



# Lessons Learned from the National Lower Gastrointestinal Bleed Audit

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On behalf of the National Comparative Audit in Blood Transfusion  
Lower Gastrointestinal Bleeding Working Group and the  
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# Lower GI bleeding



- Incidence 33-87/100,000
- Diverticular bleeding incidence doubled 1996-2005<sup>1</sup>
- LOS and mortality increasing<sup>1</sup>
- 20% of all GI bleed admissions
- Uses half of all red cells transfused for GI bleeding<sup>2</sup>
- Fewer publications in comparison to upper GI bleeding

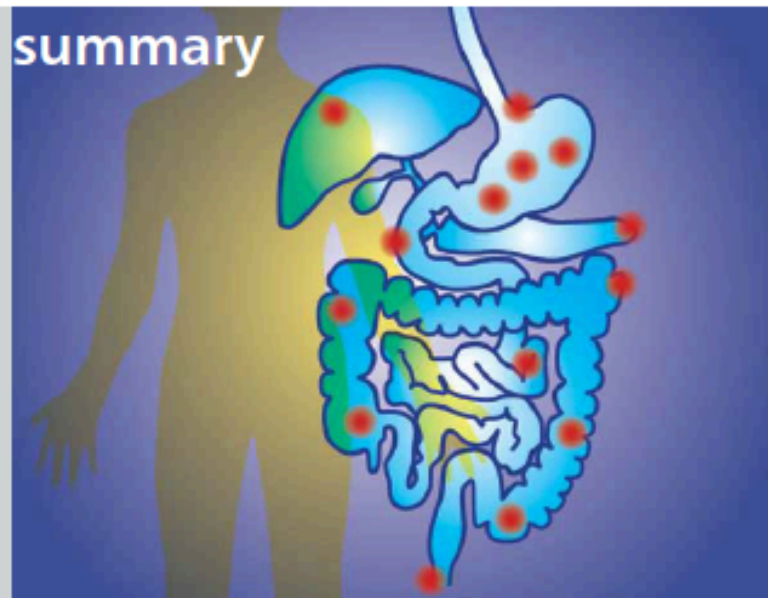
1. Lanas A et al. The changing face of hospitalisation due to gastrointestinal bleeding and perforation. *Aliment Pharmacol Ther.* 2011 Mar;33(5):585-91

2. Tinegate et al. Where do all the red blood cells (RBCs) go? Results of a survey of RBC use in England and North Wales in 2014. *Transfusion.* 2016 Jan;56(1):139-45

# Current Guidance

## Time to Get Control?

A review of the care received by patients who had a severe gastrointestinal haemorrhage



## NCEPOD:

- No current guideline addresses all presentations, pathologies or treatment options
- Limited evidence on which to base management recommendations

# National Lower GI Bleed (LGIB) Audit

- First national audit of lower GI bleeding
- ORGANISATIONAL (resources for LGIB)
- PATIENT DATA
  - Typical LGIB patient – co-morbidities, medications
  - Endoscopy, interventional radiology, surgery
  - Blood transfusion
  - Patient outcomes; re-bleeding, mortality, re-admission

# Methods

- Consecutive adults with:
  - Dark or bright red blood per rectum or clots, maroon coloured stool, blood mixed in with stool, melaena (but no haematemesis)
- Case identification methods and questionnaires piloted in 10 hospitals
- Letters to every acute hospital in the UK
- LGIB audit lead and small team in each site

# Results

- 143/174 hospitals across the UK
- 2528 patients
- largest prospective study of LGIB



Total N = 2528 N (%)	
Median age	74 years (IQR 57-83)
Diabetes	377 (15.0)
Respiratory disease	298 (11.8)
MI	285 (11.3)
Stroke	217 (8.6)
Aspirin	584 (23.1)
Warfarin	270 (10.7)
NOACs	131 (5.2)
Previous LGIB admission	435 (21.4)
Female	1319 (52.5)
Shock	58 (2.3)
Hb ≤ 7	140 (5.6%)
Hb ≤ 8	272 (10.8%)
<b>Red cell transfusion</b>	<b>666 (26.7%)</b>
<b>≥4 units</b>	<b>258 (10.3%)</b>

# Red cell transfusion

- Use restrictive thresholds (trigger Hb  $<7\text{g/l}$ ) in patients that do not have major haemorrhage or acute coronary syndrome (NICE 2015)

	Patients that received a red cell transfusion N = 666
Patients meeting criteria for restrictive transfusion threshold:*	599 (89.9%)
-All transfusions were at $\leq 7\text{g/l}$	117 (19.5%)
-All transfusions were at $\leq 8\text{g/l}$	304 (50.8%)

- Reduce number of patients being transfused
- Median 3 units per patient (range 1-17)

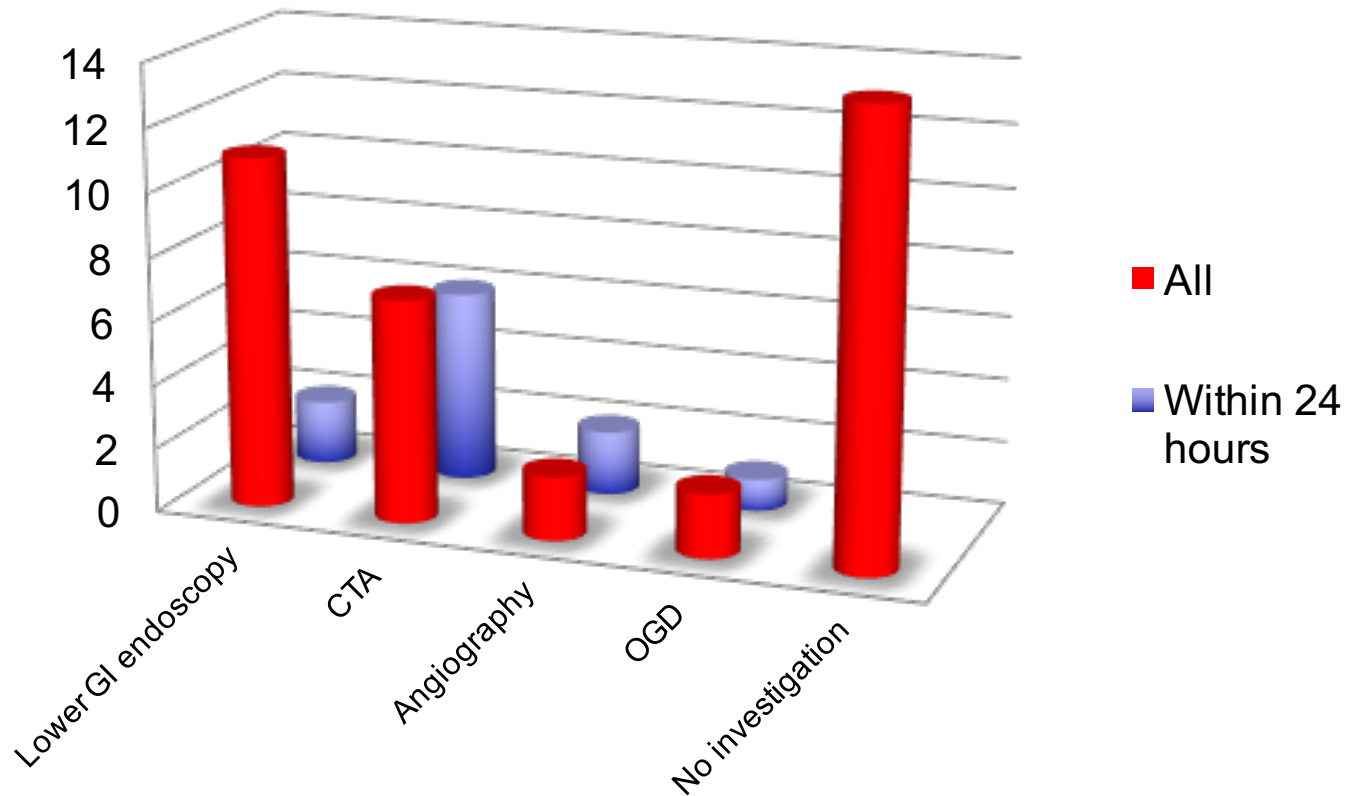


	Total N = 2528 N (%)	Diagnostic yield
<b>Endoscopy</b>		
<i>Flexible sigmoidoscopy</i>	543 (21.9)	76.8%
<i>Colonoscopy</i>	99 (4.0)	71.7%
<i>Endoscopic haemostasis</i>	54 (2.2)	
<b>Radiology</b>		
<i>CT Abdomen/pelvis</i>	507 (20.7)	55.8%
<i>CTA</i>	149 (6.1)	49.7%
<i>Angiography</i>	37 (1.5)	51.4%
<i>Embolisation</i>	19 (0.8)	
Capsule endoscopy, red cell scan, Meckel's scan	11 (<0.5%)	
<b>OGD</b>	285 (11.5%)	(any +ve excluded)
<b>Not investigated during admission</b>	1213 (49.0)	

- 210/1213 (17.3%) not investigated received a red cell transfusion, (5%≥4 units)
- Re-admission 51/1014 (5.0%) vs 59/952 (6.2%) p=0.586

# Investigation of LGIB

Clinically significant bleeding: **SBP<100mmHg, HR≥100 AND 1 unit red cells**



N = 36/2528 (1.4%) patients

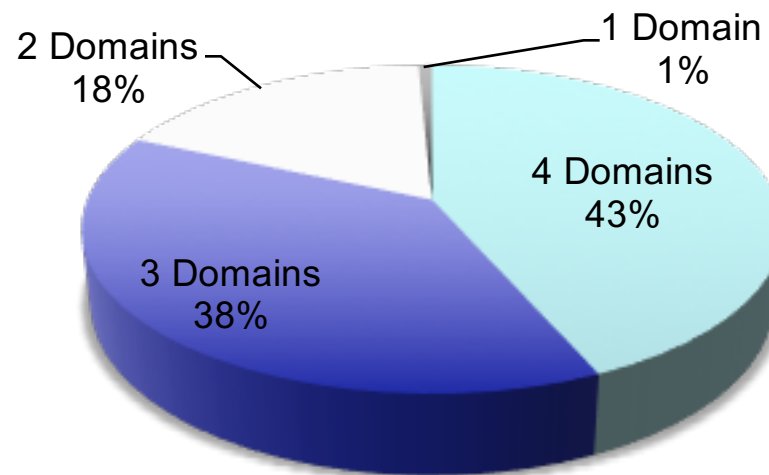
# Treatment of LGIB

- 6 (0.2%) patients required laparotomy for bleeding

	Endoscopic Haemostasis N=54	Mesenteric embolisation N=19	Laparotomy for bleeding N=6
<b>Source of bleeding</b>	16 haemorrhoids, 8 diverticular, 3 angiodysplasia, 3 post-polypectomy	3 diverticular, 2 cancer, 3 angiodysplasia, 2 post-polypectomy	2 diverticular, 2 cancer, 1 angiodysplasia, 1 unknown
<b>Re-bleeding</b>	7/54 (13%) (1 embolised)	7/19 (36%) (2 re-embolised, 1 resection)	0
<b>Complications</b>	2 perforations (2 resections)	2 ischaemias (1 resection)	UTI, wound infection
<b>Mortality</b>	0	(2+1)	3

# Resources for LGIB

- Patients with acute GI bleeding should only be admitted to hospitals with 24/7 (NCEPOD):
  - endoscopy
  - interventional radiology (on-site or network)
  - abdominal surgery
  - critical care and anaesthesia
- 59/136 (43.3%) hospitals met these criteria
- Interventional radiology most often lacking (92 [67%] in hours, 72 [55%] out of hours)



# Discharge Diagnoses

	Age < 60 N=699 N (%)	Age 60-79 N=938 N (%)	Age ≥ 80 N=889 N (%)	All patients Total N = 2528* N (%)
<b>Diverticular Disease</b>	<b>94 (13.60)</b>	<b>259 (28.5)</b>	<b>315 (36.7)</b>	<b>668 (27.1)</b>
<b>Colitis</b>	<b>163 (23.6)</b>	<b>117 (12.9)</b>	<b>65 (7.6)</b>	<b>346 (14.1)</b>
<b>Malignancy</b>	<b>18 (2.6)</b>	<b>71 (7.8)</b>	<b>65 (7.6)</b>	<b>155 (6.3)</b>
<b>Benign anorectal disorders</b>	<b>171 (24.8)</b>	<b>127 (14.0)</b>	<b>124 (14.4)</b>	<b>422 (17.1)</b>
<i>Haemorrhoids</i>	126 (18.3)	86 (9.5)	93 (10.8)	305 (12.4)
<b>Angiodysplasia</b>	<b>5 (0.7)</b>	<b>11 (1.2)</b>	<b>9 (1.0)</b>	<b>25 (1.0)</b>
<b>Small bowel source</b>	<b>2 (0.3)</b>	<b>11 (1.2)</b>	<b>3 (0.3)</b>	<b>16 (0.6)</b>
<b>Other</b>	<b>10 (1.4)</b>	<b>13 (1.4)</b>	<b>6 (0.7)</b>	<b>29 (1.2)</b>
<b>Unknown</b>	<b>160 (23.2)</b>	<b>194 (21.3)</b>	<b>222 (25.8)</b>	<b>576 (23.4)</b>

# Outcomes

	Acute admissions N=2331 N (%)	Inpatient bleeds N=185 N (%)	All patients N=2528 N(%)	Literature
<b>Mortality</b>				
All	51 (2.2)	33 (17.9)	<b>85 (3.4%)</b>	3.9-8.8%
Due to LGIB	3 (0.1)	1 (0.5)	<b>4 (0.2)</b>	
<b>Re-bleeding</b>	667 (32.8)	89 (54.6)	<b>757 (34.2)</b>	14%
<b>Median length of stay (IQR)</b>	3 (1-6)	9 (5-17)	<b>3 (1-7)</b>	
<b>Re-admission by 28 days</b>				
All	244 (13.8)	16 (14.5)	<b>260 (13.6%)</b>	5.2% 1 year
Due to further LGIB	107 (6.1)	4 (3.6)	<b>111 (5.8%)</b>	

Inpatients had significantly higher in-hospital mortality and LOS (p<0.001).

# Summary

- Diverticular bleeding was the most common cause of LGIB
- Anorectal bleeding was important
- Blood products were administered liberally
- Few patients required emergency surgery

# Recommendations

- Transfusion practices should be re-evaluated in hospitals to ensure appropriate transfusion thresholds are being utilised (BCSH 2015)
- Patients who are shocked and requiring red cell transfusion should be prioritised and investigated urgently as an inpatient (NCEPOD 2015)
- Hospitals have a duty of care to provide acute haemorrhage control. Those without on-site IR should liaise with their regional centre to establish an agreed formalised network (NCEPOD 2015)

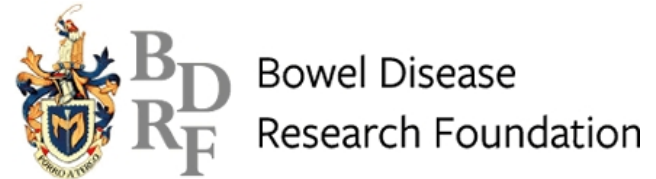
[Murphy MF](#), [Wallington TB](#), [Kelsey P](#), [Boulton F](#), [Bruce M](#), [Cohen H](#), [Duguid J](#), [Knowles SM](#), [Poole G](#), [Williamson LM](#); [British Committee for Standards in Haematology, Blood Transfusion Task Force](#). Guidelines for the clinical use of red cell transfusions. [Br J Haematol](#). 2001 Apr;113(1):24-31.

National Confidential Enquiry into Patient Outcome and Death (NCEPOD). Time to get control? A review of the care received by patients who had a severe gastrointestinal haemorrhage. July, 2015. [www.ncepod.org.uk](http://www.ncepod.org.uk)



# National Comparative Audit of Lower Gastrointestinal Bleeding and the Use of Blood

Results from a National Audit  
May 2016



*Blood and Transplant*



The Association of Coloproctology  
of Great Britain and Ireland

Download full report at:  
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