Upper GI bleeding; presentation, initial assessment and management

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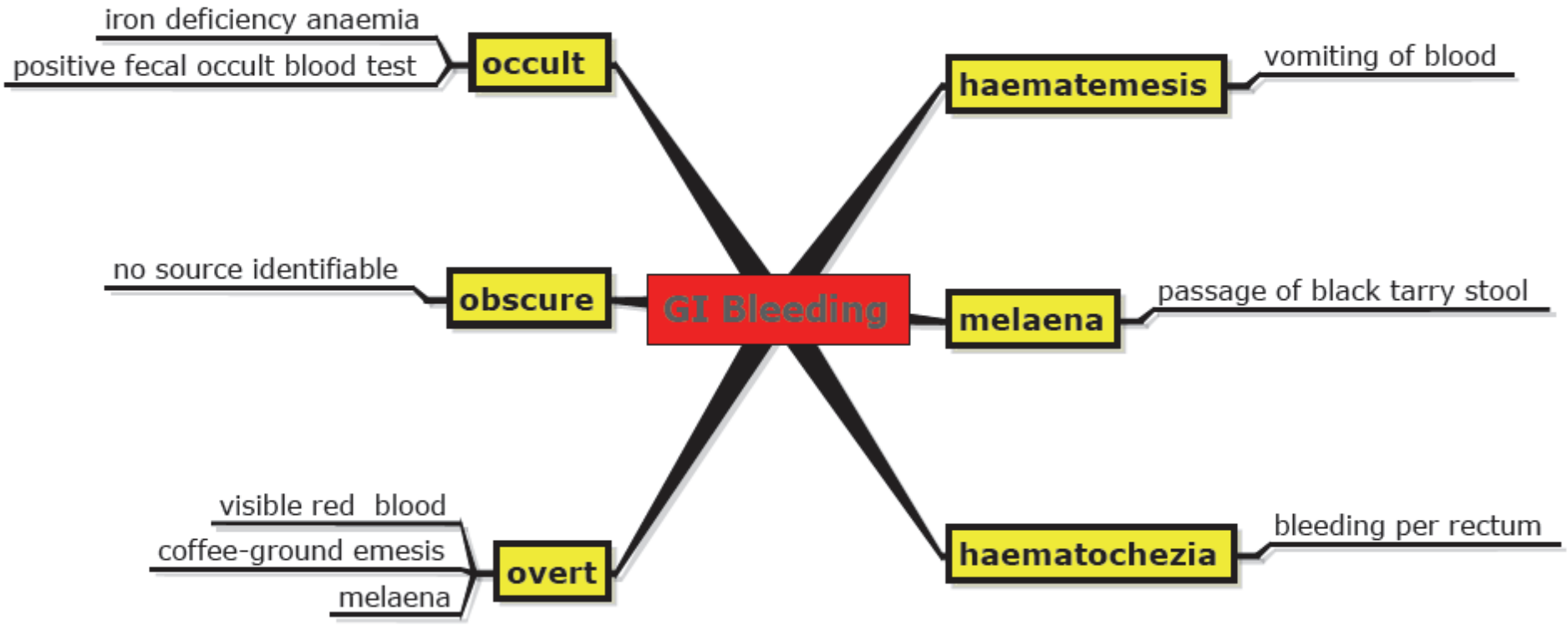
"if this is what greets you in the morning, you probably need to go see a doctor"

Plan

- Presentation
- Audit data and mortality
- NICE guidance
  - Risk assessment
  - Medical therapies
- Service delivery

GI Bleeding - Definitions



AUGIB – a common problem

- 50-1072/100,000 pa
- 50-70,000 hospital admissions pa
- 9000 deaths pa

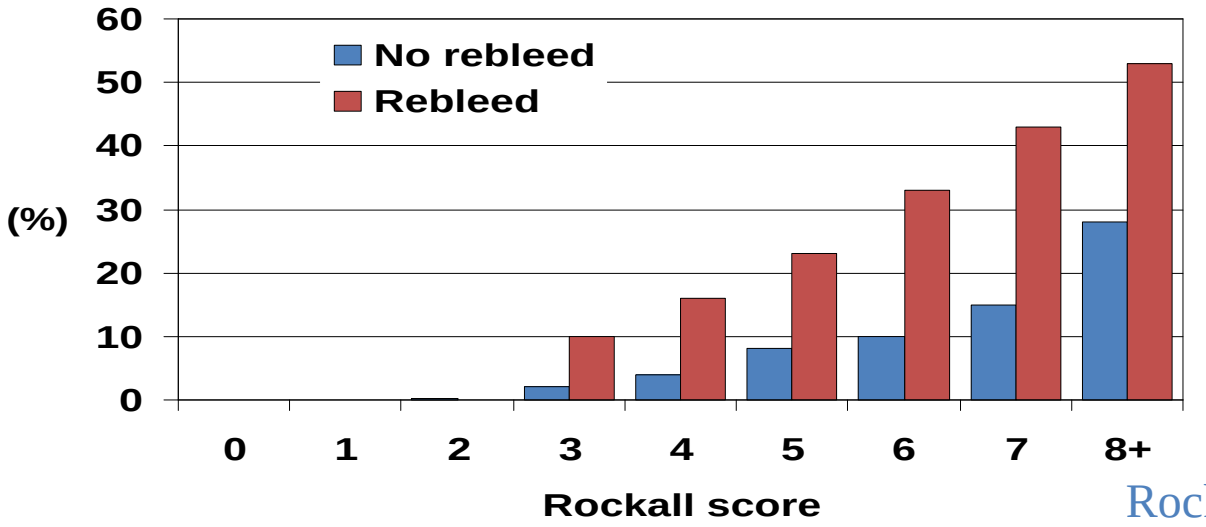
- Relevance of ageing population
  - Increased use antiplatelets and anticoagulants

2 key prospective National Audits

- 1993/4
  - 74 hospitals, 4 health regions, 4m
  - 4185 patients
    - Rockall TA et al., BMJ 1995
- 2007
  - 217/257 hospitals (84%), 2m
  - 6750 patients (76%)
    - Hearnshaw et al., GUT 2011

“Rockall” risk score for UGI bleed

Score	0	1	2	3
Age	<60	60-79	>80	
Shock	Systolic bp >100, Pulse < 100	Systolic bp > 100 Pulse > 100	Systolic bp < 100	
Comorbidity	None		Cardiac failure, IHD, any major comorbidity	Renal f, Liver f, disseminated malignancy
Diagnosis	MW tear, no lesion, no SRH	All other diagnoses	Malignancy of UGI tract	
Major SRH	None or dark spot		Blood in upper GI tract, adherent clot, visible or spurting vessel	



Rockall et al., Gut 1995

1993/4 versus 2007: What's changed?

- 1993
  - Medical therapy variable
  - Use of endoscopy variable
- 2007
  - Endoscopic haemostasis
  - Proton pump inhibitors
  - *H.Pylori* eradication
  - Strategies to reduce NSAID toxicity
  - Increasing age and alcohol related liver disease

Characteristics/Outcomes- 1993 vs. 2007

Characteristic	1993/4 Audit	2007 Audit
Age (median)	67	68
>80 years (%)	26	27
> 1 major co-morbidity (%)	50	50
Peptic Ulcer (%)	47	36
Varices (%)	6	11
No cause identified (%)	30	17
Rebleeding (%)	16	13
Surgery (%)	7	2
Mortality (%)	14	10
New admissions	11	7
In-patients	33	26

Mortality according to Rockall score 1993/4 vs 2007

Complete Rockall Score	%with score 1993/4	%with score 2007	Mortality % 1993/4	Mortality % 2007
0-1	14	16	0	0.6
2-3	26	25	2	2
4-5	33	31	8	7
6-7	20	19	**22**	**13***
8+	6	9	**41**	**25***

*p<0.05

Re bleeding after first endoscopy

Rockall score	Expected	Observed	Relative Risk
0-2	60	46	**0.77 (0.55 to 0.99)**
3-5	321	156	**0.49 (0.41 to 0.57)**
6-7	339	141	**0.42 (0.35 to 0.49)**
≥8	230	123	**0.53 (0.44 to 0.62)**

Significant improvement in re bleeding rates since 1993/4

Risk-adjusted mortality

- Using “expected” mortality from 1993 data
- Group by Rockall score (n=4989 who had complete Rockall score after endoscopy)
- Expected mortality 2007
  - 524/4989 - **10.5%**
- Observed mortality 2007
  - 370/4989 – **7.4%**
- 34% reduction in mortality (95%CI 27-41%)

Analysis of UK HES 1999-2007

- Increasing co-morbidity
- Modest reductions in mortality
  - 14.7% to 13.1%,
  - OR 0.87 (0.84-0.90)
  - Adjusted OR (age/comorbidity) **0.80** (0.77-0.83)

Crooks C et al., Gastro 2011

Can we do better? Acute provision

- 52% formal OOH provision
- 50% endoscoped within 24 hours
- Patients with Rockall score > 5
  - 42% > 24 hours; 14% > 72 hours
- 74% consultants on rotas "competent" at 4 haemostatic procedures (including SB tube)
  - 64% with varices received therapy
  - 76% with high risk stigmata received therapy

Differences between hospitals with and without OOH rota

	OOH on call rota (3499)	No OOH rota (2821)
1st Endoscopy OOH	586/2969 (20%)	254/1980 (13%)
Endoscopic therapy	25%	21%
Re-bleeding rate	14%	13%
Median stay	6 days	5 days
Mortality after OGD	7.1%	8.2%

17% overall

Risk adjusted mortality 1.20 (95% CI 0.96-1.51)

Hearnshaw et al., Gut 2010

NCGC National Clinical Guideline Centre

Acute upper gastrointestinal bleeding

Management

Clinical Guideline

Methods, evidence and recommendations

June 2012

Commissioned by the National Institute for Health and Clinical Excellence

NICE Guidance

- Assessment of risks
- Resuscitation and Initial Management
  - Blood products
  - Terlipressin
- Timing of endoscopy
- Management of non-variceal bleeding
  - Endoscopic Treatment
  - Proton pump inhibitors
  - Treatment options after first or failed endoscopic treatment
- Management of varices
  - Antibiotics
  - Oesophageal varices
  - Gastric varices
- Control of bleeding and prevention of rebleeding
- Primary prophylaxis
- Information and support for patients and carers

Pre- and Post- endoscopy Rockall scores

Score	0	1	2	3
Age	<60	60-79	>80	
Shock	Systolic bp >100, Pulse < 100	Systolic bp > 100 Pulse > 100	Systolic bp < 100	
Comorbidity	None		Cardiac failure, IHD, any major comorbidity	Renal f, Liver f, disseminated malignancy
Diagnosis	MW tear, no lesion, no SRH	All other diagnoses	Malignancy of UGI tract	
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Pre-endoscopy score /7

Post-endoscopy score /11

Blatchford Risk Score

Blood urea (mmol/L)	
≥6.5 <8.0	2
≥8.0 <10.0	3
≥10.0 <25	4
≥25	6
Haemoglobin (g/L) for men	
≥120 <130	1
≥100<120	3
<100	6
Haemoglobin (g/L) for woman	
≥100<120	1
<100	6
Systolic blood pressure (mm Hg)	
100-109	1
90-99	2
<90	3
Other markers	
Pulse ≥100 (per min)	1
Presentation with malaena	1
Presentation with syncope	2
Hepatic disease	2
Cardiac failure	2

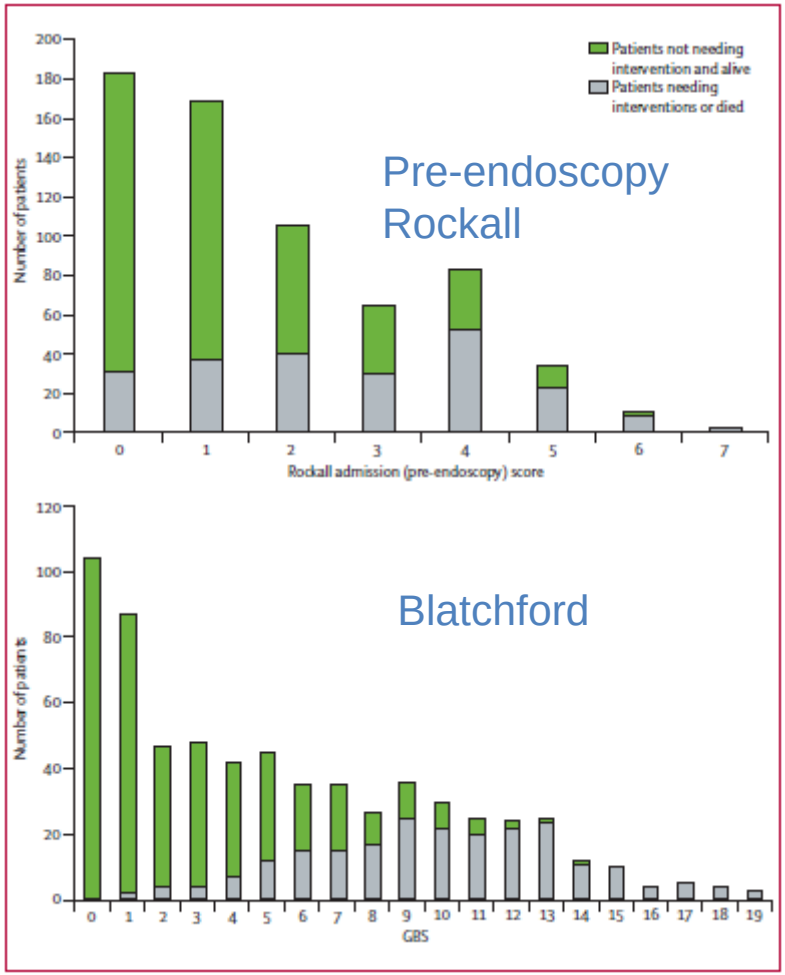
TOTAL

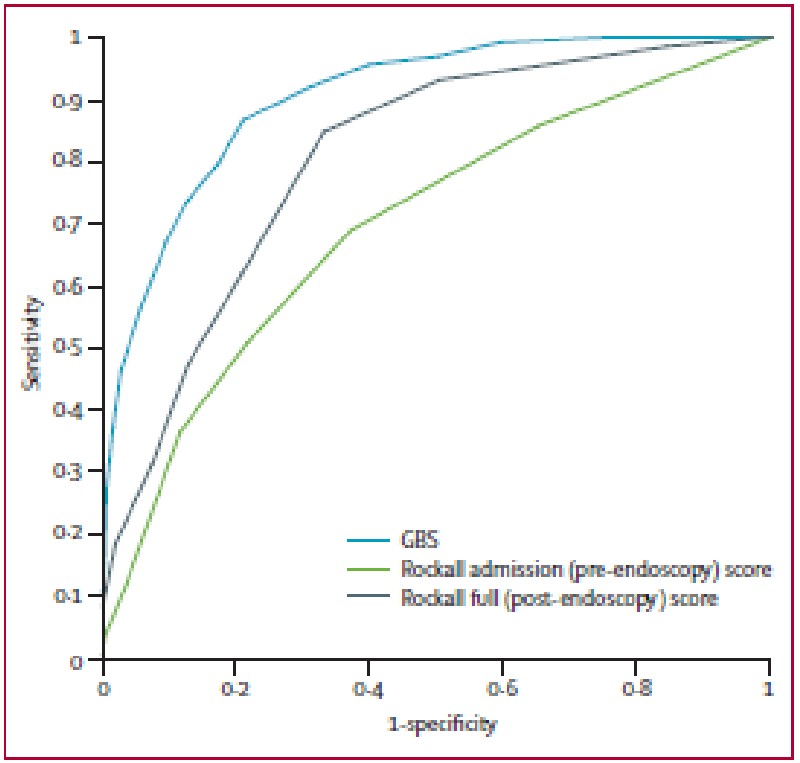
/23

Blatchford et al., Lancet 2000

Comparison of Rockall with Glasgow Blatchford score (GBS) to predict need for intervention

4 Hospitals; N = 676





Stanley A et al., Lancet 2009

NICE Recommendation: risk assessment

- Use the following formal risk assessment scores for all patients with acute gastrointestinal bleeding:
  - the Blatchford score at first assessment, and
  - the full Rockall score after endoscopy.
- Consider early discharge for patients with a pre-endoscopy Blatchford score of 0.

The Leeds protocol

Triage the urgency of endoscopy based on GBS and haemodynamic stability			
Patient source	GBS = 0 or 1 Stable Low-risk	GBS ≥2 Stable Intermediate risk	GBS ≥2 **Unstable*** Or suspected varices** High risk
A&E/SAU	Follow CDU protocol¶ GBS = 0: discharge and book O/P OGD GBS = 1: discuss with on-call Gastro Reg	Admit to Gastroenterology Ward 91/92 only Perform OGD on next available list	Urgent review by Gastro Reg Arrange bed on gastroenterology wards (91/92) only Perform emergency OGD (*in acute theatre if after midnight*) Consider Level 2 care bed
Existing Inpatients	Discuss with Gastro Reg and perform routine OGD (within 24 hours)	Discuss with Gastro Reg and perform routine OGD (on next available list)	Perform emergency OGD (*in acute theatre if after midnight*) Consider level 2 care bed

Acid Suppression therapy

- pH > 6.5 stabilises clot
- Acid secretion should be completely suppressed for several hours
- Pre-endoscopy therapy?
  - Approx 80% ulcers will stop bleeding spontaneously
    - No significant difference in mortality, rebleed, surgery, transfusion requirements or length of hospital stay
    - Reduced SRH and endoscopic Rx required
      - Lau JM, NEJM 2007

PPI therapy post endoscopy

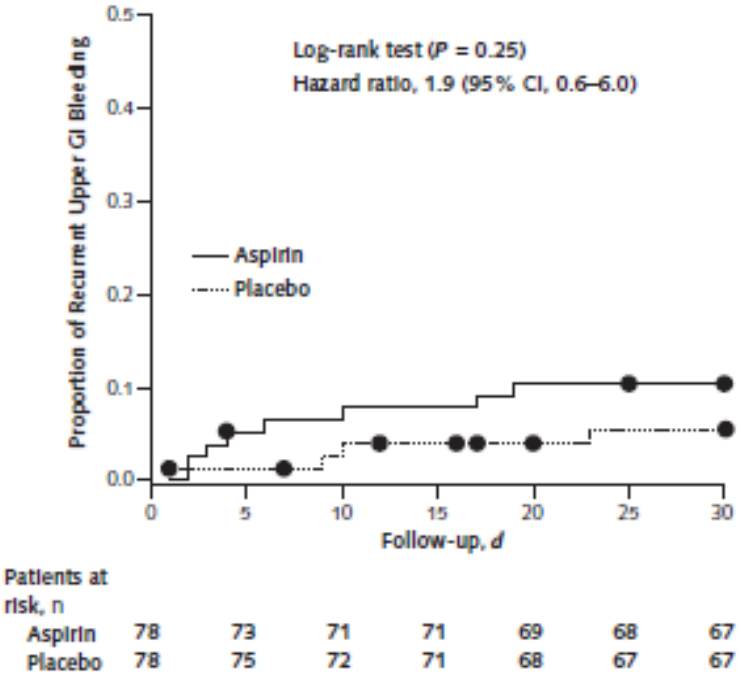
- Reduced rebleeding
  - OR 0.43 (0.34 – 0.46)
- Reduced surgery
  - OR 0.36 (0.26 - 0.50)
- Trend on mortality
  - OR 0.76 (0.49 – 1.19)
- Reduced LOS and Transfusion requirements
- Preferable to H2RA
- Unable to differentiate between IV vs. oral PPI

- Do not offer acid-suppression drugs (proton pump inhibitors or H2-receptor antagonists) before endoscopy to patients with suspected non-variceal upper gastrointestinal bleeding.

- Offer proton pump inhibitors to patients with non-variceal upper gastrointestinal bleeding and stigmata of recent haemorrhage shown at endoscopy.

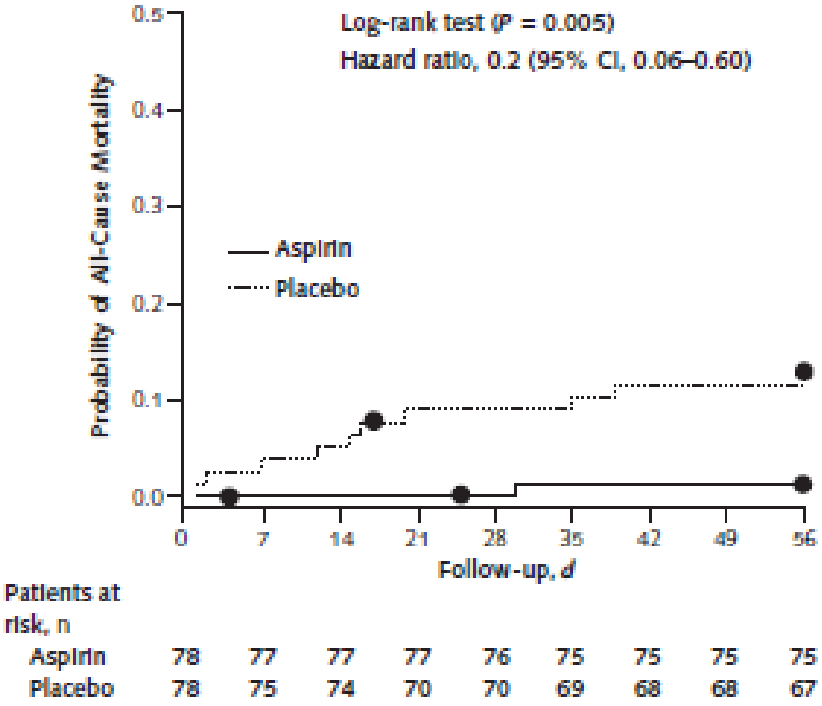
Stopping Aspirin after endoscopic haemostasis? N=156; RCT – Aspirin cont for 8/52 vs. placebo

Rebleed rate at 30 days



HR 1.9 for cont aspirin

All cause mortality



HR 0.2 for cont aspirin

Sung JJ et al. Annals Int Med 2010

- Continue low-dose aspirin for secondary prevention of vascular events in patients with upper gastrointestinal bleeding in whom haemostasis has been achieved.

- Stop other non-steroidal anti-inflammatory drugs (including cyclooxygenase-2 [COX-2] inhibitors) during the acute phase in patients presenting with upper gastrointestinal bleeding.

- Discuss the risks and benefits of continuing clopidogrel (or any other thienopyridine antiplatelet agents) in patients with upper gastrointestinal bleeding with the appropriate specialist (for example, a cardiologist or a stroke specialist) and with the patient.

Varices

- Terlipressin
  - Reduces portal pressure
  - Reduces mortality
  - Increases haemostasis at endoscopy
    - use pre-OGD
  - No effect on rebleed rates
  - Probably equivalent to Octreotide
    - use if Terli c/i
  - 5 days equivalent to 10

Varices

- Antibiotics
  - Trend to reduced mortality < 30 days
  - Significant reduced re-bleeding, transfusion, infections
  - Usually given for 5 days; broad spectrum active against G-ve

- Offer terlipressin to patients with suspected variceal bleeding at presentation. Stop treatment after definitive haemostasis has been achieved, or after 5 days, unless there is another indication for its use[b].

- Offer prophylactic antibiotic therapy at presentation to patients with suspected or confirmed variceal bleeding.

Timing of endoscopy

- NICE
  - 3 RCTs – all VERY LOW QUALITY
  - No evidence for early vs. late for mortality, rebleeding, surgery, transfusion, LOS
  - Cost-effectiveness best if < 24hrs – if >330 cases/ year
- 2007 Audit
  - 52% OOH rotas
  - Non-significant trend to better outcomes if OOH provision
  - No "weekend effect" despite sicker patients, longer delays
    - 38% endoscopy < 24hrs vs. 55% weekday
      - Jaireth V et al., Am J G 2011

- Offer endoscopy to unstable patients with severe acute upper gastrointestinal bleeding immediately after resuscitation.

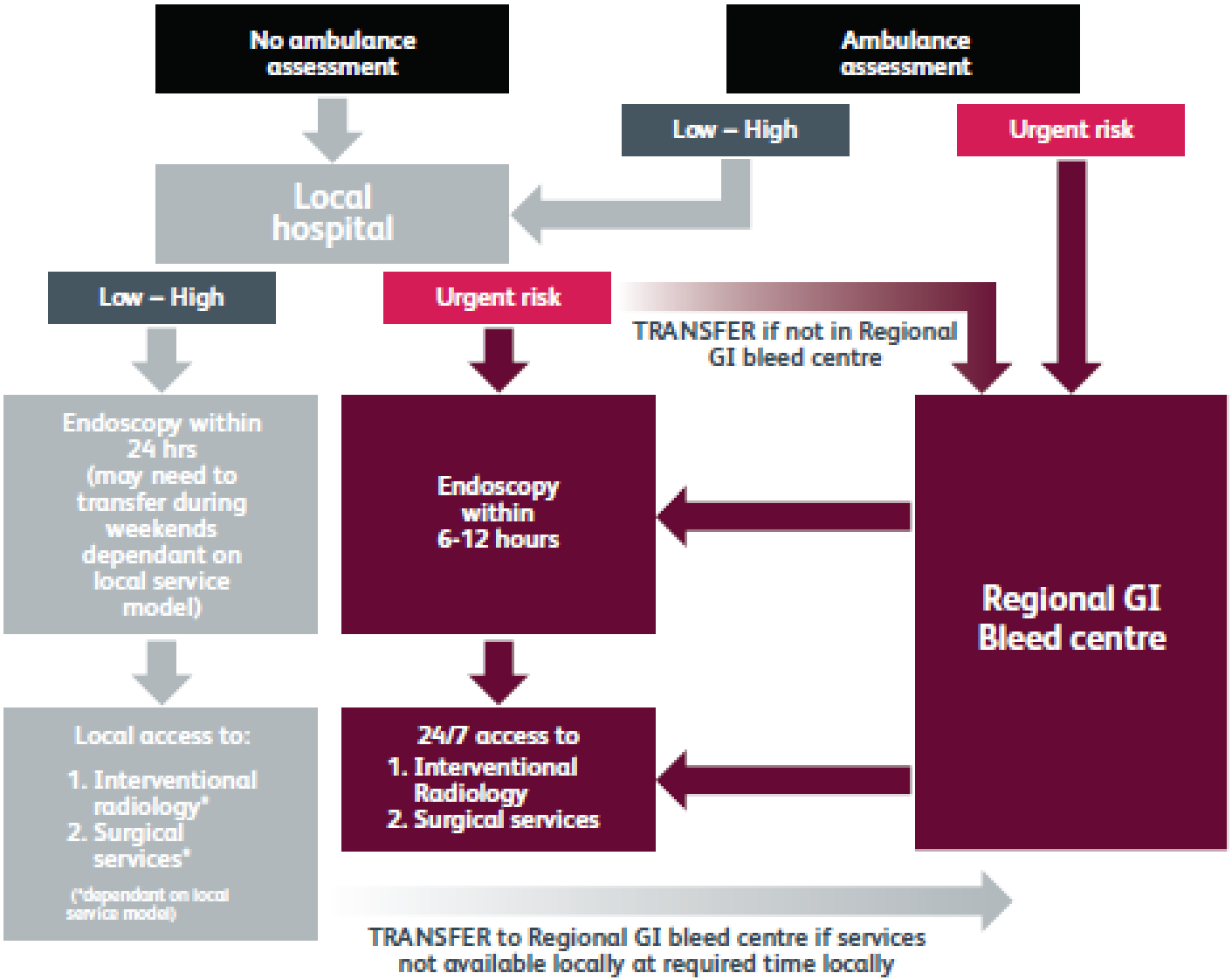
- Offer endoscopy within 24 hours of admission to all other patients with upper gastrointestinal bleeding.

- Units seeing more than 330 cases a year should offer daily endoscopy lists. Units seeing fewer than 330 cases a year should arrange their service according to local circumstances.

Local models

- Dedicated lead
- Service review and audit
- Model depends on population size and resource
  - Appropriate training essential
- Dialogue with commissioners
- Daily endoscopy slots for GI bleed
- Weekend lists?
- On call rotas - ? networked

Potential model for UGI bleeding service



Conclusions

- Mortality improving
- Clear guidance on medical therapy
- Room for improvement
- Need to decide on best model of service delivery
- The future
  - Networks
  - Data on Transfusion
  - Tranexamic Acid?

Time to Endoscopy

	Weekday N = 3931	Weekend N = 1073
Median time-hours (IQR)	21.8 (11.3-47.7)	38.9 (15.8-64.2)
Endoscopy within 24 hours % (n)	55.2 (2170)	38.2 (410)