check and the name of the person responsible for the next check?	5	5								
4	Are equipment and materials, with no obsolescence, in the area, and no excessive material?	5	5	5	5	5	5	5	5	5	5
3S - SHINE											
1	Are areas clean, with equipment tidy and well maintained?	5	5								
2	Are walkways and storage areas, kept clean and free of clutter?	5	5								
3	Are areas kept clean and tidy in general?	5	5								
4	Are regular cleaning schedules in place?	5	5								
5	Is all labelling and signage reading correct and up to date?	5	5	5	5	5	5	5	5	5	5
4S - STANDARDISE											
1	Are people from the standard, what is required and how to reach the standard, from all?	5	5								
2	Are all materials, tools, equipment and other standardised items, from all, with the same name, and the same standard?	5	5								
3	Are the area 5S standards, standardised, from all?	5	5								
4	Is there a method of achieving the standard?	5	5								
5	Are the area emergency, with a safety, when standardised, and no standard?	5	5	5	5	5	5	5	5	5	5
5S - SUSTAIN											
1	Is 5S training up to date for all staff in area?	5	5								
2	Is there a 5S audit, with a plan, and a schedule, for all staff in area?	5	5								
3	Are all materials, tools, equipment and other standardised items, from all, with the same name, and the same standard?	5	5								

5S Audit summary



'Conduct regular audits and plot the scores. Publish results to show improvement trends and generate friendly competition between areas.'

Example 3: Sluice room

Royal Devon and Exeter NHS Foundation Trust

Aim: create space, reduce stock and improve replenishment.

Before:

- stock above head height
- shelving dangerously positioned
- out of date stock
- no clear labelling.



'We started off small, in a theatre sluice which was overstocked and cluttered with items which hadn't been used in a long time.'

Sort – remove unnecessary items.



Set and shine – clean the area and lay it out to support common tasks.



Standardise – use visual management to communicate standards. Specify standard stocking levels to provide a basis against which to audit.



'In the short-term this is good. But long-term it can be seen that the shelves need to be replaced, which means the facilities department needs to be involved.'

Sustain – audit against standards to maintain improvements.

Allocate an individual to take ownership of an area, they will provide the drive to keep up all the improvements this work has achieved and to audit the area regularly.

Consider a buddy system between individuals who are responsible for different areas, this will provide cover when they are on leave.

Weekly 5 S Audit Sheet			
Theatre: <u>8th Audit</u> <u>4-1-08</u>			
No	Audit Item	Score	
		"Yes"	"No"
Score Values:		1	0
1S - SORT			
1	Are all the items stored in this area definitely required?	1	
2	Are all the items 'in date' and has stock been correctly rotated?	1	
3	Is there any overstocking?	1	
4	Have all items not required been re located or destroyed?	1	
5	Are areas free of clutter?	1	
		5	Score
2S - SET			
1	Are all items found in their correct locations?	1	
2	Are frequently used items easily accessible?	1	
3	Is there a clearly identified area for storing infrequently use items?	1	
4	Are all locations clearly labelled?	1	
5	Do people uphold the standards of the area?	1	
		5	Score
3S - SHINE			
1	Are areas tidy, with equipment in correct places?	1	
2	Is cleaning done on a regular basis?	1	
3	Do areas look clean and tidy in general?	1	
4	Are regular cleaning schedules in place?	1	
5	Are people signing and dating the cleaning rota?	0	0
		4	Score
4S - STANDARDISE			
1	Are all areas clearly labelled in the same format?	1	
2	Does everything have a specific location?	1	

THEATRE 8 SLUICE STOCK UP LEVELS/LIST			
LOCATION:	STOCK	LOCATION:	STOCK
SINK		SHELVES BY DOOR	
Prepzyme Foam	1	Wipes	1
Prepzyme Liquid	1	Hand Towels	1
Washing up liquid	1	Cunty Bags	1
Tiran Sanitizer	1	UNSTERILE GLOVES	
Chlorox Tablets	1	Small	1 box
Fly Spray	1	Medium	1 box
		Large	1 box
CBD UNDER SINK	1	Surgeons hoods	1 box
Prepzyme Liquid	1	Blue Masks	1 box
Prepzyme Foam	1	Small Yellow Bags	1 Roll
Alcohol Gel	1	Apron	1 Roll
Hand Soap	1		
SPECIMEN POTS		CBD IN SLUICE	
Small Formaline pots	5	White Bowls	5
Medium Formalin pots	2	Blue Bowls	1
Large Formalin/small bucket & lid	1	Yellow Bowls	1
Frozen Section Pots	10	Pillows	2
Sterile Specimen pots (Glass)	5 sets of 2		
Sterile pots for culture	10	ON TOP OF CBD	
		Receptal boxes	2
SHELVES BY SINK			
J Cloths	To the line		
Kim Wipes	To the line		
Inco Pads	To the line		
Sterile Bowl liners	4		
Bag Ties	15		
Blue /HSDU bags	1 Roll		
Large Black Bags	1 Roll		
Large Yellow Bags	1 Roll		
Suction Filters	12		
Cascade Tubing	10		
Blue Suction Liners	6		
White Suction liners	2		
Mop Heads	5		
Green patient property bags	5		

'This can be the hardest part. It doesn't have to be the team leader. Just delegate a member of your team who will take ownership.'

Lessons learned

- When project work involves removing cupboards it may be necessary to 5s and then 5s again after the facilities work is completed.
- If the area is small don't have too many people involved in the physical work.
- Remember the facilities department will have other commitments, so book them as soon as possible.
- There may be delays from the suppliers of the plastic storage boxes, so order well in advance.

Plan – milestone checklist

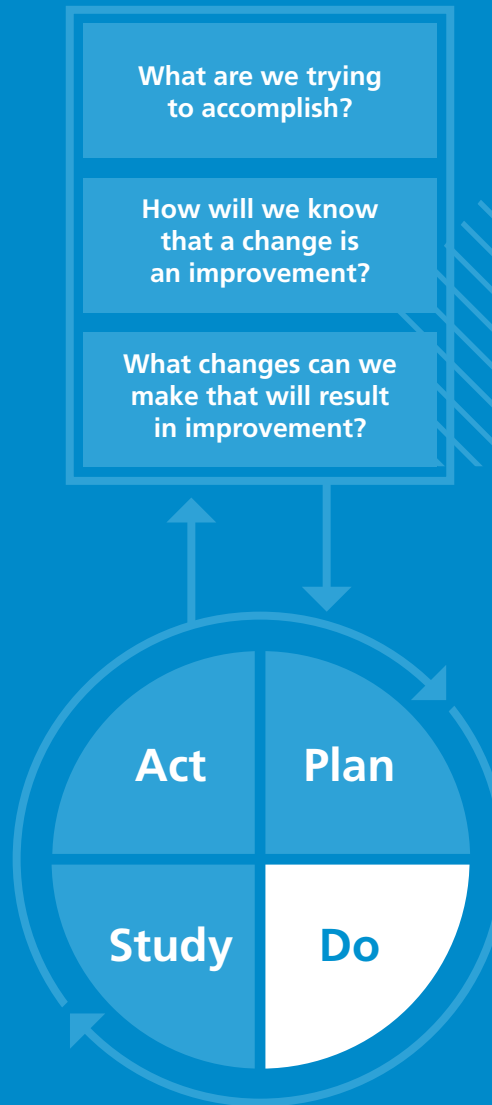
Move on to **Do** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Chosen an area	
Decided on a team	
Played the 5S game with the team	
Talked to the executive leader and the facilities department	
Recorded how the area currently looks and its functions	
Identified the main tasks carried out in the area	
Understood how the area is actually used	
Agreed a clear goal and put in place ways to measure it	
Communicated the plans	
Reviewed ideas that have worked	
Looked for ideas from other areas within your organisation	

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?	



4. **Do:** Sort – Set – Shine



5S What is it?

5S is an approach to simplify the workplace and reduce everything in the **right place**, in the **correct amount**, at the **ready to go!** **Save time, space, energy, interruptions**

5S What are the steps?

1. **Sort** – remove what is not needed.
2. **Set** – agree what goes where and ensure easy
3. **Shine** – keep environment clean, clear and well
4. **Standardise** – an agreed, consistent process
5. **Sustain** – an approach to audit reviews and c
improve.

5S Who is involved?

everyone... Champions will be trained to help support i
t all staff will be involved in future 5S activities and s

A reminder of the 5S process

During the **do** stage of the module the team will work through the first three steps of 5S:

- **Sort**
- **Set**
- **Shine**

The 5S steps

1. **Sort** – remove what's not needed
2. **Set** – right thing in the right place
3. **Shine** – keep things ready to go
4. **Standardise** – an agreed, consistent process
5. **Sustain** – continually improve

Sort

Work and storage areas in theatres tend to evolve over time. More often than not, things just accumulate; they are not used very often or are being kept 'just in case'.

Cluttered and messy work areas are not just an eyesore, they waste:

- time searching for things
- space.

In some cases, areas have such a build-up of clutter they become a health and safety risk. Sorting makes you get rid of unnecessary items.

'Be ruthless. If you haven't used it in a while get rid of it!'

The process

1. Use the 5S inventory sheet to record the location and quantities of every item in the area. As you log each item put a tag (or sticky note) on it, so that you know you have accounted for it.

The 5S inventory sheet is available at www.institute.nhs.uk/theatres_resources

5S Inventory Sheet

NHS

Institute for Innovation and Improvement

Inventory sheet number: _____

Department:

Area:

		Current			Proposed		
Ref #	Item description	Location	Quantity	Cost	New location	Quantity required	Cost

Don't skip this! It is important you are able to produce evidence of the savings this process can generate.

The inventory sheet provides evidence of your change and becomes your bargaining chip. It is especially relevant for 5S activities where stock reduction and freeing-up space is a priority.

'You will be asked again and again how much you saved. It is important to have a record of what you took out and what you put back.'

2. Identify two zones near the area where you are implementing 5S.

This could be in the same room or just outside. Each of the areas needs to be at least the size of a desk as the team will use them to sort through the contents of the area. Label the areas:

- remove / definitely go
- can't decide.

3. For every item on the inventory sheet ask the following questions:

Do we really need it?

- What is it used for?
- How often do we use it?
- When did we last use it?
- Is it still valid (in-date, relevant, latest issue)?

Based on your answers, put each item into one of the following groups:

- **must stay**
- **remove / definitely go**
- **not sure**

use a green highlighter to mark off the items you decide to keep

use a red / pink highlighter to mark off the items that you are removing

use a yellow highlighter to mark off the items you are unsure about

Put the all the remove (**red**) and not sure (**yellow**) items into your designated areas.

'Don't be put off or daunted by pulling everything out. This process can take a very long time, in some areas a lot of stuff has accumulated over a long time.'



'A good time to do 5S is at the weekend when the theatre suite is quieter and areas aren't being used. This will take some arranging but the outcomes are rewarding as the team involved get the job finished because they want to be there.'

What to do next with the items



Green

- Move on to **set** stage.



Red

- As many items as possible should be given to other theatres or returned to stores.
- Anything broken or expired should be disposed of following hospital waste and recycling policy.
- Add up the money your team has saved on the inventory sheet, this includes items that have been returned to stores or given to another theatre.



Yellow

- Store these items in a safe place for one month.
- Only re-introduce these items if someone has requested them.

Sort – milestone checklist

Move on to **Set** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Played the 5S game (if there are new team members)	
All items in the chosen area recorded on an inventory sheet	
All items have been discussed with the team and each item tagged as either must stay, unsure or definitely go	
All items marked 'definitely go' have been removed or returned	
All items marked 'unsure' have been safely stored away	

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?	

Set

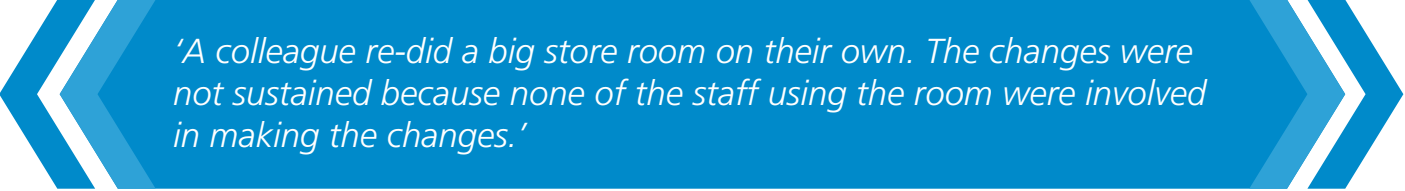
Time is wasted searching for things. Setting means you won't spend time looking for something that is not there.

Having a place for everything means that you can easily:

- see what you need when you need it
- see if something is missing
- maintain these standards (once you standardise).

The process

- Group items by use / frequency of use / size to reduce time spent collecting items used for the same or similar purposes.
- Work with the team to identify the best locations for each item – so you do not standardise in the wrong place! Use your spaghetti diagrams to help you do this.
- Decide a new layout to trial.
- Use visual management techniques to make the new locations of items clear – use coloured tape, photographs or colour-coding.
- Communicate the changes to all staff who use the area to prevent it taking even longer to find something because it now has a different (though fixed) location. Remember to include colleagues from other departments who also use the area or invite them along to the area so you can explain what you have done and why.
- Place a feedback sheet in the area for staff to write their comments – especially those who haven't participated to make them feel involved.



'A colleague re-did a big store room on their own. The changes were not sustained because none of the staff using the room were involved in making the changes.'

Using spaghetti diagrams to help set

Spaghetti diagrams are ideal to help decide how to set an area. You may have already created a spaghetti diagram of how the room is currently used as part of your plan stage. Here is an example of what you need to do:

- draw out or obtain a plan drawing of the area your team is working on
- plot a member of staff using the area on the plan by marking where the person moved
- this can be done by following the staff member or by watching the video you made during the plan stage
- measure the distance travelled and write it on the plan.

Use your spaghetti diagram to:

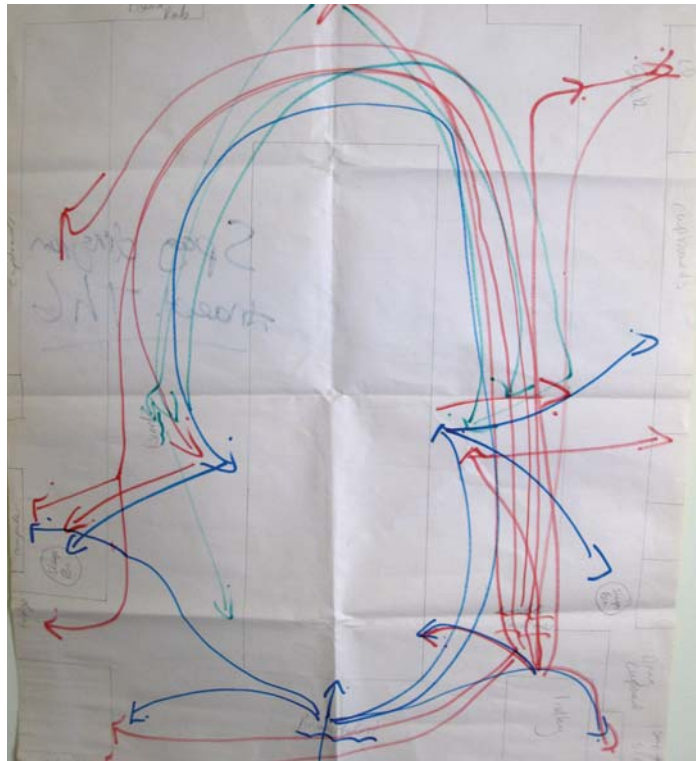
- work with the team to create a better way of setting out the room so movement is reduced
- plot the new layout and its impact on the users of the room in a different colour on the plan, as below.

Remember, you don't work in a 2D world

It is easy when working with spaghetti diagrams to forget the world is not flat. It is important to set your area by considering how the area works vertically, not just horizontally.

Rules for setting items:

- fast moving items close to the door
- heavy items stay close to the floor
- slow moving items towards the back
- lighter items go higher in the stack.



Additional considerations

- Frequently used items should be closer to where you need them.
- Items used together should be kept together.
- Items may need to follow safety guidelines with regards to temperature, light and ventilation.
- Your new layout must comply with manual handling standards.

Marking locations: make the locations of items clear using visual management. This can be done by using coloured tape, photographs or colour-coding.

Infection control: always check with infection control about the use of tape. Explain it is a temporary measure and ensure that, as soon as possible and when staff are happy, the markings are made permanent.

'Due to infection control, we changed our tape every month during our trial. Each time we did it we changed the colour of the tape so that everybody could see it had been changed.'

Janet Henry – theatre manager/matron, West Middlesex University Hospital NHS Trust



Visualisation – the three-second rule

Use visual management to achieve the three-second rule as you implement 5S in your area. Your goal is to communicate the status of an area or process to any individual so that they can understand it within three seconds.

Working with this aim in mind helps guide and direct activities to keep communications clear and simple.

Example of good 5S and visual management

Where it is



Which trolley is being used

'This means everyone using the area will be able to see within three seconds what they require.'



BLUE BOWLS X3

GLOVES X1 OF EACH

HAND GEL X1

MOP HEADS X2

SWAN BAGS X1

PATIENT PROPER BAGS

SPRINGS X1

YELLOW CLOTHES

KIM WIPES

TOILET PAPER

BLACK BAGS X2

INSTRUMENTATION BAGS X3

TOILET

YELLOW BAGS X2

TOILET BAGS X3

Y SUPPORTS X3 PAIRS

PENKID SECTIONS LAYERS X4

WALL BOLTER LAYERS X4

TUBING X4

WHITE SECTION LAYERS X4

PT X4

SECTIONS SUPPORTS

PENKID BOLTER X3 PAIRS

WALL BOLTER

Set – milestone checklist

Move on to **Shine** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Played the 5S game (if there are new team members)	
Items grouped by use, frequency of use or size	
Best location for each item identified using spaghetti diagrams	
New layout decided	
New locations for equipment marked as suggested	
Changes to the area communicated to all staff	

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?	

Shine

Now that all of the items in your chosen area have been set, you and your team can clean to create a work area to be proud of.

Remember, if there are any new team members you need to play the 5S game with them.

The key principles of shine

1. Infection control: follow your hospital guidelines to establish the best cleaning tools and procedures for your chosen area.
2. Cleaning shows the outside world that you and your team are in control of the chosen area.
3. Getting stuck in while cleaning allows for close inspection of the area. This helps to highlight any faults.



'Take the opportunity to get medical equipment repaired and ready for use before placing back into the shined area.'

The process

- Clean the area thoroughly involving as many people as possible, eg theatre staff, senior staff.
- Ensure your cleaning follows hospital policy with regards to infection control.
- Talk to external people, eg materials management, pharmacy, if you would like their help in getting something regularly restocked.
- Talk to estates if you think major changes need to be made to a room, eg removal of sinks, additional outlets.
- Keep equipment ready to go:
 - understand current maintenance schedule and responsibility for equipment
 - restock, eg commode pans are available when needed.
- Agree who will help to maintain the area and the equipment on an ongoing basis.
- Senior leadership should be on the schedule at least once a month.

Tip: Prepare the team for likely frustrations – such as delays in minor estates work and consumables, eg new storage boxes.



Shine – milestone checklist

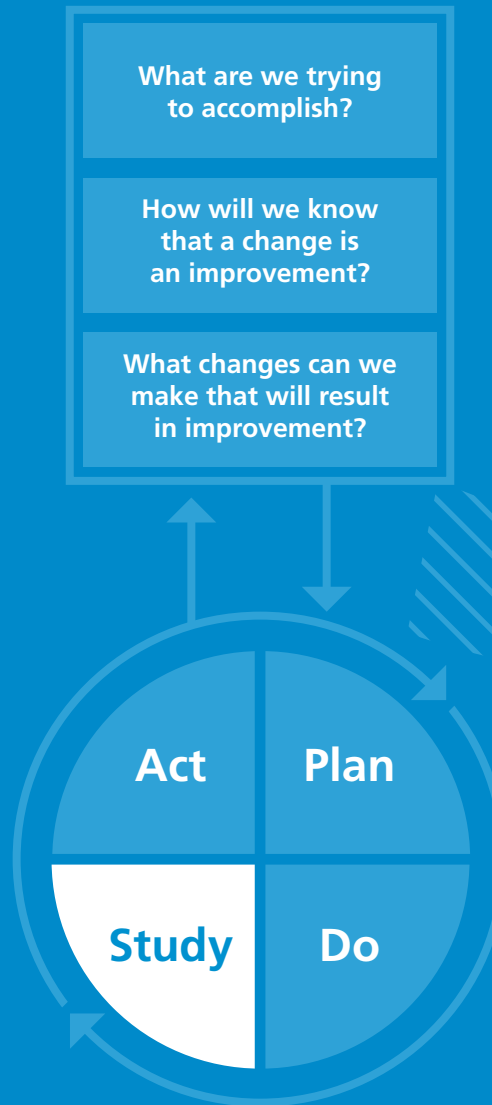
Move on to **Study** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Played the 5S game (if there are new team members)	
Target area cleaned	
Talked to estates if needed	
Talked to external people if needed	
Broken equipment repaired	
All equipment made <i>ready to go</i>	
Roles and responsibilities of new cleaning plan discussed with the team	

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?	



5. Study



Study – the new layout

What are we studying?

- Do the changes make any difference?
- Are staff following the changes?

Before the test starts

- Determine the period for the test. It should be:
 - long enough to allow failures
 - short enough to change and retest.
- Identify additional temporary data collection methods as required, eg five minutes at a theatre team meeting or by leaving flipcharts up in the area to collect feedback.
- Set the start and end dates of the testing period.
- Inform all staff personally at theatre team meetings or at audit sessions, post notices on your Productive Operating Theatre notice boards and put messages in your theatre message book.
- Agree the audit checklist, see the Sustain section.

During the test

- Run both regular and random audits.
- Get daily feedback from staff and patients on how they feel the new layout is working.
- Take 'after' photos and video during the test period.
- Invite visitors from senior leadership as appropriate to view the new layout and complete an audit checklist.

Tip: *All changes must be agreed as a team. Changes made alone always come back to haunt you.*

Evaluate your results

- Review audits to see if the test has been successful.
- Review feedback from staff as well as the before and after photos and videos.
- Decide where there are still opportunities for improvement and if there are additional changes that can be made to the area, for example:
 - a piece of equipment kept in the area that wasn't used
 - the layout can still be improved.
- Update or complete a new inventory sheet. Compare this with the first inventory sheet to work out the difference in the number of items held in the area and their value.
- Assess the impact in terms of time:
 - repeat the timings you made in the prepare section and communicate the time saved.

'You may not get this right first time but your results may highlight where you could make additional changes. If this is the case you will need to test the impact of your new changes: repeat this testing cycle until you are happy with the new layout.'

Claire Bradford – programme leader and theatre matron, Royal Devon and Exeter NHS Foundation Trust

Theatre 1 Operating Theatre 5s Checklist

Aug 09

Week Commencing: 27/7/09		Mon 27 Date:	Tues 28 Date:	Wed 29 Date:	Thurs 30 Date:	Fri 31 Date:	Comments
1	Theatre equipment as per list	✓	✓	✓	✓	✓	
2	Theatre cleaning schedule up to date	-	-	-	✓	✓	
3	Equipment is allocated places	✓	✓	-	-	✓	ward bed x 2 in Th.
4	Consumables / Gloves stocked up	-	-	-	-	✓	
5	Gratnell trolley stocked up	-	-	-	-	✓	
Matron (Janet Henry) weekly check:							

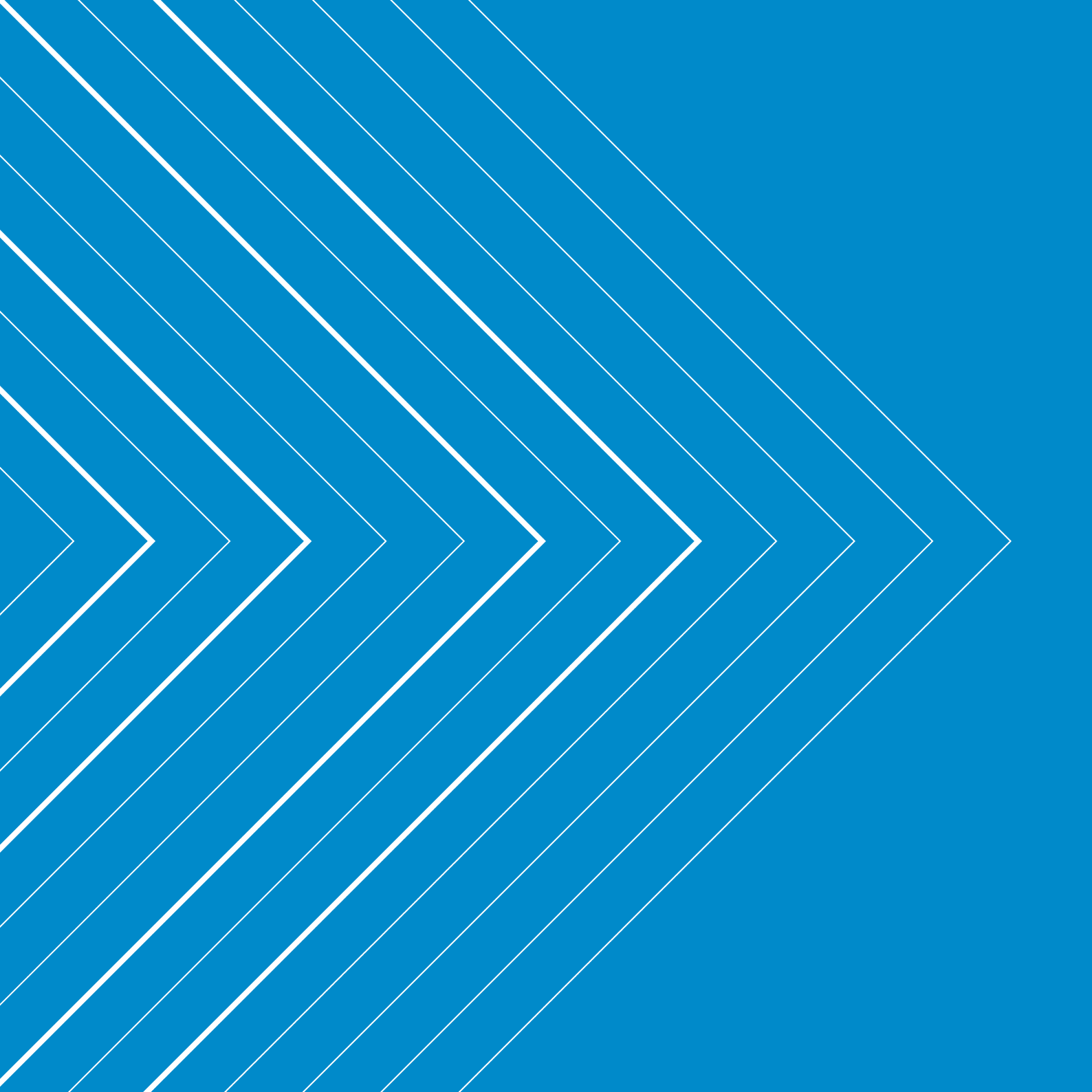
Person responsible for this area: Jayne Cabillian

Study – milestone checklist

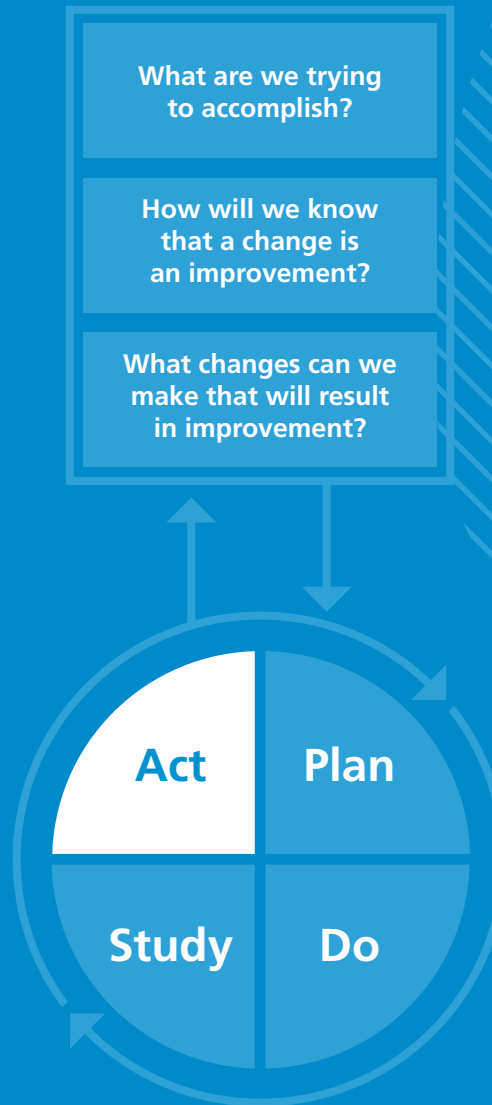
Move on to **Act** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Decided on the test period	
Communicated with all staff	
Audit checklist agreed and responsibility assigned	
Audits reviewed	
Feedback from staff reviewed	
Before and after photos and videos reviewed	
Inventory sheet updated and savings identified	
Additional opportunities for improvement discussed and decided upon	

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?	

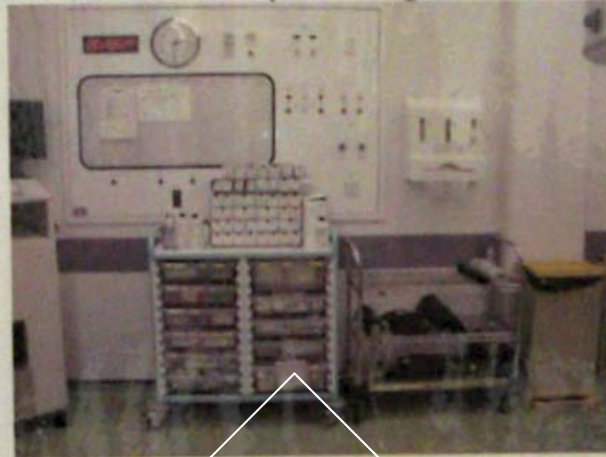


6. **Act:** *Standardise – Sustain*



Standard

Theatre 1 Operating Theatre



- Theatre equipment as per checklist
- Theatre cleaning schedule up to date
- Equipment in allocated places
- Consumables / gloves stocked up
- Grathnell trolley stocked up

Room Owners: Marina Lobo Dias
Chantelle Hiriart

Last Updated 27/11/2008

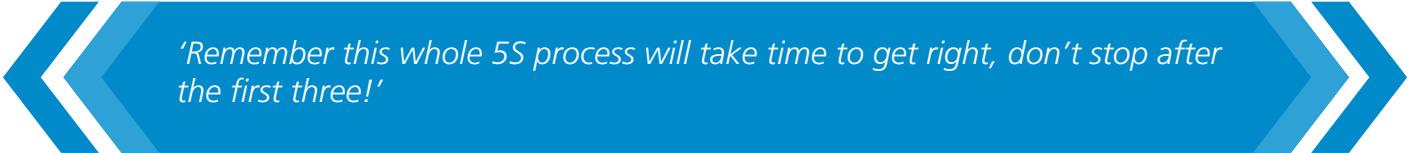
Standardise

Standardising work increases quality and efficiency. Having standards will make it easy for staff, particularly new and agency staff to see how things are done.

Standardising is about:

- agreeing the standard
- documenting the agreement
- communicating the standard
- visualising the agreement where appropriate
- following the standard
- auditing to ensure the standard is followed by everybody.

Clear, well-communicated standards are the foundations of sustained changes.



'Remember this whole 5S process will take time to get right, don't stop after the first three!'

The process

- Decide what needs to be done on a regular basis to maintain the area and how often you will do it.
- Use this information to write standard procedures. Standards can be presented in many forms, for example:
 - visual aids
 - photos
 - worksheets.
- Agree who will do the audit on an ongoing basis.
- Communicate new standards to all staff.

‘Senior staff must recognise how important it is to be involved in auditing, as it encourages staff to continue.’

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

5S AUDIT SHEET

Date:

Area:

Audited By:

Champion:

No	CHECK ITEM	DESCRIPTION	M	T	W	T	F	S	S
1	Are all items required within this room?	All items within the area have a picture board. There are no unwanted items.							
2	Is everything within a specified parking bay?	According to the floor plan							
3	Is the layout of the room suitable for identified use?	Items are set by frequency/clustering							
4	Are high standards of cleanliness maintained?	All items and the area is free from dust and clutter							
5	Is the room in a good state of repair?	All fixtures and fittings are to a high standard							
6	Is there evidence recent /up-to-date communication regarding the area?	Notice boards are up-to-date							
7	Are standard operating procedures visible?	Standardised work processes are visibly displayed and there is evidence of their use							
8	Are all standard operating procedures being adhered to?	Read and check							
9	Do staff have 5S awareness?	Check if list available or question staff							
10	Are previous audit observations actioned?	Check previous problem counter measure sheets							
SCORING: Mark 1 for YES and 0 for NO All 0 and NO must be actioned on problem counter measure sheet and planner			TOTAL SCORE:						



'Make sure everyone is aware of the changes or more time will be wasted looking for the moved items. Use all means of communication: boards, communication books, notices and the department message book.'

Example 1: communication

*This room has undergone 5S!
'A place for everything and everything in its place'*

What is 5S?

We have used what is often called the 5S model. This is a set of questions that help you think about organising the work environment, sorting a room, trolley, desk or piece of equipment.

Sort – do we need it?

Set – position things so that everyone knows where to find them.

Shine – clean the area.

Standardise – agree, communicate, document and follow.

Sustain – use as part of daily routine and continually improve.

Why 5S?

We want to make sure you have what you need, where you need it and when you need it! Less time spent looking for equipment and information means more time spent with patients.

What have we changed?

Stock has been reduced.

Time to restock and to lay-up has been reduced.

Shelving units have been revised, only information (policies and procedures) which are relevant and up-to-date are now stored.

Notice boards have been reviewed. Information displayed is structured, up-to-date and relevant. The **layout of the room** has been improved. The working environment is more productive and functional.

We welcome your comments and suggestions to make this work environment more efficient! Thank you for your cooperation.

The Productive Operating Theatre team.

Standard

Theatre 2 / 3 Preparation Room



- Work surfaces clear
- Fluid warming cabinet stocked
- Instrument trays in allocated places

Room Owners: Vicky Whitham
Tom Wicinski

Last Updated 27/11/2005

Example 2: communication

Use central communication boards in the theatre suite to keep staff apprised of what is happening in the project.



Standardise – milestone checklist

Move on to **Sustain** only if you have completed **all** of the items on this checklist

Checklist	Completed?
Played the 5S game (if there are new team members)	
Decided what needs to be done on a regular basis and how often	
Agreed which staff will maintain the standard	
Standard procedures and checklists written	
New standards communicated to the entire theatre team	

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?	

Sustain

You and your team have now sorted, set, shined and standardised your chosen area. This area will now help you deliver care to your patients instead of hindering you.

This last S is the hardest S of all.

To ensure all your hard work doesn't come to nothing, you need to ensure the new area is sustained. This is not reliant on hard work and vigilance but on a scheduled audit system designed and agreed with your team. Sustain moves 5S from being just a project to being part of everyday theatre life.

Audits are for life not just for Christmas...

The process

- Develop a 5S audit sheet as a team.
- Create an audit planner.
- Agree who will do the audits on an ongoing basis – try to involve as many people as possible, eg a rotating list of staff.
- Perform regular 5S audits.
- Display and communicate audit results.

'Just setting the standard is not enough. Auditing the facilities must become part of everyday life in your theatres department. If you want to maintain the benefits of 5S, never stop auditing.'

'The staff may lose interest if no-one is regularly checking the audit tools. It's important the audit structure is maintained. Record comments such as "Well done!" for encouragement.'

Example of an audit for an area that has undergone 5S

Audits are part of a system to maintain changes and to make sure 5S becomes routine.

The audit lists the key standards that should be maintained in the area

Barnsley Hospital NHS Foundation Trust												
5's Check List												
No	Activity	Who	When	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Comments	
1	Equipment labelled in correct position on charge	SE	Daily	Y	Y	N	Y				ALL BP MACHINES IN USE AT TIME OF AUDIT	
	Apron and glove dispenser stocked	SE	Daily	Y	Y	Y	Y					
3	Trolley and equipment free of unnecessary items	SE	Every shift	Y	Y	Y	N					
4	Trolleys and equipment clean	SE	Daily	Y	Y	Y	N					
5	No unwanted items in area	NW	Every shift	Y	Y	Y	Y					
	Replaced as required	NW	Daily	Y	Y	Y	Y					
	not return to racking	NW	Daily	Y	Y	Y	Y					
	management packs prepared and stocked	NW	Daily	Y	Y	Y	Y					
9	Check floor Sweep / Mop	NW	Daily	Y	Y	Y	Y					

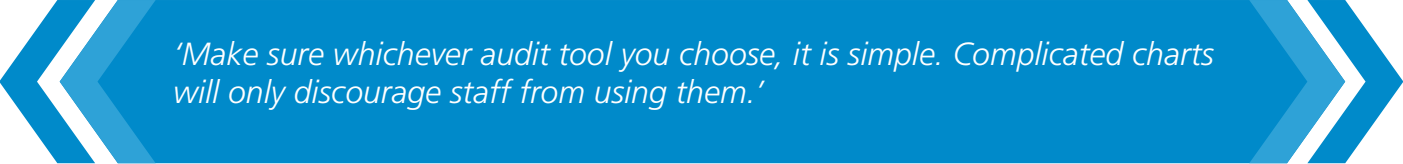
Every standard should be marked 'yes' or 'no'

Comments can be added to give the reason why standard not met

Visually review each item to ensure

Ensuring the audits are completed – audit planner

Using the audit planner (see the Toolkit) will show who needs to do an audit, when audits should be completed and whether audits are completed on the planned days. The audit planner should be displayed in a prominent position within the area.



'Make sure whichever audit tool you choose, it is simple. Complicated charts will only discourage staff from using them.'

Example of an audit checklist

FREQUENCY OF CHECKS

	FREQUENCY OF CHECKS			
QUARTERLEY	Due end of Jan ⁰⁷			
MONTHLY				
WEEKLY	WK 1 Dec	WK 2 Dec	WK 3 Dec	WK 4 Dec
DAILY				
DAILY				
DAILY				
	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
	<i>M</i>	<i>T</i>	<i>W</i>	<i>Th</i>
	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
	<i>M</i>	<i>T</i>	<i>W</i>	<i>Th</i>
	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>
	<i>M</i>	<i>T</i>	<i>W</i>	<i>Th</i>

Well Done

Good work

Thanks

NON EXEC

CLINICAL DIRECTOR

HEAD OF THEATRES

Main Anaesthetic Suite 1

Anaesthetic Suite Room 2

TV Field Area

HAVE WE COMPLETED TODAY'S AUDIT?

ANAESTHETIC ROTA

'The board was placed in a high-profile place close to the theatre manager's office. It constantly showed whether the daily audits were being carried out.'

Lynn Gibson – senior operating department practitioner, West Middlesex University Hospital NHS Trust

How can I make 5S stick?

Monitor and audit continually

- Conduct a daily audit on the areas to ensure the changes made are being followed.
- Discuss how often audits should be done and when the audit pyramid should be introduced. See example opposite.

Do not stop improving

- Get your executive leader or equivalent to participate in auditing and regular maintenance of areas that have undergone 5S.
- If you are a theatre leader discuss audit results with theatre staff at least once a month at the weekly review meeting, see Knowing How We Are Doing module.
- Ensure changes made are brought to the attention of executive leader and senior leadership.

Maintain the standard

- Encourage theatre staff to continue to find newer and better ways of doing things – it is not about doing this once and then applying standard operating procedures, but about continually improving.
- Standard operating procedures can be used to make sure the changes are maintained and to create a theatre manual.

Sustain is the most difficult part of 5S. Persevere – it will be worth it!

If the change is not working:

- **discuss with those involved**
- **re-sort**
- **re-set**
- **re-shine**
- **re-standardise**
- **re-sustain.**



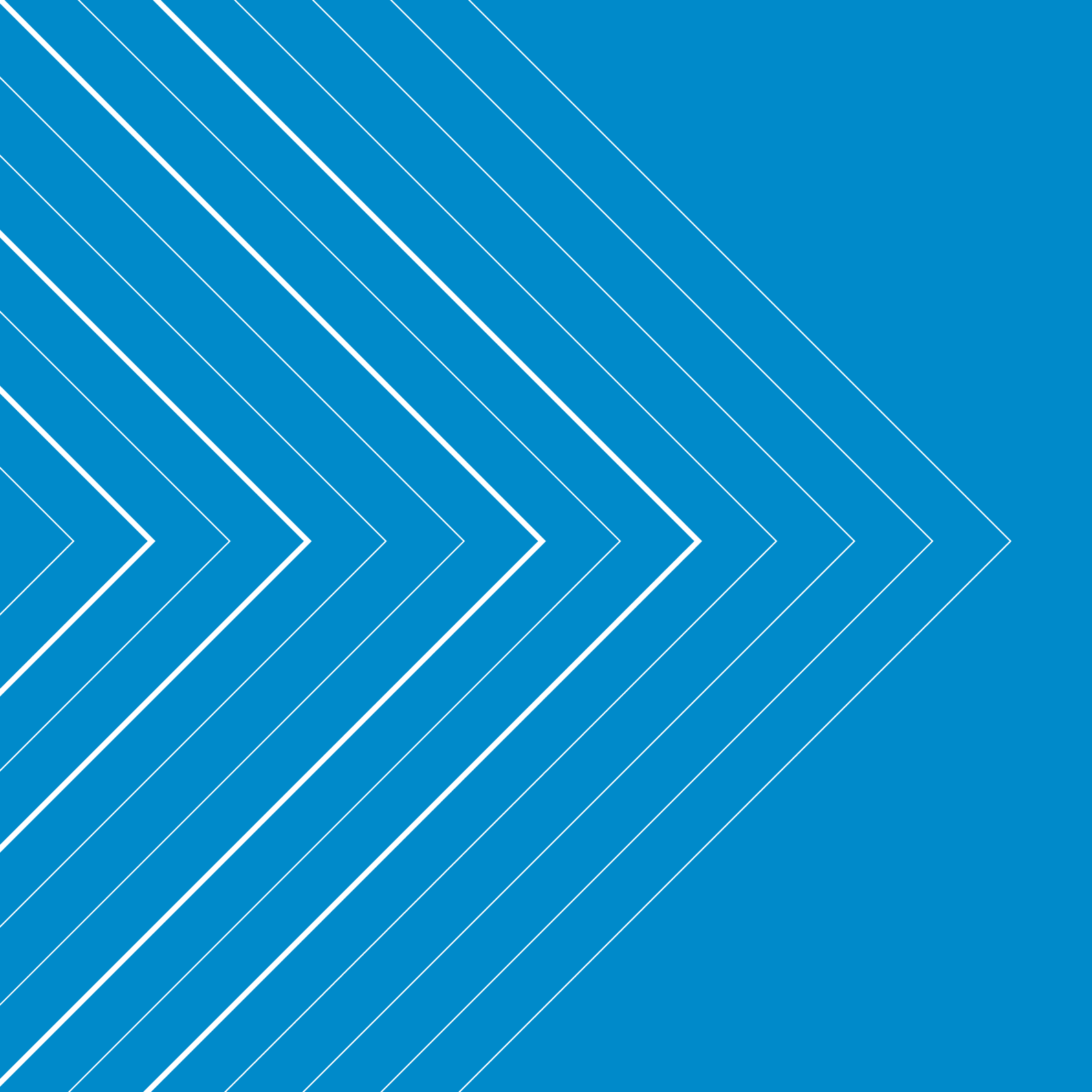
Sustain – milestone checklist

Move on to start 5S in a new area only if you have completed **all** of the items on this checklist

Checklist	Completed?
5S audit sheet developed	
Audit planner created and responsibilities agreed	
Regular 5S audits in place	
Audit results communicated	

Make sure all staff are aware of progress – discuss as part of team meeting.

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?	



7. Learning objectives complete?

Learning objectives were set at the beginning of this module. Test how successfully these objectives have been met by asking three team members the questions in the table overleaf. Ask the questions in the first column and make an assessment against the answer guidelines in the second column.

The results of this assessment are for use in improving the facilitation of this module and are not a reflection of staff aptitude or performance. If all three team members' responses broadly fit with the answer guidelines then the learning objectives of the module have been met.

Note the objectives where the learning has only been partly met and think about how you can change the way you approach the next module so the objectives are fully met. It sometimes helps to re-read the module and reflect on the experiences in implementing the module first time around.

Tip: Use the 5S game in the Toolkit to reinforce learning.

MINI VAC X 1

PATTIES X 1

BAGAJET X 2

YEATS DRAIN X 1

CORRUGATED DRAIN X 1

PANTS 2PAIRS EACH(6)

STERILE UMBILICAL CLAMP X

JAIQUES ORANGE CATHET

MEFIX 4"6"8" X1

JELONET S/M/L X1

ELASTOPLAST 2"4" X2

TAGADERM SMALL/LARGE X5

LAFA 5CM/10CM/15CM/20CM X5

BOXES 24 25 26 27

SELECTION OF STRAPPING

AIRSTRIPS

SLEEK

Question (ask the team member)	Answers for outcome achieved
Why do we use the 5S process?	<ul style="list-style-type: none"> • Structured way to create an ideal workplace • Reduces time wasted looking for things • Makes the theatre an easier and safer place to work in • The theatre department will look and feel better • Saves space • Removes the seven wastes • Creates clear standards for areas
How does 5S eradicate the seven wastes?	<ul style="list-style-type: none"> • Reduces level of stock held • Places items in defined areas • Lays out rooms around their intended use • Reduces time spent finding equipment • Standardises the changes • Sustains through continuous audit
What is visual management and how is it used in the Well Organised Theatre?	<ul style="list-style-type: none"> • Helps staff find items of equipment in three seconds • Uses pictures, symbols and colours instead of words • Marks out areas, stock levels, locations
Define standard work and how it is used to save time and make things easier	<ul style="list-style-type: none"> • There is an agreed and understood way of doing things • Key to sustaining new well organised theatre process • Records the best known (highest quality) way the team know for well organised theatre process
How have you made better use of space and reduced the amount of stock stored?	<ul style="list-style-type: none"> • By setting out areas • Only stocking what is required • Removed unessential items
Why are standards and audits necessary to sustain improvements?	<ul style="list-style-type: none"> • Ensures people are carrying out the new well organised theatre process • Maintains momentum • Helps embed new ways of working into everyday practice • Based on the standard created by the team

Acknowledgement

Thank you to all the staff at:

Central Manchester University Hospitals NHS Foundation Trust
Heart of England NHS Foundation Trust
Medway NHS Foundation Trust
Royal Devon and Exeter NHS Foundation Trust
The Rotherham NHS Foundation Trust
The Shrewsbury and Telford Hospital NHS
West Middlesex University Hospital NHS Trust





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ISBN: 978-1-907045-06-6

NHS Institute product code: PD060

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