Improving GI Bleed Services

December 2011
Executive summary

A short project was initiated within Healthcare Improvement Scotland to support the implementation of the SIGN guideline on gastrointestinal (GI) bleeding.

The objectives were to:

- raise awareness of the SIGN guideline on GI bleeding by delivering six workshops around Scotland in the period December 2010 to March 2011
- encourage NHS boards to reflect on their current service provision and to start improving these services in line with the SIGN guideline, and
- follow up progress with the NHS boards 6 months after the workshops.

These objectives were completed on schedule.

Most board areas are currently in the process of implementing service improvements according to their local priorities.

The final outcome of this project is the following list of recommendations.

1. There should be clear care pathways (and protocols) for dealing with different GI bleeds, detailing clear lines of responsibility and accountability for the entire patient journey.

2. Daily endoscopy lists should be undertaken in larger hospitals that manage significant numbers of upper GI bleeding.

3. All staff who perform endoscopy procedures (especially out of hours) should have the skills to cope with all aspects of haemostasis and have the appropriate skilled support (specialist nurses and anaesthetists) when needed.

4. NHS boards should explore regional solutions (within their area and more widely if appropriate) in order to be able to sustain rotas and skills base (particularly for interventional radiology).
1 Background

The mortality of acute upper GI bleeding remains high. The large UK wide audit undertaken by the National Blood Service and the British Society of Gastroenterology in 2007\(^1\) showed that the mortality of patients presenting to hospital with acute GI bleeding was approximately 7\% whilst that of patients who bleed as established inpatients was 25\%. Crude mortality is almost unchanged over the last 60 years. The majority of patients who die are elderly and have other significant medical illnesses and it is true that the case mix of patients who present with acute GI bleeding are older and have more co-morbidity than reported in earlier series. Nevertheless, it was clear in the audit that mortality varies between hospitals, even allowing for differences in case mix, implying variation in clinical management across the UK.

SIGN guideline 105 (the management of acute upper and lower GI bleeding, 2007\(^2\)) defined the evidence base for managing patients with acute GI bleeding and NICE guidelines for acute upper GI bleeding are to be published in 2012. These (and other guidelines) state that optimum management includes proper assessment and triage at presentation, active resuscitation including support of co-morbidities, endoscopy undertaken at an optimum time with endoscopic therapy to treat variceal and non-variceal causes. Rescue therapies comprising a range of interventional radiological techniques and operative surgery are used when endoscopic therapies fail. Endoscopy is clearly central to the diagnostic and therapeutic protocol and it is clear from many clinical trials that timely endoscopy can arrest active bleeding, prevent re-bleeding and improve mortality. Endoscopy undertaken within 24 hours reduces the length of hospital stay and is cost effective.

Despite the evidence base published in guidelines, it is clear from the UK audit that the current service provision for patients with acute upper GI bleeding across the country is patchy. Forty-five per cent of hospitals did not provide out-of-hours emergency endoscopy even though 60\% of patients admitted to hospital did so out of normal working hours. The audit showed that a significant proportion of patients did not receive endoscopy within 24 hours and some patients at high risk of re-bleeding and death did not receive urgent endoscopy.

At the time of the SIGN guideline publication, service arrangements for appropriate endoscopy provision for acute GI bleeding in Scotland were unclear. The arrangements for dealing with acute GI bleeding across NHS boards were not known, and there was an incomplete picture of case mix, patient outcomes or the challenges facing units aspiring to improve their services. A short term working party was therefore set up by Healthcare Improvement Scotland to examine these issues (see Appendix 3 for membership). This involved a series of workshops within the NHS boards to examine arrangements for dealing with acute upper GI bleeding and obtain views as to how services could be improved.

This document summarises the findings of those workshops and distils them into a series of recommendations that we hope will improve the care of this patient group.
2 What we did

2.1 Improvement workshops

A number of awareness raising and improvement workshops were conducted all over Scotland to encourage NHS boards to reflect on their current GI bleed services and to see what quality improvements they can implement.

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>NHS boards invited</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 December 2010</td>
<td>Edinburgh</td>
<td>Lothian / Borders / Dumfries &amp; Galloway</td>
</tr>
<tr>
<td>18 February 2011</td>
<td>Airdrie</td>
<td>Lanarkshire / Ayrshire &amp; Arran / Forth Valley</td>
</tr>
<tr>
<td>1 March 2011</td>
<td>Aberdeen</td>
<td>Grampian / Orkney / Shetland</td>
</tr>
<tr>
<td>3 March 2011</td>
<td>Inverness</td>
<td>Highland / Western Isles</td>
</tr>
<tr>
<td>18 March 2011</td>
<td>Glasgow</td>
<td>Greater Glasgow and Clyde</td>
</tr>
<tr>
<td>24 March 2011</td>
<td>Dundee</td>
<td>Tayside / Fife / Golden Jubilee</td>
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To encourage attendance and participation in these workshops, a letter was sent out by the Chief Medical Officer to all medical directors and clinical governance leads requesting that representatives of the following staff groups should attend:

- accident and emergency staff
- endoscopists
- surgeons
- gastroenterologists
- appropriate nurses
- interventional radiologists
- ITU / acute medicine staff
- appropriate managers
- clinical governance staff, and
- others as appropriate.

Between 20 and 50 people attended each workshop. At each of the sessions, staff were presented with a summary of the SIGN guideline and the findings of the UK audit. This was followed by presentations from staff about their local GI bleed service provision, with audit data where available.

The main focus of the workshops was a discussion of what improvements could be made to comply with the guideline. Each NHS board then highlighted their key action points and identified individuals to lead on implementation.

2.2 Support for NHS boards

An electronic community was created to support networking and the sharing of protocols and service models. This community hosts a range of resources, including presentations that were given at the workshops and examples of good practice. The community can be accessed through The Knowledge Network or by following this link: http://www.elib.scot.nhs.uk/SharedSpace/communities/Pages/Index.aspx?ContainerID=222472
3 What we found

3.1 Service provision

It was clear from the workshops that a wide range of service models are in place across Scotland for managing patients with acute GI bleeding. These range from a comprehensive 24/7 rota involving therapeutic endoscopy, interventional radiology (arterial embolisation and TIPSS) and emergency operative surgery, provided by on-call medical and nursing staff. At the other end of the spectrum are units in which out-of-hours endoscopy is unavailable. Such hospitals rely upon ad hoc goodwill arrangements in which off duty medical staff deliver out-of-hours therapeutic endoscopy without the support of trained nurse assistants. It is not possible in this snapshot of service arrangements to know whether patient outcome is affected by these differing service arrangements, but we know that across the UK mortality and re-bleeding are lower in units that deliver a comprehensive clinical 24/7 service. There is clearly great inequity of service provision for this clinical problem across Scotland and this almost certainly leads to differences in patient outcomes and safety.

3.2 Main improvement themes

Each NHS board identified a small number of action points to focus on. There was a large overlap between the different lists of action points and the following key themes emerged across Scotland.

1. Perform skills audit.
2. All staff who may scope out-of-hours to be involved in routine lists to gain experience.
3. Better communication between teams (consultant to consultant where possible).
4. Implement triage protocols.
5. Agree care pathways for different GI bleeds and criteria for transfer.
6. Focus certain procedures to different centres (with the appropriate facilities available in the chosen sites).
7. Clarify ownership of patients at different stages of their care pathway.
8. Introduce weekend routine endoscopy lists with slots for emergencies.
9. Develop formal interventional radiologist rotas.
10. Investigate having endoscopy nurses on call.
11. Explore regional solution for NHS boards with small numbers of specialists.
12. Audit outcomes (mortality, length of stay, time to intervention, transfer to another hospital).
4 Progress

Progress reported by NHS boards is listed in Appendix 1.

4.1 Measures

All NHS boards are encouraged to record process, outcome and balancing measures, for example:

<table>
<thead>
<tr>
<th>Process measures</th>
<th>Outcome measures</th>
<th>Balancing measures</th>
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<tbody>
<tr>
<td>• Number of different types of GI bleed presentations</td>
<td>• Mortality</td>
<td>• Workload impact on different staff groups</td>
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<tr>
<td>• Availability of appropriately trained specialist on call at time of presentation</td>
<td>• Complication rates</td>
<td>• Waiting times for routine endoscopy</td>
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<td>• Time to intervention</td>
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<tr>
<td>• Numbers transferred to another hospital</td>
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<td>• Length of stay</td>
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5 Conclusions

The workshops demonstrated that clinicians are extremely enthusiastic to improve working practice to deal better with acute GI bleeding. Changing the service model could be demanding but there is a will to do this. The challenges apply to medical staff but also to nursing and others since modern endoscopic and interventional radiological practices demand both doctor and expert nursing assistance. Proper on-call arrangements for nursing and other staff need to be developed particularly in those units dealing with a large volume of critically ill patients.

In 2010, a working group with representatives from the National Patient Safety Agency, British Society of Gastroenterology, Association of Upper Gastrointestinal Surgeons, Royal College of Radiologists, Royal College of Nursing and patient groups addressed provision of services for patients with acute upper GI bleeding. This was stimulated by anecdotal reports of deaths and other misadventures in patients presenting to UK hospitals because of acute GI bleeding and by the findings of the UK audit. The working group concluded that a series of minimal service standards should be applied to all patients.

1. There should be a nominated clinical lead responsible for acute upper GI bleeding.
2. All patients should be properly assessed and risk scored on presentation.
3. Resuscitation should be undertaken prior to therapeutic intervention.
4. All high risk patients should be endoscoped within 24 hours, preferably on a planned list.
5. For patients who require more urgent intervention for endoscopy, interventional radiology or surgery, formal 24/7 arrangements must be available.
6. The necessary team, meeting defined competency levels, should be available throughout the complete patient pathway.
7. Each stage of the patient pathway should be carried out in an area with appropriate facilities, equipment and support including staff experienced in the management of acute upper GI bleeding.
8. All hospitals must collect a minimum data set in order to measure service provision against auditable outcomes.

It was clear from the Scottish Workshop project that clinicians would support these service standards.

It is recognised that one model of patient care does not apply across all units in Scotland. For example whilst a unit dealing with a large number of acutely bleeding patients should be expected to provide comprehensive services day or night, particularly if that unit is a referral centre, the same could not be justified in a relatively small remote and rural institution where out-of-hours endoscopy for severe acute upper GI bleeding is infrequent and the number of clinicians able to deliver therapeutic endoscopic therapy is limited. Nevertheless, the application of these service standards is not excessively demanding and will improve patient safety and clinical outcome.

Whilst much of the focus of the working group considered improving mortality in high risk patients presenting with acute GI bleeding, it was also recognised that the current management of stable patients could also be improved and this would have economic benefits. Daily endoscopy lists (weekends and public holidays) throughout the year facilitates endoscopy within 24 hours both for urgent cases and for stable patients who can then be discharged from hospital at an appropriate time. Currently in many units across the UK,
patients presenting with acute GI bleed on a Friday will not undergo endoscopy until the following week; they may be inappropriately hospitalised for several days at a time. A daily endoscopy service would accelerate the care process and has the additional advantage of dealing with other semi urgent cases at weekends (for example patients requiring oesophageal dilatation, patients requiring semi-urgent colonoscopy). Clearly the development of routine, weekend and holiday endoscopy lists may challenge other aspects of care within medicine. It may for example stress acute general medical services since gastroenterologists are an important component of acute medical care; it may mean that gastroenterologists re-arrange their week such that they work routinely some weekends and in compensation have days off Monday to Friday. Larger hospitals (that see in the region of 300–400 bleeding cases per year) that have introduced daily lists tend to manage acutely ill bleeding patients better.

This report by no means produces all the answers. It is not known how best to deal with acutely ill bleeding patients out-of-hours in remote and rural areas and whilst we would advocate networks and referral centres to which patients developing haematemesis and melaena in the community are directed, this does not deal with all the issues. For example, the mortality of the acutely bleeding inpatient is very significant (25–30%) yet such patients cannot be easily transferred to referral centres where haemostatic therapy could be applied. It is possible that for that very ill subgroup of patients expert endoscopists and their support staff will have to travel to other hospitals in order to administer potential life saving treatments. Protocols need to be developed for safe transfer of acutely bleeding patients to units where endoscopic, radiological and operative therapies can be given and this represents a considerable challenge.

The intention of this project was to raise awareness of the SIGN guideline on GI bleeding, to encourage NHS boards to reflect on their current service provision and to start improving these services in line with the SIGN guideline.

Most board areas are currently in the process of implementing service improvements according to their local priorities. Based on the discussions at each of the workshops and the findings during discussions with local staff, the project steering group produced four key recommendations for GI bleed services to consider.

1. There should be clear care pathways (and protocols) for dealing with different GI bleeds, detailing clear lines of responsibility and accountability for the entire patient journey.

2. Daily endoscopy lists should be undertaken in larger hospitals that manage significant numbers of upper GI bleeding.

3. All staff who perform endoscopy procedures (especially out of hours) should have the skills to cope with all aspects of haemostasis and have the appropriate skilled support (specialist nurses and anaesthetists) when needed.

4. NHS boards should explore regional solutions (within their area and more widely if appropriate) in order to be able to sustain rotas and skills base (particularly for interventional radiology).
References


2 Management of acute upper and lower gastrointestinal bleeding. SIGN guideline 105. SIGN, 2008 (http://www.sign.ac.uk/guidelines/fulltext/105/index.html)

## Appendix 1: NHS board progress update - September 2011

<table>
<thead>
<tr>
<th>NHS board</th>
<th>Priority areas</th>
<th>Action planned</th>
<th>Progress made</th>
<th>Future plans</th>
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| **Ayrshire & Arran** | Reviewing competencies of individuals involved in out of hours endoscopy        | - Survey of endoscopists<br>- Steering group established to work up options and develop costed proposal<br>- Options to be reviewed, costed and discussed with staff<br>  
All above are being progressed by the Endoscopy Management group under the chairmanship of Debbie Kirk, Healthcare Manager | - Initial survey completed. Results summarised and shared with Clinical Directors for surgery and medicine for review and discussion<br>- Group has met twice. Initial long list of options produced with advantages and disadvantages detailed and high level costings<br>- Options identified and costed Initial meeting has taken place with staff and staff side | Continue to further progress with the above                                                                                                               |
|                   | Developing proposal for out of hours endoscopy service, with particular emphasis on weekends |                                                                                                                                                    |                                                                                                                                                                                                                  |                                                                                                         |
|                   | Explore options to introduce out of hours endoscopy nurse on-call rota          |                                                                                                                                                    |                                                                                                                                                                                                                  |                                                                                                         |
| **Dumfries & Galloway** | All staff who scope out of hours to be involved in routine lists to gain experience: Surveys usually undertake OOHs endoscopy, and occasionally call in the gastroenterology physicians for assistance / advice.  
All surgical staff undertake some endoscopy routine lists but two surgeons have training / experience requirements. The gastroenterology physicians usually provide a planned back up for these two surgeons.  
OOHs theatre staff often do not have endoscopy experience.  
Anaesthetists do provide skilled support. | Up-skilling of OOHs theatre staff to be discussed at the next Endoscopy Users Group Meeting re. appropriate training or an alternative provision of staff, since the need for emergency OOHs scoping is infrequent | This topic has been explored at the Endoscopy Users Group meetings. Theatre staff have commenced a rolling programme of being present during routine endoscopy lists. | Any requirement for therapeutic endoscopy when either of above on call, will need to be addressed by management so that there is cover by medical gastroenterologists |
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<td><strong>Introduce weekend routine endoscopy lists with slots for emergencies:</strong></td>
<td>Demand suggests that there is not a great need for a weekend routine endoscopy list. The current waiting time for routine referrals is two-three weeks. There are also financial issues concerned with commencing such a routine weekend list. A small number of patients do, however, wait as inpatients over weekends for endoscopies. Slots for emergencies/in patients are reserved on routine weekday lists and these patients are allocated slots as soon as possible.</td>
<td>To review the system for booking admitted patients into the routine endoscopy list reserved slots in order to reduce the waiting time and therefore the length of patient stay. Endoscopy Users Group. GI bleeds require to be done as and when occur, but two slots per day are available on routine endoscopy lists. Five out of seven general surgeons are able to deal with acute GI bleeds at weekend on call – ref above for arrangement for two in seven.</td>
<td>Following discussion of the evidence for need and the viability of proposals, it was agreed that the need was low, and the number of available nurses would be too few to achieve a viable rota. There would also be financial implications.</td>
<td>To monitor.</td>
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<td><strong>Investigate having endoscopy nurses on call:</strong></td>
<td>This has been linked with Theme two. There are a small number of endoscopy nurses, some of whom are still gaining experience. The possibility of endoscopy nurses being on call OOHs would support the surgeon endoscopists and the theatre staff.</td>
<td>For discussion at the endoscopy users group meetings to determine the need and the viability of the proposal.</td>
<td>It was decided not to take this possibility further.</td>
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**Greater Glasgow and Clyde**
- Inequitable provision of acute GI bleeding services across the Health Board
- Involvement of surgical staff OOH who do not have regular endoscopy sessions
- Impact of increased medical gastroenterology in OOH
- All staff who may scope OOH to be involved in routine lists (skills audit by David Stewart and Alan Clarke)
- OOH scopes to be done in theatre (local implementation)
- Better communication between teams (Consultant to Consultant):
  - Majority of OOH endoscopies performed in theatre; some lower risk procedures still take place in the endoscopy suite
  - TIPSS procedures no longer performed at the Victoria Infirmary and patients are transferred to other hospitals for
- Skills audit still needs to be done especially on sites where there is a reliance upon general surgical OOH cover
- Intention to co-operate with HIS based measures of outcome from GI bleeding
- Agreement on levels of
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<td>Grampian</td>
<td>bleeding and its consequences for general medical cover&lt;br&gt;• TIPSS provision not comprehensive across Board area&lt;br&gt;• Problems of geography with large centres close to each other and others quite distant</td>
<td>local implementation)&lt;br&gt;• Agree triage protocols and care pathways (Dr Ewan Forrest)&lt;br&gt;• Focus certain procedures to different centres (eg stop TIPSS in hospitals that lack the necessary skills, support and facilities): Interventional Radiologists Prof Moss and Dr Edwards&lt;br&gt;• Highlight risks in current set up in corporate risk register (Mr Colin Mackay)</td>
<td>this purpose&lt;br&gt;• Protocols for the triage and management of GI bleeders in existence and documented in widely available GGC handbook</td>
<td>responsibility and accountability of OOH endoscopists required across GGC</td>
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<td>Extend endoscopy hours to 8am till 8pm&lt;br&gt;• Produce protocol for triage and test before change to ECC&lt;br&gt;• Have a management protocol/pathway which includes Pharmacological issues, transfusions, anticoagulants for ECC.&lt;br&gt;• Audit OOH scoping, and other important outcomes/registers.</td>
<td>Endoscopy hours have not been extended to 8am to 8pm. One of the main drivers was the loss of the overnight cover by GI registrar, but as this has not happened, this is not such a priority at present. Will be kept under review by Dr PS Phull, Endoscopy lead NHS Grampian.&lt;br&gt;Triage and management protocol under revision with first drafts discussed and amendments made. Dr JS Leeds and Dr A Mukhopadhy leading on this.&lt;br&gt;Consideration of robust mechanism for OOH scoping audit. No lead identified.&lt;br&gt;Not aware of progress at of standard assessment form at Dr Gray's or who is progressing this.</td>
<td>New protocols and proposals for new ways of working produced but not yet ratified</td>
<td>Continue open dialogue with colleagues from Gastroenterology and other specialties to ensure robust, secure systems for management of patients with GI bleeding.</td>
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| Lanarkshire | Management of upper GI bleeding in Hairmyres Hospital should be reviewed and aligned with the current pathways in most of the other hospitals within Scotland. | Ongoing discussions with A&E and AMAU around changing working patterns with new rotas and move to the ECC, being led by Dr MG Smith, Clinical Lead for Gastroenterology | • Developed and implemented a triage protocol for upper GI bleed in Wishaw General Hospital.  
• Created emergency endoscopy slots for emergency in the three units. This is happening at the beginning of the list Monday – Friday  
• Skill audit completed | To develop and implement the area mentioned above |
| | Expanding the use of upper GI bleeding care pathway which includes patient scoring (Blatchford score) This is currently implemented successfully in Wishaw General Hospital and will be escalated in both Monklands and Hairmyres. |  |  |  |
| | After completion the skill audit in identifying suitable people in each unit to provide endoscopy and endostasis to assess the sustainability of 24/7 cover in each unit whether this should be done independently or we were looking at a regional solution. |  |  |  |
| | • Endoscopy and endostasis skill audit, lead - Mr BenYounes  
• Clarify ownership of patient and management pathway in Hairmyres Hospital, lead - Mr A Khan, AMD and Mr BenYounes.  
• Implementing the triage protocol for all GI bleeders (Wishaw General Hospital, lead – Dr El-Nujumi; Hairmyres, lead – Dr Reilly; Monklands, lead – Dr Gangi)  
• Reviewing the out of hours endoscopy service within the three sites and explore the possibility of regional solution, lead – 1. Mr BenYounes; 2. Mr Khan; 3. Dr Malekian  
• Assess the feasibility of the introduction of an on call endoscopy nurse to provide cover for out of hours service, lead – Pauline Warnock |  |  |  |
| Lothian | Referral pathways across Lothian in the 1st instance and to incorporate referrals from Borders thereafter. | Develop local pathways – Nick Church  
Build relationships and develop cross-Board working for pathways from Borders – Nick Church | Referral pathway for St John’s Hospital to RIE complete and approved, now plan to roll out to other sites in Lothian. | Liaise and commence work with NHS Borders.  
Consider local development of checklist to improve quality of service in RIE. |
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<td>Orkney</td>
<td>We have a close 2–3 consultant team that manages all our GI bleeds and related surgical services. This small team works closely together and closely with our single theatre, acute &amp; receiving ward and related support team. As such many of the issues that other boards have regarding care, staffing and communication are more easily controlled. Out-of-hours continuity of care and communication is not a problem because this is covered by the same team. Communication is easier in the small team with the consultants doing joint rounds and ownership of patients is quite clear.</td>
<td>We have a close relationship with our provider of off-Island care (NHS Grampian) and stabilise and transfer any appropriate cases. We do not have the need to develop any more extended routine endoscopy services though we do have the facility to carry out endoscopy as an emergency at any time. This holds for endoscopy nurses. We have a contract with NHS Grampian to provide us with interventional radiology in Grampian.</td>
<td>Following our JAG review we have set up a group to look into patient issues around our endoscopy services.</td>
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| Shetland  | • Introduction of Rockall scoring for all patients presenting to A & E with GI bleeding  
• Joint surgeon/physician care pathway for all patients with GI bleeding  
• Audit of last 20 patients admitted with GI bleeding | • Presentation of Rockall score system to relevant staff at Clinical Governance meeting (Dr Omotara)  
• Presentation and discussion of proposed care pathway to Clinical Governance meeting (Dr Lalla)  
• Presentation of Audit to Clinical Governance meeting (Dr Almustafa) | Actions 1–3 allocated to staff | Commissioning of Heater probe in Theatre  
Visit to Aberdeen by endoscopists and theatre staff to update Variceal banding skills |
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<tr>
<td>Western Isles</td>
<td>Establishing an effective gastrointestinal haemorrhage endoscopy service</td>
<td>A short life working group comprising physician and surgeon endoscopists has been set up by the Endoscopy Users Group (August meeting) to develop a robust system to ensure patients with GI haemorrhage undergo endoscopy at an appropriate time. Dr KN Achar is leading this initiative.</td>
<td>The group has been set up and is due to meet soon.</td>
<td>To audit and monitor the new endoscopy system once it is in place.</td>
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Appendix 2: Improvement of management of upper and lower GI bleed steering group membership

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Hospital/Institution</th>
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<tbody>
<tr>
<td>Dr Kel Palmer (Chair)</td>
<td>Consultant Gastroenterologist</td>
<td>Western General Hospital, Edinburgh</td>
</tr>
<tr>
<td>Dr Andrew Fraser</td>
<td>Consultant Gastroenterologist</td>
<td>Aberdeen Royal Infirmary</td>
</tr>
<tr>
<td>Mr Colin MacKay</td>
<td>Consultant Surgeon</td>
<td>Glasgow Royal Infirmary</td>
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<tr>
<td>Mr Simon Paterson-Brown</td>
<td>Consultant Surgeon</td>
<td>Royal Infirmary of Edinburgh</td>
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<tr>
<td>Dr Nigel Reynolds</td>
<td>Consultant Gastroenterologist</td>
<td>Ninewells Hospital, Dundee</td>
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<tr>
<td>Ms Louise Robertson</td>
<td>Clinical Guidelines Facilitator</td>
<td>NHS Lothian</td>
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<tr>
<td>Dr Adrian Stanley</td>
<td>Consultant Gastroenterologist</td>
<td>Glasgow Royal Infirmary</td>
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<tr>
<td>Mr Lindsay Potts</td>
<td>Physician/Gastroenterologist</td>
<td>NHS Highland</td>
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<tr>
<td>Ms Leslie Humphries</td>
<td>Project Officer</td>
<td>Healthcare Improvement Scotland</td>
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<tr>
<td>Dr Ali El-Ghorr</td>
<td>Implementation Adviser</td>
<td>Healthcare Improvement Scotland</td>
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