

The Productive Endoscopy Unit

*Building teams for safer care*TM

Scheduling

Version 1

This document is for the executive lead, programme lead, endoscopy managers, endoscopy matrons, schedulers, coordinators, endoscopists, bowel cancer screening teams, information analysts, clinical lead and improvement leads





Contents

Purpose of this module	05
1. What is the Scheduling module?	11
Learning objectives	14
What is scheduling?	15
2. How will you do it in your unit?	18
The Model for Improvement (PDSA) and A3 thinking	19
3. The three questions and the NHS Change Model	23
1. What are we trying to accomplish?	24
2. How will we know change is improvement?	26
3. What changes can we make that will result in improvement?	28
4. Utilising sessions	31
What is utilising sessions?	31
Why utilise sessions?	31
Plan	34
Learning points	43
Idea that have worked elsewhere	44
Example one: Using the IMAS Demand and Capacity modelling tool to drive improvement	44
Example two: Reviewing lost capacity	45
Example three: Weekly Priority Targetted List meetings	46
Reducing surveillance waits	46
Introducing annual policies	47
Reviewing job plans	48
Activity Meetings	49
Example four: Electronic scheduling	49
Example five: Three session days	52
Example six: Patient flow and scheduling	54
Do	58
Study	64
Act	68

5. Managing lists	73
What is managing lists?	73
Why do it?	73
Problems with overbooked lists	75
Problems with under-booked lists	76
Linking scheduling with other modules	77
Plan	78
Ensuring strong and visible leadership	79
Create the team	79
Collecting relevant data	80
Learning points	86
Ideas that have worked elsewhere	87
Example seven: Pooling lists	87
Example eight: start stop audit	88
Example nine: Removing paper notes from the unit	89
Example ten: Reducing DNA's and short notice cancellation	90
Example eleven: Reducing DNA's and cancellations	92
Example twelve: Queen Elizabeth Hospital	94
Example thirteen: Northumbria Healthcare NHS Foundation Trust	95
Do	102
Process mapping the current scheduling process	103
Study	107
Collect, analyse and review your data	108
Act	110
6. Learning objectives complete?	116
Acknowledgements	118

Purpose of this module

This module will help you to create a scheduling system which is efficient and effective. By applying improvement techniques to two key areas of your scheduling system, specifically, how you make the most of your available capacity, and importantly, how you manage each session within that capacity.

This module provides a structured approach that will help you understand and review your current scheduling systems and processes, helping you to identify where you can make improvements, and how you can tailor solutions to suit the needs of your organisation.

The scope of this module is extensive, unlike the other modules in The Productive Endoscopy Unit, Scheduling reaches way beyond the boundaries of the endoscopy department. There are quick wins however, some improvements will take longer to implement. The potential benefits are significant, the definition of high quality care comprises: effectiveness, patient experience and safety.¹

The drive for an effective and efficient service comes from two key perspectives; patients increasing expectations on services to provide high quality, safe care with no delays, and also from an organisational requirement to ensure resources are used effectively. Endoscopy demand is due to rise >90% by 2017² (also see The Executive Leader's Guide). In addition, the NHS Operating Framework for 2012/13 has set an expectation that less than one per cent of patients should wait longer than six weeks for diagnostic tests. As endoscopy diagnostic tests are included within that expectation, it is crucial to ensure endoscopy departments and lists run efficiently.

Good scheduling is essential to ensure you achieve benefits for your patients, your staff and your organisation.

The Commissioning Board, Everyone Counts: planning for patients 2013/14, outlines the incentives and levers that will be used by Clinical Commissioning Groups to improve services from April 2013. There are five offers to help commissioners deliver for the public, one of which impacts upon scheduling - routine NHS care seven days a week.

1. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_085825 NHS next stage review
2. Dr R Valori and Dr N Haslam

Surgical colleagues will in addition have surgeon specific activity, clinical quality measures and survival rates published. This includes upper gastro-intestinal and colorectal surgery.

Throughout 2013/14 commissioners must use sanctions within the NHS Standard Contract if they are not satisfied over the completeness and quality of a provider's data. It is essential that endoscopy units, starting with the scheduling team, ensure that hospital information system records are accurate and are the definitive record superior to any endoscopy local system.

In practice this means that the hospital information system is your Trust's window to the world. If you have just one patient waiting ten weeks, your Trust will officially be seen as having waiting time of ten weeks, and this information amongst others will be directly available to local commissioning groups, when they decide where they will purchase local services from.

It is also highly important to keep accurate surveillance patient records. Trusts are required to show patients as on the active waiting list as soon as their surveillance date arrives.³

The Joint Advisory Group (JAG)

Endoscopy units in the UK who commit to the JAG Accreditation Pathway are assessed annually. The JAG (Joint Advisory Group) in Gastrointestinal Endoscopy is the body responsible for setting patient centred, workforce and training standards for endoscopy in all sectors and accrediting them. The JAG operates within the Clinical Standards Department of the Royal College of Physicians and its mission is to provide UK wide support, not just for endoscopy services but for the workforce ensuring, that they have the skills, resources and motivation necessary to provide the highest quality, timely, patient centred care.

The JAG provides a clear framework within which to reach the acceptable standards for endoscopy units for accreditation and reaccreditation. Endoscopy Departmental accreditation is achieved via completion of the Global Rating Scale (GRS) and additional environment and decontamination standards. This module of The Productive Endoscopy Unit is mapped to the framework to help staff address any shortfall in achieving the acceptable standards for endoscopy units.

This module is produced in association with the JAG and will help you to improve patient scheduling in your endoscopy unit, as well as supporting the achievement of the GRS standards and accreditation within the following domains: Quality of the patient experience (timeliness and choice), Workforce (skill mix) and Training (planning lists).

3. CEO gateway letter - <http://www.england.nhs.uk/everyonecounts/>

STD NO	DESCRIPTION
D. Quality of Patient Experience - D2 Timeliness	
8.1	The hospital waiting list policy is available in the unit
8.2	The endoscopy operational policy includes all referral, booking and scheduling rules
8.16	Capacity can be flexed according to demand to ensure waits are within the above limits
D. Quality of Patient Experience - D3 Booking and Choice	
9.1	The hospital access/booking policy is available in the unit
9.8	Patients are informed of the appointment choices available in a full booking system
9.9	A booking system is in place for recall (surveillance) appointments
9.13	All endoscopist booking procedures are assessed for equality of access
D. Quality of Patient Experience - D5 Aftercare	
11.12	All patients that require a follow up appointment agree one prior to discharge
E. Workforce - E1 Skill mix review	
13.11	The service adopts a flexible approach to rostering in response to scheduling
F. Training - F1 Environment	
18.3	There is some adjustment of training lists to meet the needs of trainees
18.4	There are informal arrangements for the planning of training lists
18.8	At least 50% of training lists are adjusted according to trainees needs
18.11	There are sufficient training lists to meet the needs of all the trainees
18.13	All training lists are adjusted according to trainees needs
18.15	There is segmentation of endoscopy lists to maximise training opportunity for rarer procedures
18.17	There is a process in place for training lists to be identified and planned six weeks in advance
F. Training - F3 Assessment	
20.15	Adjustments are made to future training lists on the basis of assessments

The NHS Constitution 2013/14 sets out patient's rights – schedulers play a vital role in achieving these goals.

Referral To Treatment waiting times for non-urgent consultant-led treatment

Admitted patients to start treatment within a maximum of 18 weeks from referral - 90%

Non-admitted patients to start treatment within a maximum of 18 weeks from referral - 95%

Patients on incomplete non-emergency pathways (yet to start treatment) should have been waiting no more than 18 weeks from referral - 92%

Diagnostic test waiting times

Patients waiting for a diagnostic test should have been waiting less than 6 weeks from referral - 99%

Cancer waits - 2 week wait

Maximum 2 week wait for first outpatient appointment for patients referred urgently with suspected cancer by a GP - 93%

Maximum 2 week wait for first outpatient appointment for patients referred urgently with breast symptoms (where cancer was not initially suspected) - 93%

Cancer waits - 31 days

Maximum one month (31-day) wait from diagnosis to first definitive treatment for all cancers - 96%

Maximum 31 day wait for subsequent treatment where that treatment is surgery - 94%

Maximum 31 day wait for subsequent treatment where that treatment is an anti-cancer drug regimen - 98%

Maximum 31 day wait for subsequent treatment where that treatment is a course of radiotherapy - 94%

Cancer waits - 62 days

Maximum two month (62 day) wait from urgent GP referral to first definitive treatment for cancer - 85%

Maximum 62 day wait from referral from an NHS screening service to first definitive treatment for all cancers - 90%

Maximum 62 day wait for first definitive treatment following a consultant's decision to upgrade the priority of the patient (all cancers) - no operational standard set

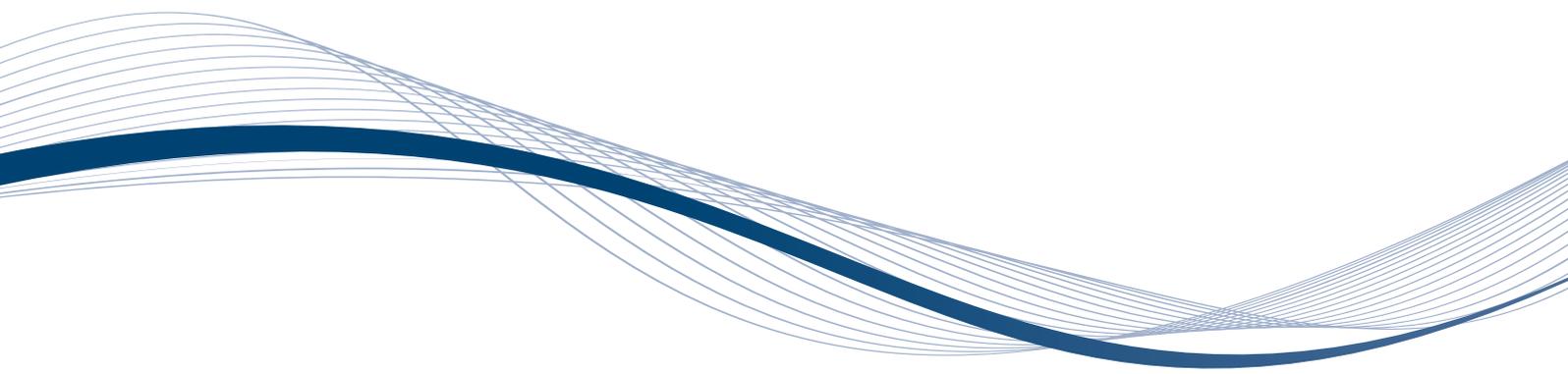
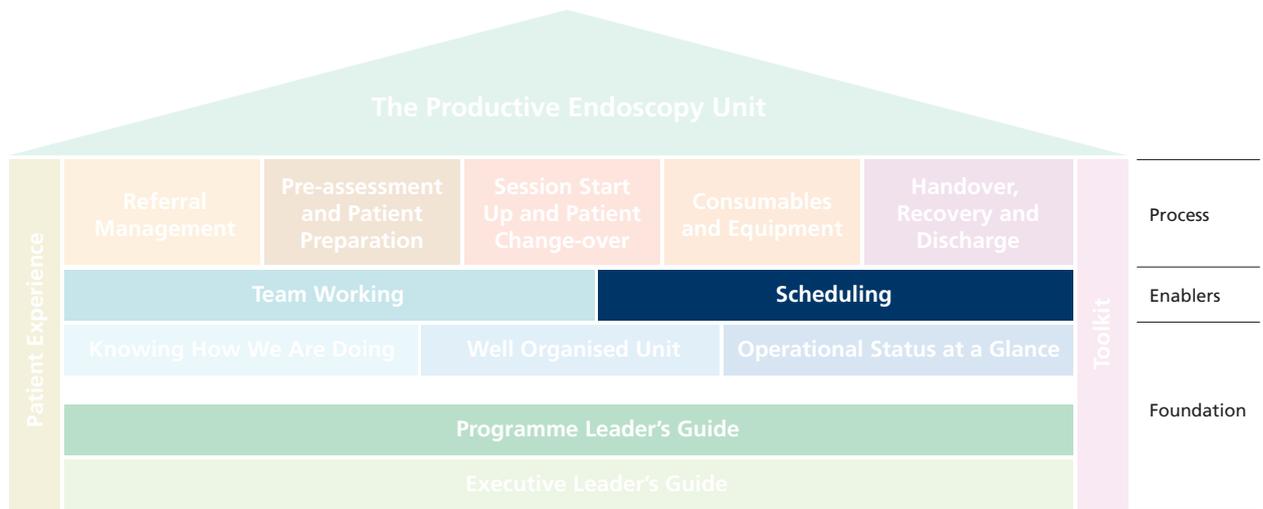
Mixed Sex Accommodation Breaches

Minimise breaches

Cancelled Operations

All patients who have operations cancelled, on or after the day of admission (including the day of surgery), for non-clinical reasons to be offered another binding date within 28 days, or the patient's treatment to be funded at the time and hospital of the patient's choice.

These modules create The Productive Endoscopy Unit





1. What is the Scheduling module?

What is it?

The scheduling module provides a practical approach to understanding your endoscopy scheduling systems and processes, identifying where and how you can make improvements to deliver a reliable, achievable list in a timely manner. This enables you to make the most effective use of your capacity, your team's knowledge and experience, and the resources you have available. Effective scheduling of sessions is essential to improve services to patients, provide organised achievable lists for staff, and ensure optimum use of endoscopy capacity.

This module takes you through a diagnostic process to help you understand your current system. It introduces interventions that will have significant effects on how you utilise your rooms, and will provide a generic approach to improvement that will help you identify and implement changes that are specific to your organisation.

Why do it?

Scheduling is a critical part of how an endoscopy unit runs. How you schedule can make the difference between a well organised, efficient and effective department to one in disarray and increased stress for all involved. Poor scheduling is one of the most common causes of staff frustrations.

Good scheduling values the patient's time, reduces waste, giving staff time to deliver a good quality service and supports good patient outcomes and experience, alongside income generation for the organisation.

For patients, good scheduling improves the delivery of safe, reliable and efficient care by:

- Reducing waiting times, avoiding cancellations and unnecessary delays on the day of procedure
- Ensuring relevant information is distributed in a standardised manner that enables the right team, right equipment and right information to be in the right place at the right time for each procedure
- Providing clear and relevant information in a timely manner, allowing patients and their relatives to plan their bowel preparation, admission and discharge
- Giving patients a choice of appointment
- Valuing the patients experience and needs.

For endoscopy room teams, good scheduling improves their experience and wellbeing by:

- Ensuring lists are constructed in a way that does not lead to significant under or over-runs
- Ensuring timely notification of sessions that allows any specialist equipment and the correct skill mix of staff to be arranged
- Minimising the time spent on rework
- Reducing delays and eliminating wasted time.

For schedulers, good scheduling improves their experience by:

- Raising the profile and importance of the role of schedulers and scheduling within the organisation
- Helping reduce the complexity of many of the current processes
- Reducing the current levels of re-work
- Helping improve the relationship between the role of the schedulers and clinical teams.

For endoscopists, good scheduling improves their experience by:

- Ensuring lists are realistic and achievable every time
- Ensuring that specific needs in terms of skill mix, equipment, and patient preparation are present every time
- Preventing last minute re-working of lists.

For the organisation, good scheduling improves organisational efficiency by:

- Using resources within a hospital by maximising utilisation effectively
- Effectively meeting quality and commissioning requirements with minimum stress and decreased costs
- Improving the patient experience
- Improving staff wellbeing
- Improving the reputation of the organisation
- Improving communication helping to decrease repetition and reduce rework.

What it covers

This module will help you determine the best way to improve your endoscopy scheduling by enabling you to:

- Understand your current scheduling system and processes, identifying where improvements can be made
- Understand your endoscopy demand and capacity
- Analyse your data to understand how many sessions and points you actually use, and the impact and cost of adhoc (waiting list initiatives) unused or partially used sessions
- Develop systems to ensure you always use all available slots
- Manage individual lists effectively
- Decide how best to utilise your capacity
- Manage waiting lists and Patient Tracking Lists (PTLs) effectively
- Ensure appropriate start, stop and change-over times to remove waste.



When we first started using Productive Endoscopy, I thought it was just about scheduling more patients and being more productive but the less obvious things that came out of it were more important, like getting ideas from the grass roots has a massive impact on morale.



Dr Ed Seward, Clinical Lead, Whipps Cross Hospital, Barts Health

What it does not cover

This module will not prescribe one solution; it will help you decide what a good scheduling process should look like within your organisation and help you make that happen.

Through the Scheduling module you may identify areas where you can make improvements within an endoscopy list, for example during Patient Change-over or Session Start Up however, this module will not focus on those areas as they are covered in detail in the process modules.

Learning objectives

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

- Be able to optimise the use of endoscopy time and improve patient care through forward planning and organisation
- Have identified measures that are important to scheduling and how to monitor them on an ongoing basis
- Understand how to achieve optimal utilisation of sessions
- Understand the importance of monitoring demand and capacity and know how to do it
- Appreciate why using the points system effectively is essential to scheduling
- Understand the importance of reviewing scheduled lists
- Understand the current scheduling process and eliminate any waste within it
- Understand the importance of involving and providing feedback to all those who contribute to scheduling and the wider endoscopy team
- Have built up an effective communication system ensuring the right information will be in the right place at the right time.

Tool
Dot voting
Interviews
Process mapping
Cost/benefit analysis
Module action planner
Timing processes
5 - Why analysis
Capacity & Demand
PPAT tool (The JAG)
IMAS tool

What is scheduling?

In its simplest form scheduling can be defined as:

“Planning or arranging something to take place at a certain time.”

Chambers English Dictionary

It sounds so simple. However, when scheduling an endoscopy list there are many factors that need to be arranged and coordinated to make sure that a patient can be scoped at a specific time. Not only do you need to do the best for the patient in front of you, but you also need to make the best use of your resources (staff, room capacity and equipment), to ensure you can deliver the same level of service for all patients.

Your service provides for outpatients, inpatients, urgent two week wait, emergencies and surveillance patients. Improving scheduling will require you to put in place processes which meet the needs of each group without detriment to the others.

All booking procedures should be assessed for equality of access to meet GRS standard – Quality of patient experience – Equality – 7.11.

Endoscopy scheduling is complex, it involves many different elements and people, often with competing priorities. Through this module you will develop a comprehensive picture of all the parts involved in your scheduling process, you'll develop a better understanding of the interdependencies between the different roles and the implications your actions have on others involved in different stages of the process, and ultimately, the patient.

Through this understanding you will be able to identify where improvements can be made to ensure you deliver an effective and efficient service for your patients, while ensuring optimum use of your capacity and resources. It may not be immediately apparent that there is an issue with scheduling, but we have found by taking a look at this complex process, there are always significant opportunities for improvement.



It's important that the team make the connection that each piece of paper in this unit is a patient. ”



Koralie Bird, Endoscopy Sister, Portsmouth Hospitals NHS Trust

What does the perfect scheduling process look like?

- Endoscopy capacity that matches demand – the number of procedures per week are balanced with the number of patients requiring a procedure that week
- All available sessions are used and filled – no empty or partially filled sessions and no need for waiting list initiatives
- Realistic and achievable lists compiled using actual procedure times with an appropriate points allocation⁴ – no early or late finishes
- No non-clinical cancellations on the day of scoping due to a hospital error
- Lists are confirmed prior to the day with no last minute changes – correct procedures listed with all the details
- Lists issued with time to prepare – staff skill mix, equipment, instrumentation, portering, transport and ward based patients
- A smooth booking process with no re-work for the schedulers

These are a few ideas; you probably identified most of these factors at your visioning session and possibly more!

Typically, scheduling does not consistently achieve this and the following is all too often familiar:

- Waiting list pressures due to perceived insufficient capacity
- Insufficient lead-in time between booking and patient attendance
- Rework due to urgent two week wait or inpatient activity
- Sessions not being fully utilised or last minute changes
- Inequality of points allocated to sessions/operators
- Mismatch between types of procedure on the waiting list and the schedule
- Poor referral information which results in early finishes or over running
- Cancellations on the day due to patients not prepared, operators not available, incorrect information or information not being available.
- Lack of beds for planned patients needing pre-procedure support
- Surveillance patient vetting and backlog.

Once again these are only a few of the daily issues. Many of these issues can be addressed through improved scheduling.



Key to a great endoscopy unit is the administrative staff. If you can't get patients the right appointments in the right manner, it doesn't matter how great your nursing and endoscopist skills are!



Lisa Smith, National Improvement Lead, NHS Improving Quality

4. How many 'points' should there be on an endoscopy list?- May 2012- www.thejag.org.uk



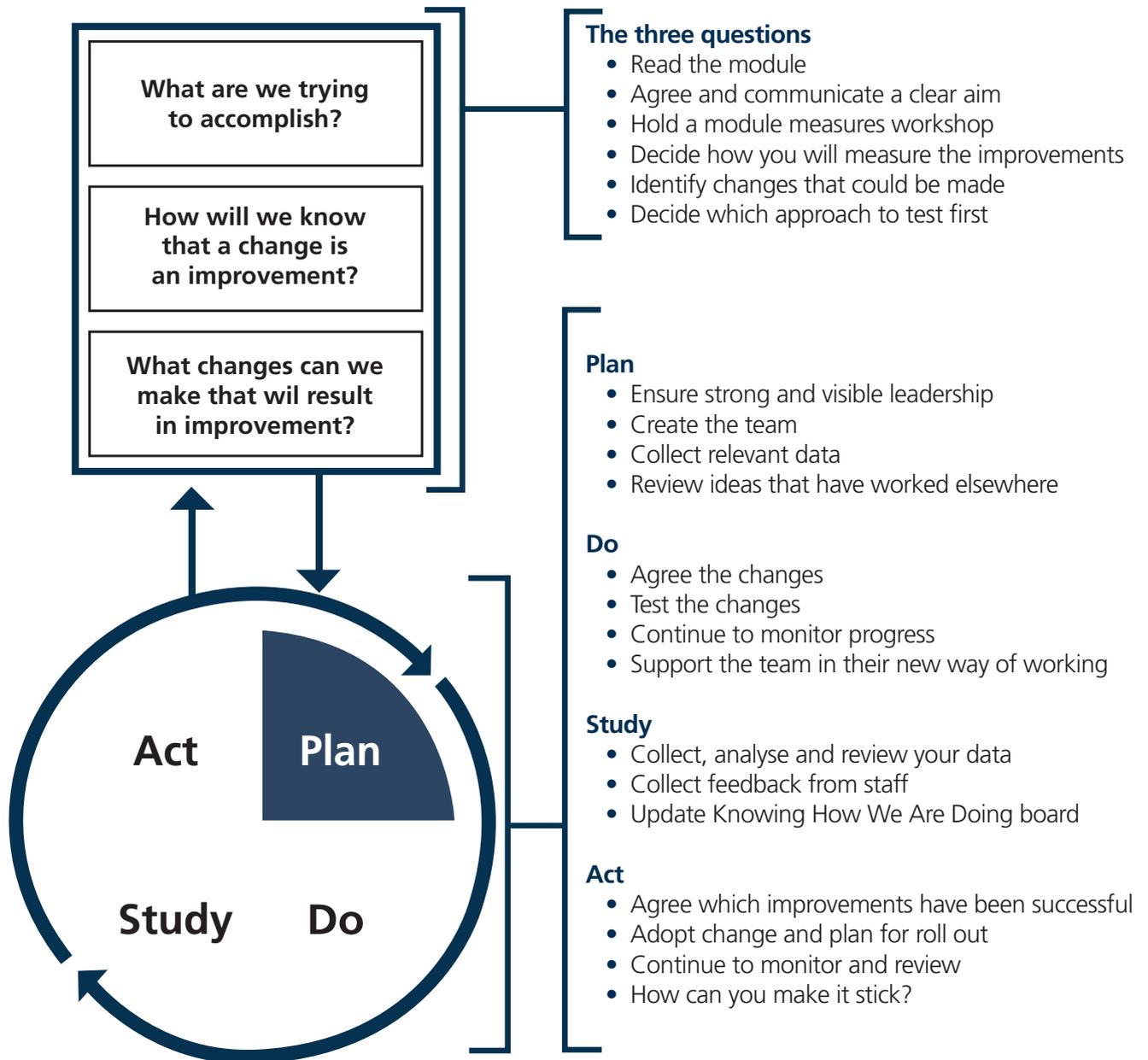
2. How will you do it in your unit?

To begin to understand and improve scheduling in a manageable way, this module has identified two approaches, described in the following sections:

- Utilising sessions
- Managing lists.

Each section follows a Plan, Do, Study, Act (PDSA) Model for Improvement and A3 thinking.

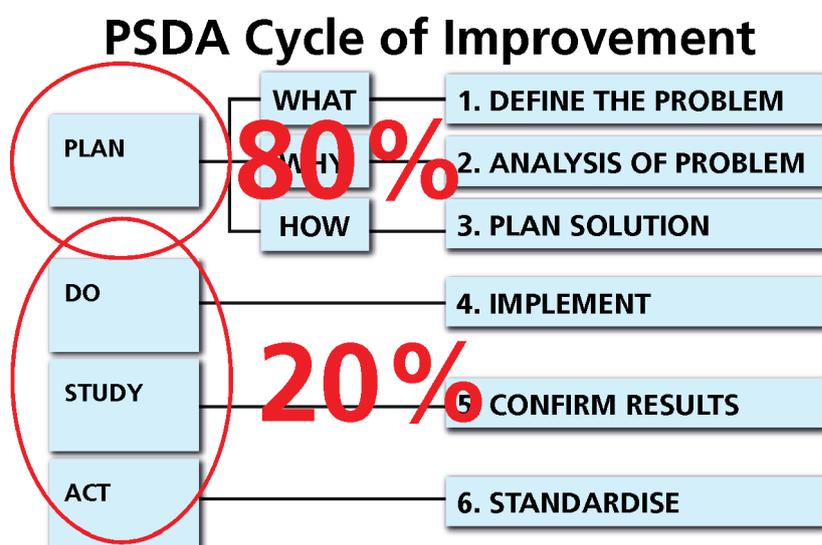
The Model for Improvement and A3 thinking



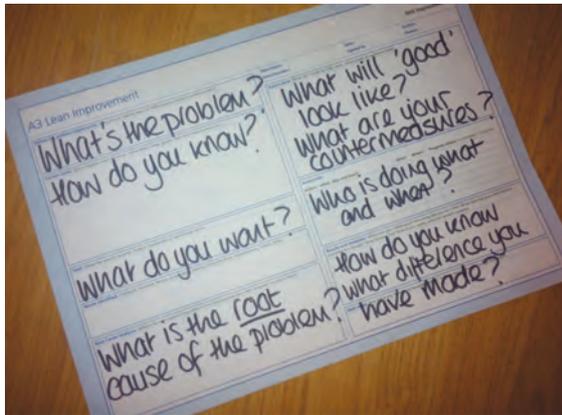
A3 thinking

Simply put, A3 thinking is a structured way of thinking deeply about an issue or problem, which follows a series of standard steps (rigorous application of a PDSA cycle), to produce a concise output as a condensed document or A3 Report (11 x 17 inch paper).

This method of application of PDSA helps to move teams from intuitive problem solving, quick fixes and work-arounds, to understanding the root cause (what the problem REALLY is) and developing countermeasures that are staff and customer focussed.



The A3 report will serve as a simple record of your PDSA cycles and the changes made as a result - it is easy to forget where you started from once you are on your continuous improvement journey. A3 templates and further information can be found in The Productive Endoscopy Unit Toolkit.



A3 Format

Title:	Version:	Date:
Author:		
Problem statement: PLAN	Future State: PLAN	
Current status: PLAN	Action Plan: DO	
Goal: PLAN		
Root cause analysis: PLAN	Results & Measures: STUDY/ACT	
Waste Identified:	Next steps:	

TIP: Remember to use the PDSA cycle at each section of the A3 to really understand and think deeply about your problem and possible solutions.

The Productive Endoscopy Unit - 2. How will you do it in your unit?



3. The three questions and the NHS Change Model

Before you start to implement the Scheduling module, be clear about the approach you are going to take.

Take time to read through the module carefully, so that you understand the full scope of what is involved.

Then work through the three questions from the Model for Improvement. These questions and your answers to them will provide you with a framework that will be fundamental to achieving your improvements.

- 1) What are we trying to accomplish?
- 2) How will we know that a change is an improvement?
- 3) What changes can we make that will result in an improvement?

Why do we need a change model?

The model has been created to support the NHS to adopt a shared approach to leading change and transformation – see www.england.nhs.uk/sustainableimprovement/change-model

Building on what we collectively know about successful change the ‘NHS Change Model’ has been developed to bring together improvement knowledge and experience from across the NHS into eight key components, which applied together, makes change happen.

By using the model to link with The Productive Endoscopy Unit modules, you can be sure you are applying the principles of continuous quality improvement (CQI) in an evidenced based, systematic application of change management approaches.



Using an evidence-based improvement methodology ensures that the change will be delivered in a planned, proven way that follows established methods that will ensure that the adoption and systematic spread of change is supported more effectively.

- The overall success of change efforts are more likely to be assured
- There is a range of proven methodologies available to support different kinds of change:
 - The Productive Series can deliver improvements in quality, increased safety, reduced turnaround times, increased efficiency and productivity, improved staff morale and reduced costs.

1. What are we trying to accomplish?

The key idea in answering this first question is to provide an aim for your improvements that will help to guide you and keep your efforts focused.

Think about how the Scheduling module will contribute to achieving both your local vision for the programme and the overarching key aims of the programme of improving:

- Patient's experience and outcomes
- Safety and reliability of care
- Team performance and staff wellbeing
- Value and efficiency.



It may be necessary to identify a number of aims, as there are two approaches involved in the Scheduling module and it is likely that there will be a number of different workstreams. When setting your aims for Scheduling make sure they follow the SMART principles.

Setting a **SMART** aim

As a team set an aim for what you want to achieve from this module according to SMART principles:

Simple – give the aim a clear definition (e.g. reduce turnaround time)

Measurable – ensure that data is available

Aspirational – set the aim high to provide a challenge to the team but make sure it is achievable

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

Time bound – set a deadline.

These are some examples of SMART measures for an endoscopy unit:

- Number of dropped sessions
 - Reduce the number of dropped sessions in endoscopy by 50% within 6 months
- Number of surveillance patients having their procedure on time
 - Ensure that 100% of surveillance patients have their procedure on time within 3 months
- Inpatients scoped within 24hours
 - All inpatients to be scoped within 24 hours by next month

Once agreed, communicate the module aim(s) on your Knowing How We Are Doing boards, showing clearly how the aims of this module links to your vision. The efficiency driver diagram (Programme Leader's Guide - appendix and toolkit) will help you with aims and appropriate measures for this module.

Some SMART measures for Scheduling might include:

- List plan v. actual
 - Increase the number of actual points on a list to match planned points within 3 months
- Delays - late starts/finishes/interruptions
 - Reduce late starts by 75% within 3 months
 - Reduce late finishes by 100% within 3 months
 - Reduce interruptions by 50% by next month
- Number or percentage of cancellations
 - Reduce cancellation by 50% within 6 months
- Turnaround time
 - Improve TAT by 50% within 6 months
- Percentage room utilisation
 - Increase endoscopy procedure room utilisation to 100% within 6 months.

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

This second question builds on the work you have done in the Knowing How We Are Doing module. It is about monitoring and measuring the impact of the changes you make. If you make a change and your measures get better over time, then you can conclude that the change led to an improvement.

Measuring the impact of the changes you are making is really important to enhance you and your team's learning. It allows you to quantify the improvements you have made, which will generate further enthusiasm and support for the programme. It also enables you to identify changes you have made that have not had the desired effect, highlighting where you need to modify your approach.

As part of Knowing How We Are Doing, you will have agreed a balanced set of measures across the four programme aims. Consider how your improvements from the Scheduling module will be represented in the balanced set of measures.

If it is not obvious, you will need to add additional measures that will capture the impact of this module. The suggested measures sheet and driver diagrams in The Productive Endoscopy Unit Toolkit will give you some ideas about what you could measure.

To explore this further, run a module measures workshop with the team that is going to be involved with this module. A suggested set of slides for this session is available in the Toolkit. The efficiency driver diagram will also assist with developing measures for this module.

The aims of this session are to:

- Refresh the team's understanding of how to use measurement to drive improvement
- Understand how the Scheduling module fits into your agreed balanced set of measures
- Identify measures for Scheduling
- Decide how to collect, analyse and review the information
- Complete a measures checklist for each measure in the Scheduling module.

Once agreed put in place processes to start collecting, analysing and reviewing the data for your balanced set of measures. Remember to share the progress on your Knowing How We Are Doing board.

Here are some ideas of what you might wish to collect. You may already be collecting some of these - your choice may also be influenced by other modules.

- Number of staffed and unstaffed sessions not being taken up
- Session utilisation - percentage of staffed sessions actually being run, numbers of dropped lists
- Number of additional lists being put on by speciality/procedure type – waiting list initiatives
- Number of minutes each session starts late/early
- Number of minutes each session finishes late/early
- Numbers of pooled lists/cross cover
- Numbers of points on lists
- Amount of time each endoscopist takes by procedure compared to the points allocation
- The time the patients are in the room as a percentage of the total list time⁴
- The time a patient is actually being scoped⁴
- Turnaround time/patient changeover
- Waiting time
- Lost income due to cancelled/unused sessions
- Cancellations, DNA's and on the day patient refusal
- Percentage of surveillance patients seen on time
- Percentage of diagnostic patients seen on time
- Percentage of patients participating in Bowel Cancer Screening (BCS)

TIP: For a four hour PA it is recommended that a list should last a maximum of 210 minutes⁴ (it should be possible after an uncomplicated procedure to turn a room round in 6 minutes) - see the Session Start-Up and Patient Change-over module for ideas on how to achieve this.

4. How many 'points' should there be on an endoscopy list? May 2012 www.thejag.org.uk

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 unit that will result in improvement.

This module will consider scheduling from two approaches:

- Utilising sessions
- Managing lists.

You will have an overall idea of what you want to achieve from the Scheduling module however, the detail of what and how you can achieve it will become clear through your diagnostic work, such as your data collection and analysis and process mapping. With the teams for each section of the Scheduling module, work through a number of PDSA cycles testing a variety of different approaches to improving your Scheduling. Remember to start small, testing with one team and one list while you learn and develop the approach before working up to a full roll-out across the unit.

Examples of changes that have been shown to work are provided in the Plan section.

These examples include:

- Three session days and seven day services
- Pooled lists
- Electronic scheduling
- Reducing surveillance waits
- Implementation of annual leave policies
- Reducing DNA's and cancellations.



The three questions – milestone checklist

If you have completed **all** of the items on this checklist move on to **the next sections**:

- Utilising sessions
- Managing lists.

Checklist	Completed?
Read the module	
Decided and communicated a clear aim for the module	
Held a module measures workshop	
Agreed how you will measure your changes	
Thought about what changes you will make	

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. Utilising sessions

What is utilising sessions?

Most organisations will already have a full endoscopy timetable where they have allocated all the sessions in each room to a particular endoscopist or speciality on a weekly basis. This stage of the Scheduling module focuses on the level of detail beneath that high-level timetable. It ensures that all sessions are either used as agreed and if they are not, perhaps as a result of the endoscopists' other commitments or leave, that each session is reallocated or made available to other endoscopists. This will result in no unused staffed sessions.

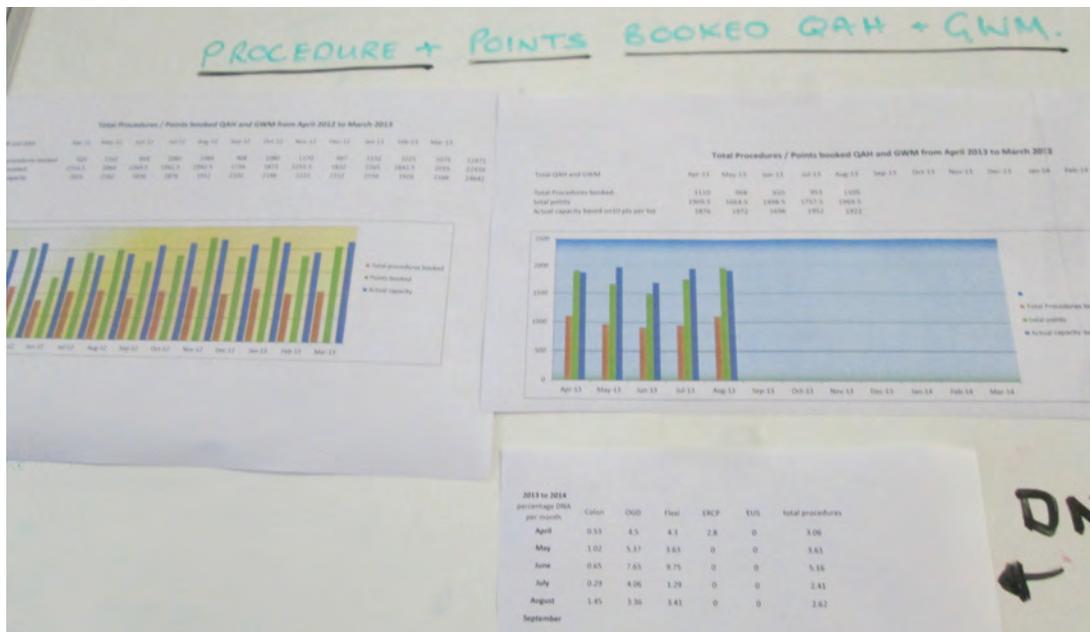
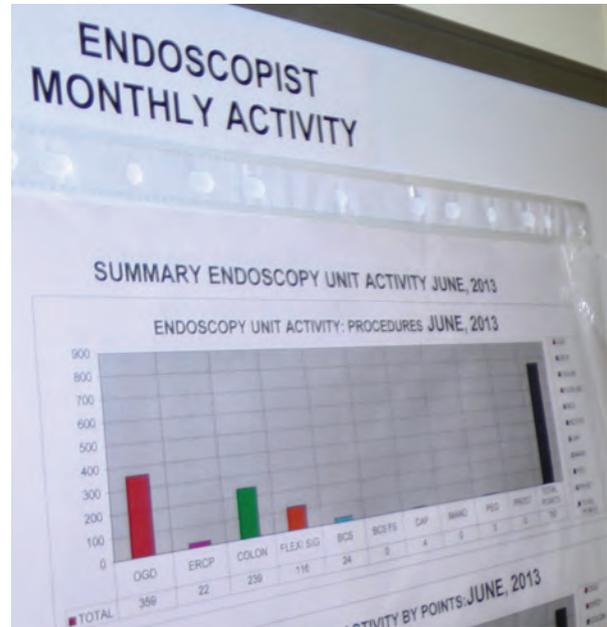
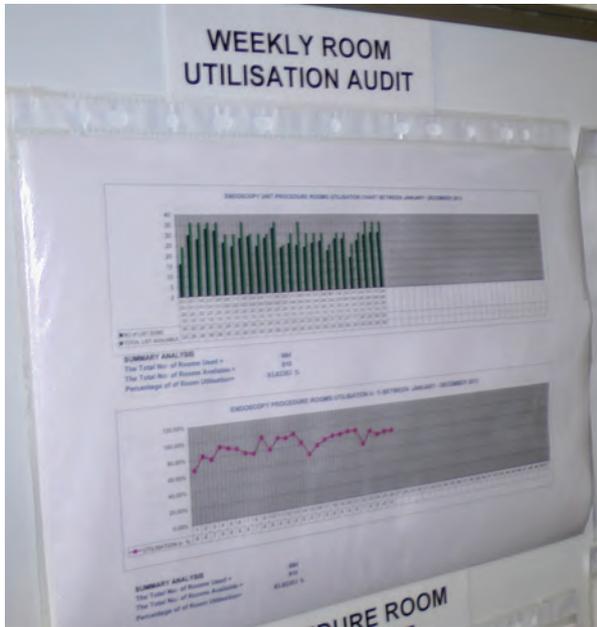
By working through this section of the module you will understand the impact that 'dropped' sessions have when aggregated over time. You will also develop a robust approach to systematically ensuring all available sessions are utilised.

Why utilise sessions?

The cost of running an endoscopy room varies and often the full costs are difficult to determine as services may be provided by different directorates e.g. maintenance costs, decontamination. However, you should be able to calculate costs of staffing and equipment as a minimum.

Therefore, if a funded session is not utilised, for example if the endoscopist is on leave, it will still cost the organisation for staffing and estates. In addition to this, as this time was not used for any procedures, the organisation will not receive any income for that time. Also importantly, it will cost the same again to re-schedule those patients into endoscopy. It may even cost more if the patients are seen as part of a 'waiting list initiative.' Waiting list initiatives are extra lists that are put on to provide additional capacity, often at the weekend or in the evenings and at additional premium rates. They are usually arranged to help meet national targets or manage increased demand.

The Productive Endoscopy Unit - 4. Utilising sessions



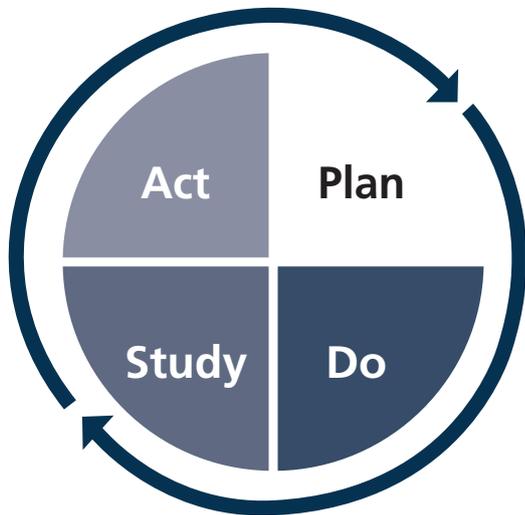
Portsmouth Hospitals NHS Trust Knowing How We Are Doing boards - list utilisation data

By effectively using all available sessions and systematically reallocating any individual sessions that are not going to be used, it should be possible to substantially reduce or even abolish the need for extra lists. Effective use of existing unit capacity may also reduce the need to build new facilities, or open new rooms to manage increased demand. A thorough business case for new facilities will not only look at the demand for a service and the current capacity available, but also utilisation.

There are many reasons why sessions go unused, for example:

- Leave not covered
- Specialist procedures not covered
- Scheduled unused rooms – no staff on rota.

Many of the causes show a systems failure with poor recognition of the problems, poor data capture to understand the causes and frequency of the problem, or putting in place effective solutions. The cost of an empty room, loss of income and the expense of putting on additional lists, make it worthwhile to invest in understanding the issues and finding effective and sustainable solutions.



Plan

There are a number of steps to work through to help you plan tests of change (PDSA cycles) for implementing utilising sessions.

The module team needs to understand the importance of involving all groups of staff to make sure the solutions tested in PDSA cycles meet everyone's needs.

Ensuring strong and visible leadership

We suggest that the clinical lead and programme lead work together on this particular part of the Scheduling module because:

- It involves a diverse number of groups such as room staff, scheduling, medical and surgical directorates with their own management structures and cultures, consultant surgeons, consultant gastroenterologists, nurse and consultant endoscopists. It will need engagement and support from all of these groups to be successful. The module leader must have the influence to bring these groups together to find effective and sustainable solutions
- It has the potential to have a very significant financial impact on efficiency, by reducing lost revenue and decreasing the number of extra sessions needed.



[after displaying data]...People went away knowing how many patients were waiting for endoscopy. They could sometimes be obstructive in slotting patients onto lists. Now that they have a visual cue of how many people are waiting things are better. ”

Dr Ed Seward, Whipps Cross Hospital, Barts Health NHS Trust

Create the team

You will need to identify a team representing the various groups involved from across the department. This team will work together to understand the current way of working (current state), identify what changes could be made, and implement the improvements that will enable your endoscopy unit to utilise all of its sessions.

Suggested membership of this team could include:

- Programme leader
- Managers from each speciality
- Endoscopy manager
- Senior clinical, medical and surgical staff
- Senior nurse/matron
- Nurse and/or Consultant endoscopists
- Schedulers
- Information analyst.

Holding a series of meetings to understand the current state is an important first step.

Understanding endoscopy demand and capacity

Is your endoscopy timetable correct?

Before looking at how you reallocate any dropped sessions it would be important to understand whether:

- Endoscopy capacity matches the demand of the referrals coming in
- Endoscopy capacity is correctly distributed between the different specialties.

Put simply demand and capacity can be explained as:

Demand: the work you need to do, e.g. referrals coming in

Capacity: the resources available to do the work, e.g. number of rooms multiplied by the hours of staff time available to run them.

It is also important to understand:

Activity: the work that you actually do, e.g. number of procedures or points delivered

Backlog: the demand that has not been dealt with, e.g. the waiting list and surveillance patients.

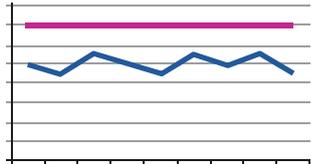
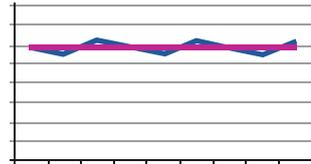
Demand and capacity can be analysed simply or in as much detail as your data and analytical capability allows. Whether you calculate it simply by using the number of procedures, points or by using operator specific procedure times that incorporate variation, the important point is that you start to think about the shape of the demand coming into the unit and how it relates to your capacity to do the work.

To do a very basic demand and capacity study for endoscopy, simply plot on a run chart the total number of patients that are referred for endoscopy every week and how many patients are treated every week.

Demand should include – all referrals from outpatients, all inpatient referrals, two week wait, all surveillance patients who are now due to have their procedure, any straight to test and GP referrals.

Capacity should be looked at in two ways, the first is the actual capacity – how many hours or points can your scheduling team book into in a week. Also the potential capacity – how many hours or points can your scheduling team book into in a week if there was no unused time e.g. Monday to Friday 4hr sessions twice (or three times) a day every day in each room – based on a 42 week year (this allows for natural down time).

The diagram below shows what your demand and capacity analysis will show you.

Shape 			
Analysis	Demand greater than capacity	Capacity greater than demand	Capacity matching demand
Impact	Waiting list increases (build up of backlog)	Waiting list should reduce (backlog reduces)	Waiting list should be roughly stable or rises slightly as excess demand will still be there next week, whereas unused capacity is lost for ever
Possible action	Requires increased throughput through endoscopy, are additional sessions available?	Could endoscopy sessions be reduced or additional referrals be taken on?	Capacity is approximately correct but you need to consider the impact of variation

For a more accurate analysis subtract the patients that are referred for a procedure but are taken off the waiting list without being treated. This could be for any reason, e.g. if they are clinically unfit or simply decided not to have the procedure.

All your calculations need to use the same frame of reference e.g. time. So ensure that if you count the demand for colonoscopy and allocate that 2 points or 30 minutes, that all operators actually perform a 30 minute slot for a colonoscopy.

You can then start to take into consideration variation in demand and then look at how you can reduce that variation.

A demand and capacity Excel tool is available as a part of the toolkit that accompanies The Productive Endoscopy Unit modules. Alternatively, the IMAS excel tool (www.nhsimas.nhs.uk) may also be used to input your data, whether simply using the number of procedures referred, points or the procedure times of the patients referred for endoscopy.

From your data you will generate a number of charts available at both specialty and operator level:

- Basic run chart showing the shape of your weekly demand
- Capacity required to meet the demand
- Statistical process control chart – showing the variation in demand (see Toolkit for more information on SPC charts).

From your data you will also be able to produce a table detailing the capacity required by each operator and specialty, based on demand.

Monitor your demand over time to make sure:

- You have the correct amount of capacity to meet the demand
- Capacity is correctly distributed between the different specialties
- You pick up changes in demand before the waiting times get out of control.

Add the points value for each procedure on to your patient tracking list (PTL) – this will mean that you can quickly see how much demand in terms of points you have yet to convert to activity.

Once you are satisfied that the capacity of your unit timetable matches the demand for each specialty, move on to collect data about utilising sessions.

Collect and understand relevant data

Collecting data allows you to understand how you currently work, which is known as your current state. By understanding your current state you will be able to identify what you would like your new way of working to be or your future state.

This information will also act as your baseline, against which you can measure the impact of changes. Some of the information you may have already decided to collect as part of your balanced set of measures.

Collect the following data:

- Current department schedule
- Current actual utilisation of planned sessions. This can be on a room basis as it is probably already in place. You will need to define planned and cancelled sessions and any unallocated sessions
- Turnaround times - it is useful to audit the amount of time the room is not in use between patients and any variation between operators/rooms
- Reasons why planned sessions were not used. If this is not readily available, a one month audit snap shot should provide insight into reasons for cancellations or unused sessions
- Notice given before a planned session was dropped
- Costs of unused sessions, which could include:
 - Cost in terms of staffing, estates and equipment
 - Lost income from the list
 - Cost of re-booking cancelled lists
- Number of extra sessions that are arranged as waiting list initiatives
- Costs of extra sessions
- Understand the leave notification system
- Map out the current methods used to manage unused lists.

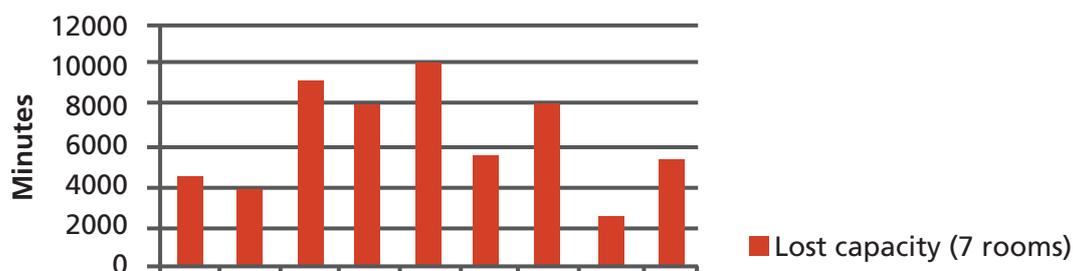
TIP

- **It is better to convert your final calculations into hours, rather than number of lists or points, as the definition of a session may vary, even across a single organisation**
- **Converting hours into '£' can convey a powerful message**

The chart below shows some of the baseline data from an endoscopy test site, showing that over a period of 9 months there were 57,600 minutes of lost capacity due to unused sessions.

This equates to 3,840 points or 3,840 flexible sigmoidoscopies/OGD or 1920 colonoscopies that could have been performed by the unit representing £1,443,840 (for FS or OGD), or £1,059,200 (for colonoscopies) of lost income at tariff.

Lost capacity due to dropped sessions (7 rooms)



Understanding your data

With your team you should now analyse all the data collected to understand your current state. Identify any further data you could collect that will deepen your insight.

At the end of this diagnostic phase you should understand:

- What is currently happening by speciality
- The main drivers contributing to or causing the current state
- The cost to your organisation in terms of lost income and re-booking from unused sessions
- The cost of putting on additional sessions
- The number of additional sessions that could have been saved by re-utilising the unused sessions - these should then all be converted into '£'s using tariff costs
- Where you should target your efforts for maximum impact.

Review ideas that have worked elsewhere

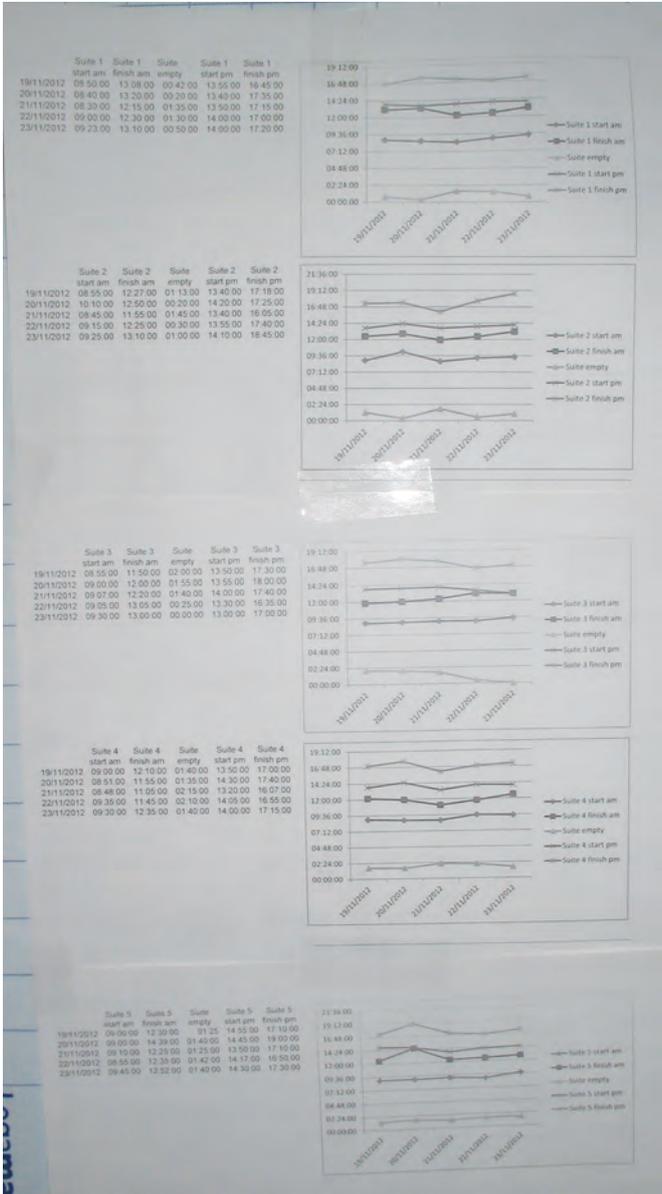
Working with test sites, we have seen a number of successful solutions to utilising sessions. However, you will need to develop your own solutions that work in your own organisation.

Whatever your approach consider the following key points:

- The most important factor is recognising that there are opportunities for significant improvement
- Ensure scheduling is recognised as a priority within the organisation; this will ensure the necessary resources are allocated to allow solutions to be found and put into practice. It is a common mistake to either permanently or temporarily increase sessions with extra rooms, endoscopists and nursing staff, and forget all this will be poorly utilised if sufficient scheduling staff are not made available and given a reasonable (six weeks) lead in time to agree dates with patients
- Recognise how utilising all your sessions will directly impact on the number of extra sessions required
- Ensure there is some pooling of waiting lists for common procedures and that they are not all endoscopist specific waiting lists – GRS standard 8.10
- Collect, analyse and review your data and use it to show progress
- Recognise potential empty sessions at least six weeks (and longer if possible) before they happen, to allow time to reallocate them
- Ensure that reallocation is organised using an agreed adhered to escalation policy and overseen by the clinical director
 - Allow a limited period for the session to be reallocated (two weeks) before escalating to the clinical director
- Put in place a percentage session utilisation target that has been decided by your organisation in response to its own needs and expectations
- Display utilisation data within a prominent staff area so it is owned by all team members
- Find innovative ways of getting endoscopists to backfill sessions for example:
 - Sessions are for endoscopy use not specific surgeons/endoscopists
 - Nurse or consultant endoscopists whose primary purpose is to ensure high utilisation by providing cover.
- Have an effective diary system open to all relevant staff, where endoscopist leave must be entered at least six weeks in advance or preferably longer
- Monitor utilisation – all endoscopists and senior staff should be aware of their own and their specialties utilisation weekly
- Act upon under utilisation – audit why each session was not used and act upon recurring issues such as endoscopists unable to attend due to regular other commitments (ward rounds/outpatient clinics etc.)
- Consequence – ensure everyone is aware of the consequences of regularly not using sessions and reallocate them to where they are needed.
- Training – It is important to plan training lists well in advance (at least 6 weeks), adjusting the number of points per session and type of procedure to meet the trainees needs. This adjustment must be counted correctly when calculating future capacity requirements to ensure capacity including training still matches demand GRS standard 18.3 and 18.8
- Full booking reduces DNAs and cancellations, therefore it is recommended that between 25% and 75% of new referrals from outpatients are fully booked - GRS Standards 9.5, 9.10 and 9.14

The Productive Endoscopy Unit - 4. Utilising sessions

Portsmouth Hospitals NHS Trust - Knowing How We Are Doing board - start/stop audit



Learning points

Backfilling empty sessions can be a complex problem which is why so many occur. This may occur because:

- No part of the organisation takes responsibility for it; it is not a scheduler's role nor a unit manager's role, though they may often spend hours trying to address it
- The organisation has not realised the enormous amount of revenue these empty sessions represent and has not therefore put in place systems to deal with it
- Setting a target utilisation of between 90-95% automatically builds in the concept of underutilisation and it is not therefore flagged up as an issue
- The connection between the concept of unused sessions and paying for additional sessions is not recognised
- Backfilling unused sessions is often done at the last minute when it is not possible to find endoscopists available to do the list and then patients to attend
- Job planning for consultants can make it difficult if endoscopy is not given the same weighting as other tasks.

Ideas that have worked elsewhere

Example one: Using the IMAS Demand and Capacity modelling tool to drive improvement

- The Pennine Acute Hospitals NHS Trusts

The endoscopy team were struggling to keep up with demand and bring patients in for elective procedures within six weeks, so a review of the demand and capacity using the IMAS modelling tool was instigated.

The process involved gathering accurate data for one year retrospectively, on a points based approach and reviewing the high volume case mix only and excluding surveillance. This initial work phase is kept simple (other items can be incorporated at a later stage) so that data is used as a supporting tool, rather than becoming a project in itself.

Demand = all additions to the waiting list, grouped urgent and routine, deducted complex procedures and all removals from the waiting list other than admission.

Capacity = core capacity (42 week year) removing emergency and surveillance capacity.

Aim

Review the variability of demand and assess whether the capacity range is sufficient.

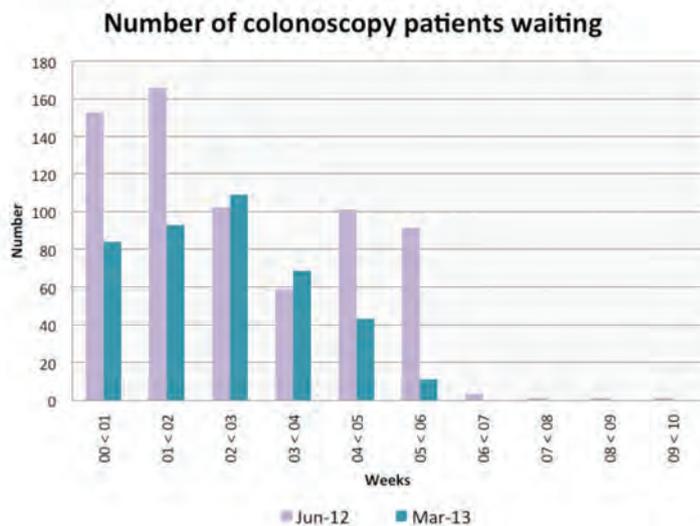
The model showed that in medicine there was enough capacity and that in surgery there was insufficient capacity but in total there was just enough to meet demand. Demand across four sites was a weekly average of 798 points with an average capacity of 888. However, this would vary and inefficiencies meant some capacity was lost. Lists ran between 8.9 and 11.1 points per session.

As a result of the data analysis, the recommendations were:

- Planning for the future needed to address the weekly shortfall otherwise any one-off backlog clearance would be ineffective
- Introduction of a locum endoscopist for four months to reduce the backlog
- Pooling of resources to maximise the surgical capacity
- More points added to each list
- Introduction of three session days and six day working
- Review on-call arrangements impact on capacity.

Impact

- The waiting list graphs show that by appropriately removing long standing patients waiting over six weeks significantly reduced the reported waiting time viewed by commissioners, and gave a more accurate description of actual waiting times at the Trust.



Example two: Reviewing lost capacity – Portsmouth Hospitals NHS Trust

Problem

- Long term data collection showed lost capacity every week
- The reasons were both shortage of nursing staff and inability of the consultants to cover leave

What we did

- Addressed the nursing shortage - interim general manager supported recruitment up to current establishment levels ensuring the ability to staff the procedure and recovery areas on a daily basis
- Began correctly assigning points to procedures (i.e. colon with dye spray = 3 points not 2)
- Continue to monitor underutilisations and review the root causes and trends
- A part of the coordinator's role is to put inpatients onto lists with available capacity
- IT systems updated accordingly to assure that the capacity is validated
- Job plans were reviewed

Impact

- Average of 26 lists (range 11-42) lost per month in 2012: representing lost income on average of £119,000 per month
- 6 lists lost in January 2014 representing a lost income on average of £27,000 – an improvement of 77% and a reduction in lost income of £92,000 per month (or £1,104,000 p.a.)



A good relationship with your General Manager makes sure you're supported.



Kay Bird, Endoscopy Unit Manager, Portsmouth Hospitals NHS Trust

Example three: Weekly Priority Targetted List (PTL) meetings - Portsmouth Hospitals NHS Trust

Problem

- Patients breaching each month
- Patients booked out of turn
- Nobody had a real handle on how much capacity was available

What we did

- Weekly senior team meeting to analyse PTLs with:
 - General manager
 - Business intelligence team (data)
 - Endoscopy administration
 - Endoscopy nursing staff.
- Increased administration staff that are booking appointments
- Reviewing training for admin staff to ensure they are all working to the same standards
- SOP's are being written to standardise booking processes
- Changed the pathway for referrals in the office so they are not put 'out of sight, out of mind'

Impact

- Patients are being booked in turn in the appropriate timeline
- Breaches are reducing to zero
- Less short notice appointments being made resulting in less patient phone calls and less complaints

The future

Recognising there are continual improvements to be made, diagnostic and surveillance PTLs will be amalgamated and the PTL used as the flag for booking.

Reducing surveillance waits - Portsmouth Hospitals NHS Trust

Problem

- Too many surveillance patients were on the waiting list
- Patient Administrative System (PAS) data was not 'clean'
- Hard copies of referrals did not match the electronic system
- Patients were waiting too long over the six week target

What we did

- Efforts were made to validate patients on the waiting list
- Additionally, a nurse endoscopist performed clinical validation against guidelines
- Questionnaires sent to waiting patients regarding family history
- Gained agreement to outsource some colonoscopies to the Independent Sector Treatment Centre (ISTC)
- Team made a concerted effort to put on additional Saturday lists
- Increased the number of admin staff booking appointments – three staff booking (two dedicated to colonoscopy)
- Began booking directly from the PTL

- Implemented weekly meetings to discuss PTL
- Admin manager ensures that patients are booked in turn
- The PTL is sent to the department daily
- System put in place to validate clinical referrals two months before the patients due date to ensure they are organised before their due date

Impact

- Surveillance waits backlog reduced from 700 patients to 400 due to validation alone
- The backlog of 400 patients surveillance waiting in the queue reduced to zero with help of ISTC, Saturday lists and forced booking into list slots
- Sustainable system now in place to ensure surveillance patients are dealt with in a timely fashion to prevent a backlog in the future



The administrative staffs job will become easier and their pressure won't be as much if they're booking in real time. ”

Kay Bird, Endoscopy Unit Manager, Portsmouth Hospitals NHS Trust

Example four: Introducing annual leave policies - Whipps Cross Hospital, Barts Health NHS Trust

Problem

- Increasing demand meant that dropped lists and unused capacity could not be accepted
- There was an anxiety that there would not be enough staff to keep the department running at peak times or when staff were on annual leave
- To safeguard lists and maintain workflow annual leave policies for all staff groups were agreed

What we did

- How many staff of each different grade could be absent from the department in order to run all lists was worked out
- Nursing and health care assistant rota's were implemented first due to the relative simplicity
- Staff readily accepted the maximum number of personnel that could be off at any one time
- The administration manager did the same with the booking, reception and clerical staff
- The clinical lead discussed the need to keep the department covered at all times with the consultant body – both medical and surgical teams. Agreement on the minimum levels of consultant cover required was reached

Impact

- The number of dropped lists is minimised
- The capacity utilisation is 87% of lists
- The medical and surgical division work as a team and cover for each other if requesting leave at short notice
- There is a strong team of clinical nurse endoscopists who provide additional cross cover

Reviewing job plans - Whipps Cross Hospital, Barts Health NHS Trust

Top tips

- Identify an individual who can collect the data on available sessions on a monthly basis and ask them to assemble it into an easily readable format
- Publicise this data so that everyone is aware of the numbers of dropped lists and the impact this has on lost capacity
- Make a list of all personnel capable of performing endoscopic procedures – no matter how limited in terms of time and skill
- Work collaboratively across disciplines - and remember this may include people in primary care such as GPs
- Task people to come up with options to address the issue - this will not only give you a range of options but will also help staff feel engaged in sorting out the problem
- Do not be afraid to have difficult conversations with colleagues. Discussions about working schedules and practices are amongst the most difficult you will ever have with colleagues. So long as the rules are applied consistently and fairly - and are reached by a consensus, then it is easier to ask colleagues to abide by them
- Regular additional lists may form part of a business case to appoint another colleague if it can be demonstrated that this will represent a saving in the long run
- Appointing a colleague to work flexibly is invaluable in improving list utilisation - nurse endoscopists usually have more flexibility than their medical colleagues and may be more cost effective

What we do

- Send out potentially uncovered available slots on a monthly basis - as well as intermittent 'emergency' slots (for patients in danger of breaching)
- Consultants volunteer to cover additional lists in the week - the Trust must agree to pay additional PAs or pay for lists on a per list basis
- Draw on a pool of experienced registrars who can independently perform endoscopies
- When you really cannot fill a slot, use it for productive endoscopy work - there are usually a range of activities that can be implemented such as collecting audit data, rethinking the storage in the endoscopy rooms or displaying the latest patient feedback.

Example five: Activity meetings - The Royal Liverpool and Broadgreen University Hospitals NHS Trust

Problem

There was no cohesive communication strategy within the department and no reporting mechanism in place for any general concerns/issues. Staff managed any problems day to day but failed to escalate them appropriately.

What we did

A weekly meeting, attended by the clinical leads, senior management team, senior nursing team and the admin team to discuss any issues that are affecting service delivery.

The focus of the meeting is:

- Current endoscopy activity
- List utilisation and
- Quality standards of care.

Also discussed are staffing issues, complaints or clinical incidents.

Impact

This approach to communication allows all team members to understand the different pressures across the department. There is a commitment from the senior management and clinical team to attend this meeting and many decisions are made quickly and easily as key people are in attendance.



Monthly meetings are not enough, we have daily meetings. ”

Nicky Taggart, Endoscopy Manager,
The Royal Liverpool and Broadgreen Hospitals NHS Trust

Example six: Electronic scheduling – Portsmouth Hospitals NHS Trust

Problem

- The paper diary was always in the wrong place! Managers used it to work out capacity, senior nurses used it to work out viable sessions with nursing and consultant cover, the booking clerks used it to make appointments and the reception clerks required it to discuss and confirm appointments with patients directly at the desk
- Sessions are booked across sites; clearly, one site could not see the list when the diary was housed on the other. Additionally, there was no transparency as to what capacity was available at which site
- A lot of time was wasted in staff searching for the diary and the paper system was extremely labour intensive
- The sessions within the paper diary were constantly being erased and written over. Often, this became confusing on the worn page
- With 13,500 procedures done per annum, a more manageable way of scheduling sessions was required

What we did

- Using PDSA, PAS and TheatreMan, systems were tested but proved inadequate for the job
- An online scheduling system was trialled (via a test site). In agreement with the general manager, this was agreed as the most effective solution
- The chosen system brings over the demographic details from PAS
- A project schedule for setting up the system was agreed:
 - Releasing staff time for planning, scheduling and mapping meetings
 - Process mapping – current and future state booking systems
 - Identifying PC/software access requirements
 - Administrative, nursing and medical team awareness sessions (including governance)
 - Setting up templates for each session
 - Super user training
 - Training – staged schedules with staff groups
 - Building list templates
 - Write up of 'quick reference' guides
 - Final template set up
 - Agree dates for end of paper diary
 - Commence testing
 - Running paper and electronic systems in parallel – two weeks
 - Identify and resolve any outstanding issues
 - Go 'live' and cease paper booking
 - Schedule review dates.

Impact

- Straightforward booking across sites - eliminating the need for a paper diary system completely
- Duplicate and inappropriate bookings have been eliminated as the electronic system flags when an appointment has been made, and forces a decision to continue/abandon making an additional appointment. This failsafe mechanism is not available with a paper based system
- The system has been surprisingly easy to use and simple enough for all staff to get to grips with in a relatively short space of time
- The system enables a clear understanding of used and unused capacity
- Consultants and endoscopists can plan ahead from their own offices/clinics
- Less mistakes are being made
- Weekly capacity reporting is at the click of a button
- Allows for real time audit trace of the number and reasons why patients have been cancelled (due to them not following preparation instruction and consuming food etc.)

Example seven: Three session days - The Royal Liverpool and Broadgreen University Hospitals NHS Trust

The Royal Liverpool was operating a 2 tier on-call 24/7 rota for gastroenterology (registrar plus consultant) which provided an emergency endoscopy bleed service. The concept of seven-day service delivery in endoscopy was to further improve the in-patient and emergency endoscopy service, which was introduced as a scheduled single session solely for in-patients at the weekend (Saturday and Sunday) and Bank Holidays. This was not based on any waiting list initiative, but introduced as part of the working week for the endoscopy unit to reduce main theatre utilisation, facilitate early discharge, improve in-patient throughput, increase capacity and improve quality. The unit performs 16,000 procedures per annum including over 2,000 in-patients per annum and 65 sessions of endoscopy per week.

Challenges for the department

- Successful implementation of Bowel Cancer Screening sessions (BCS),
- Maintenance of inpatient flow to prevent unnecessary waits (and bed management problems) to reduce length of stay
- A significant increase in demand as a result of a change to the lower GI algorithm - making colonoscopy the first line investigation for lower GI symptoms.

All of these issues placed significant pressure on the department and its ability to meet waiting list requirements.

What we did

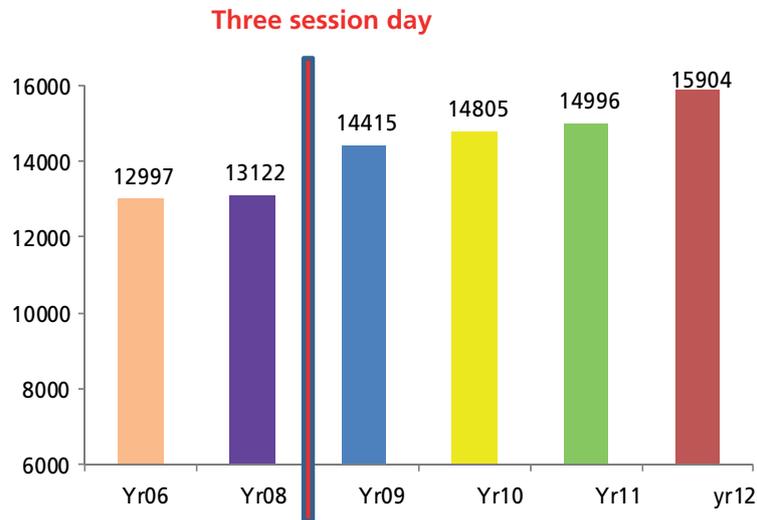
Using ongoing demand and capacity data to assess current waiting times, impact on services and increases in demand, the first phase was implementation of the three session day, introduced in 2009. Flexible working is a core component of the implementation of the 'three session day', therefore a review of the nursing staff rosters was required to ensure adequate cover, moving from working long days to an early and late shift system. Nurse endoscopists and fellows, plus the use of annualised job plans, provided a flexible workforce which is able to provide cover for dropped sessions, especially evening sessions which can be difficult to backfill.

This was also used as the foundation for a business case to extend the units opening from 08.30 to 20.30 Monday to Friday, necessitating a change to staff contracts and numbers. Three additional consultant endoscopists, as well as nursing support and new scopes, were required to run four rooms for the extended day.

The second phase was the introduction of seven day delivery in 2013. It required the appointment of additional consultants and re-negotiation in consultant job plans, to ensure a ward and inpatient list was performed each day at the weekend and the Bank Holidays without losing weekday activity. The increased flexibility of the consultants working day has been realised with a compensatory session being given during the week for working an evening session.

Further nursing and decontamination whole time equivalent hours were included and contracts re-negotiated as part of the working week.

Joint medical and nursing leadership was instrumental in driving the changes forward.



Impact

- Improvement of patient choice. Patient opinion is regularly gathered
 - Patients requiring endoscopy services now have a reduced waiting time and can chose the time of day that they attend for their appointment
 - Working patients do not need to take time off work as they can attend evening sessions
 - Bowel prep can be administered on the same day as the procedure, which is more favourable for some patients.
- By introducing the 'three session day', there has been a reduction in the number of endoscopies performed out of hours by the 'on call' staff during the week.
 - Timely access for in-patients who require endoscopy
 - Reduced need to perform endoscopy in theatre at the weekends
 - It is anticipated that the weekend inpatient lists will facilitate discharge at the weekend and reduce length of stay by improving in-patient access times for diagnostics.
- Pooling of waiting lists enables a flexible approach to scheduling, utilising the available capacity effectively



“A proactive management team provides strong leadership to a highly effective clinical team who have displayed a “can do” attitude, enabling change to happen.”

Example eight: Patient flow and scheduling - The Royal Liverpool and Broadgreen University Hospitals NHS Trust

Problem

Challenges were the over and under running of sessions and the waiting time on the unit for patients. In particular how much of a patients time was spent waiting as opposed to actual value added clinical time.

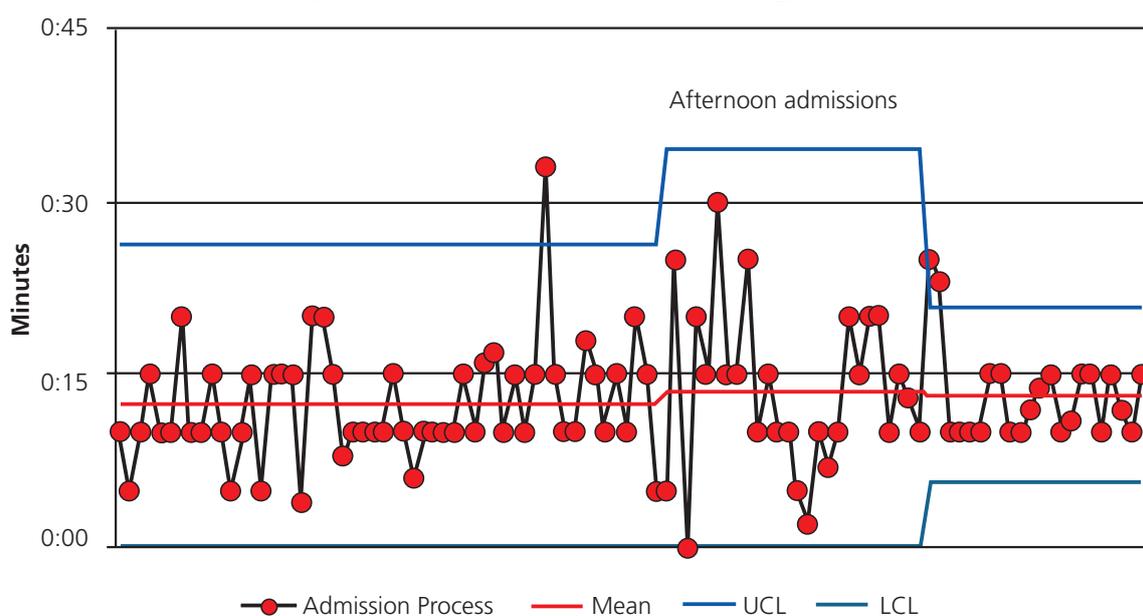
What we did

Data was collected to review individual patients, from the appointment time until the patient is discharged.

- The time taken between appointment to admission
- Admission to procedure,
- Procedure times
- Procedure finish time to discharge

The admissions process graph (SPC) shows that the mean is 12 minutes to be admitted with a range of 4 to 20 minutes (UCL 26) however, there is a noticeable extension to this time in the afternoon (UCL 34). The evening admission process is also less variable.

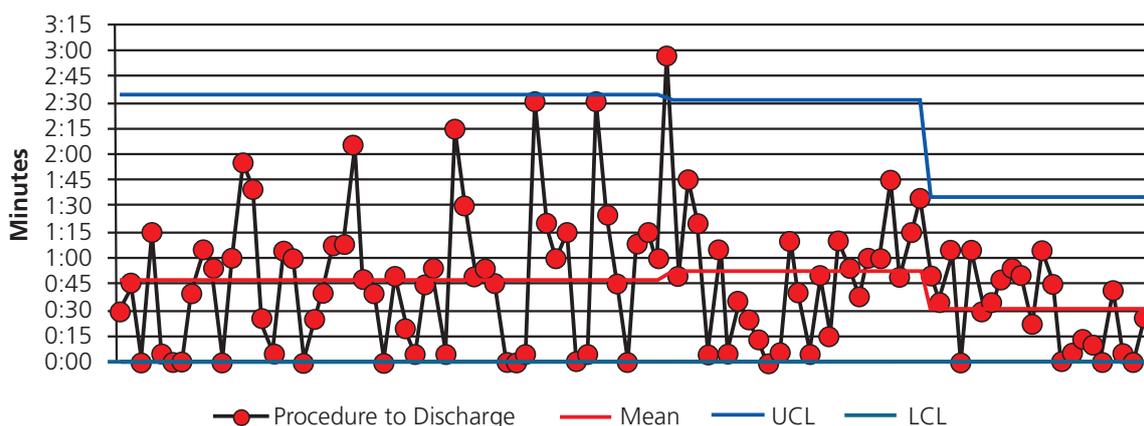
**Admission Process
(Split by AM, PM and Evening sessions)**



A similar pattern was noticed in the period between admission and procedure however, more notable was the actual non value added waiting time, which whilst averaging at around 35 minutes could extend to in excess of 1.5 hours.

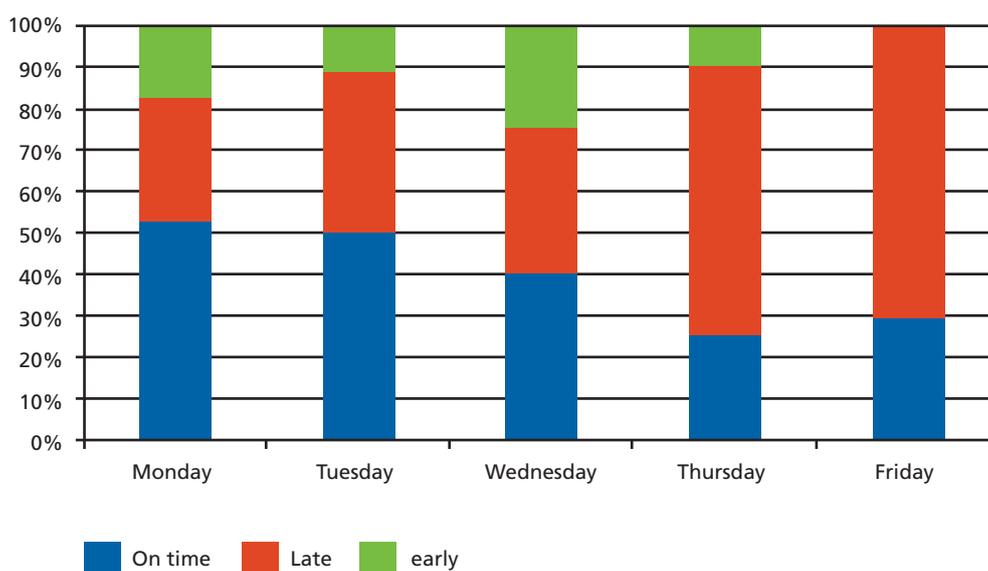
The following procedure to discharge graph shows huge variability, which in some cases will be due to patient case mix. However, a trend can be seen of waits extending upwards during the morning and into the afternoon session, but decrease dramatically by the evening session. There is a definite lack of drive to discharge quickly late afternoon, but this drive increases as staff are due to finish at 21.00.

Procedure to discharge (Split by AM, PM and Evening sessions)



The graph below explores early and late finish times. As you can see Thursday and Friday are much more likely to have later finishes. Root cause analysis revealed this was because of complex nature of cases.

**Ryl Liverpool Endoscopy Session Finish by type by day of the week
May to September 2013**



Impact

- Late starting of lists means patients are waiting in the department much longer than they should, which may cause distress and detracts from a positive experience of care
- Lack of mid-afternoon discharges means a bottle neck of patients occurs between the hours of 14.00 to 16.00, and the problem is perpetuated as this coincides with break times for staff. Patients delayed discharge causes them frustration as well as anxiety for the area co-ordinator
- Late finishes on the complex lists extends the time that patients are in the department, meaning that some patients are having to be discharged late at night
- The nurses' working day also has to be extended to recover these patients which can have a negative impact on rostering in the week

What we did

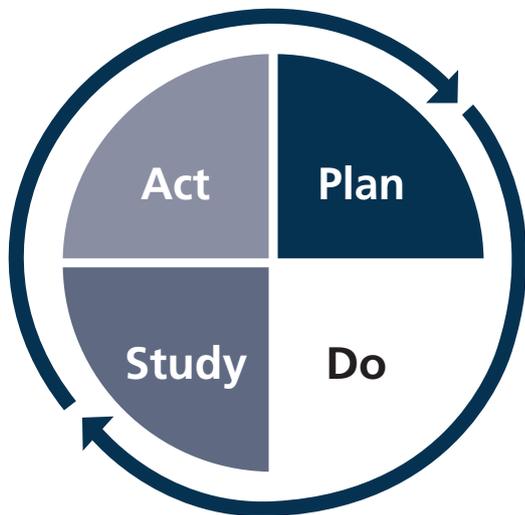
- A high visibility manager spent one hour each morning co-ordinating the start of each list, directing staff and tackling delays - this extra person allowed the area co-ordinators to manage patients and general issues
- Specific roles and responsibilities were assigned to staff in recovery/admission areas. Role specific cannulation and discharge nurses meant more focus and direction for staff, resulting in a more efficient flow and a reduction in the discharge bottleneck
- The scheduling of complex patients was reviewed and the points allocated for complex procedures was reduced on evening lists, effectively giving more time per procedure
- The template for all procedures was reviewed to ensure balance of complex/non-complex procedures throughout the week

Utilising all available sessions – Plan – milestone checklist

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

Checklist	Completed?
Ensured strong visible leadership	
Created the team	
Understood endoscopy capacity and demand	
Collected relevant data	
Reviewed ideas that have worked elsewhere	

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?	



Do

Once you have identified some ideas for improvement that you would like to try, you will need to test it on a small scale, with one area to see if it works.

Remember implementation works best when staff are involved and are encouraged to develop their own solutions.

This section may involve several iterations of the PDCA cycle.

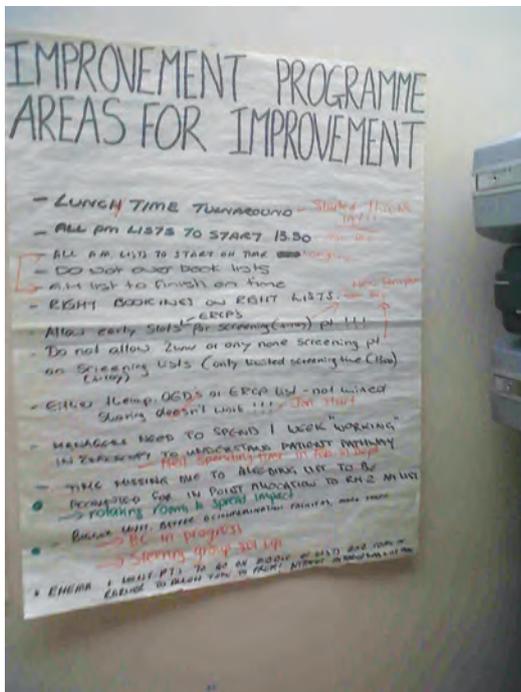
Agree changes

As part of the plan stage you will have collected data that will have given you a good understanding of the current state of how your department works. You will have also reviewed ideas and approaches to utilise all available sessions that have worked in other organisations.

With this knowledge the team will:

- Identify what the future state will look like and generate ideas that will increase your session utilisation
- Use the examples previously given to help produce ideas amongst your team. But remember that all organisations are unique and you will have to develop an approach that will work for you
- Brainstorm ideas that could help increase your session utilisation. Prioritise your ideas using dot voting (see the Toolkit)
- Agree on the changes you want to test, then consider whether there are any other stakeholders that you will need to get agreement from before beginning your tests. Your executive leader or champions should be able to help with this.

Example of niggles and nuggets boards



Test the changes

Once you have decided on the ideas you want to trial, develop a plan for your test:

- Use the module action planner (see the Toolkit) to plan and track the required actions
- Make sure that your deadlines for actions or results are realistic and achievable
- Keep everyone relevant informed of decisions, deadlines and progress.

It is likely that even the best ideas will require several Plan Do Study Act cycles, to enable you to modify and refine your ideas before you are happy to roll them out on a larger scale. Try your ideas out on a small area first, perhaps on one list – your approach will depend on the idea you are testing.

Regardless of the approach you take, effective communication to all stakeholders is an important component in implementing new ways of working. If you decide to start with a single specialty such as medical, make sure that the other specialty such as surgery are aware of the work you are doing and can contribute if they want.

Any improvement should be celebrated. However, ideas that are not as successful are equally valuable and are an important part of the learning process. It may take time to reach your final goal – especially if it is to be sustainable.



...motivational projects keep staff going - it's important to give staff key improvement skills.



Nicky Taggart, Endoscopy Manager,
The Royal Liverpool and Broadgreen Hospitals NHS Trust

Continue to monitor progress

At the beginning of the module you identified measures that will help you to know that the changes you make are improvements; you built on this information in the Plan stage by collecting relevant data. In the Do stage you will continue to collect, analyse and review this data as you test your changes.

Support the team in their new way of working

One of the reasons that scheduling is so complex is because it requires coordination between different staff teams that may have different ways of working and different lines of accountability.

The teams implementing the changes will need to have:

- Strong support and commitment from the executive leader
- Good clinical engagement
- Open and clear communication about the changes and the impact they are having (positive and negative)
- The time to dedicate to the project
- Regular team meetings during the testing and roll-out to monitor progress, feedback on the changes and any suggested modifications or refinements.



It's just about having people who can see fresh ideas. ”



Barbara Crean, Endoscopy Unit Matron, Portsmouth Hospitals NHS Trust

Learning points

- Establish effective routes of communications between all unit and operator staff to manage the situation
- Be aware that you may meet resistance to changing the status quo
- Strong leadership is essential to engage all stakeholders and implement changes that impact across the organisation
- Ensure any resources needed (analytical support) are released to support this work (strong leadership will enable this)
- Collect data on the impact of any changes
- Be innovative in finding new solutions to difficult stumbling blocks – involving as many people as possible in the idea generation stage will result in a wealth of ideas and engagement in the project
- Ensure you actively engage with your clinicians, real sustainable improvements will not occur without their help and active cooperation
- Ensure all parties are kept informed of progress and that they 'own' the solutions

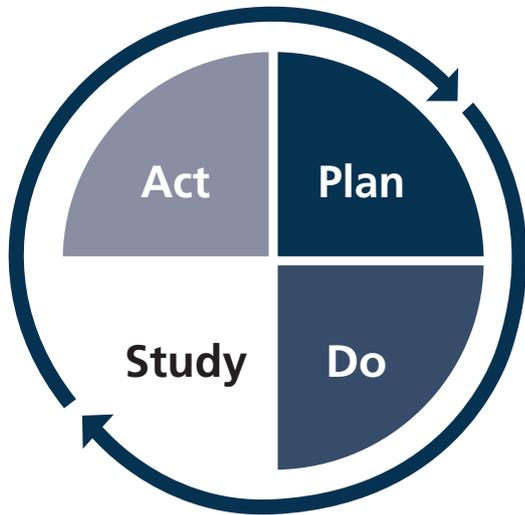
Do – milestone checklist

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

Checklist	Completed?
Agreed the changes to test	
Communicated with and got agreement from the wider stakeholders	
Developed a plan for the test(s)	
Continued to collect, analyse and review your measures	
The team have support from the executive leader and clinical support for the changes	

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?	





Study

Implementing improvements will take several PDCA cycles. It is important to keep track of your measures for success so that you can assess the impact of changes soon after you make them.

Collect, analyse and review your data

As you have tested your changes you should have continued to collect, analyse and review your key measures to show the impact of the changes you have made over time.

The Scheduling module, and in particular this section, has some clear quantitative measures:

- Session utilisation - percentage of funded staffed sessions actually being run
- Number of staffed sessions not being taken up
- Number of additional lists being put on by specialty – waiting list initiatives
- Turn around times between patients
- Under run and over run (start and stop audit).

What is the impact of the changes you have made on these measures or the others that you have been collecting, analysing and reviewing?

Use the following questions to guide your discussions	Examples
What were we aiming to achieve?	To increase session utilisation, reduce time wasted between patients and decrease the amount of additional lists
Do the results indicate we are achieving those aims?	Yes, we have increased our session utilisation and decreased turnaround. The number of additional lists has reduced but could be improved further
Is the team confident we have made the correct conclusions?	Yes, there is a clear relationship between our changes and increased utilisation
Has the team measured the change for long enough to draw conclusions?	Two months more data would show if the trends continue to increase or are going to be sustained
Do the results indicate we should be doing something else?	Perhaps in relation to the number of additional lists
Are the measures useful?	Yes No - review and adapt measures used

Collect feedback from staff and patients

What impact have the changes had on the different groups involved – unit staff, consultants, endoscopists, trainee endoscopists, patients, schedulers?

- Are the changes having a positive or negative impact on them?
- Do they have suggestions for how the changes can be improved further?
- Collect anecdotes and examples

Update the Knowing How We Are Doing board

- Use your Knowing How We Are Doing board to communicate and share progress with the endoscopy department on key measures. Also include quotes, comments and staff and patient stories
- Include the headline results in your Productive Endoscopy Unit newsletter, so that progress can be shared across the organisation
- Your key performance measures should be summarised and regularly presented at your Trust board.
- Remember to share and communicate the progress with all members of the team

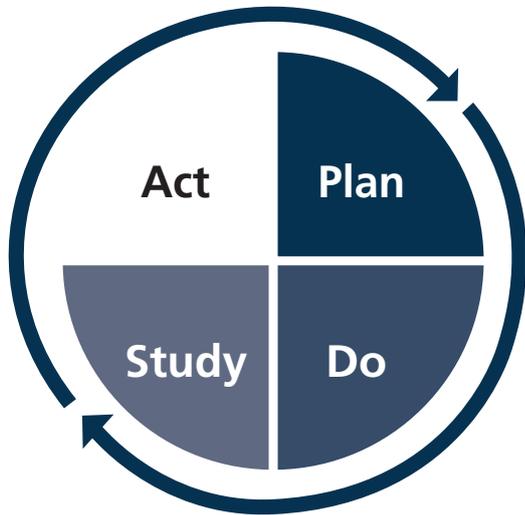


Study – milestone checklist

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

Checklist	Completed?
Continued to collect, analyse and review your data	
Discussed the impact the changes have had on the data	
Collected feedback from staff about how the changes have affected them	
Updated the Knowing How We Are Doing 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?	



Act

Once you have successfully developed and tested your improvement ideas, you will need to plan for roll-out across your organisation, and crucially, how the changes will be sustained in the long term.

Agree which improvements have been successful

Once the team has undertaken the data analysis and reviewed the feedback, they will need to decide whether to:

- Adopt the change
- Adapt the process in some way to improve it further. Is one part less successful than another? If changes are decided on then do you need a further period of study to understand whether the adaptation(s) have worked?
- Abandon. If the proposed change has not worked – do not despair. Carefully analyse as a group what you have learned and what you would do differently next time. Are there things you have learned that may be useful to the wider group working on other parts of the programme? If so share them.

TIP: The Model for Improvement encourages the testing of lots of ideas through small cycles of change. It is expected that many changes will need to be adapted before they are adopted. It is also expected that changes will be abandoned which is why you should first test ideas on a small scale in a supportive environment.

Adopting a change and planning for roll-out

For the changes you are adopting as a team, you will need to create a roll-out plan that considers the following factors:

- How you might roll changes out and embed them across a wider group e.g. another site?
- Who will lead on this and take ownership of the changes?
- How will you disseminate the information to all those concerned?
- How will you put in place a monitoring system to ensure the change is sustained over time?

Continue to monitor and review

- It is important that you continue to collect, analyse and review your key measures, to encourage sustainability - particularly as you roll-out to new areas
- It is still important to collect, analyse and review your data in the original area where you first implemented the change. However, once you are satisfied that the change is an improvement and is being sustained, you may reconsider the frequency and the number of measures that you collect, analyse and review.

How can I make it stick?

As much effort, if not more, needs to go into the roll-out and sustainability of a change as goes into the planning and start of it. Sustaining new ways of working is always a challenge. The NHS Sustainability Model identifies ten factors that are key to the sustainability of any improvement. They are explained in the table below. These should be considered in your roll-out plan.

	Factor	Things to consider
Staff	Clinical leadership	<ul style="list-style-type: none"> • Have strong clinical leaders and champions supporting the change, use them to influence their colleagues.
	Senior leadership	<ul style="list-style-type: none"> • The programme executive leader.
	Training and involvement	<ul style="list-style-type: none"> • Provide training on the changes to those that are affected by it so that they understand any new systems and processes, e.g. if you change from a paper to electronic diary make sure the staff are confident in using the new electronic system.
	Staff behaviours	<ul style="list-style-type: none"> • Continue to involve staff in developing the changes further – people own what they help to create which will increase the likelihood of sustainability. Use your champions to influence their colleagues
Organisation	Fit with organisational goals and culture	<ul style="list-style-type: none"> • Show how the change fits, with your Productive Endoscopy Unit vision and the wider organisations strategy
	Infrastructure	<ul style="list-style-type: none"> • Formally incorporate the new roles and responsibilities that people have as a result of the changes into their job plans • Develop policies that embed the changes
Process	Benefits	<ul style="list-style-type: none"> • Explain to the staff involved what the benefits of the new ways of working are for them
	Credibility of evidence	<ul style="list-style-type: none"> • Share the qualitative and quantitative benefits that you have collected through the testing cycles to engage colleagues during roll-out
	Monitoring progress	<ul style="list-style-type: none"> • Continue to monitor the progress of the changes so that teams can see the impact of their efforts.
	Adaptability	<ul style="list-style-type: none"> • Consider how the change will adapt to a different team, specialty or site, do modifications need to be made?

To identify factors you may need to focus on to increase the sustainability of your improvements complete the Sustainability Model which is available as a part of the Toolkit.

Act – milestone checklist

Go back to **Plan** for another cycle of improvement when you have completed all of the items on this checklist.

Checklist	Completed?
Agreed which changes have been successful and should be adopted	
Agreed which changes need to be adapted and decided how they will be taken through another testing cycle	
Agreed which changes should be abandoned	
Developed a roll-out plan for changes that will be adopted	
Agreed how you will continue to monitor your measures	
Completed the Sustainability Model to identify any factors that may need further work to increase sustainability	

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. Managing lists

What is managing lists?

This section will be the most familiar to schedulers as it deals with:

- Creating an endoscopy list from the booking information
- Ensuring lists are optimised
 - not overbooked leading to late finishes
 - not underbooked leading to early finishes
- Cascading the information about the lists to appropriate groups in a timely manner to ensure correct staffing and equipment are available.

This section will show you how to:

- Work with your colleagues to collect and use relevant data
- Use this information to create realistic lists based on:
 - the points per procedure allocation
 - the turnaround time between cases
- Identify how the current scheduling system works, the waste within it, and how to eliminate it.

Why do it?

Overbooked and underbooked sessions have potentially serious effects on everyone and need to be minimised wherever possible by careful planning.

To correctly populate a list you will need to know how long each part takes.

The only way to actually know how long an operator takes to undertake a session and individual procedure type is to measure it, however for endoscopy there are some standard expectations which are that a fully trained endoscopist should be able to deliver 12 points per session. A session is based on 4 hours. An endoscopist in training may well start by delivering 8 points and work up to 12 as their abilities and experience increase.

To be able to correctly populate a list it is also important to understand the whole scheduling process, the people involved, what they do at each stage, what information is communicated and how. This will enable you to identify areas where you can make the process more reliable and efficient.

Operational essentials

When working through this module there will be some operational essentials that you should include, and have readily to hand to ensure that your teams work dovetails with both national and hospital policy and supports accreditation of your unit through the Global Rating Scale.

Delivering services in accordance with these areas will directly impact upon the performance management for your unit and hospital. Commissioning from primary care teams will be made with reference to these national and local goals.

National policy

The NHS Constitution – Everyone Counts – describes what patients are entitled to expect in terms of access and equality for example with diagnostic waiting times, mixed sex accommodation, cancellations and equality. The 2013/14 publication can be found here; <http://www.england.nhs.uk/everyonecounts/>

You should ensure that capacity is planned appropriately and can be flexed through advanced planning to accommodate the goals within the constitution and those of timeliness and choice within the Global Rating Scale.

Bowel Cancer Screening

In order to optimise the benefit to risk ratio of screening, colonoscopy services in the Bowel Cancer Screening Programme (BCSP) must be delivered to national standards. Whilst dedicated BCS lists ensure screening patients are seen in a timely fashion, every effort should be made to release lists not required in a timely fashion to enable the capacity to be used for symptomatic patients. This can only be achieved by developing a true team working approach and liaison between the bowel cancer screening nurses, schedulers, endoscopy manager and clinicians.

Hospital policy

Your unit should have the latest hospital waiting list policy available within the scheduling team office at all times (GRS 8.1).

Along with the *Knowing How We Are Doing* module team, ensure that all current processes which are going to be retained and improvements are assessed for equality of access (GRS 7.11).

An example might be to ensure that any single sex waiting list times are equal with other lists for the same procedure, it would be inappropriate for patients who choose a single sex environment to have a significantly extended waiting time.

The problems with overbooked lists

For staff

Lists that are regularly overbooked and therefore over-run, can cause considerable stress to endoscopy unit staff. Every list that over-runs increases the likelihood of staff:

- Becoming disengaged and de-motivated
- Having increased sickness rates
- Leaving the organisation.

For patients

Overbooked lists risk patients being cancelled. This can be very upsetting and disruptive for patients and their families who have:

- Reorganised their commitments to come in for the procedure
- Taken bowel prep ready for colonoscopy
- Experienced the stress of expecting a procedure, preparing themselves and then realising they will have to undergo the whole pre-operative experience all over again.



My appointment was 9:20am - seen two hours later - made me very anxious. ”

Patient

For consultants

Overbooked lists are tiring and stressful. The situation has the potential to:

- Decrease performance, thereby affecting the quality and outcome of the procedure
- Impact upon other commitments.

Overbooking lists builds an increased risk of errors and suboptimal results into the system, which can be avoided by correct scheduling.

Some teams have overbooked sessions because they have a high DNA rate, working around an issue is not effective. Tackling the root cause of DNAs should be the priority.

Overbooking trainee lists adds additional pressure to a learning environment and should be avoided through appropriate planning initiated with good feedback and communication between teaching leads and the scheduling planning lead. (GRS 18.4 and 18.13)

For the organisation

It is inefficient, expensive and unsafe to overbook. Overbooking results in:

- Increased safety risks due to teams becoming fatigued
- Reduced quality due to teams becoming fatigued
- Overtime or owed time – which causes disruption at a later date
- Using expensive agency staff to back fill these gaps
- Disengaged staff – which has been shown to decrease productivity

Problems with under-booked lists

The issues with overbooked lists have to be balanced against the problems with under-booked lists. Under-booked lists can lead to:

- Increased waiting times for patients
- Slow start and poor session flow
- Additional lists at premium rates to manage waiting times
- Staff dissatisfaction at not being able to use their skill and expertise to help patients
- Unused / wasted room and staff time (an expensive resource)
- Loss of income for the organisation.
- Underutilisation will jeopardise investment for future growth.

Once the list has been created and agreed, it needs to be communicated widely in a timely manner to allow the required staff and equipment to be made available so that the list can run smoothly on the day.

Linking scheduling with other modules

Although they are clearly linked, it is important to understand the difference between a list that is overbooked and a list that overruns.

Overbooked lists have too many cases or not enough time allowed for each case, this indicates an issue with scheduling.

Over-running lists could be a result of too many cases or not enough time being allocated for each case. They could also be a result of late starts, inefficient turnarounds, patients not being ready, glitches or complications that have occurred throughout the day.

Similarly there is a difference between a list that is under-booked and a list that under-runs.

Underbooked lists have too few cases or too much time allocated for each case; again this indicates an issue with scheduling.

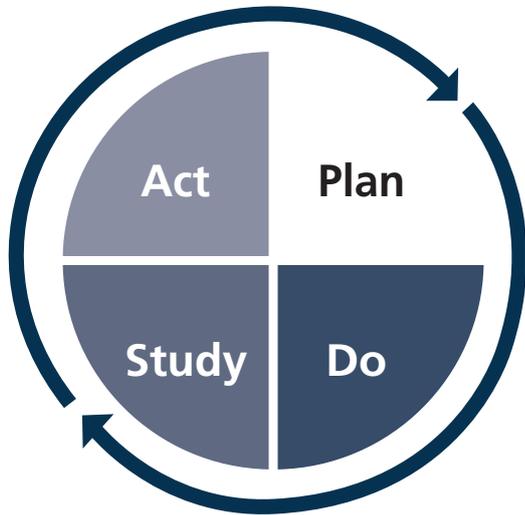
Under-running lists or lists that finish early could be the result of too few cases or too much time allocated for each case, but could also be a result of efficiencies made during processes within the list, such as session start-up, turnarounds or elimination of glitches.

Improvement work which seeks to reduce under and over runs, will only impact on service delivery if once these issues are resolved (releasing capacity) this capacity is then used to put on more cases. Communicating this two step approach to the operating team is essential. The improvement goal is not to work the team harder but to release wasted time and replace this with hands on patient care.

As a result of this close relationship between scheduling and the processes occurring within a list, this stage of the Scheduling module is closely linked to the process modules. It is therefore important that the module teams work closely together in particular around *Session Start Up and Patient Change-over*.

The aim of the *Session Start Up and Patient Change-over* module is to remove any waste from these processes, so that they can be routinely carried out in the most efficient way in terms of both time and process. This will result in a reduction or the elimination of delayed starts and improved times for turnarounds between cases.

As part of these modules the teams will time how long, in minutes, these processes take. This information will be needed for this module to schedule and manage lists effectively.



Plan

There are a number of steps to work through to help you plan tests of change (PDSA cycles) for implementing managing lists.

The module team needs to understand the importance of involving all groups of staff to make sure the solutions tested in PDSA cycles meet everyone's needs.

Ensure strong and visible leadership

Identify a lead for this part of the module. This could be the programme leader, an improvement facilitator, a consultant or one of your programme champions. They will need to:

- Agree an implementation plan with the executive leader, programme leader and lead clinicians for the programme
- Set the direction and drive this programme forward
- Manage the timelines
- Arrange and lead meetings and working sessions
- Provide support and encouragement to the project team
- Engage and influence the wider team
- Work closely with clinical teams and schedulers
- Work closely with the process module teams.

Creating the team

There are various groups involved in the different stages of creating a list and it is important they are all involved in this programme. The team will work together to understand the current way of managing a specific list from the different perspectives of all the groups, and identify what changes could be made to improve the process for all involved and in particular the patient.

Membership of the team might include:

- Programme leader
- Nursing staff
- Pre assessment team
- Schedulers
- Endoscopists (surgical, medical and nursing)
- Unit manager
- Directorate manager
- Bowel cancer screening team
- Information analyst.

This is intended only as a guide; other groups or individuals may need to be involved at specific parts of the journey, e.g. inpatient ward senior nurse.

As previously mentioned this part of the Scheduling module links very closely to the process modules, in particular Session Start Up and Patient Change-over. The teams working on these modules will have to work closely together. We would encourage an overlap between the membership of these teams to guarantee a connection between the modules.

Collecting relevant data

The collection of data is necessary to:

- Help you understand your current state
- Identify areas for improvements
- Provide you with a baseline
- Create effective lists that are based on procedure times.

Before collecting any data, decide an area to focus on first to test your data collection. There are a number of different possibilities:

- Collect data on one room for a week
- Collect data on the high throughput procedures
- Collect data to ensure you can demonstrate improvement in your unit.

Some possible aims of this module include the following.

- 1** 20% increase in activity from average baseline position
- 2** Identifying two more colonoscopy slots per day
- 3** Calculating 'lost' capacity each session (late starts/early finishes/slicker changeovers)
- 4** Amount of waste identified (quantified in 'time') = 'potential time saving'
- 5** Activity 'actually' done versus 'declared' activity PA

1) Procedure times

Collection of actual procedure times is the key to creating effective lists. To understand how long each procedure actually takes, collect the following information:

- Operators name
- Precise information on what procedure was undertaken (note if the planned procedure and actual procedure are different and why)
- Length of time the procedure took (minutes) – clearly define this e.g. from insertion of scope to removal
 - Standard - Mean inspection time > 6 minutes on withdrawal from caecal pole to anus in negative procedures (Ref: Quality Assurance Guidelines for Colonoscopy - NHS BCSP Publication No 6-February 2011)
- Turnaround time between cases (minutes) – all the time not included in the length of procedure
- Details of any special circumstances that may affect the time
- Anaesthetist's name (if required) and sedation time.

You should try and collect data on all the procedures in all of your sessions for at least one month, preferably two or three, to capture as much information as possible.

You may already collect this data, if not use the Pathway Timings Audit in the Toolkit to help.

Use this data to identify the average time each operator takes to carry out each procedure. Exclude from your average any timings that had special circumstances such as complications, that resulted in the procedure taking a very unusual length of time.

This data will give you a realistic set of times from which it will be possible to ensure that the points allocation per session (or points per procedure), is realistic for the operator and procedures planned.

Endoscopy schedules are commonly allocated on a points system with 1 point = 15 mins of session time. As mentioned earlier a fully qualified endoscopist should be delivering 12 points within a 4 hour session and those in training 8 points moving up to 12 as they gain skills and experience.

You should collect data which looks at the points which were scheduled over a month and compare this to the points which were delivered. You are looking at variation between rooms or operators which does not have a reasonable explanation.

2) Start, finish and change-over times

To understand how your lists currently run you will need the following core information:

- **Start time:** number of minutes each session starts late or starts early and the reason why
- **Finish time:** number of minutes each session finishes late or early and the reason why
- **Changeover time:** number of minutes the change-over between each patient takes.

The Productive Endoscopy Unit - 5. Managing lists

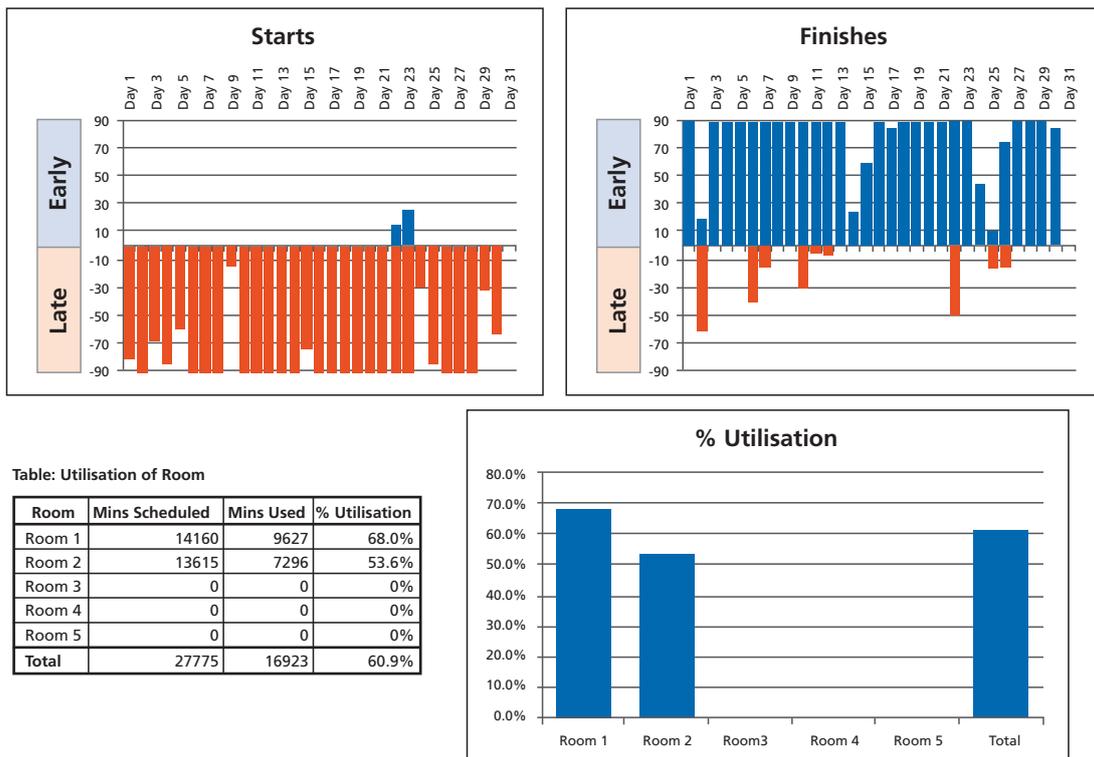
To help you audit start and finish times a spread sheet is available as part of the Toolkit. Print off the manual collection sheet and provide one to each endoscopy room. Ensure that the reason codes are used meaningfully - do not encourage free text as this is difficult to analyse.

Audit of reasons the endoscopy session delayed in starting and/or over run								
DATE - Week commencing -								
ENDOSCOPY ROOM NUMBER -								
SCHEDULED OPENING TIMES		9.00am - 13.00pm 13.30pm - 17.30pm						
DAY	am/pm	Arrival time	Start time	Stop time	Endoscopist	Actual points per session	Reason (see codes)	Reasons for variance
6	MON	AM						1 Room not ready
7	MON	AM						2 Equipment not ready
8	MON	AM						3 Admin not ready
9	MON	PM						4 Nurses not ready
10	MON	PM						5 Doctors not ready
11	MON	PM						6 No Patients arrived
12								7 No medical records
13	TUE	AM						8 I.T. problems
14	TUE	AM						9 Decontamination issues
15	TUE	AM						10 Missing stock
16	TUE	PM						11 Machine Failure
17	TUE	PM						12 Patient here early
18	TUE	PM						13 Procedure easier
19								14 All staff here
20	WED	AM						15 No patients left
21	WED	AM						16 Procedures complex
22	WED	AM						17 Patients arrived late
23	WED	PM						18 Had a late start
24	WED	PM						19 Medical emergency
25	WED	PM						20 cancelled list
26								21 Multiple reasons

Ensure that one person each day is responsible for collecting the data in each room, also that one person is then responsible for ensuring the data is completed properly and for entering this data on a weekly basis into a spread sheet.

Room No	Time of Day	Data Type	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
1	Morning	Scheduled start time	09:00	09:00	09:00	09:00	09:00	09:00
		Actual start time	09:15	10:30	09:30	09:15	09:25	09:18
		Scheduled finish time	13:00	13:00	13:00	13:00	13:00	13:00
		Actual finish time	11:35	12:20	13:04	13:05	11:50	13:00
		Reason for Start Variance	Doctors not ready	Medical emergency	Doctors not ready	All staff here	Doctors not ready	Doctors not ready
	Reason for Finish Variance	No Patients Left	No Patients Left			No Patients Left		
	Afternoon	Scheduled start time	13:30	13:30	13:30	13:30	13:30	13:30
		Actual start time		14:10	14:05	13:30	13:50	14:45
		Scheduled finish time	17:30	17:30	17:30	17:30	17:30	17:30
		Actual finish time		18:00	16:35	17:30	16:50	17:10
Reason for Start Variance		Cancelled List	doctor coming from another	Doctors not ready			doctor coming from another	
Reason for Finish Variance			No Patients Left		No Patients Left	No Patients Left		
2	Morning	Scheduled start time	09:00	09:00	09:00	09:00	09:00	09:00
		Actual start time	08:59	08:45	09:50	09:45	10:25	09:05
		Scheduled finish time	13:00	13:00	13:00	13:00	13:00	13:00
		Actual finish time	11:32	11:15	11:25	12:00	11:30	12:55
		Reason for Start Variance			Doctors not ready	Doctors not ready		
	Reason for Finish Variance	No Patients Left	Multiple Reasons	No Patients Left	No Patients Left	No Patients Left	No Patients Left	

A report will then be produced for you. It is important all room staff feel the data is important, are involved and responsible for the collection, and the results are discussed with them and acted upon. These roles should be rotated between all members of staff.



Cancellations and rescheduling

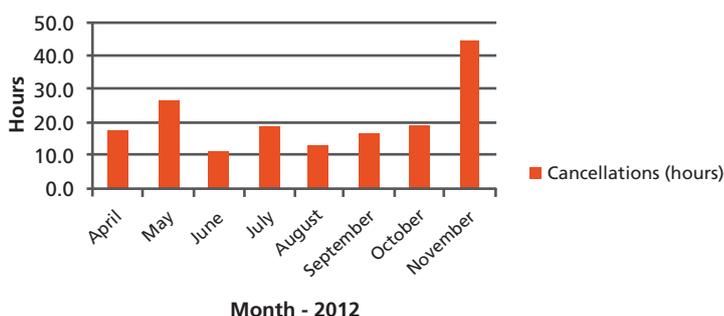
For an indication of the amount of re-work involved in re-scheduling cancellations, collect the number of patients rescheduled each week and the reasons why.

Understand how long it takes

Measure each process to see how long it takes to:

- Compile a list (include all telephone conversations, written requests)
- Book a patient
- Cancel and re-book a patient.

Cancellations (hours) - this could be re-work for the A&C staff



For example, in one test site, because they were working with paper diaries and did not offer choice to patients they had a cancellation (and subsequent re-work for the administration team) of 25% of all referrals. This equates to approximately 21 hours per month of A&C band 2's and 3's time rescheduling appointments (see graph). Over a year, this adds up to 252 hours or £2,200 p.a (mid-point band 2 and 3 average pay) just to reschedule cancelled appointments.

Policies and templates

Collect:

- Policies relating to scheduling that your organisation has developed
- Examples of templates that are used to collect and pass on information at the various stages of the scheduling process
- Screenshots from any IT systems and understand how they are used.

Talk to staff

From the data collected so far, the team will be able to see the impact of the current way the lists are created. Are sessions being used effectively? Do they over-run or under-run?

To support this information and to begin to understand where improvements can be made, you will need to understand the process used to create the current lists.

Speak to unit staff, schedulers, endoscopists, bowel cancer screening, secretaries and others involved in the scheduling process. The aim is to get general feedback from all staff involved in the scheduling process to help you understand how lists are currently created and to gather ideas about how it could be improved. Use these questions to guide your discussions.

- What information is used to create the list?
- What works well?
- What frustrates you?
- What ideas do you have about how it could be improved?

This information can be collected in one to one interviews or in small group sessions. Refer to the Toolkit for guidance on interviewing.

Talk to patients

The scheduling process is one of the stages on their experience of the service they received. Their insight is essential in improving your scheduling process so that it is centred on the patient.

Collect feedback from patients. You could do this through a questionnaire, through semi-structured interviews or using the Experience Based Design approach and emotional mapping.

The aim is to understand how the scheduling process felt to them, so that you can make improvements that your patients really want.

For more information about getting patient's perspectives see the Patient Experience module for tools on gathering patient opinions.

Analyse the data collected

Review all the information, data and feedback that has been gathered in order to get a clear understanding of how your current scheduling process is working, how the lists are currently constructed and how effectively they run on the day

You should be able to identify:

- Positive elements of the current scheduling process - that you want to keep and build on
- Negative elements, problems or frustrations that you want to eliminate, change or improve.

You will use all of this information to create a process map of how you create and communicate a list.

Review ideas that have worked elsewhere

As scheduling is such a large and complex process, you will need to develop your own approach for your organisation that focuses on your local issues. Reviewing the learning points and examples of improvements made in other sites may prompt ideas that could also work for your organisation.

Learning points

What we have learned from our test sites and other organisations about creating effective lists:

- Use the data you have collected to inform you in your decision making process
- All endoscopy units should have a waiting list management system that effectively records all new and recall (planned/surveillance) patients and this links closely with any hospital information system which records activity to ensure your unit gets paid for the work it completes. (GRS 8.3)
- Raise the profile of scheduling – if scheduling is poor it will impact the rest of the pathway
- Work closely with your colleagues in the endoscopy rooms to have common definitions, e.g. 'start up' and 'finishing' times
- Recognise that some operators may display considerable variation in procedure times and points per session for the same procedures. You will need to understand in a non-confrontational why this occurs to effectively manage these lists
- Discuss variation with the clinical director to have a clinical overview of the challenges
- Discuss with your endoscopists the idea of 'pooling' some patients. Being able to transfer patients between operators and lists increases flexibility to a significant degree. In some organisations this may prove easy to effect whilst in others it may generate considerable resistance. You may consider trialling this with one small group. (GRS 8.10)
- Effective communication methods are essential for gathering the right information in sufficient time to create the lists, and then to distribute them across the organisation.

Ideas that have worked elsewhere

Example nine: Pooling lists - Whipps Cross Hospital, Barts Health NHS Trust

Problem

- Patients were not seen 'in turn' due to surgeons and physicians having their own lists
- Depending on when the consultant/endoscopist had a list scheduled, a patient could wait a longer time to be seen by the consultant they saw in the clinic they were referred from

What we did

- The clinical lead held discussions with colleagues – both on a one to one basis and as a group
- Pooled the procedure list in accordance to the patients appointment time
- Agreed that no 'cheery picking' was allowed during a pooled list to ensure equality
- Audited the finishing time during pooled list
- Some consultants only perform Oesophago-Gastro-Duodenoscopy (OGD) investigations so patients cannot go to these consultants in the general pooling lists

Impact

- Rather than three queues there is now only one
- Most consultants pool all cases – diagnostic and surveillance
- Technically difficult patients are exceptions to the rule (e.g. variceal bleeds etc.)
- Patient flow is kept to an optimum with as near first in first out succession in place
- The backlog has been substantially reduced
- Surveillance patients are all seen within their due dates
- Best use of all capacity is made across all lists
- Pooling lists has justified not cutting points back for trainees – a tactic that has been surprisingly positive for junior members of our team

Top tips for introducing pooled lists:

- Be pragmatic - if one consultant does not want to be part of the 'pooling team' then work around it. Chances are, they will come round when they see the successes across the team
- Lead by example
- Demonstrate the benefits through data

Pooled lists - Northumbria Healthcare NHS Foundation Trust

Problem

- Consultants traditionally wanted to scope the patients they had seen in clinic, and then review them back in the clinic at a later date
- With the advent of the ICARUS appointment system, the consultants were able to access the diaries for all endoscopy rooms over five sites – regardless of the consultant named to run the session. This provided an opportunity to review current ways of working

What we did

- Discussions were held at Endoscopy User Group meetings between the surgeons and the physicians as to how best the endoscopy workflow could be managed across the whole Trust
- There were suggestions about 'pooling' patients for diagnostic and surveillance purposes
- Although this was initially met with some resistance, eventually, concerns were overcome and a trial period was agreed

Impact

- All patients now leave their outpatient clinic appointment with an endoscopy date booked
- Patients are offered choice at the time of consultation and walk immediately to the endoscopy department for their pre-assessment to be performed on the same day
- Consultants can still choose to do specific patients on their own lists if necessary – but the patient is informed why
- Capacity across the whole endoscopy service is utilised more effectively as all slots are now filled for each list
- A confirmation letter is still sent by post to every patient

Example ten: Start stop audit - Portsmouth Hospitals NHS Trust

Problem

- Patient flow was variable
- Long turnaround times between patients were making lists overrun
- Some lists moved faster than others

What we did

- Monthly start stop audit
- Discussed at Friday morning nurses meeting to raise awareness of the audit and initial findings
- Added an extra patient onto inpatient lists where possible to improve turnaround times of inpatients
- Made sure admitting nurses had staggered starts

Findings

Data showed it could take anything between 3 – 19 minutes for changeovers between patients. This variation needed further root cause analysis to find out the 'real' reasons for delays and put actions in place to reduce them.

Impact

- Reduced waiting between patients on each list
- Less lists running over time
- Increased awareness of lists being monitored improved tardiness
- Healthy competition between rooms
- No-one wants to be seen as the late laggards!
- Co-ordinator makes sure inpatients are ready if there is a slot at the beginning of a list
- The team are encouraged to discuss at outset of the list 'who' is responsible for 'what' role in changeovers between patients

- The GP/ERCP lists have a team brief prior to the list start. The purpose of this is to identify everyone's roles according to the WHO checklist
- Rooms are stocked up in the evening and it is part of the daily huddle to review if they are ready – to stop interruption to flow mid list in search of consumables

Example eleven: Removing paper notes from the unit - Queen Elizabeth Hospital Birmingham

Problem

When patients were booked for an endoscopy, the booking staff would forward a request to the medical records department to retrieve the hospital notes from file and send them to the endoscopy booking office. Once received, these notes would be prepped by the prep team with the relevant documentation and sent to the endoscopy department ready for the patient's visit. This amounted to approximately 250-300 sets of notes each week.

The system was set up before the introduction of the electronic patient record at the Trust which is now used by all other outpatient areas, meaning the need for notes in outpatients no longer exists.

What we did

Discussions between the project manager, clinical lead, endoscopy manager, the booking team, endoscopy nursing staff and some of the endoscopists in the unit, came to a general consensus that with the electronic patient record available, there was no longer a need for the paper notes to be in the department.

The Trust's medical records manager was very supportive of moving to a paperless process.

As there was still a need for some paper documentation (pathways, consent forms etc.) in the department, it was agreed that this would still be prepped in advance and sent to the Endoscopy Unit instead of being filed in the notes; these could then be scanned to the electronic patient records after the patient's visit.

The plan was communicated to all endoscopy users, with a PDSA of a two week trial where notes would still be available during the trial. They would only be available to the Endoscopist by specific request. Throughout the trial period, the nursing staff kept an audit of the total number of requests they received for notes and this was noted as zero. Based on this and the positive feedback, the decision was made and communicated to all endoscopy users that hospital notes would no longer be available on the endoscopy unit.

Impact

On an average week 25 hours were saved in administrator time, allowing them to refocus this on booking patients for procedures and filling lists more efficiently, making sure that all patients were booked in for pre-screening appointments as required, and calling patients to remind them of their appointments in an attempt to reduce last minute cancellations or DNAs.

This removal of waste can also be expressed as £14,178 per annum based on a band 3 salary.

The notes no longer appear in the reception area which improves the first impression for patients attending, gives more storage space to staff and improves the security of confidential information.



Removing the notes from the department has led to lots of positive feedback. It has made the jobs of the booking staff, the receptionists, the nurses and everyone involved in endoscopy so much easier and gives the patients the best impression possible when they arrive.



Ian Shakespeare, Project Lead and Group Support Manager for Endoscopy, United Hospitals Birmingham NHS Foundation Trust

Example twelve: Reducing DNA's and short notice cancellations - Gateshead Hospitals NHS Trust

What we did

DNAs

- Data over six months in 2013 revealed 88 DNAs (approximately 2% of activity during the period)
- A further breakdown of the 88 patients' demographics revealed that females aged between 50 to 69 residing in NE9, NE10 or NE16, and males aged between 60 and 69 residing in NE10 were most likely to DNA
- This information was passed to the pre-assessment nurses who were instructed to give extra regard to patients they saw in clinic who met this profile
- A questionnaire was sent to the 88 DNA patients to draw out themes around cause of not attending, but the response rate was low and reasons varied widely
- A proforma is now attached to all patient notes created for endoscopy referrals (new and repeat) which states when a patient has not attended or cancelled at short notice
- Any DNA or short notice cancellation notes are passed back to the referrer with the proforma on the front for a decision on whether to rebook or discharge
- There is a Trust policy of a maximum of two DNA episodes then automatic discharge.

Short notice cancellations

- Three week's data on all lists was analysed to determine how many short notice cancellations occurred and if these slots were re-utilised or lost
- Over this period a total of 65 points (or 16.25 hours) were not re-utilised due to cancellations with 38 of these cancellations at short notice (less than 72 hours)
- Based on 15 minutes per point and an hour of average endoscopy activity generating approximately £1,255 revenue¹ this was a waste of nearly 6 hours and £7,530 lost income per week (not including the additional costs incurred by the unit i.e. staff, utilities and consumables for running the list)
- Aggregated for a year this would equate to 282 hours (or 70 lists at 4 hours per list) and £353,910 lost income to the unit (not including cost of running the list)
- During the third week of data collection the endoscopy scheduling team decided to proactively monitor all cancellations which had come in during the day, in order to produce a daily cancellation report which was then phoned through to booking staff for immediate action
- Nursing staff on the unit were also notified of spare slots the following day so they could proactively triage the inpatient referrals to compliment the work of the booking team.

Impact

- This work showed that numerous patients who went on to not attend had received a reminder through the automated messaging service in operation at the Trust (with 14 patients having confirmed their appointment with the hospital)
- These findings have been passed on to feed into the next review of the effectiveness of reminder methods for patients
- Proactive monitoring of lists by the scheduling team during the third week of the exercise resulted in the re-utilisation of 16 out of 27 points (59%) which would have been lost as a result of cancellations
- This meant that 6.75 hours of potential lost activity was reduced to 2.75 hours and from a lost income basis the waste was reduced from a potential £8,471 to £3,451 (not including the costs incurred in running the list)
- Although 11 points were still lost, four of these were cancelled within one hour of the procedure and were not able to be utilisable by that point.

5. Based on an average hour of revenue generated with tariff, performing most common three procedures based on 15 minutes per point, and using suggested number of procedures per point as colonoscopy = 2 points, flexi-sigmoidoscopy or OGD = 1 point i.e. (4 points of colonoscopy @ £992) + (4 points of flexi-sigmoidoscopy @ £1300) + (4 points of OGD @ £1472) / 4 = £1255 an hour

Example eleven: Reducing DNA's and cancellations - Whipps Cross Hospital, Barts Health NHS Trust

Problem

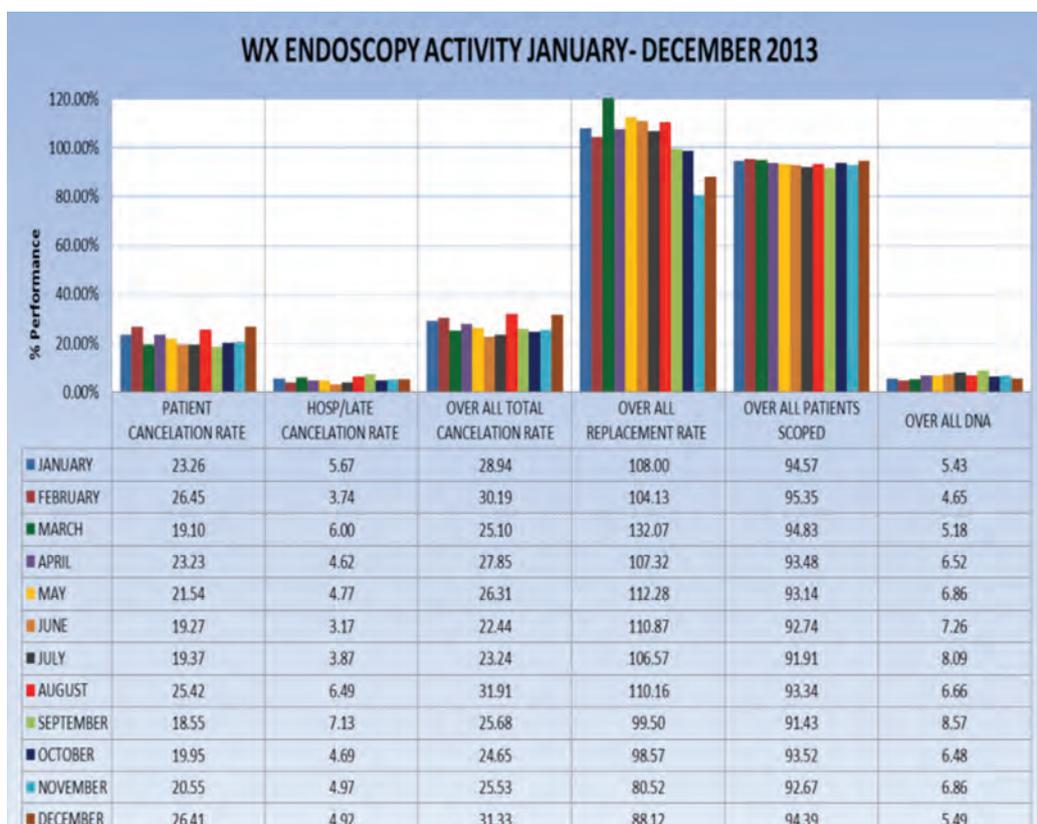
- Identified a high DNA rate of 14%
- Historical cancellation rate of 33%

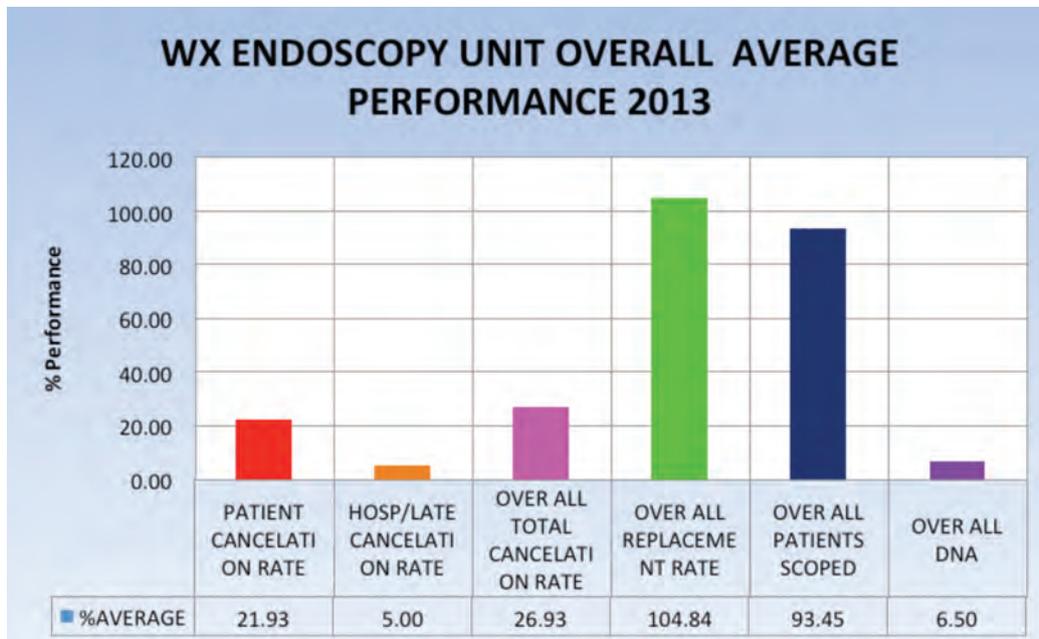
What we did

- Pooling lists and implementing pre-assessment as part of the outpatient process; telephone triage for GP referrals has helped to reduce the cancellation rate
- Introduced 'Gastroenterologist Of the Day' (GOW) to triage referrals every day:
 - T1: immediate (bleeders etc.) – procedure performed the same day
 - T2: patient to be seen within 24 hours
 - T3: routine patients seen as outpatients within 2-4 weeks
- The front of house (administration team) telephone patients a few days prior to their appointment to ensure the patient is still intending to go ahead with the investigation/procedure
- Made a formal agreement that all slots on lists were to be filled (even those with short notice cancellations)

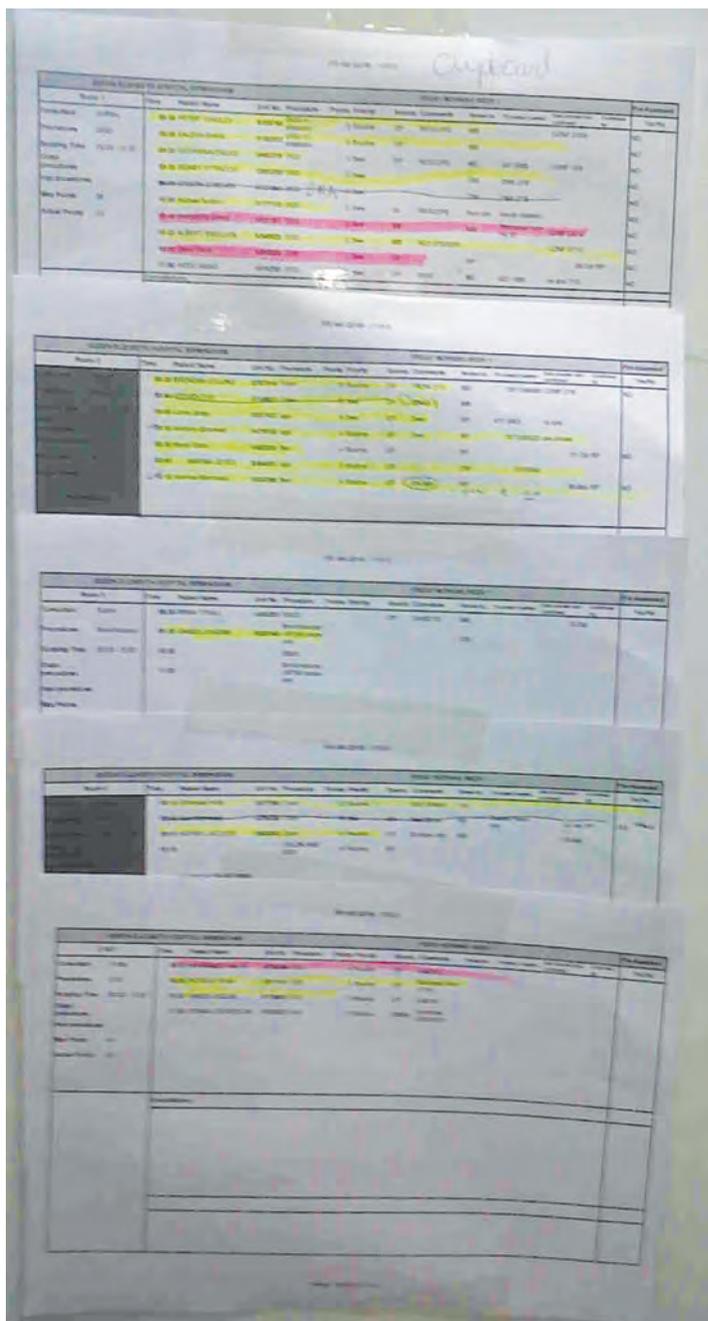
Impact

- DNA rate has reduced from 14% to 4%
- Now have a 98% replacement rate for cancellations





Example twelve: Queen Elizabeth Hospital - University Hospitals, Birmingham NHS Foundation Trust



A daily room scheduling plan (daily patient list) is placed on the inside hatch of each room's consumables cupboard. As each patient's procedure is completed they are marked off on the list but because the hatch is accessible from the unit corridor, staff are able to check on the rooms progress without going in and without patient details being on display.

Example thirteen: Reducing DNAs and cancellations – Northumbria Healthcare NHS Foundation Trust

Problem

- DNA rate of 4-5%
- Cancellation rate of 5-6%
- By comparison, DNA rate for Bowel Cancer Screening patients is only 0.58%

Monthly breakdown of DNA and cancelled procedures

Month	Total Performed		DNA		Cancelled/Not Performed		Total Not Performed	
	No.	%	No.	%	No.	%	No.	%
August	1264	90.5%	70	5.0%	62	4.4%	132	9.5%
September	1400	90.9%	62	4.0%	78	5.1%	140	9.1%
October	1305	88.8%	76	5.2%	89	6.1%	165	11.2%
Total	3969	90.1%	208	4.7%	229	5.2%	437	9.9%

What we did

DNAs and cancellations were broken down by procedure.

Procedures cancelled

	Cancelled			DNA			Total		
	Procedures		Points	Procedures		Points	Procedures		Points
	No.	%	No.	No.	%	No.	No.	%	No.
Colonoscopy	51	1.2%	102	34	0.8%	68	85	1.9%	170
OGD	112	2.5%	112	96	2.2%	96	208	4.7%	208
Flexi Sig	65	1.5%	65	78	1.8%	78	143	3.2%	143
ERCP	1	0%	3	0	0%	0	1	0%	3
Total	229	5.2%	282	208	4.7%	242	437	9.9%	524

n = 4406

Reasons for cancelled procedures – by the patient

Of those cancelled, 52% were cancelled by the patient. The principal reason, 45/120 (38%), that patients gave when cancelling their appointment was that they were unwell/unfit for their procedure. The majority, 98/120 (82%), of procedures were cancelled on the day of procedure.

Cancelled by patient due to:	On Day		≤ 2 Days Before		2 Days Before		n=229 Total	
	No.	%	No.	%	No.	%	No.	%
Patient says unwell/unfit	38	32%	5	4%	2	2%	45	20%
Procedure preparation non-compliance	15	13%	-	-	-	-	15	7%
Family/home commitments	6	5%	5	4%	1	1%	12	5%
Patient no longer wants	4	3%	4	3%	-	-	8	3%
Problem with bowel prep	7	6%	-	-	-	-	7	3%
Patient has no transport	7	6%	-	-	-	-	7	3%
Patient requested later date	5	4%	1	1%	-	-	6	3%
Work commitments	4	3%	1	1%	-	-	5	2%
Cancelled as a result of admin error ²	3	3%	1	1%	-	-	4	2%
Clinical management change	2	2%	-	-	1	1%	3	1%
Cancelled due to bereavement	3	3%	-	-	-	-	3	1%
Cancelled - no detail	2	2%	1	1%	-	-	3	1%
Patient declined procedure/TCI	2	2%	-	-	-	-	2	1%
Total	98	82%	18	15%	4	3%	120	52%

Although patients initially reported that they were unwell on the day of procedure, another main reason was that patients were unsure of what to expect during their procedure and feeling anxious so choose not to turn up for the assessment and procedure.

² Three patients did not receive their letters in time prior to TCI so were unprepared, one patient letter went to the wrong address and as the patient had moved away from booked hospital, was unwilling to travel.

Reasons for cancelled procedures – by the endoscopy unit

Of those cancelled, 42% were cancelled by the unit/hospital. Patient non-compliance with procedure preparation accounted for the majority, 28/96 (29%), of procedures cancelled by the unit. The majority, 74/96 (77%) were cancelled on admission.

By unit/hospital due to:	On Day		On Admission		<2 Days Before		>2 Days Before		n=229 Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Patient non-compliance (meds/prep)	-	-	28	29%	-	-	-	-	28	12%
Procedure not required/inappropriate	2	2%	8	8%	3	3%	1	1%	14	6%
Clinical management change	5	5%	9	9%	-	-	-	-	14	6%
Patient unfit for procedure	3	3%	7	7%	1	1%	-	-	11	5%
Refused to consent to procedure	-	-	8	8%	-	-	-	-	8	3%
Equipment failure/unavailable	5	5%	5	5%	-	-	-	-	7	3%
Reason not specified	-	-	6	6%	-	-	-	-	6	3%
Consultant unavailable	4	4%	-	-	-	-	-	-	4	2%
Admin error (wrong list/procedure)	-	-	1	1%	-	-	-	-	1	0%
Patient left unit before procedure	-	-	1	1%	-	-	-	-	1	0%
Patient family/home commitment	1	1%	-	-	-	-	-	-	1	0%
Adverse reaction to throat spray	-	-	1	1%	-	-	-	-	1	0%
Total	20	21%	74	77%	4	4%	1	1%	96	42%

Further analysis took place to ascertain if patients were cancelling or just not attending on their first visit to the endoscopy unit, or on successive visits.

Treatment status for DNA procedures and procedures cancelled/not performed

The treatment status for each procedure was ascertained on PAS, this identified that 201 of all procedures were 'First Activity', 157 were 'Subsequent Activity', 37 surveillance and 29 planned follow up. The table below shows the breakdown for DNA procedures, those cancelled by patients and those cancelled by the unit/hospital.

		First activity		Subsequent		Surveillance		Planned FU	
		No.	%	No.	%	No.	%	No.	%
DNA/FTA	n=208	113	54.3%	57	27.4%	21	10.1%	17	8.2%
All cancelled/not performed	n=229	88	38.4%	100	43.7%	16	7.0%	12	5.2%
Not cancelled ³	n=13	5	38.5%	3	23.1%	1	7.7%	1	7.7%
Total	n=437	201	46.0%	157	35.9%	37	8.5%	29	6.6%

Breakdown of treatment status

The following three tables show the breakdowns for procedures cancelled by patients (A), those by unit/hospital (B) and those not cancelled (C).

	First activity		Subsequent		Surveillance		Planned FU	
	No.	%	No.	%	No.	%	No.	%
Cancelled by patient due to:	No.	%	No.	%	No.	%	No.	%
Patient says unwell/unfit	18	15%	17	14%	7	6%	3	3%
Procedure preparation non-compliance	8	7%	5	4%	1	1%	1	3%
Family/home commitments	2	2%	8	7%	1	1%	1	1%
Patient no longer wants	5	4%	3	3%	-	-	-	1%
Problem with bowel prep	3	3%	3	3%	-	-	1	-
Patient has no transport	4	3%	1	1%	-	-	2	1%
Patient requested later date	3	3%	3	3%	-	-	-	2%
Work commitments	2	2%	2	2%	1	1%	-	-
Cancelled as a result of admin error ²	3	3%	1	1%	-	-	-	-
Clinical management change	1	1%	2	2%	-	-	-	-
Cancelled due to bereavement	3	3%	-	-	-	-	-	-
Cancelled - no detail	1	1%	2	2%	-	-	-	-
Patient declined procedure/TCI	-	-	2	2%	-	-	-	-
Total	53	44%	49	41%	10	8%	8	7%

³ 3 procedures were not on PAS, but were booked on ICARUS: All patients had been admitted as inpatients, 1 had died, 1 had been done as an inpatient prior to booked procedure, 1 patient was booked on ICARUS but had not been sent for.

	First activity		Subsequent		Surveillance		Planned FU	
	No.	%	No.	%	No.	%	No.	%
n = 96								
By unit/hospital due to:	No.	%	No.	%	No.	%	No.	%
Patient non-compliance (meds/prep)	8	8%	16	17%	2	2%	2	2%
Procedure not required/inappropriate	5	5%	7	7%	1	1%	1	1%
Clinical management change	4	4%	10	10%	-	-	-	-
Patient unfit for procedure	5	5%	5	5%	1	1%	-	-
Refused to consent to procedure	3	3%	5	5%	-	-	-	-
Equipment failure/unavailable	4	4%	2	%	11	1%	-	-
Reason not specified	-	-	4	4%	-	1%	1	1%
Consultant unavailable	4	4%	-	-	-	-	-	-
Admin error (wrong list/procedure)	-	-	1	1%	-	-	-	-
Patient left unit before procedure	1	1%	-	-	-	-	-	-
Patient family/home commitment	-	-	1	1%	-	-	-	-
Adverse reaction to throat spray	1	1%	-	-	-	-	-	-
Total	35	36%	51	53%	6	6%	4	4%

	First activity		Subsequent		Surveillance		Planned FU		Not known	
	No.	%	No.	%	No.	%	No.	%	No.	%
n = 13										
Procedures not cancelled	No.	%	No.	%	No.	%	No.	%	No.	%
Procedure done as inpatient	1	8%	1	8%	-	-	-	-	1	8%
Procedure rebooked, prev. not cancelled	1	8%	-	-	-	-	-	-	-	-
Procedure not required/inappropriate	1	8%	-	-	1	8%	-	-	-	-
Admin error: patient not sent for	-	-	-	-	-	-	-	-	1	8%
Patient unfit for procedure	1	8%	-	-	-	-	-	-	-	-
Patient deceased	1	8%	2	15%	-	-	1	8%	1	8%
Total	5	38%	3	23%	1	8%	1	8%	3	23%

What we did

- A band 6 nurse arranges with the patient a date and time face-to-face for their pre-assessment
- Providing choice for patients and allowing them to negotiate their own appointments has reduced DNAs considerably
- Pre-assessment allows the nursing team to assess the patient's needs, ascertain what additional information/preparation they need and ensure everything is in place for them – so preventing them from cancelling appointments unnecessarily

Impact

- DNA rate is currently 0.5%
- Cancellation rate is currently 0.5%
- Data sets are now able to be broken down to each site and to individual endoscopists!



Our initial thoughts were that doing pre-assessment would reduce a lot of our DNAs, we expected this to happen and were delighted when the data confirmed it for us. At last we had hard proof – the data brought it!



Sandra Marshall

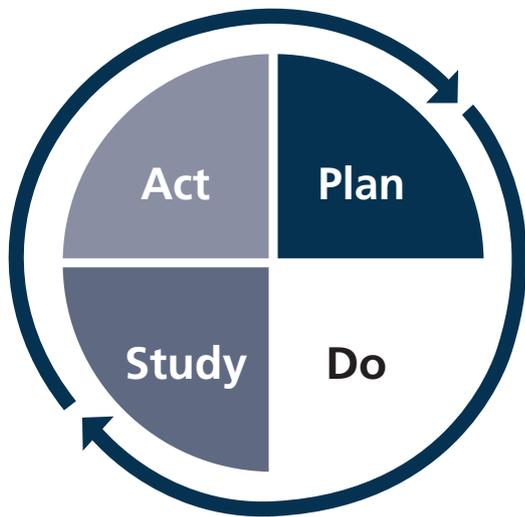
Endoscopy Unit Manager, Northumbria Healthcare NHS Foundation Trust

Plan – milestone checklist

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

Checklist	Completed?
Identified strong visible leadership	
Created the team	
Collected relevant data and information	
Identified and collected procedure times	
Collected data on start, finish and turnaround times	
Talked to staff to get their feedback	
Talked to patients to get their feedback	
Analysed the data and information	
Reviewed ideas that have worked elsewhere	

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?	



Do

Once you have identified some ideas for improvement that you would like to try, you will need to test it on one room or with one specialty to see if it works.

Remember implementation works best when staff are involved and are encouraged to develop their own solutions.

This section may involve several iterations of the PDSA cycle.

Process mapping the current scheduling process

Display the analysis identified

The information that has been produced from the data collection should be displayed close to where the mapping of the current state will take place. This is so that the information can be used during the mapping event, to enhance the depth of understanding of the current state and use information to aid your decision making.

Now that all the information has been collected and understood, the current processes can now be mapped. It may be more manageable to break the scheduling process down into smaller parts. Consider:

- Mapping the whole process initially at a high level first
- Then produce detailed maps of the individual processes:
 - The booking process
 - How a list is created.

Map the current state

Create a current state process map based on your team's understanding of the scheduling process and the data you have collected. Refer to the Toolkit for full guidance on mapping.

Populate the map:

- Add all the staff feedback to the map
- Add any process timings or data to the map
- Review each process step by step and highlight any concerns or issues that you may have with the process
- Add all the issues to the map.

Create the future state

Having mapped the current state discuss:

- How it could be improved
- How to make the improvements happen.

Create the new design - the actions beneath the new process steps are those which need to be implemented to achieve this desired future state.

Agree the changes

The team needs to agree what changes are required to implement the new improved future state scheduling process. However, you will need to get agreement from other stakeholders outside the improvement team, e.g. changing the template of a waiting list pro forma will require the endoscopists agreement.

Consider who you need to consult and involve for each of the proposed changes. They will probably identify additional ideas for improvement that could also be tested.

Create an implementation plan

Use the Toolkit, to produce a cost/benefit analysis and module action planner, to create your implementation plan.

The cost benefit analysis will enable you to prioritise your changes based on the cost to implement them and the benefit they will bring. This may be necessary if you have identified a large number of changes. Remember to consider the benefits in terms of the four programme aims of:

- Patient experience and outcomes
- Team performance and staff wellbeing
- Value and efficiency
- Safety and reliability of care.

Then, with the team, create a module action plan to establish and track any actions, timescales and ownership of the tasks.

The module action planner can then act as your weekly review document to make sure implementation stays on track. Display the completed module action planner sheet in a prominent position within the endoscopy department.

Test the changes

Once you have agreed the ideas you want to test and have created a plan, ensure that:

- The leadership and ownership of each change is clearly established
- Everyone involved understands the purpose of the proposed changes
- You communicate the changes that are being tested to all stakeholders, including those who are not directly involved in the tests
- You identify the data you will need to collect to see if the change is an improvement
- The data will be accurately and effectively collected
- You have an effective method to analyse and review the data
- People are encouraged to comment and make suggestions about the changes
- You help solve any problems that may occur during implementation
- You set a specific date to start
- You set a defined study period
- You set dates for future meetings to assess the effects of the changes and refine the approach based on feedback.

Remember, it is likely that even the best ideas will require you to go through several Plan Do Study Act cycles to enable you to modify and refine your ideas before the team is happy to roll-out solutions on a large scale.

Continue to monitor progress

Throughout your defined test period, continue to collect, analyse and review your data as described in Knowing How We Are Doing. During the Plan stage you collected a considerable amount of information to help you understand the current scheduling system. You will be able to use this as part of a baseline against which you can measure your progress.

- Set regular meetings where the team involved in implementing the change can discuss progress and issues, and make suggestions for further improvements
- Communicate progress to the wider team through your Knowing How We Are Doing board and the organisation's newsletters

Support the team in their new way of working

One of the reasons that scheduling is so complex is because it requires co-ordination between different departments and specialties that have different ways of working and different lines of accountability.

The teams implementing the changes will need:

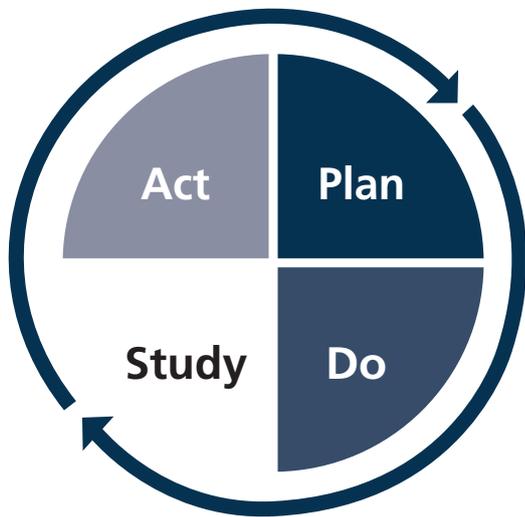
- Strong support and commitment from the programme leader and executive leader
- Good clinical engagement
- Open and clear communication about the changes and the impact they are having (positive and negative)
- Time to dedicate to the project and attend the progress meetings.

Do – milestone checklist

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

Checklist	Completed?
Process mapped the current scheduling process	
Created a future state for the scheduling process	
Identified and agreed the ideas to test	
Communicated with and got agreement from the wider stakeholders	
Developed an implementation plan for the testing	
Began the tests	
Continued to monitor progress	
The team has executive leaders and clinical support for the changes	

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?	



Study

Implementing improvements will take several PDCA cycles. It is important to keep track of your measures for success so that you can assess the impact of changes soon after you make them.

Collect, analyse and review your data

During the Study stage, the team will reflect on how successful the changes they implemented have been. This will occur after the original test period has been completed.

Use the three questions from the Model for Improvement as a framework to focus your thinking:

- What were we trying to accomplish?
- How do we know that the change was an improvement?
- What changes did we make that resulted in an improvement?

As you have tested your changes you should continue to collect, analyse and review your key measures to show the impact of the changes you have made.

- Assess the impact the changes have had on your key measures, for example:
 - Has there been a reduction in late finishes due to overbooking?
 - Has there been a reduction in early finishes due to under booking?
 - Has the use of actual procedure and turnaround times resulted in lists that are consistently achievable and has this optimised the time available?
 - Are lists produced in a timely manner that allows for staff and equipment to be arranged?
 - Has there been a reduction in cancellations and rework involved in rescheduling patients?

Collect feedback from the staff and patients

- What impact have the changes had on all those involved - both positive and negative?
- Do they have suggestions for how the changes can be improved further?
- Collect anecdotes and examples

Review the quantitative and qualitative data together

- What worked well?
- What did not work well?
- What could have been done better?
- Has the team measured for a long enough time to draw clear conclusions?
- Do any further tests need to be undertaken to refine or improve the changes?
- What are the staff views and perceptions of the change? What would they like to see changed or improved?
- Did you discover any unexpected benefits useful to your team or the work going on in other Productive Endoscopy Unit modules? If so have you disseminated them?

Update the Knowing How We Are Doing board

- Use the Knowing How We Are Doing board to communicate and share progress with the unit. Show progress on key measures, include quotes, comments and stories
- Include the headline results in your Productive Endoscopy Unit newsletter, to share progress across the organisation

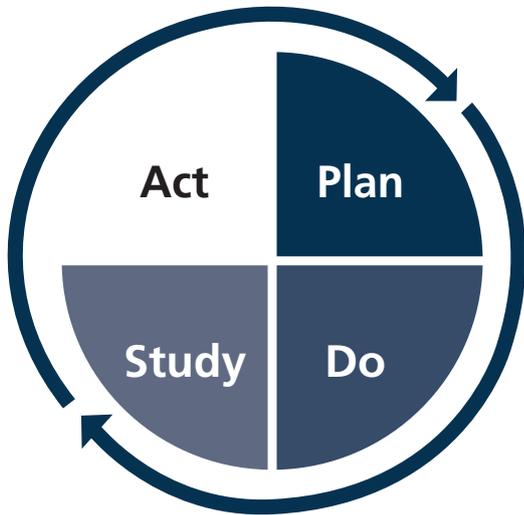
Discuss results and progress in your weekly team meetings, audit mornings, and brief/debrief and huddle sessions: ensure all staff are informed including those working out of core hours.

Study – milestone checklist

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

Checklist	Completed?
Continued to collect, analyse and review your data	
Discussed the impact the changes have had on the data	
Collected feedback from staff about how the changes have affected them	
Communicated progress by updating the Knowing How We Are Doing 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?	



Act

Once you have successfully developed and tested your improvement ideas, you will need to plan for roll-out across your organisation, and crucially, how the changes will be sustained in the long term.

Agree which improvements have been successful

Once the team has undertaken the data analysis and reviewed the feedback, they will need to decide whether to:

- Adopt the change if it has been a success and look to roll it out to other areas
- Adapt the process in some way to improve it further. Perhaps the change has not achieved the desired outcome, by adjusting or modifying it slightly it may be more successful. If changes are decided, you need a further period of study to understand whether the adaptation(s) have worked or not
- Abandon the change if it was not successful. Remember, many of the changes you propose may not be successful: do not consider this as a failure but as an opportunity for further improvement. In this situation carefully analyse as a group what you have learned and what you would do differently next time. Are there things you have learned that are useful to the wider group working on other parts of the project? If so share them.

Adopting a change and planning for roll-out

For the changes you decide to adopt as a team, you will now need to consider:

- How to roll-out and embed the change across a wider group or endoscopy sites
- Who will lead on this and take ownership of the changes
- How you will disseminate the information to all those concerned
- How the changes link in or impact the work of the other Productive Endoscopy Unit modules, in particular:
 - [Operational Status at a Glance](#)
 - [Knowing How We Are Doing](#)
 - [Session Start-up and Patient Change-over](#)
 - [Pre-assessment and Patient Preparation](#)
 - [Consumables and Equipment.](#)
- How you will put in place a monitoring system to ensure the changes are sustained over time.

Your Productive Endoscopy Unit steering group may have clear thoughts or have developed a plan detailing how the whole programme will roll-out across the organisation. Discuss with the steering group your ideas for the roll-out of the Scheduling work and how they fit with the overall plan.

Continue to monitor and review

- It is important that you continue to collect, analyse and review your key measures, to encourage sustainability - particularly as you roll-out to new areas
- It is still important to collect, analyse and review your data in the original area where you first implemented the change. However, once you are satisfied that the change is an improvement and is being sustained, you may reconsider the frequency and the number of measures that you collect, analyse and review

How can I make it stick?

As much effort, if not more, needs to go into the roll-out and sustainability of a change as the planning and starting of it. Sustaining new ways of working is always a challenge. The NHS Sustainability Model identifies ten factors that are key to the sustainability of any improvement. They are explained in the table below. These should be considered in your roll-out plan.

	Factor	Things to consider
Staff	Clinical leadership	<ul style="list-style-type: none"> • Have strong clinical leaders and champions supporting the change and use them to influence their colleagues.
	Senior leadership	<ul style="list-style-type: none"> • The programme executive leader.
	Training and involvement	<ul style="list-style-type: none"> • Provide training on the changes to those that are affected by it so that they understand any new systems and processes, e.g. if you change from a paper to electronic diary make sure the staff are confident in using the new electronic system.
	Staff behaviours	<ul style="list-style-type: none"> • Continue to involve staff in developing the changes further – people own what they help to create which will increase the likelihood of sustainability. Use your champions to influence their colleagues
Organisation	Fit with organisational goals and culture	<ul style="list-style-type: none"> • Show how the change fits, with your Productive Endoscopy Unit vision and the wider organisations strategy
	Infrastructure	<ul style="list-style-type: none"> • Formally incorporate the new roles and responsibilities that people have as a result of the changes into their job plans • Develop policies that embed the changes
Process	Benefits	<ul style="list-style-type: none"> • Explain to the staff involved what the benefits of the new way of working are for them
	Credibility of evidence	<ul style="list-style-type: none"> • Share the qualitative and quantitative benefits that you have collected through the testing cycles to engage colleagues during roll-out
	Monitoring progress	<ul style="list-style-type: none"> • Continue to monitor the progress of the changes so that teams can see the impact of their efforts.
	Adaptability	<ul style="list-style-type: none"> • Consider how the change will adapt to a different team, specialty or site, do modifications need to be made?

To identify factors you may need to focus on to increase the sustainability of your improvements complete the Sustainability Model which is available as a part of the Toolkit.

Don't stop improving!

Just because you have decided to adopt an improvement it does not mean that the work is complete. Your new way of working with the improvements embedded now becomes your current state. Continue to look for the opportunities to improve it further.

It is likely that as you roll-out and engage more teams, they will come up with more ideas of how the changes can be refined and improved further or adapted to meet their particular needs. It is important to continue to provide opportunities for the wider teams to be able to influence and develop the new ways of working.

By doing this you will be creating a culture of continuous improvement within your department where improvement is seen as an integral part of the working day not an additional activity – the ultimate aim of The Productive Endoscopy Unit.

Act – milestone checklist

Checklist	Completed?
Agreed which changes have been successful and should be adopted	
Agreed which changes need to be adapted and decided how they will be taken through another testing cycle	
Agreed which changes should be abandoned	
Developed a roll-out plan for changes that will be adopted	
Agreed how you will continue to monitor your measures	
Completed the Sustainability Model to identify any factors that may need further work to increase sustainability	
Provided opportunities for continuous improvement	

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?	



Consent

+/- Cannulation

Colonoscopy

Polypectomy
EMR
Dye spray
Serial Bx

2-4 cm

Wipe Clean
Wipe change

Report writing
Labelling Samples
Post obs.
Hand over

As
redness of Paj
redation levels
emotional stat

Defect

→ No
→ Poor
→ Explain
→ Answer
→ Poor
→ No
→ No
→ No

Defect

Difficult Colon
Signif Pathology
Equip Avail
Regular!
Trig → Pull for
Cure

Defects →
Pt unwell
Dirty Pt
PRQs.
Printer → I.T. (Deep clean)

Trig →
Slope
out.

(Equip cleaning)

Porting Pt.

(Deep clean)

Mobility

→

let

dation

onchs.

Co-Morbid.

6. Learning objectives complete?

Key learning objectives were set at the beginning of this module. Test how successfully these objectives have been met, by asking members of the improvement team the questions in the table.

Ask the questions in the first column and make an assessment against the answer guidelines in the second column. Answers will vary based on your team's experience and the improvements you made.

For the objectives that have only been partly met, think about how you can change your approach to the module next time.

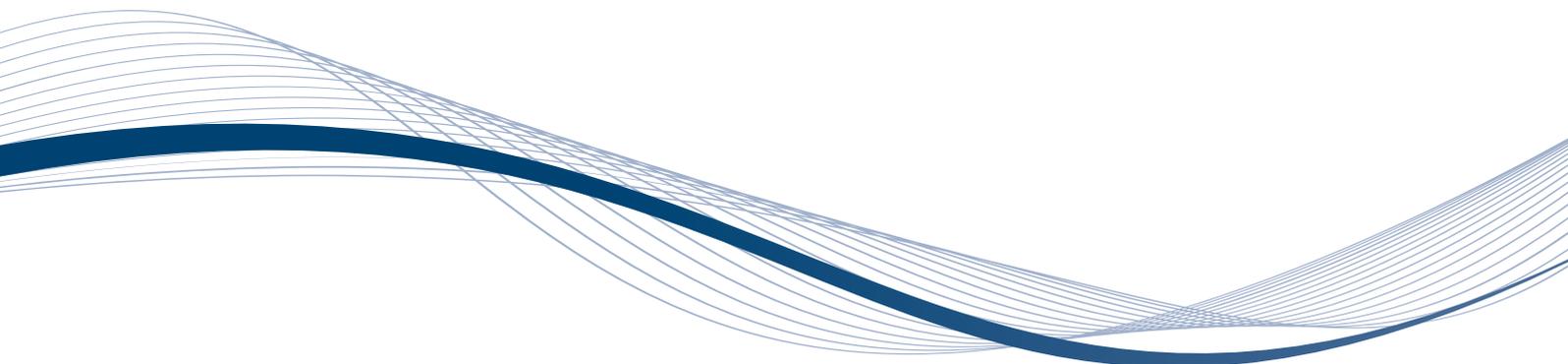
Question	Possible answers
What improvements have we made to achieve optimal utilisation of endoscopy sessions?	<ul style="list-style-type: none"> • Developed a clear approach to identifying any sessions that are not going to be used six weeks before the day of the list so it can be reallocated within one week or escalated to the clinical director
Why is it important to monitor endoscopy demand and capacity and how do you do it?	<ul style="list-style-type: none"> • To make sure the capacity is correctly distributed between the operators to maintain an acceptable waiting time for patients • To make optimal use of capacity
Why are procedure times and points per session essential to scheduling?	<ul style="list-style-type: none"> • To ensure lists are created that optimally use the endoscopy time avoiding over-runs and under-runs and inappropriate variation
Why is it important to review scheduled lists?	<ul style="list-style-type: none"> • To make sure the team agree that the list is achievable and properly utilised
What did you learn about the current state scheduling process?	<ul style="list-style-type: none"> • How complex the process is • More people and steps involved than expected • The amount of rework involved • The impact actions in one area has on another area
What measures are important to scheduling and how to monitor them on an ongoing basis?	<ul style="list-style-type: none"> • Session utilisation • Number of additional lists being put on • Number of minutes lists start and finish early

Question	Possible answers
Why is it important to involve and provide feedback to all those who contribute to scheduling?	<ul style="list-style-type: none">• So that everyone involved understands the impact their actions have on others, (e.g. in terms of rework, overrunning lists, costs of empty rooms) and can learn how to work together to provide a better service for the patient and each other.
What communication systems have you got to ensure the right information is in the right place at the right time?	<ul style="list-style-type: none">• Intranet based schedules• Regular meetings• Clear roles and responsibilities of information will be communicated.

Acknowledgements

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