Non-infectious causes of gastrointestinal disease in migrants

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Case scenarios

- Bloody diarrhoea in 75 yo Bangladeshi
- Iron deficiency anaemia in 50 year old non-english speaking asian woman
- Diarrhoea in 20 year old law student
- Abdominal pain and diarrhoea in 30 yo polish decorator
- Managing urgent GI case in community

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Bloody diarrhoea in 75 yo bangaladeshi man

- 75 yo from East End: type 2 diabetic
- Home to Bangladesh
- Returns with bloody diarrhoea; stool cultures negative
- Sigmoidoscopy shows confluent colitis to mid transverse colon

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Size of the problem

- Prevalence
  - UC 250/100,000
  - CD 100/100,000
- Incidence
  - CD 5-10/100,000/yr
  - UC 10-15/100,000/year
- 80% lifetime operation rate for CD, 20% colectomy incidence for UC
- 10% receive Mabs costing c10k/year
- IBD confers Increased risk of colorectal cancer
- Total cost to UK economy 0.7-1 billion/year

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Reasons to study IBD in Migrants

- Evolving pattern of disease in developing countries
- An evolving problem in some Migrant communities (South asians, Askenazi Jews)
- Studying migrant populations may give insights into environmental risk factors

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IBD in migrants: issues

- IBD incidence/prevalence in developing world
- Incidence and prevalence in UK migrants
- IBD course in migrants
  - Extent of disease
  - Complications
  - Risk of relapse
- Colorectal cancer risk in migrants

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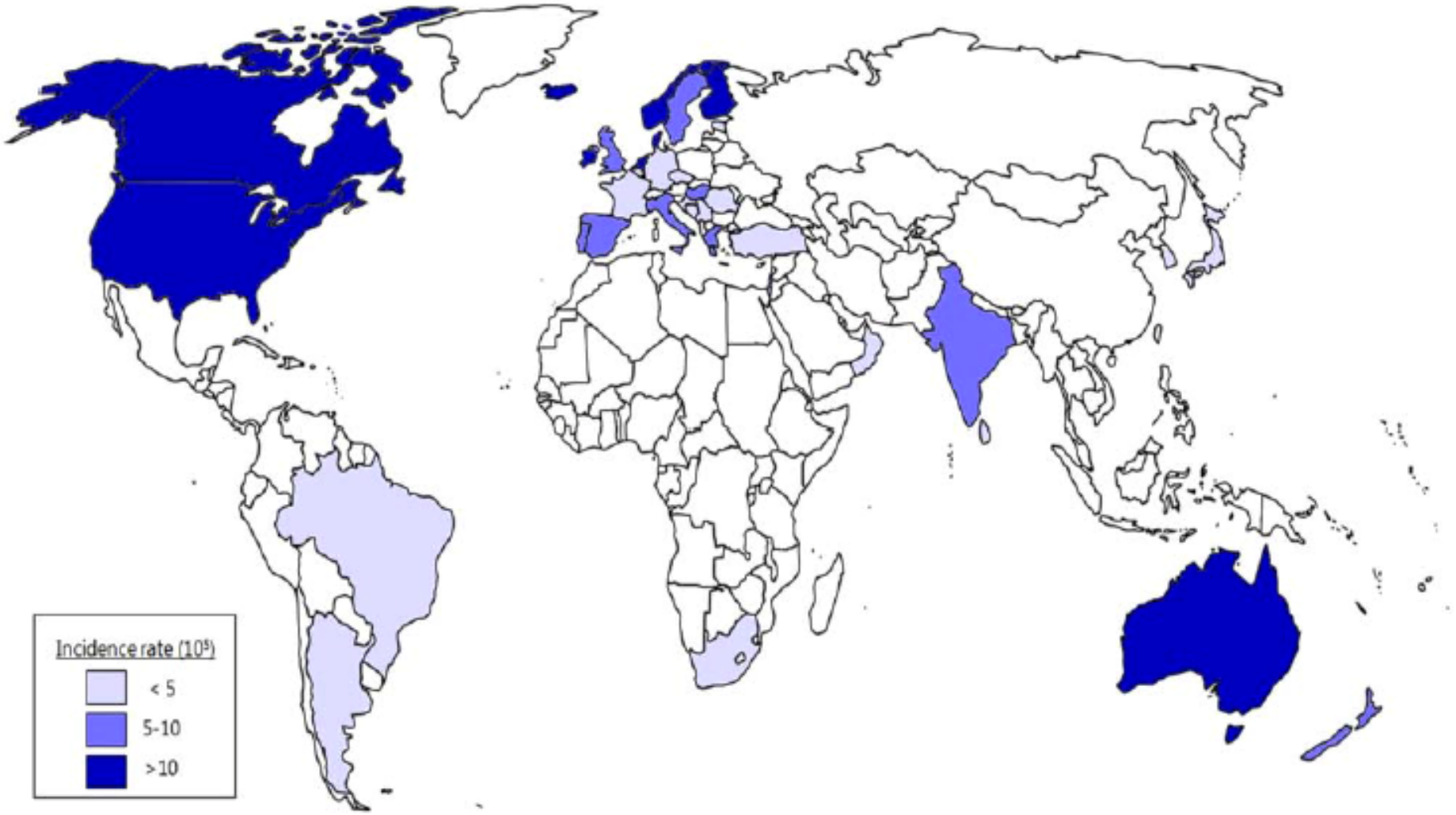
Global map of UC incidence



Ng, Gut 2013

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Incidence of UC and CD in Asia

TABLE 2. *Incidence of ulcerative colitis and Crohn's disease in Asia*

Location (reference)	Year	Incidence (cases/10^5/year)	
		Ulcerative colitis	Crohn's disease
Japan (9)	1991	1.95	0.51
Japan (10)	1979		0.78
	1974	0.47	
	1965	0.08	0.01
Seoul, Korea (11)	1986–1997	0.68	
	1995–1997	1.23	
	1986–1988	0.20	
Hong Kong (12)	1966–1980	0.1	
Singapore (13)	1956–1970		
Chinese		0.02	
Indians		0.20	
Singapore (14)	1965–1970		
Chinese			0.04
Kuwait (15)	1977–1982	2.27	0.45
Sultanate, Oman (16)	1987–1994	1.35	

Yang IBD 2001

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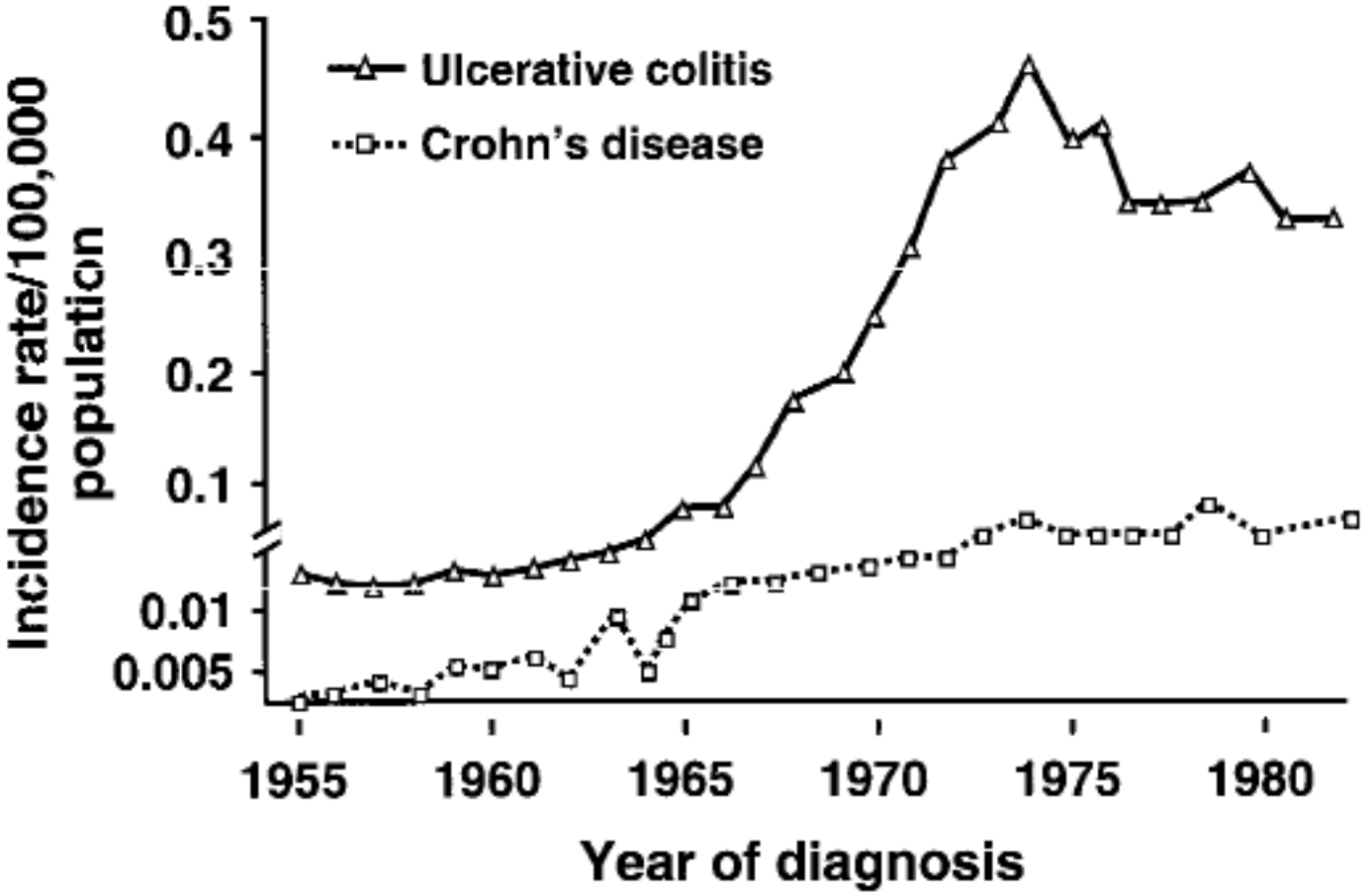
Annual incidence of UC and CD in Japan



Yang 2001 IBD

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Incidence of UC and Crohns among Migrant Asians

TABLE 1. *Incidence of ulcerative colitis and Crohn's disease among migrant Asians*

Location (reference)	Year	Incidence (cases/10^5/year)	
		Ulcerative colitis	Crohn's disease
Leicestershire, England (20,21)	1981–1989		
South Asians		13.9	3.1
Europeans		7.6	4.7
Leicester, England (22)	1991–1994		
South Asians		17.2	
Europeans		7.0	
Tower Hamlets, England (23,24)	1981–1989		
Bangladeshis		2.4	2.3
Europeans		9.4	4.4
Derby, England (25)	1981–1985		
South Asians			4.4
Others			7.5
Fiji (33)	1985–1986		
Indians		1.7	0.14
Melanesians		0.15	
Durban, South Africa (34,35)	1983–1987		
Indians		2.7	0.73
Kinneret, Israel (26)	1965–1994		
Arabs		1.7	
Jews		4.1	
Upper Galilee, Israel (27)	1967–1986		
Arabs		0.96	
Jews		3.21	

Yang 2001 Inflamm Bowel diseases

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Prevalence of UC and CD in migrant Asians

TABLE 3. *Prevalence of ulcerative colitis and Crohn's disease among migrant Asians*

Location (reference)	Year	Prevalence (cases/10^5)	
		Ulcerative colitis	Crohn's disease
Leicestershire, England (28)	1989		
South Asians		172.5	33.2
Europeans		127.8	75.8
Kinneret, Israel (26)	1994		
Arabs		26.9	
Jews		86.7	
Upper Galilee, Israel (27)	1986		
Arabs		19.3	
Jews		64.2	
Southern Israel (29)	1992		
Arabs			8.2
Jews			50.6

Yang IBD 2001

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IBD course in migrant populations

- In developing countries, UC incidence rises first, then CD
- No difference in disease extent: 30% proctits, 30% left sided, 30% pancolitis
- Higher incidence of UC in male asians may reflect reluctance of females to seek care
- No major differences in local or systemic complications between asian migrants and european
- Some evidence of lower colectomy rates in south Asian migrants in Leicester

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Environmental risk factors

- Smoking: no good geographical data. Smoking likely does not cause CD but modulates it once present
- Appendicectomy: associated with lower incidence of UC
- Dietary factors: saturated fat intake in Japanese
- Microbiota:
  - new techniques are stimulating much research: hygiene and cold chain hypotheses
  - Gastroenteritis can predispose to IBD
- Sun exposure and vitamin D levels
- Modest link between oral contraceptives and IBD

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Iron deficiency in migrants

- Globally 2 billion people are anaemic
- Iron deficiency most widespread nutritional disorder in the world

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75yo south indian

- Presents with UTI, found to be anaemic
- Hb 9.3, MCV 69, CRP 45, Ferritin 35, Iron 8 (7-26), TIBC 75 (41-77) IBS 10.5%

- Is this Iron deficiency?
- According to what criteria?

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Diagnosing Iron deficiency

- Ferritin is accurate measure of Iron stores but is acute phase protein made in liver
  - Normal value is over 13 but only when CRP is normal
  - If CRP is raised, lower limit of Ferritin is 100
- TIBC reflects Transferrin – acute phase protein made in liver
- Key measure is Iron Binding saturation: should be over 15%

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Differential of microcytic deficiency in Migrants

- Iron deficiency
  - Dietary deficiency
  - Malabsorption due to GI problems or diet high in phytates (legumes, whole grains) or phenols (tannins in tea, wine)
  - Blood loss (mennorhagia, infestation with hookworm, schistosomiasis, ascariasis)
  - Increased iron needs in growth and pregnancy
- Thallassaemia
- Lead poisoning: eye kohl, calabash chalk

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Diarrhoea in a 20 year old law student

- BO 5x/day
- Up at night
- Weight loss 7 lb
- New job
- Pressure at home

- Is this more suggestive of IBD or IBS?
- Do you need to refer to secondary care?
- Are there any tests which can help you decide?

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NHS

Technology Adoption Centre

Faecal Calprotectin

Faecal Calprotectin testing in Primary Care

/www.calprotectin.co.uk/wp/wp-content/uploads/2013/05/Faecal_Calprotectin_Report_Final_220413.pdf

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NHS TAC on Faecal calprotectin

Following a survey of all GP practices, GPs felt the benefits of FCP testing to be

- Provides additional reassurance for patients who may have anxiety or uncertainty about IBS or IBD
- Reduced number of referrals from those tests which have been clearly negative. During this project, a total of 129 patients were spared from referral to secondary care
- Identified cases for referral that may not previously have been clinically indicated
- Greater confidence in diagnosing IBS within primary care without the need for endoscopy.

"Whilst not a formal research trial, NTAC feels that this work is highly suggestive that FCP is a useful tool in the diagnosis of IBS within primary care. "

http://www.calprotectin.co.uk/wp/wp-content/uploads/2013/05/Faecal_Calprotectin_Report_Final_220413.pdf

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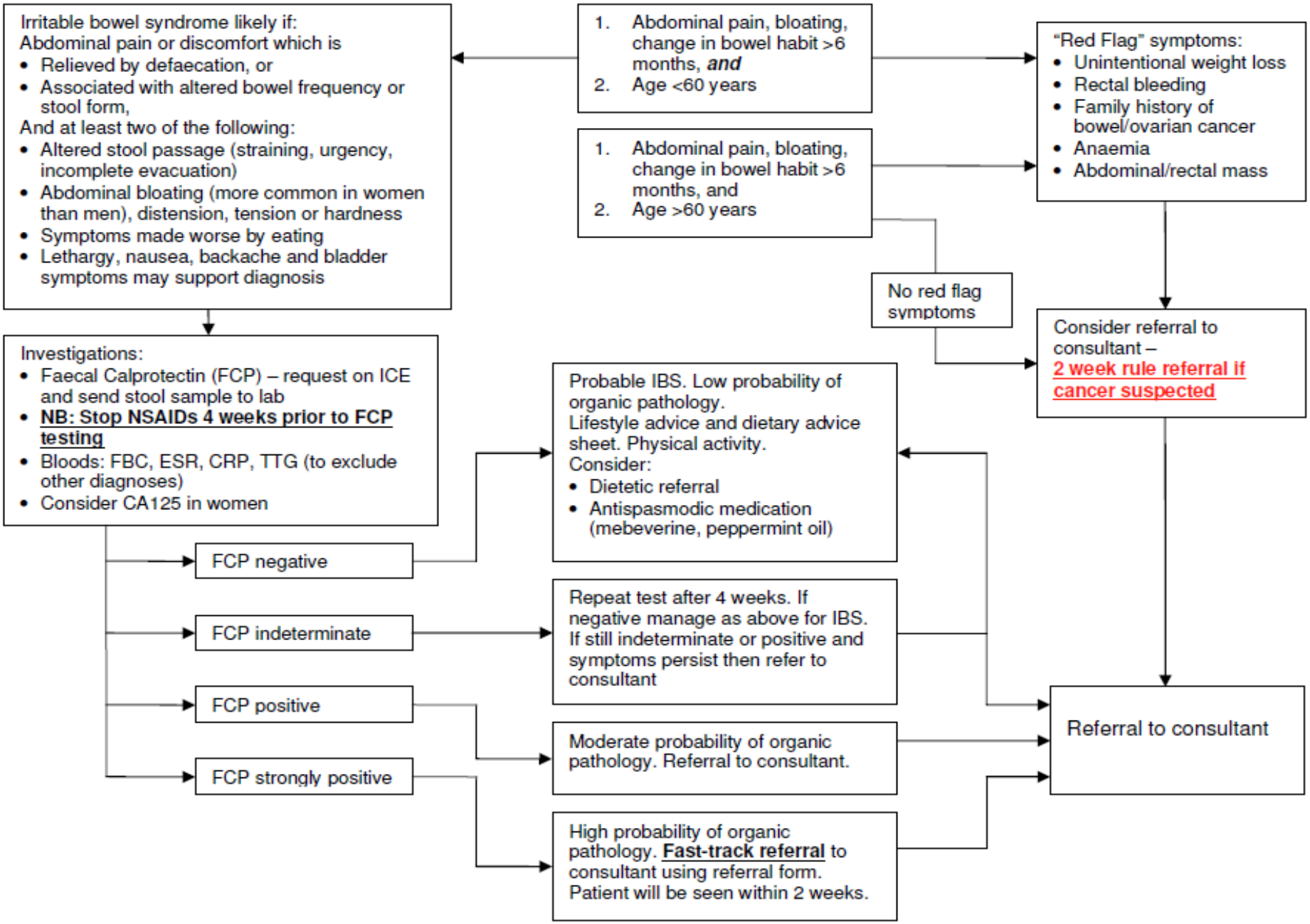
Northumberland Primary Care IBS Pathway (Based on NICE CG61 Pathway)



Abdominal pain and diarrhoea in 30 yo polish decorator

- Epigastric discomfort radiating to back
- Little relief from antacids/PPI
- Loose stools
- Weight loss 5 kg

- 3 relevant investigations?
- Likely diagnosis?
- Management?

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Faecal elastase as a marker of pancreatic insufficiency

Table II. [FE-1] compared to clinical diagnosis: all cases.

[FE-1]	Clinical diagnosis positive	Clinical diagnosis negative	Totals
[FE-1] <200 µg/g	32	9	41
[FE-1] >200 µg/g	9	55	64
Totals	41	64	105

Sensitivity = 78%, specificity = 76.6%, positive predictive value (PPV) = 78%, negative predictive value (NPV) = 85.9%, diagnostic accuracy = 82.9%.

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Faecal elastase as a marker of pancreatic insufficiency

Table III. [FE-1] compared to clinical diagnosis: mild acute pancreatitis (Ranson score <3).

[FE-1]	Clinical diagnosis positive	Clinical diagnosis negative	Totals
[FE-1] <200 µg/g	31	1	32
[FE-1] >200 µg/g	8	49	57
Totals	39	50	89

Sensitivity = 79.5%, specificity = 98%, positive predictive value (PPV) = 96.9%, negative predictive value (NPV) = 86%, diagnostic accuracy = 89.9%.

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Helicobacter pylori

- **Effectiveness of HP eradication has fallen largely due to clarithromycin resistance**

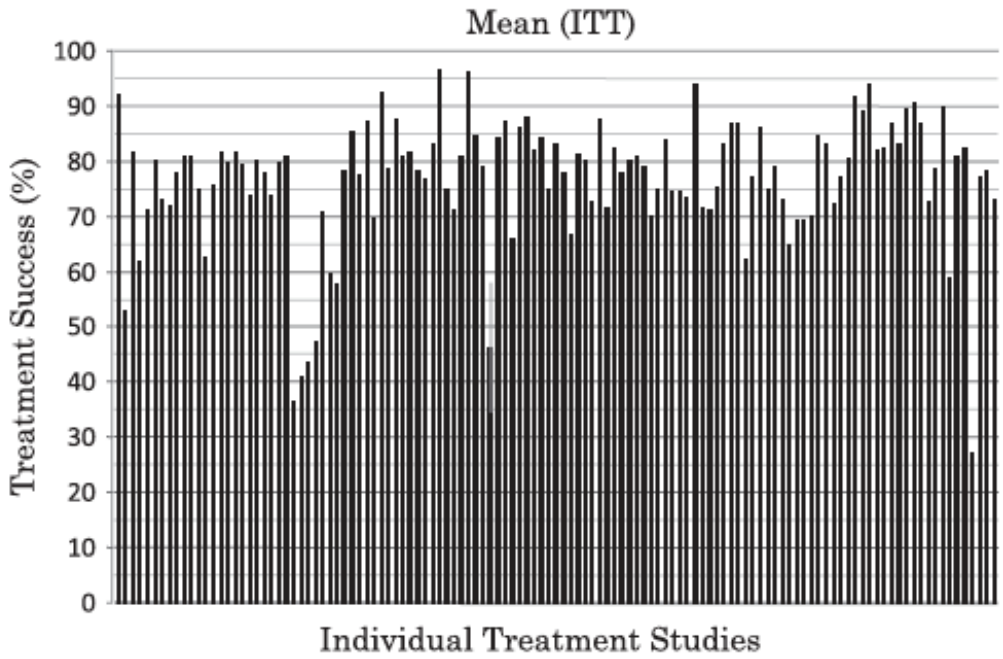

Figure 1 Percentage of intention-to-treat (ITT) treatment success for 'legacy triple therapy'. 'Legacy triple therapy' contains a proton pump inhibitor (PPI), clarithromycin and amoxicillin. The studies were identified from published articles and reviews in PubMed; see text for details.

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Helicobacter Pylori

Helicobacter pylori treatment in the era of increasing antibiotic resistance

David Y Graham,[1] Lori Fischbach[2]

"The time is long overdue to let clinicians know that currently used treatments for HP are not adequately effective, and alternative therapies with over 95% treatment success need to be identified"

Gut 2010; 59:1143-53

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Recommendations for treating HP

- Do not use ‘legacy triple therapy’ consisting of a PPI, clarithromycin and amoxicillin unless it has been proven to be highly effective locally (eg, eradication >90% in per-protocol analyses)
- use higher doses of drugs (eg, 500 mg of clarithromycin, metronidazole and tetracycline) unless it has been shown that lower doses are equally effective
- use 14 day duration unless a shorter duration has been shown locally to be equally effective (eg, for clarithromycin and fluoroquinolones)
- do not use a triple regimen containing clarithromycin, if clarithromycin is commonly prescribed locally or the patient has taken clarithromycin in the past, for any indication
- avoid fluoroquinolones if a quinolone (eg, ciprofloxacin, levofloxacin or moxifloxacin) has been given previously, even for any indication
- following treatment failure, do not reuse drugs for which resistance is likely to have developed (ie, clarithromycin and fluoroquinolones)

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Recommendations for treating HP

- Use a treatment which achieves >90% eradication in local population
- If this is not known, use e.g
  - 14 day quadruple regimen (PPI, amox, clari, nitroimidazole)
  - 10 days sequential treatment (PPI plus amox 5 days, followed by PPI, clari, nitroimidazole for 5 days)
  - Bismuth based quadruple regimens can be used as first line therapies
  - Newer drugs furazolidine, nitazoxanide need evaluating

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