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AIMS

Modernising Endoscopy Services (MES) is a toolkit, which aims to provide a basis for multidisciplinary redesign of endoscopy services. It consists of three interlinked parts:

- **Challenges** based on redesign principles
- **Step by step guide** to using the spreadsheet tool
- **Spreadsheet tool**, a computer based management tool in the form of a CD

Each issue is presented as a key challenge. For each challenge, a number of actions are identified that will help teams identify both good practice and areas for improvement for their service.

INTRODUCTION

Endoscopy teams across England have developed this tool, in conjunction with the National Endoscopy Programme. The aims were to provide a resource for project leads, clinicians and managers who are seeking ways of improving access to their Endoscopy service. Timely patient access to endoscopy services is key to delivery of several major target areas in the NHS Plan and NHS Cancer Plan, including:

- Maximum 13 week outpatient wait for endoscopy (where they are classified as outpatients)
- Sustainability of two week urgent referral targets for patients with suspected cancer, in those cases where diagnosis by endoscopy is key e.g. upper and lower gastrointestinal cancers and lung cancer
- Maximum 31 days from urgent referral to first treatment for cancer patients, in those cancers where endoscopy plays a key diagnostic step
- Implementation of booking systems (100 per cent booked appointments by 2005)

This toolkit should be used for endoscopy service redesign with the following at its core:-

- The patient’s needs and views
- The whole service in mind (without disadvantage to any groups of patients)
- Incorporation into health community programmes of work where endoscopy has been identified as a ‘hot spot’
- Have clear lines of communication which are established from the outset
- To be an integral part of the Cancer Services Collaborative, National Booking Programme and local Trust/PCT Modernisation Programmes

BACKGROUND TO THE NATIONAL ENDOSCOPY PROGRAMME

In November 2000, the NHS Modernisation Agency (then the National Patients Access Team) set up a national project to take forward recommendations regarding the need to:

- Redesign endoscopy services.
- Increase the numbers of endoscopists.
- Tackle variation in existing approaches to training of endoscopists.
- Address inconsistencies in the classification of endoscopy.

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1 Guidance on how to classify endoscopic procedures is expected in 2002/3
2 Sustainable in the sense that other patients referred to endoscopy are not disadvantaged by carving out capacity for the cancer 2 week wait referrals. Audit data exists to demonstrate that not all cancer patients are diagnosed through the cancer 2 week wait referral routes.
The first stage of this project identified a number of key issues common to many endoscopy services which were found to include:

- Lack of strategic direction and varied clinical leadership
- Increasing activity both diagnostic and therapeutic
- Poor demand information
- Complex, multiple referral routes
- Wide variation in access times for patients
- Concerns about capacity, including staff, facilities and equipment
- Concerns about adequacy of training

An awareness of these issues from the outset of any endoscopy service improvement programme is important in ensuring that options for change are based on a thorough understanding of the issues facing the department and, importantly, that the improvement programme has the support of Senior Clinicians and Managers.

These key issues identified during the initial stage of the national endoscopy project form the framework for the tool kit and each is presented as a key challenge. For each challenge, a number of actions are identified that will help teams identify both good practice and areas for improvement for their service. In stage two of this project 12 (phase one) pilot sites were established. They collected capacity and demand data for three months linked to preparation for service redesign. At the end of this period, eight sites then proceeded to undertake one year’s redesign linked to continued data collection. These pilot sites used, evaluated and refined the toolkit and the approach taken in this document. They reported that the framework provided by the toolkit was very helpful in targeting redesign efforts to maximise improvement in access times for patients.

In 2002, stage three of the national programme commenced with spread of the toolkit to 29 further endoscopy units who will be using it to aid service redesign. Each of these sites will be involved in partnership working to ensure seamless integration into established streams of work. In addition to these 29 sites the national endoscopy team have been training other independent endoscopy units who wish to use the toolkit and have project support locally from either a Regional Cancer Services Facilitator or Service Improvement Manager.

The key links originally established with Cancer Services Collaborative, Cancer Action Team and the National Redesign team are still closely maintained. The National Endoscopy Programme is managed within the National Booking Programme.

CONTACT INFORMATION

Contact information is available on the website - www.modern.nhs.uk/booking
The table below provides a summary plan of actions that the guide has been designed to support. Each summary action point is presented in more detail with key tools and techniques that have been successfully used by NHS teams in many other service improvement programmes.

### SUMMARY ACTION PLAN

The table below provides a summary plan of actions that the guide has been designed to support. Each summary action point is presented in more detail with key tools and techniques that have been successfully used by NHS teams in many other service improvement programmes.

#### Summary Action Plan:

1. **Identify strategic support and clinical leadership for redesign in endoscopy**
   - Agree links to other improvement projects and any joint working
   - Agree the scope of the project, objectives, time scales and reporting mechanisms
   - Establish a project team that includes a board ‘sponsor’
   - Identify a clinical lead to support the project

2. **Map the process for all points of access (from GP referral and internal referral) to discharge of patient after result**
   - Run a process mapping workshop
   - Shadow a sample group of patients
   - Start timing each step of the process at the constraint

3. **Set up a system to capture daily demand, capacity (including room utilisation and staff/equipment availability) and activity**
   - Produce a demand process template for frequently performed procedures
   - Produce a capacity template – identifying current scheduling, room availability, equipment availability and equipment turnaround times

4. **Determine whether the waiting list is constant or changing over time**

5. **Run a workshop to analyse the findings from diagnostic phase (a minimum of 3 months complete data) and agree an action plan to improve patient access**

6. **Agree how progress with the action plan will be monitored**
Learning from the national project and the NHS Modernisation Agency’s Research into Practice Programme identifies the importance of strong clinical, executive and senior managerial leadership in determining the success of any redesign project.

This was reinforced in the pilot sites. Ensuring the local project reported into a forum with authority for influencing Service and Financial Framework (SaFF) negotiations was a key challenge for each pilot site. Active support from the Chief Executive and/or Director of Operations/Modernisation was a critical success factor.

It is important to establish who is “sponsoring” the project, what level of authority in influencing organisational priority setting that person has, and their ability to co-opt others to the project as necessary. It is also important to agree with that person clear objectives for the project and time-scales involved. The following questions may be helpful in determining actions necessary to secure the necessary leadership commitment:

**What priority is given to endoscopy services within the local healthcare community?**
- Is it a Trust, PCT or Strategic Health Authority priority?
- Are there any plans for capital investment?
- How is the Trust Board made aware of issues in endoscopy?
- Has a business case previously been to the Trust Board for endoscopy?

**Who is identified as the clinical and managerial lead for endoscopy?**
- What level of authority do they have for making change across the various users of the endoscopy service?
- Is that lead able to access central support to aid in service improvement – for example, Local Modernisation Review Lead, Clinical Audit Support, IT support, Booking Programme support, Cancer Services Collaborative support, and so on?
- If not, who can?
- Is it possible to get an executive or non-executive director to act as “sponsor” for Endoscopy Service Improvement?

**Is there an endoscopy user group in place?**
- Are there clear terms of reference for that group?
- Does the membership reflect the key stakeholders – including senior management, medical and surgical clinicians, radiography, and primary care?
- Is there an “impartial” and senior chair?
- How are decisions/recommendations from the group communicated?
- What appears on the agenda?

In one pilot site, the local project manager could not find an evidence of central co-ordination of modernisation work across the health community. The resulting lack of accountability structures operating within the host organisation resulted in poor integration of the pilot project into the overall strategic direction of the Trust.

**Challenge One: Identify Strategic Support and Clinical Leadership for the Project**
How does action planning and progress with service redesign get on to the agenda?

How does the group influence Trust planning priorities?

**Key to successful service improvement is:**

- Ensuring the work is "sponsored" by senior management in the organisation.
- That the improvement objectives are signed off by the "sponsor".
- That progress monitoring is agreed with a clear timetable for reporting.
- Ensuring that redesign becomes part of the daily work of the organisation.
Agreeing the referral map
In endoscopy departments, patients access the service from many referral points. In understanding current demand, it is important to ensure a comprehensive referral map is identified that reflects accurately all points of referral into endoscopy, including endoscopic work done outside the main unit: e.g. theatres, community hospitals and so on. The booking clerks and medical secretaries are key stakeholders in this work and need to be included from the outset.

Method
The first step in detailing a comprehensive referral map is to:

- Clarify all types of endoscopy being undertaken in the existing services.
- Identify if endoscopy is performed in areas other than the main endoscopy suite.
- Capture all referrals in order to understand the demands on the service and to give meaningful information for current and future service planning.

Have ALL entry points for endoscopy referrals been clearly identified? Consider for example:

- What type of GP referrals exist (Open access, two week cancer, others?)
- What types of outpatient referrals are made (Consultant, Nurse specialist, others?)
- What types of in-patient referrals are made (emergency, out of hours, others?)
- Do the referrals come into a single central point or into multiple locations?

- Is all endoscopy done in one place – or are there referrals to main theatres, OPD, radiology?
- How are follow-up/surveillance patients "referred"?
- Is any endoscopy carried out in primary care? Agree how this will be included in your project

Mapping the existing patient pathway
Process mapping, although a simple exercise, is one of the most powerful ways for a multi-disciplinary group to identify and understand the real problems in a service from the patient’s perspective.

Analysis by the NHS Modernisation Agency has shown that:

- Typically, 30 to 70 per cent of the work in a patient process doesn’t add any value for patients
- Around 90 per cent of the errors, duplication and delay in patient processes are at the point of "hand-off" – where responsibility for the patient is handed from one professional or department or agency to another. Up to 50 per cent of the steps in a typical NHS patient process involves a "hand-off"
- Usually, no-one is responsible for the patient’s journey through the care process and patients often receive care which is fragmented and subject to delays
**How to run a process mapping session for your project**

The objectives of this type of event are to:

- Help everyone to understand what the patient is currently experiencing.
- Identify the stages in the process causing the problems in relation to achieving NHS cancer plan targets and the NHS Plan.
- Identify causes of waits and delays.

**Preparation**

- Define and agree which group of patients are being mapped.
- Define and agree what the first and last step of the process is e.g. Start - the process starts when the referral is made. End - the clinical decision as a result of the endoscopy findings is made e.g. discharge back to GP, onward referral to another speciality, OPD follow-up, referral for surgery, etc.
- Be careful not to limit the scope unnecessarily.
- Identify all staff groups within the scope of the process being considered, including support staff, administrative staff, porters and clinical staff.
- Invite the 10-15 representatives of those staff groups who are part of the patient process to map the process.
- Involve representatives of patients and carers who use the service.
- You can get support locally from your Regional CSC Facilitator, Service Improvement lead, National Booking Programme Manager or Service Improvement Manager.

**Resources**

- Time allowed: this depends on the scope of the process to be mapped; Either one or two half days, no more than two weeks apart with same participants
- Two facilitators: One to map process and one to note comments, issues, etc
- Post-it notes
- Flip chart
- Flip chart pens

**Method**

Mapping the patient process – high level map

- Record on post-it notes **who** does **what** to the patient

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**Example**

- GP examines patient
- GP refers patient to hospital
- Patient waits at home
- Patient receives appointment
- Patient attends OP clinic
- Clerk checks patient’s details
- Doctor examines patient
- Nurse checks patient’s details
- Etc, etc
There are bound to be variations so record what happens 80 per cent of the time.

Concentrate on what happens to the patient. Don’t get side tracked by what happens to a referral form or request card – these are other processes which need to be mapped, just don’t get bogged down in detail at this point.

**Analysing the patient process:**

Having mapped the patient process, analyse by considering the following:

- How many steps in the process?
- How many times is the patient passed from one person to another (handoff)?
- What is the approximate time of each step?
- What is the approximate time between each step?
- What is the approximate time between first and last step?
- Where does the patient have a wait or have to queue?
- Where are there waiting lists in the system?
- How many steps add no value to the patient? (Ask the patients)
- Where are there problems for patients – what do patients complain about?
- Where are there problems for staff?

- Watch and shadow patients in this part of the process
- Map the relevant parallel process, which may have caused the delay. Parallel processes include:
  - The referral letter - how long does it take from when the patient is told to when the patient receives the appointment in the post?
  - The pathology specimen - how long does it take from when the specimen is taken to when the requesting clinician has the report back for use?
  - The imaging reporting system - how long does it take from when the image is taken to when the image and report is back with the referring clinician?

**At the end of the process mapping event:**

- Agree next steps
- Identify specific areas for further study
- Collect data where necessary
- Allocate specific actions
- Organise sessions where ideas for improvement can be generated and tests of those ideas planned
- There may be some obvious actions that everyone agrees with and where improvements could be made straight away. **Just do it!!**

**Tips**

- Keep the group focused on the objectives – current patient process and problems
- Process maps can get very long – use the back of a cheap roll of wallpaper
Once a group has mapped the patient process, check it out with others who were not able to attend the event and with patients – leave on display in the department and ask for comments on post-its.

Photograph the main steps and make a large transportable photo board to take around with you.

Map the information you give to patients.

Who gives information and at what stage?

Are there any duplications or contradictions?

Are there any gaps?

Find out what patients want and need.

While a group is mapping the process there will be lots of comments, thoughts and ideas. Don’t lose them. Note them on a separate flip chart but move on with the job in hand – mapping and analysing the patient process.
Insights into patients’ perceptions and views about current endoscopy services provide powerful information to include in any service redesign work. The NHS Modernisation Agency has a number of key publications to assist in thinking through which approach is best suited to your project (see section 14 for references).

In preparation for process mapping workshops, it can be really helpful to have a number of key quotes from patients to feed in. Two quotes are included here that illustrate a number of important points.

The first quote was taken from patient interviews and the second quote came from patient diaries.

The first patient was concerned about the cost of her telephone bill. She had made several phone calls to the hospital to try to find out when her appointment was scheduled. Each time she was passed from one department to another with little progress. The patient then decided it was more cost effective for her to use her bus pass to visit the endoscopy department in person to get the information she wanted. This is powerful information to feed back to the endoscopy team. It raises key points, from the patient’s perspective, about the “transparency” of existing referral routes and clarity of current information to patients about how their appointment will be made. These are likely to be areas where redesign will deliver significant benefits to both patients and the staff who are currently fielding inquiries from these patients.

The second quote raises important questions around consent procedures, and when and what type of patient information is given to patients.

In the process of clinical decision regarding patient destination following the result of the endoscopic procedure(s).

- What mechanisms are being used: patient literature, taped information, help line access, pre-assessment interview, video, and so on?

- Would the information currently in use pass the Plain English tests and achieve a Crystal Mark™?
INTRODUCTION FOR CHALLENGES FOUR TO SEVEN

A CD containing the spreadsheet tool that enables the redesign teams to record demand, capacity, activity and backlog information for their departments accompanies the following sections. The second part of this toolkit also includes a step by step guide to help project teams use the spreadsheet tool.

Data Quality

As with all data collection, good quality of information is crucial to the success of the project. It is important that a member of staff is responsible for data collection and ensuring the quality of the information. More than one individual should understand the data collection process to allow cover for annual leave and sickness. Poor data collection will result in inappropriate decisions and outcomes. The following are key to making sustainable changes to the service:

- Good communication with all staff concerned in data collection
- Everyone being responsible for data quality
- Decisions seen to be taken on the collected information

Calculations

To make meaningful capacity, demand, activity and waiting list comparisons it is important to express them all in the same currency. In this case the shared currency is minutes of TIME. The spreadsheet tool automatically performs all the calculations described in the text from data entered. Timings can be measured from patient walk-throughs or stop watch studies – you should then select the timing which captures 80 per cent of patients.

Using the data

This toolkit is designed to support and be used on a daily basis by endoscopy redesign projects and is not primarily a reporting tool. The spreadsheet tool creates graphs and tables from the inputted data and these can be exported to other documents to support service redesign planning.

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1 Those projects funded as part of the National Endoscopy Programme will be also be expected to submit the spreadsheets and progress reports to the NHS Modernisation Agency on a monthly basis.
**CHALLENGE FOUR: BEING CLEAR ABOUT ACTUAL DEMAND**

Many clinical teams have seen an apparent rise in activity in endoscopy services. However, many services do not currently have systems in place to accurately capture and report demand on a regular basis. Understanding the demand for your endoscopy service is crucial to undertaking a redesign project. If your service does not currently report referrals received for endoscopy comprehensively, it will be necessary to undertake demand analysis, as described below. It is vital to establish an accurate referral map as the starting point to this work, as described in challenge two. Once the referral map has been agreed to accurately reflect all endoscopy referral routes, the next stage is to record all referrals received. You will need to agree with any outlying departments that undertake endoscopy, in addition to the main unit, a way of recording those referrals. Similarly, any emergency referrals from in-patient areas need to be recorded.

At the planning stage of this study, it is essential that you include a member of the Information Department who can advise on establishing a system (electronic or otherwise) for collecting data on an ongoing basis.

**Expressing demand in minutes and hours:**

To make meaningful demand and capacity comparisons, it is important to express both in the same currency; in this case the shared currency is TIME.

To express demand as a measure of time requires the calculation shown in the box:

\[
\text{Number of referrals} \times \text{time taken to see patient at the constraint}
\]

The constraint refers to the issue/problem holding up flow of activity and causing the bottleneck. In endoscopy units this is usually the theatre.

**Developing a process template:**

The "time taken to see a patient" is calculated by developing process templates for each type of request and identifying the constraint.

**Method:**

- Identify start and end points of the procedure i.e. when patient arrives in the department through to discharge from the department.
- Agree how many key activities are undertaken; for example: patient clerking and consent; any pre-procedure preparation; getting the patient into the procedure room and positioned; carrying out the procedure; reporting findings; patient recovery; discharge
- Follow a sample of patients through each procedure, recording the time taken for each step to be completed
Identify the times taken for each procedure from the patients sampled and select a time which would include 80 per cent of patients surveyed (80:20 rule).

A process template can be created simply by using a spreadsheet.

**Step 1.**
From your process map identify times to complete each step in the process

<table>
<thead>
<tr>
<th>Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerk in (reception)</td>
</tr>
<tr>
<td>Clerk in (nursing)</td>
</tr>
<tr>
<td>Patient gets changed</td>
</tr>
<tr>
<td>Pre observations</td>
</tr>
<tr>
<td>Consent</td>
</tr>
<tr>
<td>Procedure</td>
</tr>
<tr>
<td>Post observations</td>
</tr>
<tr>
<td>Type up report</td>
</tr>
<tr>
<td>Patient in recovery</td>
</tr>
<tr>
<td>Discharge</td>
</tr>
</tbody>
</table>

**Step 2.**
Allocate a colour to each step

<table>
<thead>
<tr>
<th>Time</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerk in (reception)</td>
<td>2</td>
</tr>
<tr>
<td>Clerk in (nursing)</td>
<td>15</td>
</tr>
<tr>
<td>Patient gets changed</td>
<td>5</td>
</tr>
<tr>
<td>Pre observations</td>
<td>2</td>
</tr>
<tr>
<td>Consent</td>
<td>10</td>
</tr>
<tr>
<td>Procedure</td>
<td>30</td>
</tr>
<tr>
<td>Post observations</td>
<td>2</td>
</tr>
<tr>
<td>Type up report</td>
<td>5</td>
</tr>
<tr>
<td>Patient in recovery</td>
<td>45</td>
</tr>
<tr>
<td>Discharge</td>
<td>5</td>
</tr>
</tbody>
</table>
Step 3.
Line up the colour steps in sequence in blocks of colour proportional to the time scale.

Step 4.
Line up several templates so that patient waits are minimised.

Step 5.
Position on time line to determine patient appointment time, optimum theatre usage and list composition.
Step 6.
Use process template to schedule resources and staff for the number of procedures.

Example

<table>
<thead>
<tr>
<th>Time</th>
<th>Staff</th>
<th>Equipment</th>
<th>Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1 clerk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>1 Nurse</td>
<td>1 examination</td>
<td>1 toilet</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>1 changing room</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1 Nurse</td>
<td>1 theatre/room</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1 Endoscopist</td>
<td>1 theatre/room</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>1 Endoscopist</td>
<td>6 scopes</td>
<td>1 theatre/room</td>
</tr>
<tr>
<td>2</td>
<td>1 Nurse</td>
<td>1 theatre/room</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1 Endoscopist</td>
<td>1 theatre/room</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>1 Nurse</td>
<td>1 bed</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1 Clerk</td>
<td>1 chair</td>
<td></td>
</tr>
</tbody>
</table>

Analysing the process template:
- Using the time required (for 80 per cent of the patients) at the constraint of the process multiply this with the number of referrals you have collected as part of the demand study. This gives you demand expressed as time – i.e. how much time needs to be available in terms of procedure capacity to deal with existing demand
- Timings for the other process stages give very useful information to think about the current approach to scheduling, when compared to the capacity available.

Example 1:
If patients require bowel preparation in the department, and there is only one toilet, only one patient of this type should be scheduled to be in the department at any one time – unless toilet capacity can be increased.

Example 2:
The number of recovery beds/chairs will influence list schedules if bottlenecks at this stage are to be avoided.
This exercise provides useful information in identifying key constraints in the process related to available capacity – for example, availability of endoscopes, availability of recovery beds, equipment turn-around times, can all impact on the time taken to complete the procedure. Future scheduling can then take account of all constraints, and eliminate their impact.

- When the times taken for each procedure are available, the next step is to calculate the actual demand figure. Take the figures derived from the exercise to capture all referrals and convert this using the process template times into demand expressed as time, as described above.

The following questions may also help in analysing the data that comes out of this exercise:

- How will the endoscopy team and Trust identify changes in demand on an ongoing basis? If referrals increase or decrease are there mechanisms that allow that to be picked up? How is/will demand be reported – daily, weekly, monthly and where will these reports go and what action will be taken, by whom?

- What demand management strategies are used? e.g. what referral protocols have been agreed, are these audited, how are variations picked up and dealt with?4

- Have surveillance and “follow-up“ endoscopy protocols been subject to evidence-based review? Are there consistent practices across the clinical teams in approaches to follow-up?

- How does demand for endoscopy compare with other similar Trusts?

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4 The British Society for Gastroenterology and the Primary Care Society for Gastroenterology both have clinical guidelines that provide a useful point of reference for developing shared protocols between primary and secondary care. These can be accessed through the respective web sites. For details see page 43.
CHALLENGE FIVE: UNDERSTANDING EXISTING BACKLOG

In addition to understanding current demand for endoscopy services, it is important to know what backlog exists in the service. This is key in taking action to clear the backlog and determining whether the action that is taken will provide a sustainable solution to preventing future backlog. It is also essential to have the backlog booked up-to-date before commencing booked appointments.

To calculate the size of your backlog in units of time, you have to:

- Identify requests by type of procedure e.g. colonoscopy, flexi-sigmoidoscopy, gastroscopy etc.
- Identify the total theatre time (patient in – patient out of theatre) it takes to do the procedure (from the process map/template)
- Identify the number of requests waiting – for all patients
- Multiply the time it takes to do the request by the number waiting, which gives the measure of time necessary to clear the backlog
- Total the timings for all procedures

Analysing the data

- What is the data showing by category of procedure?
- What is the data showing by "endoscopist", if pooled referrals are not in operation?

Dealing with backlog

Options for dealing with the backlog are linked to knowing what is possible within existing capacity. Demand, backlog and capacity data need to be considered together to ensure sustainable strategies are developed.

**Method:**

To calculate backlog you need to:

- Identify requests by type of procedure e.g. colonoscopy, flexi-sigmoidoscopy, gastroscopy etc.
- Identify the total theatre time (patient in – patient out of theatre) it takes to do the procedure (from the process map/template)
- Identify the number of requests waiting – for all patients
- Multiply the time it takes to do the request by the number waiting, which gives the measure of time necessary to clear the backlog
- Total the timings for all procedures

**Example:**

\[
\text{Number of Procedure A} \times \text{time taken to see patient at the constraint} = X \text{ minutes} \\
\text{Number of Procedure B} \times \text{time taken to see patient at the constraint} = Y \text{ minutes} \\
\text{etc for all procedures} \\
\text{Total time required} = X + Y + \text{etc}
\]

5 If you classify endoscopy procedures as outpatients you may need to put in place an electronic mechanism to code and enable identification of the referrals by procedure.
Options for dealing with backlog might include:

- Reducing inefficiencies, e.g. DNA rates, cancelled lists, session start times
- Validating (clerical and clinical) the backlog on a regular basis
- Introducing changes to the working day – e.g. extended working day, three session days, weekend working
- Additional endoscopist(s)
- Access to capacity elsewhere in the local health community
- More equipment
- Access to "waiting list initiative" funds (sustainability may be an issue)
CHALLENGE SIX: BEING CLEAR ABOUT ACTUAL CAPACITY

In keeping with the principles of demand measurement, frequently broad measures of capacity have been used. It is essential to be clear about potential available capacity, and actual capacity being used. Capacity includes facilities and equipment available in addition to the skills and staff available to operate both equipment and the facility. The following questions can help in building a clear picture of available capacity:

Method:
To express capacity in measure of time requires the calculation illustrated in the box:

Calculation expressing capacity in measure of time
Time available in theatre x staff & skills x equipment

Available Capacity of Facilities and Equipment:
- Where is endoscopy performed, e.g. all through one central unit, split site units, main theatre, day surgery, outpatient department, x-ray, primary care?
- What physical capacity is available, e.g. number of theatres, accommodation for assessment, toilets, recovery chairs, and trolleys?
- Where is out-of-hours, emergency work done?
- What equipment is available?
  - How many endoscopes and what type?
  - How long does it take to clean and disinfect equipment ready for use with the next patient, i.e. the average “turn-around” time?
  - How many scopes are available for each list?
- Does equipment availability affect lists? If so, why?
- Is equipment compatible across sites?

Carrying out room utilisation audit:
Method
- Agree how long the audit will last, we suggest a minimum of four weeks.

Capacity available in the form of staff and skills:
Key items of information are:
- How many endoscopists are available
  - Consultant Endoscopists – physicians, surgeons, radiologists
  - Associate Specialists
  - Clinical Assistants
  - General Practitioner Endoscopists
  - Nurse Endoscopists
  - Others

---

6 British Society of Gastroenterology has published guidelines regarding the recommended number of scopes to be available for various types of endoscopy session. The document can be found on British Society for Gastroenterology web site, see page 43.

7 See Appendix 2 for example of room utilisation sheet
What sessions does each contribute?

Calculate potential capacity on the basis of known usage based on history. Remember to account for holidays, study leave, existing absence cover arrangements, and so on. Also to include the impact of Bank Holidays.

How are sessions staffed in addition to the endoscopist, e.g. assessment roles, endoscopist assistant, recovery, technician roles?

What roles do registered nurses take?

What roles do health care assistants take?

What roles do technicians take?

Is capacity “carved-out” i.e. are slots protected for two week rule patients, emergency in-patients, single procedure lists, urgent, soon, routine and so on

Is there pooling of referrals, or are patients referred to named consultants and wait for the next available slot with that consultant? How does this affect access times?

How often are lists cancelled and why? This will also be picked up through the room utilisation audit.

Is the DNA rate known and accurately monitored?

Compare the data emerging from demand and capacity measures with existing booking schedules. Is there a need to revise these in the light of what you have found?
CHALLENGE SEVEN: USING ACTIVITY RECORDS TO IDENTIFY TRENDS OVER TIME

Although activity measures have had an important role in commissioning services year on year, it is important to be aware that measures of activity give no indication of actual demand for any service. Activity measures only tell us the volume of work done in the identified time period.

However, if you are redesigning processes, and you feel one outcome is likely to be improved efficiency, then trend data on activity over time may be useful. It may be useful to compare activity with scheduled capacity to help identify issues within the service, such as late starts, poor scheduling etc.

Method:
To express activity in measure of time requires the calculation shown in the box similar to that involved in counting backlog:

Calculation to express activity in measure of time

Number of Procedure A x time taken to see patient at the constraint = X minutes
Number of Procedure B x time taken to see patient at the constraint = Y minutes
Number of Procedure C x time taken to see patient at the constraint = Z minutes
etc for all procedures

Total activity = X+Y+Z+etc

It is key that all activity is captured, including any out of hours work, or endoscopic procedures carried out in other areas.

Be clear about the changes you are anticipating related to activity

- As part of this data collection you may also want to consider recording outcome of the procedure – e.g. for a diagnostic service, what proportion of procedures identify pathology.
- What impact may improving access to endoscopy have on other services, e.g. access to surgery?
- Do sessions start on time? What impact does this have?

- You may actually want to see reductions in activity over time, e.g. if you are working with key stakeholders on referral guidelines and thresholds for referral.
CHALLENGE EIGHT: PROMOTING NEW WAYS OF WORKING

In generating options for change, thinking about new ways of working is important. You should include your local Human Resources Team in your communication strategy and involve them at an early stage. You may also want to link into the national "Changing Workforce Programme" and their Toolkit to assist in this work.

The term new ways of working covers four types of change:

- Moving tasks up or down a traditional uni-disciplinary ladder (e.g. a consultant giving care previously undertaken by junior doctors in follow-up outpatients. The consultant might be more likely to discharge the patient than the juniors who did not have the same level of experience and changed frequently)

- Expanding the breadth of a job (e.g. the healthcare support worker taking on both auxiliary and technician roles)

- Increasing the depth of a job (e.g. Nurse Consultant who has discreet case load of Inflammatory Bowel Disease patients and also contributes to the endoscopy service)

- New jobs (e.g. combining tasks in a different way. For example, the endoscopy co-ordinator role has emerged to manage the complex referral processes and decrease hand-offs in some services)

There are many examples of innovative practice across the country that have achieved improvements in the care that patients experience. In addition to the types of changes identified above, the following may be useful to consider:

- Is it possible to distinguish between complex and simple work? (e.g. flexible sigmoidoscopy and colonoscopy)
- Are the same clinicians doing both?
- What is the impact of specialist versus mixed lists?
- Is it possible to design two processes with different practitioners and administrative processes – one for simple procedures, one for complex procedures?
- Are there opportunities to introduce new roles which offer greater flexibility in covering lists, moving between sites, working across primary and secondary care boundaries, releasing time for use elsewhere (e.g. picking up consultant endoscopist simple diagnostic work, freeing the consultant to do more operating or see new outpatients)?
- Are there GPs who want to develop specialist expertise?
- Can open access services be delivered in satellite sites?
- Are there opportunities for developing new administrative roles, focused on pulling the patient through the process of care, co-ordinating each stage of that patient’s journey?
- What opportunities exist for support worker roles?
- What training and education will assist in developing a new range of competencies that address constraints identified through the diagnostic phase?
- What help can the local Workforce Development Confederation offer?
- Three plus session days
- Pooled lists

*Information about the Changing Workforce Programme can be found on the following website: www.modern.nhs.uk*
SPREADSHEET TOOL: A STEP BY STEP GUIDE TO USING THE SPREADSHEET TOOL

What is the Spreadsheet Tool?
The Spreadsheet Tool is provided on a CD enclosed with this Modernising Endoscopy Services redesign guide. It is a computer based management tool that will assist project leads and endoscopy staff to:

- Record demand, capacity, activity and waiting list data
- Produce tables and graphical reports regarding this information
- Help analyse capacity and demand information

The role of the Spreadsheet Tool
The spreadsheet tool will make life easier. The package is used to assist project staff in their scheduling. It collates and manipulates information at the request of the user that would take a great deal of time if performed manually. It is a tool to give evidence in an easy to understand format, to facilitate discussions for redesigning and managing your service. It does not create or control projects and neither does it make any value judgements or decisions.

What is a Macro?
A macro is a function within Excel which allows tasks to be performed by the programme automatically. You do not need to understand macros to use the toolkit. Once you have entered and saved your monthly data you need to:

- Select the month in cell B1 of graphs sheet
- Return to the overview sheet and press the GO button

The macro will then automatically update tables and graphs for you to view and analyse. 

*Remember to always save work regularly,* preferably after each section entered.

Getting Started
The minimum requirement to run this CD is Excel 97. First load the worksheet onto your C drive. The spreadsheet tool is designed to work via Microsoft Excel. This means that it operates within the Microsoft Windows environment and can be controlled by using both keyboard and mouse. Some of the data is calculated using macros and the January worksheet, therefore it is important that the January worksheet *must not be deleted.*

When you open the spreadsheet you will be prompted as to whether you wish to open the workbook as it contains Macros. *Always enter Enable Macros at this stage.*
THE MAIN WORKSHEETS AND THEIR CONSTITUENT PARTS

Monthly worksheets
The spreadsheet tool has a worksheet for every month from January to December. Numerical data is entered into the areas highlighted in green. Each month is identical in layout and consists of up to five weeks, numbered 1 – 5. In addition, it is also split into demand, capacity, activity, waiting list, waiting list distribution, cancelled sessions, failed sessions and late starts. Definitions can be accessed by clicking on the red triangles on the top right hand corner of relevant cells.

Data must be entered for a complete month. If a month changes half way through a week that week’s data must be split by appropriate days to form the last week of one month and first week of the next. If a month starts at a weekend then start entering data in week one. Do not leave week one blank.

Issues Sheet
This sheet provides the user with an audit trail of significant events, inconsistencies in data or significant/noteworthy occurrences. It is important that these are fully documented so that at a review meeting several months later changes in the information can be discussed accurately and knowledgeably. Enter the date and cell reference to the information you are explaining and then record the issue, comment and/or action next to it.

Overview Sheet
This sheet enables project teams to enter their procedure names and timings in minutes. In addition, there is a GO button to perform the macro, which calculates and updates all the data for the tables and the graphs.

The procedure and timing information entered into this sheet is used to calculate the data in the monthly sheets, graphs and tables. If procedures and timings are changed after initial entry they automatically change the entire toolkit. Therefore, information should only be amended once for that workbook.

If your department has more than 11 procedures then another workbook must be used. Do not add extra lines to the spreadsheet because the macro and the toolkit will not work correctly.

Turn around time sheet
This sheet is used to record the room ‘down time’ i.e. when there is no patient present.

The toolkit has been developed to assist the redesign of endoscopy units and a significant focus is placed on theatre/rooms utilisation, as it is a key constraint. However, it is recognised that theatres/rooms need to be ‘turned around’ to prepare for the next patient. The turn around sheet enables the project team to monitor and understand the downtime involved in making a theatre ready for the next patient. This can be done by sampling a selected time period then redesigning and reviewing this part of the service regularly.

Graphs sheet
This sheet allows the user to view data graphically by month; the user can select the month they wish to view. There are 17 graphs available highlighting useful management and redesign information drawn from the monthly worksheet.
**Tables Sheet**

This sheet contains the tabular representation of information shown in the graphs and also contains additional micro level data. There are 34 tables available detailing daily and week on week information.

**Table hours sheet**

This sheet contains a tabular representation of information detailed in the tables sheet converted into hours instead of minutes. There are 17 tables mirroring the ones in the main tables sheet.

**Multiple Combination Lists**

Many services run endoscopy sessions which contain multiple combinations of procedures. This sheet allows the user to calculate ‘combination list’ timings. To do this the user should enter:

- The date the combination list took place
- Whether it is a morning, afternoon or evening session
- The number of each type of procedure that took place in that session.

The worksheet then calculates the estimated time taken for this list based on the timings for individual procedures which have already been entered by the user in the overview sheet.

In addition, the user can enter the total time the list actually took, and the spreadsheet will automatically calculate the difference between the two times (variance). If the variance is constantly greater than 20 per cent, then the user must reassess the calculations and assumptions made for the individual procedure timings they have entered in the overview sheet.
USING THE OVERVIEW SHEET

The Trust name is set to **Insert Trust Name**. This must be changed to your Trust’s name in order to personalise the graphs. To do this simply enter text into the Green box (cell B1) at the top of the overview sheet:

There are 11 procedure type slots available on this sheet for users to enter the names of their 11 most frequently used procedures. In addition, the user must enter numerical values in the green boxes under the minutes column for each procedure type. These timings are dependent on the times measured at each the individual sites (patient in and out of theatre) and should reflect what happens to 80 per cent of patients for specific procedure.

When more than one procedure is performed per session you should select the multiple combination option on the drop down menu. Any changes to procedure types listed on this sheet result in automatic changes to all work sheets.

**Measuring procedure times**

From your process map this is the time that the theatre is used for each patient.

*This is measured by timing each patient in and out of theatre.*

*Then identifying the time which includes 80 per cent of patients for that procedure.*

If there are other events that also happen in theatre e.g. consent this may need to be included in the timing initially but the redesign programme should work towards a more appropriate place for this to be done.
USING THE MACRO

In order to update and view the monthly data in tabular and graphical form a macro must first be run from the Overview sheet. It is recommended that the macro be run immediately after data is added to the sheets and saved.

Running the Macro

- Select the month from cell B1 of graphs sheet.

| Select month. | January |

- Return to Overview sheet.

- Click on the Go button which runs the macro.

- A progress bar will appear to inform you that the process will take a few minutes and will show you the percentage of progress complete.

- Once completed view the required (updated) month’s data in the Tables and Graphs worksheets.

USING THE MONTHLY SHEETS

Recording Demand data

All the demand upon your endoscopy unit must be entered into this sheet. It is must be 100 per cent complete in order to truly reflect the demand upon the service. Demand referrals are classified

- By procedure type

- By type of referral

To enter demand data

- Select the required month’s sheet

- Click on the relevant procedure type and day

- Enter number of referrals in numerical format (1, 3, 5, etc),

- Enter data in to the ‘green cells’ only. The total demand per day and per procedure is automatically calculated and will change when numbers are entered.

Referral types

Demand referrals are separated by procedure type and also by type of referral; definitions for each category of referral are available by clicking on the ‘red triangle’ in the top right hand corner of the relevant box.
**Day Patients** – Patients in and out in the same day (first attendees). This includes categories such as Outpatients, Direct access and Daycases but excludes two-week wait suspected cancer referrals as these are recorded separately only for demand.

<table>
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<tr>
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<th>Monday</th>
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2-week wait referrals – All two-week wait suspected cancer referrals.

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**Inpatients** – Patients who are on wards and need an endoscopy before being discharged. Exclude those patients who need an endoscopy within twelve hours, these are recorded as emergencies.

<table>
<thead>
<tr>
<th>Inpatients</th>
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9 To avoid double counting include here only cancer two-week wait referrals sent to endoscopy as a first point of entry into the system. You should however find out numbers of patients with suspected cancers referred for an endoscopy so that this can be included in any service redesign.
Emergency – All patients who need an endoscopy within twelve hours. Include out of hours work in this figure.

<table>
<thead>
<tr>
<th>Emergency</th>
<th>Monday</th>
<th>Tuesday</th>
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<tbody>
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Follow up – All patients who already had an endoscopy. This includes rescopes, follow-ups and planned surveillance patients.

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Private Patients - There is also a facility to enable you to capture private work that may have an impact on your ability to deliver NHS care. At the side of each week’s demand is the private patient box.

Enter the total number of private patient requests for each procedure each week that will be undertaken in existing scheduled sessions in the endoscopy suite. (e.g. between 9am-5pm).

<table>
<thead>
<tr>
<th>Private Patients</th>
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<tbody>
<tr>
<td>Procedure A</td>
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<tr>
<td>Procedure C</td>
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<td>Procedure D</td>
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<td>Procedure E</td>
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<td>Procedure F</td>
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<td>Procedure G</td>
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<td>Procedure L</td>
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<td>Total</td>
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</table>
Total Demand - At the bottom of each week’s data the total number of referrals for that week are calculated automatically and shown in the white cells.

At the right hand side of each week’s data the total demand for each procedure by referral category is also calculated automatically.

Recording Capacity and Activity data

The data sheet - The data is recorded in a room by room layout. There are a maximum of five rooms per week in total. The definitions are given for each category by clicking on the red triangle in the right hand corner of each cell. If your unit has more than five rooms you must use an additional Excel workbook.

Endoscopy type - Before entering the capacity and activity data you must define the procedure types used most frequently in the Overview Sheet.

Data is split into morning and afternoon sessions and by endoscopy type. The type of procedure can be chosen from the drop down menu shown when clicking in the box just below each day:

Name - The name of the endoscopist may be entered in the row below this. This is an optional choice which the user may find useful.

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<th>Sun AM</th>
<th>Sun PM</th>
<th>Mon AM</th>
<th>Mon PM</th>
<th>Tue AM</th>
<th>Tue PM</th>
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</tbody>
</table>
Capacity - Entering minutes

Useable capacity of the room is the potential capacity that is available for use. This must be entered, completed for each room available regardless of whether it was used for that session or not irrespective of staffing resources available. This is to enable total useable capacity and usage to be plotted.

To calculate capacity in minutes:

- Take the number of hours per day the room could be used i.e. 7 hours
- Split into morning and afternoon sessions i.e. 3.5 hours each
- Multiply by minutes per hour

Capacity per session = Session length (hours) x minutes per hour

\[ = 3.5 \times 60 \]
\[ = 210 \text{ minutes} \]

Example above

Session minutes available

This section is used to enter the time in minutes that the endoscopist is contracted to work, e.g. 3.5 hours session is 210 minutes. Please note this figure can be the same as useable capacity minutes.

Activity - Entering minutes

Scheduled list minutes - This section documents the number of procedure minutes scheduled. This is based on locally defined timings for each procedure type or combination list which have been entered on the overview sheet.

Examples:

A session consisting of four flexible sigmoidoscopies.
A flexible sigmoidoscopy takes 20 minutes then
4 flexible sigmoidoscopies = 4 x 20 = 80 minutes

OR

A mixed session consisting of two colonoscopies, three flexible sigmoidoscopies and two OGDs. A colonoscopy takes 40 minutes, a flexible sigmoidoscopy takes 20 minutes and an OGD takes 15 minutes then
2 colons + 3 flexi's +2 OGD's= (2x 40) + (3x20) + (2x15) = (80+60+30) = 170 minutes

This can be all calculated using the Multiple Combination List Sheet

Any minutes relating to Initiatives should be entered separately in the appropriate cells.

Initiative minutes - These are any procedure minutes that are not normally part of the service's normal workload e.g. extra sessions on Saturday mornings or in evenings or any covering of lists due to the absence of the routinely scheduled endoscopist.
Actual procedure minutes - This section contains the minutes of work actually undertaken in the session. This is based on locally defined timings for each procedure type or combination list. Once the total number of minutes worked have been entered there is space for the user to split this data down into minutes used and unused\textsuperscript{10}.

<table>
<thead>
<tr>
<th>Emergency Mins Used</th>
<th>Inpatient Mins Used</th>
<th>Day Patients Mins Used</th>
<th>Follow up Mins Used</th>
<th>Private Patient Mins Used</th>
<th>CBP Mins</th>
<th>CBH Mins</th>
<th>DNA’d Mins</th>
</tr>
</thead>
</table>

Emergency minutes - This section documents the time used for patients who either need an endoscopy within twelve hours or for endoscopies undertaken out of normal hours.

Inpatient minutes - This section includes patients who are in a hospital bed and cannot or will not be discharged until an endoscopy has been performed. This excludes patients who require an endoscopy within 12 hours.

Day patient minutes - This section includes patients who are in and out in the same day and are first attendees. This classification includes daycases, outpatients, and direct access and two week wait cancer referrals.

Follow up minutes - This section includes all patients who have previously had an endoscopy. Locally these may be called re-scopes, re-do’s, follow-ups, planned or surveillance patients.

Private Patient minutes - This section contains those minutes which are used during the session for private patients.

Cancelled by Patient minutes (CBP) - This is the time allocated to a procedure that has been cancelled by the patient and where the slot has not been refilled.

Cancelled by Hospital minutes (CBH) - This is the time allocated to a procedure which has been cancelled by the hospital.

Did Not Attend (DNA) - This is the time in minutes allocated to the procedure but the patient did not attend for the appointment.

Recording who performs procedures
This section is used to record how many procedures are performed in each session and which professional group the endoscopist belongs to. The categories include consultant, trainee doctor and nurse endoscopist, other A and other B. These last two categories can be defined by the user if others are performing the procedures such as GP, radiologist or registrar.

Running the Macro
Once all five weeks’ data for the current month has been entered and saved then run the macro

- Select the current month in graph sheet cell B1
- Return to overview sheet
- Press the Go button. This will update all the figures in the tables and graphs.

\textsuperscript{10} Unused time

CBP = Cancelled by patient, CBH = Cancelled by Hospital, DNA = Did not attend
## Recording Waiting List Data

### Waiting List

The two waiting list sections are for all patients waiting regardless of the local classification used by the Trust. These may be classified\(^\text{11}\) as daycases, outpatients, inpatients or diagnostic tests.

**Active waiters** are all first attendees who have not had an endoscopy before in this care episode. These are patients who should have their endoscopy without any delay.

**Planned** are all follow up (rescopes, redo, planned or surveillance etc) patients. There will typically be a planned delay for this group of patients. The waiting time must be recorded from the date of the previous endoscopy.

The numbers of patients on Active and Planned waiting lists must be:

- Recorded on a weekly basis
- Always on the same day of the week
- Recorded by procedure type

The Toolkit will automatically calculate the total numbers by procedure type and by classification in each category (Active or Planned).

### Active and Planned Waiting Lists

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiting List Number at start</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PLANNED</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Waiting List Number at start</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^{11}\) There is no definitive classification of endoscopy procedures currently; however guidance is expected during 2003/4.

---

## Waiting Distribution

The monthly waiting list distribution data is entered into the second section as shown below: *It is important that waiting list data is collected on the same day of each month.*
Enter data, split into Active and Follow Up categories, by procedure type and length of time waiting,

**Cancelled Sessions and Late starts**

In this section you should record capacity that has been lost regardless of the reason. This may include minutes lost through annual leave, study leave and sessions being cut short as well as lists starting late. The reasons for these cancellations or late starts should be identified in the issues worksheet.

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Sun AM</th>
<th>Sun PM</th>
<th>Mon AM</th>
<th>Mon PM</th>
<th>Tue AM</th>
<th>Tue PM</th>
<th>Wed AM</th>
<th>Wed PM</th>
<th>Thu AM</th>
<th>Thu PM</th>
<th>Fri AM</th>
<th>Fri PM</th>
<th>Sat AM</th>
<th>Sat PM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room 1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Room 3</td>
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</tr>
<tr>
<td>Room 4</td>
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<tr>
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<td>Total</td>
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<td>0</td>
</tr>
</tbody>
</table>

**Failed Procedures**

This section documents the number of failed procedures, regardless of the reason. These are procedures that started but then for whatever reason could not be completed. The reasons for such failed procedures should be entered in the issues sheet.

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Sun AM</th>
<th>Sun PM</th>
<th>Mon AM</th>
<th>Mon PM</th>
<th>Tue AM</th>
<th>Tue PM</th>
<th>Wed AM</th>
<th>Wed PM</th>
<th>Thu AM</th>
<th>Thu PM</th>
<th>Fri AM</th>
<th>Fri PM</th>
<th>Sat AM</th>
<th>Sat PM</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room 1</td>
<td>0</td>
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<tr>
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<tr>
<td>Room 4</td>
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<tr>
<td>Room 5</td>
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</tr>
<tr>
<td>Total</td>
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</tr>
</tbody>
</table>
**Turn around time**

This sheet allows you to record the time when there is no patient in the room; this could be for a variety of reasons e.g. getting the room cleaned, sterilising endoscopes and preparing the next patient.

<table>
<thead>
<tr>
<th>Date <strong>/</strong>/**</th>
<th>Session am/pm/ evening</th>
<th>Room Number</th>
<th>Patient number</th>
<th>Time Pat. entered theatre (e.g.13:00)</th>
<th>Time Pat. Left Theatre (e.g.13:50)</th>
<th>Time Pat. Spent in theatre</th>
<th>Time room prep for nxt Pat. (e.g.13:56)</th>
<th>Mins room prepared</th>
<th>Time nxt patient entered theatre (14:15)</th>
<th>Total downtime</th>
<th>Reasons for delays</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2001</td>
<td>am</td>
<td>1</td>
<td>1</td>
<td>9:00</td>
<td>9:15</td>
<td>0:15</td>
<td>9:20</td>
<td>0:05</td>
<td>9:30</td>
<td>0:15</td>
<td>Patient delay</td>
</tr>
<tr>
<td>01/01/2001</td>
<td>am</td>
<td>1</td>
<td>1</td>
<td>9:30</td>
<td>10:10</td>
<td>0:40</td>
<td>10:15</td>
<td>0:05</td>
<td>10:15</td>
<td>0:05</td>
<td></td>
</tr>
</tbody>
</table>

The user needs to insert the relevant times into the turnaround sheet; however some figures are calculated automatically. These are as follows:

- Time patient spent in theatre
- Minutes to prepare the room
- Total downtime
- The next time a patient entered theatre

All the other fields should be completed by the user on a sample basis.
GRAPHICS AND TABLES
These are automatically generated from the data entered. To ensure that the graphs and tables are updated you need to:

- Select the month you want in cell B1 of the Graphs sheet
- Press the Go button on the overview sheet and this will run the macro

These sheets allow you to view the most relevant monthly information in tabular and graphical format. The following subjects can be viewed:

**Subjects**

1. Demand by day of week
2. Demand by Procedure
3. Minutes Demand by Procedure
4. Demand by Referral Source
5. Total Planned and Actual Workload Minutes by Week
6. Breakdown of Minutes Used By Week
7. Breakdown of Minutes Unused By Week
8. Breakdown of Minutes Unused By Day
9. Procedures undertaken by Professionals By Week
10. Active and Planned Waiting List Split
11. Active Waiting List Distribution
12. Planned Waiting List Distribution
13. Macro Level Chart (1) – Showing Total capacity, Total demand, Total Activity
14. Macro Level Chart (2) - Showing Total capacity, Total demand, Total Activity, Active waiting list and Planned waiting list
15. Macro Level Chart (3) - Showing Total capacity, Total demand, Total Activity and Total waiting list
16. Cancelled Sessions
17. Failed Procedures

**Graphs**

The Graphs listed below using the month of January as an example:

- Demand by day of week - January 2002 - Insert Trust name
- Demand by Procedure - January 2002 - Insert Trust name
- Minutes Demand by Procedure - January 2002 - Insert Trust name
- Demand by Referral Source - January 2002 - Insert Trust name
- Total Planned and Actual Workload Minutes by Week - January 2002 - Insert Trust name
- Breakdown of Minutes Used By Week - January 2002 - Insert Trust name
- Breakdown of Minutes Unused By Week - January 2002 - Insert Trust name
- Breakdown of Minutes Unused By Day - January 2002 - Insert Trust name
- Procedures undertaken by Professionals By Week - January 2002 - Insert Trust name
- Active and Planned Waiting List Split - January 2002 - Insert Trust name
- Active Waiting List Distribution - January 2002 - Insert Trust name
- Planned Waiting List Distribution - January 2002 - Insert Trust name
- Macro Level Chart (1) - January 2002 Insert Trust name
- Macro Level Chart (2) - January 2002 Insert Trust name
- Macro Level Chart (3) - January 2002 - Insert Trust name
- Cancelled Sessions - January 2002 Insert Trust name
- Failed Procedures - January 2002 - Insert Trust name
CUTTING AND PASTING TABLES AND GRAPHS

The tables and graphs can be inserted into Word documents and Power point presentations by cutting and pasting as follows:

Copying graphs into Word documents

To transfer graphs into a Word document
- Select the graph by a single left click on the mouse in the appropriate chart area. A black line with eight small black boxes will appear around the graph.
- Right click the mouse in the chart area and a menu will appear
- Choose copy and a flashing box will appear around the graph.
- Go to the Word document and in an appropriate space right click with the mouse
- Select paste from the menu and the chart will appear.

Copying tables into Word documents

To transfer a table into Word documents you should:
- Highlight the area you wish to copy
- Right click on the mouse and from the list which appears select copy. A flashing box will appear around the table selected.
- Go to the word document
- Right click with the mouse where you wish the table to be placed
- Select paste; the table will appear.
Inserting Graphs into a PowerPoint presentation

In PowerPoint select the slide layout required; note that not all slides offer the option to present graphical information. This is represented by a bar chart, as shown below:

Select the style of slide required and double click to enter a graph. The following screen will appear:

- Copy the table relevant to the graph required, as described in copying tables into Word documents
- Paste this into the datasheet in PowerPoint.
- The graph will automatically change.
- Click outside the highlighted chart to hide the datasheet; your graph is transferred.
OTHER USEFUL RESOURCES AND DOCUMENTS

General.


Seeing through patient’s eyes

Learning from patient and carer experiences. Second Edition Coronary Heart Disease Partnership Programme (2001), NHS Modernisation Agency


A guide to developing effective user involvement strategies in the NHS. M Kelso (1997) College of Health

Web Sites
www-bsg.org.uk: Web site for British Society for Gastroenterology which has information about clinical guidelines, endoscopy training and broad service guidelines.


ACKNOWLEDGEMENTS

Modernising Endoscopy Services: a practical guide to redesign would not have been created without this team who took a basic concept and successfully developed this final published version. They not only establish the national programme but also developed this document and the recommended approach to enable teams to redesign their service.

Liz Allan, National Programme Manager for Endoscopy, NHS Modernisation Agency
Sally Batley, Deputy Director for Analysis, NHS Modernisation Agency
Sue Bates, Programme Manager, Cancer Action Team
Shona Brown, North London Workforce Confederation (formerly National Project Manager for Endoscopy)
Erika Collinson, Information Analyst, NHS Modernisation Agency
Ian Greenwood, Associate Director, National Booking Programme: Access, Booking & Choice, NHS Modernisation Agency
Kam Kalirai, National Redesign Leader, NHS Modernisation Agency
Lesley Wright, National Associate Director, Cancer Services Collaborative, NHS Modernisation Agency

The first wave pilot sites listed below made this toolkit possible by actively contributing to the development and refinement of this toolkit during a yearlong redesign programme.

Aintree Hospital NHS Trust
Gateshead NHS Trust,
Good Hope Hospital NHS Trust,
Lewisham NHS Trust

Mid Essex NHS Trusts
North West London NHS Trust
North Staffordshire NHS Trust
Royal Liverpool NHS Trust
## APPENDIX 1 - DEFINITIONS

<table>
<thead>
<tr>
<th>Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity</strong></td>
<td>Refers to the work done, expressed as the number of endoscopic procedures performed</td>
</tr>
<tr>
<td><strong>Backlog</strong></td>
<td>Is the number of endoscopic procedures for which referral has been made, but the procedure has not yet been performed</td>
</tr>
<tr>
<td><strong>Bottleneck</strong></td>
<td>The place in the patient pathway where hold-ups occur. It is used when the cause of the hold-up is not yet clear</td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>Resources available in terms of equipment, space, and skills available to operate the equipment and staff to run the facilities</td>
</tr>
<tr>
<td><strong>Carve Out</strong></td>
<td>Practice of &quot;protecting&quot; slots on lists for particular appointment types. For example protecting slots for two-week rule patients, whole sessions allocated to individual procedure types</td>
</tr>
<tr>
<td><strong>Constraint</strong></td>
<td>The issue/problem holding up flow of activity and causing the bottleneck</td>
</tr>
<tr>
<td><strong>Demand</strong></td>
<td>The number of referrals being made to the service. Demand measures need to be comprehensive capturing both elective and emergency referrals, i.e. generated both inside and outside of the service</td>
</tr>
<tr>
<td><strong>GP referral</strong></td>
<td>All referrals, including letters, faxes etc. that are generated by the GP and result in the patient being listed for endoscopy without being seen first. This includes two week urgent referrals, any open access or direct access services</td>
</tr>
<tr>
<td><strong>Outpatient referral</strong></td>
<td>All referrals for endoscopy, where the patient has been seen first in the outpatient department prior to the decision to list for endoscopy</td>
</tr>
<tr>
<td><strong>Inpatient referral</strong></td>
<td>All referrals for endoscopy to be carried out during an inpatient episode</td>
</tr>
<tr>
<td><strong>Repeat endoscopy</strong></td>
<td>All referrals for patients who require follow up endoscopic examination; i.e. includes surveillance patients</td>
</tr>
</tbody>
</table>
APPENDIX 2 - ROOM UTILISATION SHEET

A simple way of documenting and highlighting issues with room utilisation is to use a calendar sheet which can be coloured to denote whether a room is used or not.

Example:  

<table>
<thead>
<tr>
<th>Code: Room in use</th>
<th>Room not used</th>
</tr>
</thead>
</table>

Room 1

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 December</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
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<td>15</td>
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<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>29</td>
<td>30</td>
<td>31</td>
<td>1 January</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Room 2

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 December</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
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<td>27</td>
<td>28</td>
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<tr>
<td>29</td>
<td>30</td>
<td>31</td>
<td>1 January</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
The NHS Modernisation Agency is part of the Department of Health