

# 1 Review questions

	Details
<b>Review question 1</b>	When should (and with what indications) patients with uninvestigated dyspepsia be referred for endoscopy for further investigation and review of treatment plan?
<b>Review question 2</b>	What characteristics/symptoms of GORD or symptoms suggestive of GORD indicate endoscopy to exclude Barrett's oesophagus?
<b>Review question 3</b>	Which patient characteristics/clinical indicators/criteria indicate referral of a patient with dyspepsia, heartburn, or confirmed GORD managed in primary care to a consultant led medical or surgical service (specialist services)?
<b>Review question 4</b>	What is the clinical effectiveness of PPIs in patients with severe erosive reflux disease? i) to control / reduce oesophagitis ii) as maintenance therapy.
<b>Review question 5i</b>	In patients with symptoms of dyspepsia who are positive for <i>Helicobacter pylori</i> , which eradication regimens are the most clinically effective in the eradication of <i>H. pylori</i> ?
<b>Review question 5ii</b>	What <i>H. pylori</i> eradication regimens should be offered as second-line treatments when first-line treatments fail?
<b>Review question 6</b>	What is the effectiveness of laparoscopic fundoplication compared to medical management in patients with GORD?
<b>Review question 7</b>	What other management is effective for patients who do not respond to PPIs, H <sub>2</sub> receptor antagonists, or <i>H. pylori</i> eradication despite optimum primary care, or patients who have relapsed following surgery?
<b>Review question 8</b>	Should surveillance be used for patients with Barrett's oesophagus to detect progression to cancer, and improve survival?

## 2 IS search strategies

### 2.1 Scoping searches

Scoping searches were undertaken on the following websites and databases (listed in alphabetical order) in September 2011 to provide information for scope development and project planning. Browsing or simple search strategies were employed.

Guidelines/website	Systematic review/economic evaluations
<ul style="list-style-type: none"> <li>• Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland</li> <li>• Audit Commission</li> <li>• British Association of Paediatric Endoscopic Surgeons</li> <li>• British Society of Gastroenterology</li> <li>• British Society of Paediatric Gastroenterology, Hepatology and Nutrition</li> <li>• Campaign Against Reflux Disease (CARD)</li> <li>• Care Quality Commission</li> <li>• CORE Charity</li> <li>• Department of Health</li> <li>• European Helicobacter Study Group</li> <li>• Guidelines International Network (GIN)</li> <li>• Healthcare Improvement Scotland</li> <li>• Health Protection Agency</li> <li>• Joint Advisory Group on GI Endoscopy</li> <li>• King’s Fund</li> <li>• National Audit Office</li> <li>• National Patient Safety Agency</li> <li>• National Institute for Health and Clinical Excellence (NICE) - published &amp; in development guidelines</li> <li>• National Institute for Health and Clinical Excellence (NICE) - Topic Selection</li> <li>• National Institute for Innovation and Improvement</li> <li>• National Patient Safety Agency</li> <li>• National Prescribing Centre</li> <li>• NHS Business Services Authority</li> <li>• NHS Evidence</li> <li>• NHS Information Centre</li> <li>• NHS Scotland</li> <li>• NHS Wales</li> <li>• New Zealand Guidelines Group</li> <li>• Oesophageal Patients Association</li> </ul>	<ul style="list-style-type: none"> <li>• BMJ Clinical Evidence</li> <li>• Cochrane Database of Systematic Reviews (CDSR)</li> <li>• Database of Abstracts of Reviews of Effects (DARE)</li> <li>• Health Economic Evaluations Database (HEED)</li> <li>• Health Technology Assessment (HTA) Database</li> <li>• NHS Economic Evaluation Database (NHS EED)</li> <li>• NIHR Health Technology Assessment</li> <li>• NIHR Health Services and Delivery Research (HS&amp;DR) Programme</li> <li>• Programme</li> <li>• TRIP Database</li> <li>•</li> </ul>

- Primary Care Society for Gastroenterology
- Prodigy (formerly Clinical Knowledge Summaries)
- Reflux Advice.co.uk
- Royal Colleges
- Royal Pharmaceutical Society of Great Britain
- Scottish Audit of Gastro-Oesophageal Cancer Steering Group
- Scottish Intercollegiate Guidelines Network (SIGN)
- Scottish Medicines Consortium
- Social Care Institute for Excellence (SCIE)
- US National Guideline Clearinghouse

## 2.2 Main searches

Sources searched for the guideline

- Cochrane Database of Systematic Reviews – CDSR (Wiley)
- Cochrane Central Register of Controlled Trials – CENTRAL (Wiley)
- Database of Abstracts of Reviews of Effects – DARE (Wiley)
- Health Technology Assessment Database – HTA (Wiley)
- EMBASE (Ovid)
- MEDLINE (Ovid)
- MEDLINE In-Process (Ovid)

### 2.2.1 Identification of evidence for clinical questions

The searches were conducted between November 2011 and May 2013. The aim of the searches was to identify evidence for each of the clinical questions being asked.

The MEDLINE search strategies are presented below. These were translated for use in all of the other databases.

#### Review question 1:

What is the diagnostic utility of non-urgent endoscopy in patients with signs and symptoms of dyspepsia or GORD?

Database: Ovid MEDLINE(R) <1946 to May Week 1 2013> (update search conducted on 11 December 2013)

Search Strategy:

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- 1 exp Gastroesophageal Reflux/ (21027)
- 2 exp Duodenogastric Reflux/ (1565)
- 3 (reflux\$ or gord or gerd or ger).tw. (39779)
- 4 Esophageal Sphincter, Lower/ (585)
- 5 lower esophageal sphincter.tw. (3304)
- 6 lower oesophageal sphincter.tw. (912)
- 7 (les or los).tw. (17380)
- 8 pyros\$.tw. (3794)
- 9 acid exposure.tw. (1984)
- 10 Dyspepsia/ (7027)
- 11 (dyspep\$ or indigestion\$).tw. (10106)
- 12 (regurg\$ or waterbrash\$).tw. (25130)
- 13 hypergastrin\*.tw. (1546)
- 14 Heartburn/ (1642)
- 15 heartburn\$.tw. (3654)
- 16 exp Abdominal Pain/ (24380)
- 17 ((abdom\$ or stomach\$) adj3 (ache\$ or pain\$ or discomfort\$)).tw. (36640)
- 18 Chest Pain/ (8711)
- 19 ((chest\$ or thora\$) adj3 (ache\$ or pain\$ or discomfort\$)).tw. (24251)
- 20 (epigastri\$ adj3 (ache\$ or pain\$ or discomfort\$)).tw. (3381)
- 21 or/1-20 (179328)
- 22 exp Endoscopy, Digestive System/ (78303)
- 23 (endoscop\$ or gastroscop\$ or videoscop\$).tw. (126962)
- 24 chromoendoscop\$.tw. (532)
- 25 (esophagoscop\$ or oesophagoscop\$).tw. (1762)
- 26 or/22-25 (162901)
- 27 21 and 26 (19121)
- 28 risk factors/ (523427)
- 29 risk\$.tw. (1123252)

- 30 "Signs and Symptoms"/ (422)
- 31 (sign\* adj symptom\*).tw. (3497)
- 32 or/28-31 (1317377)
- 33 27 and 32 (2631)
- 34 exp Hernia/ (59294)
- 35 (hernia\$ or enterocele\$).tw. (48720)
- 36 34 or 35 (72057)
- 37 27 and 36 (1244)
- 38 Eructation/ (280)
- 39 (eructat\$ or belch\$ or burp\$).tw. (997)
- 40 38 or 39 (1110)
- 41 27 and 40 (126)
- 42 Polymorphism, Single Nucleotide/ (56558)
- 43 single nucleotide polymorphism.tw. (12097)
- 44 or/42-43 (59355)
- 45 27 and 44 (11)
- 46 ((paediatric or pediatric) adj reflux\$).tw. (9)
- 47 27 and 46 (1)
- 48 (famil\* adj history).tw. (38268)
- 49 27 and 48 (137)
- 50 ((gastro-oesophageal\$ or gastrooesophageal\$ or gastroesophageal\$ or gastro-  
esophageal\$) adj junction\$).tw. (1923)
- 51 27 and 50 (331)
- 52 exp Diet/ (182864)
- 53 (diet\$ or food\$ or nutrition\$).tw. (635091)
- 54 52 or 53 (698692)
- 55 27 and 54 (1151)
- 56 exp Smoking/ (115186)
- 57 (smok\$ or cigarette\$ or cigar\$ or tobacco\$).tw. (201167)
- 58 56 or 57 (228452)

- 59 27 and 58 (481)
- 60 exp Drinking Behavior/ (54011)
- 61 (alcohol\$ or drink\$).tw. (259963)
- 62 or/60-61 (271521)
- 63 27 and 62 (559)
- 64 body mass index/ (72094)
- 65 (body mass index\$ or bmi\$ or quetelet\$ index\$).tw. (110028)
- 66 Body Weight/ (156681)
- 67 exp Overweight/ (130992)
- 68 (weight\$ or overweight\$ or obes\$ or body fat).tw. (727583)
- 69 or/64-68 (885805)
- 70 27 and 69 (1665)
- 71 Age Factors/ (358134)
- 72 Aging/ (180363)
- 73 Geriatrics/ (26146)
- 74 exp Aged/ (2211124)
- 75 Middle Aged/ (3144169)
- 76 (age\$ or aging or elder\$ or geriatric\$ or old\$).tw. (2842713)
- 77 or/71-76 (5532610)
- 78 33 and 77 (1944)
- 79 Sex/ (7197)
- 80 Sex Factors/ (202377)
- 81 Men/ (2535)
- 82 Women/ (13200)
- 83 (sex or sexes or gender\$ or male\$ or female\$ or man or woman or women or men).tw. (2090224)
- 84 or/79-83 (2174250)
- 85 33 and 84 (883)
- 86 exp Population Groups/ (197033)
- 87 eh.fs. (115162)

- 88 (ethnic\$ or ethno\$ or race\$ or racial\$).tw. (155305)
- 89 or/86-88 (342359)
- 90 27 and 89 (278)
- 91 animals/ not humans/ (3753959)
- 92 33 or 37 or 41 or 45 or 47 or 49 or 51 or 55 or 59 or 63 or 70 or 78 or 85 or 90 (6383)
- 93 92 not 91 (6294)
- 94 limit 93 to english language (5150)
- 95 incidence.sh. or exp mortality/ or follow-up studies.sh. or prognos:.tw. or predict:.tw. or course:.tw. (2070024)
- 96 (sensitiv: or diagnos:).mp. or di.fs. (3656151)
- 97 95 or 96 (5064379)
- 98 94 and 97 (3567)

**Review Question 2:**

Which risk factors indicate endoscopy in order to exclude Barrett's oesophagus?

Database: Ovid MEDLINE(R) <1946 to November Week 2 2012> (update search conducted on 12 December 2013).

Search Strategy:

- 
- 1 Barrett Esophagus/ (5715)
  - 2 barrett\$.tw. (6721)
  - 3 ((column\$ or speciali\$ or intestinali\$) adj3 (epithel\$ or oesophag\$ or esophag\$ or mucos\$)).tw. (4244)
  - 4 or/1-3 (10763)
  - 5 exp Endoscopy/ (238917)
  - 6 (endoscop\$ or gastroscop\$ or videoscop\$).tw. (124065)
  - 7 chromoendoscop\$.tw. (519)
  - 8 (esophagoscop\$ or oesophagoscop\$).tw. (1758)
  - 9 or/5-8 (287817)
  - 10 4 and 9 (3856)

- 11 risk factors/ (508949)
- 12 risk\$.tw. (1087586)
- 13 or/11-12 (1274619)
- 14 10 and 13 (1162)
- 15 exp Hernia/ (58747)
- 16 (hernia\$ or enterocele\$).tw. (47909)
- 17 15 or 16 (71245)
- 18 10 and 17 (365)
- 19 Eructation/ (277)
- 20 (eructat\$ or belch\$ or burp\$).tw. (971)
- 21 19 or 20 (1080)
- 22 10 and 21 (12)
- 23 Chest Pain/ (8520)
- 24 ((chest or thora\$) adj3 (pain\$ or ache\$ or discomfort\$)).tw. (23936)
- 25 Heartburn/ (1544)
- 26 (heartburn\$ or pyros\$).tw. (6731)
- 27 or/23-26 (33421)
- 28 10 and 27 (308)
- 29 bile\$ reflux\$.tw. (683)
- 30 10 and 29 (40)
- 31 ((gastro-oesophageal\$ or gastrooesophageal\$ or gastroesophageal\$ or gastro-  
esophageal\$) adj junction\$).tw. (1880)
- 32 10 and 31 (181)
- 33 exp Diet/ (178565)
- 34 (diet\$ or food\$ or nutrition\$).tw. (619496)
- 35 33 or 34 (682299)
- 36 10 and 35 (78)
- 37 exp Smoking/ (113322)
- 38 (smok\$ or cigarette\$ or cigar\$ or tobacco\$).tw. (197081)
- 39 37 or 38 (224058)



- 40 10 and 39 (117)
- 41 exp Drinking Behavior/ (53005)
- 42 (alcohol\$ or drink\$).tw. (255109)
- 43 or/41-42 (266547)
- 44 10 and 43 (100)
- 45 body mass index/ (69217)
- 46 (body mass index\$ or bmi\$ or quetelet\$ index\$).tw. (105391)
- 47 Body Weight/ (155285)
- 48 exp Overweight/ (127354)
- 49 (weight\$ or overweight\$ or obes\$ or body fat).tw. (710695)
- 50 or/45-49 (865676)
- 51 10 and 50 (184)
- 52 Age Factors/ (353281)
- 53 Aging/ (177973)
- 54 Geriatrics/ (26016)
- 55 exp Aged/ (2177675)
- 56 Middle Aged/ (3096169)
- 57 (age\$ or aging or elder\$ or geriatric\$ or old\$).tw. (2782636)
- 58 or/52-57 (5441703)
- 59 14 and 58 (688)
- 60 Sex/ (7245)
- 61 Sex Factors/ (198826)
- 62 Men/ (2516)
- 63 Women/ (13143)
- 64 (sex or sexes or gender\$ or male\$ or female\$ or man or woman or women or men).tw. (2049175)
- 65 or/60-64 (2132677)
- 66 14 and 65 (303)
- 67 exp Population Groups/ (191780)
- 68 eh.fs. (112002)

- 69 (ethnic\$ or ethno\$ or race\$ or racial\$).tw. (150638)
- 70 or/67-69 (333290)
- 71 10 and 70 (90)
- 72 14 or 18 or 22 or 28 or 30 or 32 or 36 or 40 or 44 or 51 or 59 or 66 or 71 (1823)
- 73 limit 72 to english language (1616)
- 74 animals/ not humans/ (3717557)
- 75 73 not 74 (1607)

**Review Question 3:**

Which patient characteristics / criteria indicate referral of a patient with dyspepsia, heartburn, or confirmed GORD to a consultant led medical or surgical service?

Database: Ovid MEDLINE(R) <1946 to July Week 2 2012> (update search conducted on 05 December 2013).

Search Strategy:

- 
- 1 Dyspepsia/ (6821)
  - 2 (dyspep\$ or indigestion\$).tw. (9703)
  - 3 waterbrash\$.tw. (8)
  - 4 (regurg\$ not (mitral\$ or vascular\$ or pulmonar\$)).tw. (9577)
  - 5 Heartburn/ (1513)
  - 6 heartburn\$.tw. (3370)
  - 7 pyros\$.tw. (2949)
  - 8 acid exposure.tw. (1851)
  - 9 exp Esophagitis/ (8912)
  - 10 (esophagit\$ or oesophagit\$).tw. (10353)
  - 11 exp Gastritis/ (17242)
  - 12 (gastrit\$ or gastr\$ stas\$).tw. (16167)
  - 13 exp Gastroesophageal Reflux/ (20000)

- 14 exp Duodenogastric Reflux/ (1550)
- 15 (gord or gerd or ger).tw. (6617)
- 16 reflux\$.tw. (37107)
- 17 Esophageal Sphincter, Lower/ (510)
- 18 lower esophageal sphincter.tw. (3226)
- 19 lower oesophageal sphincter.tw. (901)
- 20 or/1-19 (92751)
- 21 Consultants/ (5573)
- 22 Specialization/ (20669)
- 23 Gastroenterology/ (7308)
- 24 (consultant\$ or speciali\$ or gastroenterolog\$ or proctolog\$ or expert\$).tw. (217588)
- 25 exp Hospitals/ (186342)
- 26 exp Hospital Units/ (69860)
- 27 exp Hospitalization/ (141259)
- 28 hospital\$.tw. (696207)
- 29 (tertiary-care or secondary-care).tw. (21389)
- 30 ((tertiary or secondary) adj3 (care or service\$ or center\$ or centre\$ or practice\$)).tw. (35460)
- 31 General Surgery/ (31930)
- 32 exp Surgical Procedures, Operative/ (2199124)
- 33 (surg\$ or operation\$ or operative\$).tw. (1380905)
- 34 Outpatients/ (7494)
- 35 Outpatient Clinics, Hospital/ (13781)
- 36 (outpatient\$ or out-patient\$).tw. (103405)
- 37 Inpatients/ (10895)
- 38 (inpatient\$ or in-patient\$).tw. (996267)
- 39 or/21-38 (4345444)
- 40 20 and 39 (46928)
- 41 exp "Referral and Consultation"/ (52336)
- 42 (refer or referr\$ or consult\$ or second opinion\$ or gatekeep\$).tw. (234511)

- 43 41 or 42 (259007)
- 44 40 and 43 (2168)
- 45 Ambulatory Care/ or ambulatory care facilities/ (44134)
- 46 Primary Health Care/ (48213)
- 47 exp General Practice/ (61347)
- 48 General Practitioners/ (933)
- 49 Physicians, Family/ (14316)
- 50 Physicians, Primary Care/ (605)
- 51 gp\$.tw. (97800)
- 52 ((general or family) adj (practice\$ or practitioner\$ or physician\$ or doctor\$)).tw. (72469)
- 53 primary-care.tw. (57220)
- 54 ((primary or ambulatory) adj3 (care or health\$ or service\$ or center\$ or centre\$ or practice\$)).tw. (87434)
- 55 Community Health Services/ (25377)
- 56 Community health nursing/ (17833)
- 57 ((walkin or walk-in or "walk in" or community health) adj3 (care or service\$ or centre\$ or center\$ or clinic\$ or facilit\$)).tw. (4417)
- 58 or/45-57 (348834)
- 59 20 and 43 and 58 (483)
- 60 44 or 59 (2283)
- 61 animals/ not humans/ (3663211)
- 62 60 not 61 (2262)
- 63 limit 62 to english language (1950)

**Review Question 4:**

What is the clinical effectiveness of PPIs in patients with severe erosive reflux disease?

Database: Ovid MEDLINE(R) <1946 to September Week 3 2012> (update search conducted by MPC on 06 December 2013)

Search Strategy:

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- 1 exp Gastroesophageal Reflux/ (20185)
- 2 exp Duodenogastric Reflux/ (1555)
- 3 (reflux\$ or gord or gerd or ger).tw. (38474)
- 4 exp Esophagitis/ (8968)
- 5 (esophagi\$ or oesophagi\$).tw. (10838)
- 6 exp Gastritis/ (17333)
- 7 (gastrit\$ or gastr\$ stas\$).tw. (16290)
- 8 or/1-7 (71512)
- 9 Proton Pump Inhibitors/ (2506)
- 10 Omeprazole/ (8164)
- 11 (ppi\$ or proton pump\$ or omeprazole\$ or losec\$ or rabeprazole\$ or pariet\$ or pantoprazole\$ or protium\$ or lansoprazole\$ or zoton\$ or esomeprazole\$ or nexium\$ or emozul\$).tw. (65237)
- 12 or/9-11 (67160)
- 13 8 and 12 (6324)

**Review Question 5:**

In patients with symptoms of dyspepsia who are positive for helicobacter pylori, which eradication regimens are the most clinically effective in the eradication of h. pylori?

Database: Ovid MEDLINE(R) <1946 to August Week 5 2012> (update search conducted on 02 December 2013)

Search Strategy:

- 
- 1 sequen\$.tw. (807727)
  - 2 tripl\$.tw. (59536)
  - 3 quadrupl\$.tw. (6797)
  - 4 ((standard\$ or convention\$) adj3 (therap\$ or treat\$ or regim\$)).tw. (75690)
  - 5 or/1-4 (935763)
  - 6 Proton Pump Inhibitors/ (2485)
  - 7 Omeprazole/ (8152)

- 8 (ppi\$ or proton pump\$ or omeprazole\$ or losec\$ or rabeprazole\$ or pariet\$ or pantoprazole\$ or protium\$ or lansoprazole\$ or zoton\$ or esomeprazole\$ or nexium\$).tw. (65001)
- 9 or/6-8 (66918)
- 10 exp Nitroimidazoles/ (14617)
- 11 (nitroimidazole\$ or antiprotozoal\$ or metronidazole\$ or flagyl\$ or tinidazole\$ or fasigyn\$).tw. (13291)
- 12 Clarithromycin/ (4687)
- 13 (clarithromycin\$ or klaricid\$).tw. (5916)
- 14 exp Amoxicillin/ (8612)
- 15 (amox\$ or amix\$ or amoram\$ or amoxident\$ or alenamox\$ or rimoxallin\$).tw. (12013)
- 16 Bismuth/ (4535)
- 17 (bismuth\$ or tripotassium\$ or tri-potassium\$ or tri potassium\$ or de-noltab\$ or denoltab\$ or de noltab\$).tw. (4269)
- 18 exp Tetracyclines/ (38584)
- 19 tetracyclin\$.tw. (25722)
- 20 exp Quinolones/ (32885)
- 21 (quinolon\$ or levofloxacin\$ or tavinic\$ or moxifloxacin\$ or avelox\$).tw. (13701)
- 22 or/10-21 (122402)
- 23 9 and 22 (3088)
- 24 5 or 23 (937359)
- 25 exp Helicobacter/ (27735)
- 26 Helicobacter Infections/ (22948)
- 27 exp Campylobacter/ (9249)
- 28 (helicobac\$ or campylobact\$ or pylori\$).tw. (48325)
- 29 or/25-28 (51267)
- 30 24 and 29 (7232)

Update search conducted on PubMed on 02 December 2013

Strategy:

Search (#11 or #12)

Search (#9 AND publisher [sb])

Search (#9 AND #10)

Search ("2013/10/10"[Date - Entrez] : "3000"[Date - Entrez])

Search (#7 and #8)

Search (helicobac\* or campylobact\* or pylori\*[Title/Abstract])

Search (#3 or #6)

Search (#4 and #5)

Search (#1 or #2)

Search (nitroimidazole\* or antiprotozoal\* or metronidazole\* or flagyl\* or tinidazole\* or fasigyn\* or clarithromycin\* or klaricid\* or amox\* or amix\* or amoram\* or amoxidant\* or alenamox\* or rimoxallin\* or bismuth\* or tripotassium\* or tri-potassium\* or tri potassium\* or de-noltab\* or denoltab\* or de noltab\* or tetracyclin\* or quinolon\* or levofloxacin\* or tavinic\* or moxifloxacin\* or avelox\*[Title/Abstract])

Search (ppi\* or proton pump\* or omeprazole\* or losec\* or rabeprazole\* or pariet\* or pantoprazole\* or protium\* or lansoprazole\* or zoton\* or esomeprazole\* or nexium\*[Title/Abstract])

Search (standard\* OR convention\* AND therap\* OR treat\* OR regim\*[Title/Abstract])

Search (sequen\* or tripl\* or quadrupl\*[Title/Abstract])

### **Review Question 6:**

What is the effectiveness of laparoscopic fundoplication compared to medical management in patients with GORD?

Database: Ovid MEDLINE(R) <1948 to November Week 3 2011> (update search conducted on 17 December 2013)

Search Strategy:

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- 1 exp Gastroesophageal Reflux/ (19796)
- 2 exp Duodenogastric Reflux/ (1567)
- 3 (reflux\$ or gord or gerd or ger).tw. (37759)
- 4 Esophageal Sphincter, Lower/ (466)
- 5 lower esophageal sphincter.tw. (3192)
- 6 lower oesophageal sphincter.tw. (893)

- 7 (les or los).tw. (15977)
- 8 Heartburn/ (1461)
- 9 heartburn\$.tw. (3294)
- 10 pyros\$.tw. (2439)
- 11 acid exposure.tw. (1801)
- 12 Dyspepsia/ (6800)
- 13 (dyspep\$ or indigestion\$).tw. (9598)
- 14 (regurg\$ or waterbrash\$).tw. (23945)
- 15 exp Esophagitis/ (8866)
- 16 (esophagi\$ or oesophagi\$).tw. (10675)
- 17 exp Gastritis/ (17444)
- 18 (gastrit\$ or gastr\$ stas\$).tw. (16251)
- 19 or/1-18 (120456)
- 20 Fundoplication/ (3123)
- 21 fundoplicat\$.tw. (3941)
- 22 gastroplicat\$.tw. (50)
- 23 nissen.tw. (2208)
- 24 (toupet or lind or watson or besley or hill).tw. (15508)
- 25 (antireflux\$ or anti-reflux\$ or anti reflux\$).tw. (4362)
- 26 or/20-25 (22949)
- 27 19 and 26 (6329)

**Review Question 7:**

What other medical management is effective for patients who do not respond to PPIs, H<sub>2</sub> receptor antagonists, or *H pylori* eradication despite optimum primary care, or patients who have relapsed following surgery?



Database: Ovid MEDLINE(R) <1946 to October Week 4 2012> (update search conducted on 12 December 2013)

Search Strategy:

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- 1 exp Gastroesophageal Reflux/ (20261)
- 2 exp Duodenogastric Reflux/ (1555)
- 3 (reflux\$ or gord or gerd or ger).tw. (38634)
- 4 Esophageal Sphincter, Lower/ (536)
- 5 lower esophageal sphincter.tw. (3257)
- 6 lower oesophageal sphincter.tw. (907)
- 7 (les or los).tw. (16703)
- 8 Heartburn/ (1538)
- 9 heartburn\$.tw. (3422)
- 10 pyros\$.tw. (3254)
- 11 acid exposure.tw. (1885)
- 12 Dyspepsia/ (6883)
- 13 (dyspep\$ or indigestion\$).tw. (9823)
- 14 (regurg\$ or waterbrash\$).tw. (24575)
- 15 exp Esophagitis/ (9004)
- 16 (esophagi\$ or oesophagi\$).tw. (10881)
- 17 exp Gastritis/ (17381)
- 18 (gastrit\$ or gastr\$ stas\$).tw. (16348)
- 19 exp Abdominal Pain/ (23831)
- 20 ((abdom\$ or stomach\$) adj3 (ache\$ or pain\$ or discomfort\$)).tw. (35707)
- 21 or/1-20 (172460)
- 22 Proton Pump Inhibitors/ (2569)
- 23 Omeprazole/ (8191)
- 24 (ppi\$ or proton pump\$ or omeprazole\$ or losec\$ or rabeprazole\$ or pariet\$ or pantoprazole\$ or protium\$ or lansoprazole\$ or zoton\$ or esomeprazole\$ or nexium\$ or emozul\$).tw. (65637)

- 25 or/22-24 (67572)
- 26 (nocturn\$ or night\$ or evening\$ or bed\$ or sleep\$).tw. (246121)
- 27 ((split\$ or separat\$ or divi\$ or even\$ or spread\$ or multipl\$ or alter\$ or chang\$ or reduc\$ or less\$ or small\$ or low\$) adj3 dos\$).tw. (196251)
- 28 25 and (26 or 27) (2830)
- 29 21 and 28 (753)
- 30 exp Histamine H2 Antagonists/ (18029)
- 31 (h2ra\$ or h2-ra\$ or "h2 ra\$").tw. (413)
- 32 (histamin\$ adj3 (antagon\$ or block\$ or recep\$)).tw. (11117)
- 33 (h2\$ adj3 (antagon\$ or hist\$ or block\$ or recep\$)).tw. (14520)
- 34 cimetidin\$.tw. (10207)
- 35 tagamet.tw. (95)
- 36 ranitidin\$.tw. (5384)
- 37 zantac.tw. (56)
- 38 famotidin\$.tw. (1635)
- 39 nizatidin\$.tw. (354)
- 40 axid.tw. (10)
- 41 or/30-40 (35084)
- 42 25 and 41 (3913)
- 43 21 and 42 (1495)
- 44 Dopamine Antagonists/ (9263)
- 45 (dopamin\$ adj3 (receptor\$ or antagonist\$)).tw. (27446)
- 46 prokinetic\$.tw. (1882)
- 47 Metoclopramide/ (4448)
- 48 (metoclopramide or maxolon).tw. (4925)
- 49 Domperidone/ (1503)
- 50 (domperidone or motilium).tw. (1835)
- 51 (itopride or ganaton).tw. (64)
- 52 (mosapride or bionus).tw. (187)
- 53 or/44-52 (38965)

- 54 21 and 53 (1474)
- 55 exp Laparoscopy/ (62058)
- 56 laparoscopes/ (3291)
- 57 surgical procedures, Minimally Invasive/ (15264)
- 58 (laparoscop\$ or celioscop\$ or keyhole\$).tw. (72639)
- 59 or/55-58 (95003)
- 60 Fundoplication/ (3277)
- 61 fundoplicat\$.tw. (4067)
- 62 gastroplicat\$.tw. (48)
- 63 nissen.tw. (2247)
- 64 (toupet or lind or watson or besley or hill).tw. (15936)
- 65 (antireflux\$ or anti-reflux\$ or anti reflux\$).tw. (4397)
- 66 or/60-65 (23538)
- 67 59 and 66 (2960)
- 68 21 and 67 (2290)
- 69 29 or 43 or 54 or 68 (5510)

**Review Question 8:**

Should surveillance be used for patients with Barrett's Oesophagus to detect progression to cancer, and improve survival?

Database: Ovid MEDLINE(R) <1946 to May Week 4 2012> (update search conducted on 18 December 2013)

Search Strategy:

- 
- 1 Barrett Esophagus/ (5504)
  - 2 barrett\$.tw. (6461)
  - 3 ((column\$ or speciali\$ or intestinali\$) adj3 (epithel\$ or oesophag\$ or esophag\$ or mucos\$)).tw. (4142)
  - 4 ((metaplas\$ or dysplasi\$ or neoplasia\$) adj3 (column\$ or intestin\$ or epithel\$ or oesophag\$ or esophag\$ or mucos\$ or high-grade\$ or low-grade\$)).tw. (13822)
  - 5 or/1-4 (21574)

- 6 exp Mass Screening/ (90868)
- 7 exp Population Surveillance/ (44090)
- 8 (screen\$ or surveillan\$ or monitor\$).tw. (843147)
- 9 or/6-8 (896405)
- 10 exp Endoscopy/ (231412)
- 11 endoscop\$.tw. (116970)
- 12 chromoendoscop\$.tw. (489)
- 13 (esophagoscop\$ or oesophagoscop\$).tw. (1731)
- 14 exp Biopsy/ (205812)
- 15 biops\$.tw. (251781)
- 16 or/10-15 (604770)
- 17 9 and 16 (43493)
- 18 5 and 17 (2222)

**Broad update search for all review questions (apart from RQ5) conducted on PubMed on 11 December 2013**

Strategy:

Search (#21 or #23)

Search (#19 and #20)

Search (#19 and #22)

Search ("2013/12/09"[Date - Entrez] : "3000"[Date - Entrez])

Search publisher[sb]

Search (#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18)

Search ((metaplas\* or dysplasi\* or neoplas\*[Title/Abstract])) AND (epithel\* or oesophag\* or esophag\* or mucos\*[Title/Abstract])

Search ((column\* or speciali\* or intestinali\*[Title/Abstract])) AND (epithel\* or oesophag\* or esophag\* or mucos\*[Title/Abstract])

Search (((((reflux\*[Title/Abstract]) NOT (coronar\* or heart\* or mitral\* or vascular\* or pulmonar\* or vesico\* or uter\* or laryn\*[Title/Abstract])))

Search lower esophageal sphincter[Title/Abstract]

Search lower oesophageal sphincter[Title/Abstract]

Search pyros\*[Title/Abstract]  
Search acid exposure[Title/Abstract]  
Search esophagit\*[Title/Abstract]  
Search oesophagit\*[Title/Abstract]  
Search gord[Title/Abstract]  
Search gerd[Title/Abstract]  
Search ger[Title/Abstract]  
Search indigestion\*[Title/Abstract]  
Search barrett\*[Title/Abstract]  
Search heartburn[Title/Abstract]  
Search (((acid\*[Title/Abstract]) AND regurg\*[Title/Abstract]))  
Search dyspep\*[Title/Abstract]  
Search waterbrash\*[Title/Abstract]

### 2.2.2 Study design filters

The MEDLINE systematic reviews and RCT search filters that were used where required for some of the review questions above are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

#### **Specific systematic reviews filter**

*Appended to review questions 4 and 7*

- 1 Meta-Analysis.pt. (37837)
- 2 Meta-Analysis as Topic/ (12594)
- 3 (metaanaly\$ or metanaly\$ or (meta adj2 analy\$)).tw. (45065)
- 4 (systematic\$ adj4 (review\$ or overview\$)).tw. (40425)
- 5 ((quantitative\$ or qualitative\$) adj4 (review\$ or overview\$)).tw. (3110)
- 6 ((studies or trial\$) adj1 (review\$ or overview\$)).tw. (6557)
- 7 (integrat\$ adj2 (research or review\$ or literature)).tw. (3111)
- 8 (pool\$ adj1 (analy\$ or data)).tw. (7682)
- 9 (handsearch\$ or (hand adj2 search\$)).tw. (4484)
- 10 (manual\$ adj2 search\$).tw. (2443)
- 11 or/1-10 (105950)

### **Broad systematic reviews filter**

*Appended to review questions 5 and 6*

- 1 Meta-Analysis.pt. (37837)
- 2 Meta-Analysis as Topic/ (12594)
- 3 Review.pt. (1757173)
- 4 exp Review Literature as Topic/ (6618)
- 5 (metaanaly\$ or metanaly\$ or (meta adj2 analy\$)).tw. (45065)
- 6 (review\$ or overview\$).ti. (240634)
- 7 (systematic\$ adj4 (review\$ or overview\$)).tw. (40425)
- 8 ((quantitative\$ or qualitative\$) adj4 (review\$ or overview\$)).tw. (3110)
- 9 ((studies or trial\$) adj1 (review\$ or overview\$)).tw. (6557)
- 10 (integrat\$ adj2 (research or review\$ or literature)).tw. (3111)
- 11 (pool\$ adj1 (analy\$ or data)).tw. (7682)
- 12 (handsearch\$ or (hand adj2 search\$)).tw. (4484)
- 13 (manual\$ adj2 search\$).tw. (2443)
- 14 or/1-13 (1894766)

### **Specific RCT filter**

*Appended to review questions 4 and 7*

- 1 Randomized Controlled Trial.pt. (342057)
- 2 Controlled Clinical Trial.pt. (85675)
- 3 Placebos/ (31568)
- 4 Random Allocation/ (76571)
- 5 Double-Blind Method/ (118432)
- 6 Single-Blind Method/ (17072)
- 7 Cross-Over Studies/ (30968)
- 8 ((random\$ or control\$ or clinical\$) adj2 (trial\$ or stud\$)).tw. (569547)
- 9 (random\$ adj2 allocat\$).tw. (18127)
- 10 placebo\$.tw. (141042)

- 11 ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (blind\$ or mask\$)).tw. (116052)
- 12 (crossover\$ or (cross adj over\$)).tw. (52321)
- 13 or/1-12 (945299)

### **Broad RCT filter**

*Appended to review questions 5 and 6*

- 1 Randomized Controlled Trial.pt. (342057)
- 2 Controlled Clinical Trial.pt. (85675)
- 3 Clinical Trial.pt. (476279)
- 4 exp Clinical Trials as Topic/ (264246)
- 5 Placebos/ (31568)
- 6 Random Allocation/ (76571)
- 7 Double-Blind Method/ (118432)
- 8 Single-Blind Method/ (17072)
- 9 Cross-Over Studies/ (30968)
- 10 ((random\$ or control\$ or clinical\$) adj2 (trial\$ or stud\$)).tw. (569547)
- 11 (random\$ adj2 allocat\$).tw. (18127)
- 12 placebo\$.tw. (141042)
- 13 ((singl\$ or doubl\$ or trebl\$ or tripl\$) adj (blind\$ or mask\$)).tw. (116052)
- 14 (crossover\$ or (cross adj over\$)).tw. (52321)
- 15 or/1-14 (1198484)
- 16 animals/ not humans/ (3718637)
- 17 15 not 16 (1120965)

## **2.3 Economic evaluations and quality of life data**

### **Sources searched to identify economic evaluations**

- NHS Economic Evaluation Database – NHS EED (Wiley)
- Health Economic Evaluations Database – HEED (Wiley)
- Embase (Ovid)
- MEDLINE (Ovid)

- MEDLINE In-Process (Ovid)

### **Health economics studies on dyspepsia and GORD**

The searches were undertaken in March 2012. The specific economic evaluations filter was appended to the following search strategy to identify relevant evidence.

Database: Ovid MEDLINE(R) <1946 to February Week 4 2012>

Search Strategy:

- 
- 1 Dyspepsia/ (6726)
  - 2 (dyspep\$ or indigestion\$).tw. (9523)
  - 3 (regurg\$ or waterbrash\$).tw. (23471)
  - 4 Heartburn/ (1468)
  - 5 heartburn\$.tw. (3288)
  - 6 pyros\$.tw. (2421)
  - 7 acid exposure.tw. (1804)
  - 8 exp Peptic Ulcer/ (70434)
  - 9 ((peptic\$ or gastr\$ or duoden\$ or stomach\$) adj3 ulcer\$).tw. (50958)
  - 10 exp Esophagitis/ (8754)
  - 11 (esophagi\$ or oesophagi\$).tw. (10524)
  - 12 exp Gastritis/ (17049)
  - 13 (gastrit\$ or gastr\$ stas\$).tw. (15913)
  - 14 exp Gastroesophageal Reflux/ (19636)
  - 15 exp Duodenogastric Reflux/ (1533)
  - 16 (reflux\$ or gord or gerd or ger).tw. (37306)
  - 17 Esophageal Sphincter, Lower/ (467)
  - 18 lower esophageal sphincter.tw. (3160)
  - 19 lower oesophageal sphincter.tw. (892)
  - 20 (les or los).tw. (15672)
  - 21 or/1-20 (183837)
  - 22 exp Gastrointestinal Neoplasms/ (251799)



- 23 ((stomach\$ or oesoph\$ or esoph\$ or intestin\$ or gastric\$) adj3 (cancer\$ or carcinoma\$ or adenocarcinoma\$ or neoplasm\$ or tumor\$ or tumour\$ or malign\$)).tw. (82446)
- 24 ((upper digestive\$ or upper gastr\$ or upper gi) adj3 (cancer\$ or carcinoma\$ or adenocarcinoma\$ or neoplasm\$ or tumor\$ or tumour\$ or malign\$)).tw. (1286)
- 25 or/22-24 (264951)
- 26 21 or 25 (428356)

### **Health economics studies for Barrett's oesophagus**

The searches were undertaken in June 2012. The specific economic evaluations filter was appended to the following search strategy to identify relevant evidence.

Database: Ovid MEDLINE(R) <1946 to May Week 5 2012>

Search Strategy:

- 
- 1 Barrett Esophagus/ (5527)
  - 2 barrett\$.tw. (6488)
  - 3 ((column\$ or speciali\$ or intestinali\$) adj3 (epithel\$ or oesophag\$ or esophag\$ or mucos\$)).tw. (4149)
  - 4 ((metaplas\$ or dysplasi\$ or neoplasia\$) adj3 (column\$ or intestin\$ or epithel\$ or oesophag\$ or esophag\$ or mucos\$ or high-grade\$ or low-grade\$)).tw. (13859)
  - 5 or/1-4 (21633)

### **Health economics studies on RQ1 Diagnostic utility of non-urgent endoscopy in patients with signs and symptoms of dyspepsia or GORD**

The searches were undertaken in June 2013. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence

Database: Ovid MEDLINE(R) <1946 to May Week 4 2013>

Search Strategy:

- 
- 1 exp Gastroesophageal Reflux/ (21073)
  - 2 exp Duodenogastric Reflux/ (1566)
  - 3 (reflux\$ or gord or gerd or ger).tw. (39865)
  - 4 Esophageal Sphincter, Lower/ (589)
  - 5 lower esophageal sphincter.tw. (3312)

- 6 lower oesophageal sphincter.tw. (912)
- 7 (les or los).tw. (17474)
- 8 pyros\$.tw. (3852)
- 9 acid exposure.tw. (1990)
- 10 Dyspepsia/ (7033)
- 11 (dyspep\$ or indigestion\$).tw. (10122)
- 12 (regurg\$ or waterbrash\$).tw. (25208)
- 13 hypergastrin\*.tw. (1550)
- 14 Heartburn/ (1650)
- 15 heartburn\$.tw. (3667)
- 16 exp Abdominal Pain/ (24439)
- 17 ((abdom\$ or stomach\$) adj3 (ache\$ or pain\$ or discomfort\$)).tw. (36738)
- 18 Chest Pain/ (8747)
- 19 ((chest\$ or thora\$) adj3 (ache\$ or pain\$ or discomfort\$)).tw. (24330)
- 20 (epigastri\$ adj3 (ache\$ or pain\$ or discomfort\$)).tw. (3388)
- 21 or/1-20 (179880)
- 22 exp Endoscopy, Digestive System/ (78532)
- 23 (endoscop\$ or gastroscop\$ or videoscop\$).tw. (127383)
- 24 chromoendoscop\$.tw. (533)
- 25 (esophagoscop\$ or oesophagoscop\$).tw. (1764)
- 26 or/22-25 (163419)
- 27 21 and 26 (19172)
- 28 risk factors/ (525551)
- 29 risk\$.tw. (1128239)
- 30 "Signs and Symptoms"/ (422)
- 31 (sign\* adj symptom\*).tw. (3508)
- 32 or/28-31 (1322964)
- 33 27 and 32 (2645)
- 34 exp Hernia/ (59410)

- 35 (hernia\$ or enterocele\$).tw. (48852)
- 36 34 or 35 (72210)
- 37 27 and 36 (1248)
- 38 Eructation/ (281)
- 39 (eructat\$ or belch\$ or burp\$).tw. (998)
- 40 38 or 39 (1111)
- 41 27 and 40 (126)
- 42 Polymorphism, Single Nucleotide/ (57063)
- 43 single nucleotide polymorphism.tw. (12199)
- 44 or/42-43 (59882)
- 45 27 and 44 (11)
- 46 ((paediatric or pediatric) adj reflux\$).tw. (9)
- 47 27 and 46 (1)
- 48 (famil\* adj history).tw. (38382)
- 49 27 and 48 (137)
- 50 ((gastro-oesophageal\$ or gastrooesophageal\$ or gastroesophageal\$ or gastro-  
esophageal\$) adj junction\$).tw. (1937)
- 51 27 and 50 (332)
- 52 exp Diet/ (183353)
- 53 (diet\$ or food\$ or nutrition\$).tw. (636973)
- 54 52 or 53 (700671)
- 55 27 and 54 (1154)
- 56 exp Smoking/ (115460)
- 57 (smok\$ or cigarette\$ or cigar\$ or tobacco\$).tw. (201772)
- 58 56 or 57 (229102)
- 59 27 and 58 (484)
- 60 exp Drinking Behavior/ (54157)
- 61 (alcohol\$ or drink\$).tw. (260642)
- 62 or/60-61 (272215)
- 63 27 and 62 (559)

- 64 body mass index/ (72497)
- 65 (body mass index\$ or bmi\$ or quetelet\$ index\$.tw. (110696)
- 66 Body Weight/ (156912)
- 67 exp Overweight/ (131550)
- 68 (weight\$ or overweight\$ or obes\$ or body fat).tw. (729928)
- 69 or/64-68 (888634)
- 70 27 and 69 (1677)
- 71 Age Factors/ (358917)
- 72 Aging/ (180659)
- 73 Geriatrics/ (26153)
- 74 exp Aged/ (2217442)
- 75 Middle Aged/ (3152892)
- 76 (age\$ or aging or elder\$ or geriatric\$ or old\$.tw. (2851598)
- 77 or/71-76 (5547763)
- 78 33 and 77 (1955)
- 79 Sex/ (7200)
- 80 Sex Factors/ (202863)
- 81 Men/ (2537)
- 82 Women/ (13211)
- 83 (sex or sexes or gender\$ or male\$ or female\$ or man or woman or women or men).tw. (2096355)
- 84 or/79-83 (2180475)
- 85 33 and 84 (886)
- 86 exp Population Groups/ (197734)
- 87 eh.fs. (115535)
- 88 (ethnic\$ or ethno\$ or race\$ or racial\$.tw. (155957)
- 89 or/86-88 (343593)
- 90 27 and 89 (280)

**Health economics questions on Q2: Symptoms indicating endoscopy for Barrett's oesophagus plus economic evaluations filter**

The searches were undertaken in January 2013. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence

Database: Ovid MEDLINE(R) <1946 to November Week 3 2012>

Search Strategy:

- 
- 1 Barrett Esophagus/ (5721)
  - 2 barrett\$.tw. (6728)
  - 3 ((column\$ or speciali\$ or intestinali\$) adj3 (epithel\$ or oesophag\$ or esophag\$ or mucos\$)).tw. (4248)
  - 4 or/1-3 (10773)
  - 5 exp Endoscopy/ (239333)
  - 6 (endoscop\$ or gastroscop\$ or videoscop\$).tw. (124226)
  - 7 chromoendoscop\$.tw. (520)
  - 8 (esophagoscop\$ or oesophagoscop\$).tw. (1759)
  - 9 or/5-8 (288290)
  - 10 4 and 9 (3859)
  - 11 risk factors/ (509982)
  - 12 risk\$.tw. (1089808)
  - 13 or/11-12 (1277173)
  - 14 10 and 13 (1162)
  - 15 exp Hernia/ (58796)
  - 16 (hernia\$ or enterocele\$).tw. (47965)
  - 17 15 or 16 (71313)
  - 18 10 and 17 (365)
  - 19 Eructation/ (277)
  - 20 (eructat\$ or belch\$ or burp\$).tw. (971)
  - 21 19 or 20 (1080)
  - 22 10 and 21 (12)

- 23 Chest Pain/ (8528)
- 24 ((chest or thora\$) adj3 (pain\$ or ache\$ or discomfort\$)).tw. (23962)
- 25 Heartburn/ (1546)
- 26 (heartburn\$ or pyros\$).tw. (6758)
- 27 or/23-26 (33479)
- 28 10 and 27 (308)
- 29 bile\$ reflux\$.tw. (683)
- 30 10 and 29 (40)
- 31 ((gastro-oesophageal\$ or gastrooesophageal\$ or gastroesophageal\$ or gastro-  
esophageal\$) adj junction\$).tw. (1885)
- 32 10 and 31 (182)
- 33 exp Diet/ (178778)
- 34 (diet\$ or food\$ or nutrition\$).tw. (620250)
- 35 33 or 34 (683111)
- 36 10 and 35 (78)
- 37 exp Smoking/ (113467)
- 38 (smok\$ or cigarette\$ or cigar\$ or tobacco\$).tw. (197375)
- 39 37 or 38 (224382)
- 40 10 and 39 (117)
- 41 exp Drinking Behavior/ (53104)
- 42 (alcohol\$ or drink\$).tw. (255464)
- 43 or/41-42 (266912)
- 44 10 and 43 (100)
- 45 body mass index/ (69416)
- 46 (body mass index\$ or bmi\$ or quetelet\$ index\$).tw. (105683)
- 47 Body Weight/ (155399)
- 48 exp Overweight/ (127702)
- 49 (weight\$ or overweight\$ or obes\$ or body fat).tw. (711690)
- 50 or/45-49 (866901)
- 51 10 and 50 (184)

- 52 Age Factors/ (353807)
- 53 Aging/ (178208)
- 54 Geriatrics/ (26028)
- 55 exp Aged/ (2180488)
- 56 Middle Aged/ (3100516)
- 57 (age\$ or aging or elder\$ or geriatric\$ or old\$).tw. (2786610)
- 58 or/52-57 (5449058)
- 59 14 and 58 (688)
- 60 Sex/ (7245)
- 61 Sex Factors/ (199058)
- 62 Men/ (2519)
- 63 Women/ (13153)
- 64 (sex or sexes or gender\$ or male\$ or female\$ or man or woman or women or men).tw. (2053611)
- 65 or/60-64 (2137179)
- 66 14 and 65 (303)
- 67 exp Population Groups/ (192157)
- 68 eh.fs. (112208)
- 69 (ethnic\$ or ethno\$ or race\$ or racial\$).tw. (150987)
- 70 or/67-69 (333935)
- 71 10 and 70 (90)

**Economic searches on Review Question 3: Dyspepsia – referral to consultancy led services**

The searches were undertaken in June 2013. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence

Database: Ovid MEDLINE(R) <1946 to June Week 1 2013>

Search Strategy:

- 
- 1 Dyspepsia/ (7104)
  - 2 (dyspep\$ or indigestion\$).tw. (10283)

- 3 waterbrash\$.tw. (9)
- 4 (regurg\$ not (mitral\$ or vascular\$ or pulmonar\$)).tw. (10180)
- 5 Heartburn/ (1675)
- 6 heartburn\$.tw. (3729)
- 7 pyros\$.tw. (4408)
- 8 acid exposure.tw. (2064)
- 9 exp Esophagitis/ (9438)
- 10 (esophagit\$ or oesophagit\$).tw. (11129)
- 11 exp Gastritis/ (17784)
- 12 (gastrit\$ or gastr\$ stas\$).tw. (16950)
- 13 exp Gastroesophageal Reflux/ (21360)
- 14 exp Duodenogastric Reflux/ (1575)
- 15 (gord or gerd or ger).tw. (7359)
- 16 reflux\$.tw. (39318)
- 17 exp Peptic Ulcer/ (72084)
- 18 ((peptic\* or marginal\* or gastroduodenal\* or curling\*) adj1 ulcer\*).tw. (24585)
- 19 Esophageal Sphincter, Lower/ (609)
- 20 lower esophageal sphincter.tw. (3349)
- 21 lower oesophageal sphincter.tw. (917)
- 22 or/1-21 (161641)
- 23 Consultants/ (5634)
- 24 Specialization/ (21087)
- 25 Gastroenterology/ (7659)
- 26 (consultant\$ or speciali\$ or gastroenterolog\$ or proctolog\$ or expert\$).tw. (241395)
- 27 exp Hospitals/ (194688)
- 28 exp Hospital Units/ (74766)
- 29 exp Hospitalization/ (151911)
- 30 hospital\$.tw. (744975)
- 31 (tertiary-care or secondary-care).tw. (24034)



- 32 ((tertiary or secondary) adj3 (care or service\$ or center\$ or centre\$ or practice\$)).tw. (39887)
- 33 General Surgery/ (32747)
- 34 exp Surgical Procedures, Operative/ (2314506)
- 35 (surg\$ or operation\$ or operative\$).tw. (1462215)
- 36 Outpatients/ (8472)
- 37 Outpatient Clinics, Hospital/ (14128)
- 38 (outpatient\$ or out-patient\$).tw. (111536)
- 39 Inpatients/ (12079)
- 40 (inpatient\$ or in-patient\$).tw. (1081478)
- 41 or/23-40 (4606154)
- 42 22 and 41 (76731)
- 43 exp "Referral and Consultation"/ (54863)
- 44 (refer or referr\$ or consult\$ or second opinion\$ or gatekeep\$).tw. (254611)
- 45 43 or 44 (279750)
- 46 42 and 45 (2627)
- 47 Ambulatory Care/ or ambulatory care facilities/ (46189)
- 48 Primary Health Care/ (52103)
- 49 exp General Practice/ (62966)
- 50 General Practitioners/ (1558)
- 51 Physicians, Family/ (14791)
- 52 Physicians, Primary Care/ (963)
- 53 gp\$.tw. (107669)
- 54 ((general or family) adj (practice\$ or practitioner\$ or physician\$ or doctor\$)).tw. (76526)
- 55 primary-care.tw. (63248)
- 56 ((primary or ambulatory) adj3 (care or health\$ or service\$ or center\$ or centre\$ or practice\$)).tw. (95956)
- 57 Community Health Services/ (26382)
- 58 Community health nursing/ (18097)
- 59 ((walkin or walk-in or "walk in" or community health) adj3 (care or service\$ or centre\$ or center\$ or clinic\$ or facilit\$)).tw. (4810)

60 or/47-59 (372571)

61 22 and 45 and 60 (543)

62 46 or 61 (2755)

**Health economics studies on RQ 4 clinical effectiveness of PPIs in patients with severe erosive reflux disease**

The searches were undertaken in May 2013. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence

Database: Ovid MEDLINE(R) <1946 to May Week 1 2013>

Search Strategy:

- 
- 1 exp Gastroesophageal Reflux/ (21027)
  - 2 exp Duodenogastric Reflux/ (1565)
  - 3 (reflux\$ or gord or gerd or ger).tw. (39779)
  - 4 exp Esophagitis/ (9302)
  - 5 (esophagi\$ or oesophagi\$).tw. (11290)
  - 6 exp Gastritis/ (17631)
  - 7 (gastrit\$ or gastr\$ stas\$).tw. (16681)
  - 8 or/1-7 (73538)
  - 9 Proton Pump Inhibitors/ (3052)
  - 10 Omeprazole/ (8882)
  - 11 (ppi\$ or proton pump\$ or omeprazole\$ or losec\$ or rabeprazole\$ or pariet\$ or pantoprazole\$ or protium\$ or lansoprazole\$ or zoton\$ or esomeprazole\$ or nexium\$ or emozul\$).tw. (68843)

**Health economics studies on RQ 5 *H.pylori***

The searches were undertaken in November 2011 and updated in Feb 2013. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence

- 1 sequen\$.tw. (780022)
- 2 tripl\$.tw. (57062)
- 3 quadrupl\$.tw. (6508)
- 4 ((standard\$ or convention\$) adj3 (therap\$ or treat\$ or regim\$)).tw. (72267)

- 5 or/1-4 (902378)
- 6 Proton Pump Inhibitors/ (2108)
- 7 Omeprazole/ (8195)
- 8 (ppi\$ or proton pump\$ or omeprazole\$ or losec\$ or rabeprazole\$ or pariet\$ or pantoprazole\$ or protium\$ or lansoprazole\$ or zoton\$ or esomeprazole\$ or nexium\$).tw. (63366)
- 9 or/6-8 (65253)
- 10 exp Nitroimidazoles/ (14387)
- 11 (nitroimidazole\$ or antiprotozoal\$ or metronidazole\$ or flagyl\$ or tinidazole\$ or fasigyn\$).tw. (12981)
- 12 Clarithromycin/ (4696)
- 13 (clarithromycin\$ or klaricid\$).tw. (5782)
- 14 exp Amoxicillin/ (8484)
- 15 (amox\$ or amix\$ or amoram\$ or amoxident\$ or alenamox\$ or rimoxallin\$).tw. (11714)
- 16 Bismuth/ (4343)
- 17 (bismuth\$ or tripotassium\$ or tri-potassium\$ or tri potassium\$ or de-noltab\$ or denoltab\$ or de noltab\$).tw. (4148)
- 18 exp Tetracyclines/ (38179)
- 19 tetracyclin\$.tw. (25264)
- 20 exp Quinolones/ (31777)
- 21 (quinolon\$ or levofloxacin\$ or tavinic\$ or moxifloxacin\$ or avelox\$).tw. (13087)
- 22 or/10-21 (119449)
- 23 9 and 22 (3112)
- 24 5 or 23 (904002)
- 25 exp Helicobacter/ (27822)
- 26 Helicobacter Infections/ (23064)
- 27 exp Campylobacter/ (9027)
- 28 (helicobac\$ or campylobact\$ or pylori\$).tw. (47975)
- 29 or/25-28 (50973)
- 30 24 and 29 (7159)

**Health economics searches on review Question 6 - Effectiveness of laparoscopic fundoplication compared to medical management in patients with GORD**

The searches were undertaken in November 2011. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence

Database: Ovid MEDLINE(R) <1948 to November Week 3 2011>

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- 1 exp Gastroesophageal Reflux/ (19796)
- 2 exp Duodenogastric Reflux/ (1567)
- 3 (reflux\$ or gord or gerd or ger).tw. (37759)
- 4 Esophageal Sphincter, Lower/ (466)
- 5 lower esophageal sphincter.tw. (3192)
- 6 lower oesophageal sphincter.tw. (893)
- 7 (les or los).tw. (15977)
- 8 Heartburn/ (1461)
- 9 heartburn\$.tw. (3294)
- 10 pyros\$.tw. (2439)
- 11 acid exposure.tw. (1801)
- 12 Dyspepsia/ (6800)
- 13 (dyspep\$ or indigestion\$).tw. (9598)
- 14 (regurg\$ or waterbrash\$).tw. (23945)
- 15 exp Esophagitis/ (8866)
- 16 (esophagi\$ or oesophagi\$).tw. (10675)
- 17 exp Gastritis/ (17444)
- 18 (gastrit\$ or gastr\$ stas\$).tw. (16251)
- 19 or/1-18 (120456)
- 20 Fundoplication/ (3123)
- 21 fundoplicat\$.tw. (3941)
- 22 gastroplicat\$.tw. (50)
- 23 nissen.tw. (2208)
- 24 (toupet or lind or watson or besley or hill).tw. (15508)

- 25 (antireflux\$ or anti-reflux\$ or anti reflux\$).tw. (4362)
- 26 or/20-25 (22949)
- 27 19 and 26 (6329)

**Health economics searches on review Question 7 – other medical or surgical treatments for GORD/dyspepsia**

The searches were undertaken in July 2013. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence

Database: Ovid MEDLINE(R) <1946 to June Week 4 2013>

Search Strategy:

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- 1 exp Gastroesophageal Reflux/ (21834)
  - 2 exp Duodenogastric Reflux/ (1598)
  - 3 (reflux\$ or gord or gerd or ger).tw. (41116)
  - 4 Esophageal Sphincter, Lower/ (636)
  - 5 lower esophageal sphincter.tw. (3396)
  - 6 lower oesophageal sphincter.tw. (951)
  - 7 (les or los).tw. (18554)
  - 8 Heartburn/ (1711)
  - 9 heartburn\$.tw. (3837)
  - 10 pyros\$.tw. (4848)
  - 11 acid exposure.tw. (2136)
  - 12 Dyspepsia/ (7239)
  - 13 (dyspep\$ or indigestion\$).tw. (10520)
  - 14 (regurg\$ or waterbrash\$).tw. (25940)
  - 15 exp Esophagitis/ (9626)
  - 16 (esophagi\$ or oesophagi\$).tw. (11821)
  - 17 exp Gastritis/ (18039)
  - 18 (gastrit\$ or gastr\$ stas\$).tw. (17309)
  - 19 exp Abdominal Pain/ (25169)

- 20 ((abdom\$ or stomach\$) adj3 (ache\$ or pain\$ or discomfort\$)).tw. (38261)
- 21 or/1-20 (184907)
- 22 Proton Pump Inhibitors/ (3452)
- 23 Omeprazole/ (9602)
- 24 (ppi\$ or proton pump\$ or omeprazole\$ or losec\$ or rabeprazole\$ or pariet\$ or pantoprazole\$ or protium\$ or lansoprazole\$ or zoton\$ or esomeprazole\$ or nexium\$ or emozul\$).tw. (73807)
- 25 or/22-24 (75976)
- 26 (nocturn\$ or night\$ or evening\$ or bed\$ or sleep\$).tw. (265507)
- 27 ((split\$ or separat\$ or divi\$ or even\$ or spread\$ or multipl\$ or alter\$ or chang\$ or reduc\$ or less\$ or small\$ or low\$) adj3 dos\$).tw. (212809)
- 28 25 and (26 or 27) (3312)
- 29 21 and 28 (952)
- 30 exp Histamine H2 Antagonists/ (18438)
- 31 (h2ra\$ or h2-ra\$ or "h2 ra\$").tw. (456)
- 32 (histamin\$ adj3 (antagon\$ or block\$ or recep\$)).tw. (11644)
- 33 (h2\$ adj3 (antagon\$ or hist\$ or block\$ or recep\$)).tw. (15499)
- 34 cimetidin\$.tw. (10324)
- 35 tagamet.tw. (97)
- 36 ranitidin\$.tw. (5605)
- 37 zantac.tw. (58)
- 38 famotidin\$.tw. (1728)
- 39 nizatidin\$.tw. (375)
- 40 axid.tw. (11)
- 41 or/30-40 (36871)
- 42 25 and 41 (4294)
- 43 21 and 42 (1658)
- 44 Dopamine Antagonists/ (9777)
- 45 (dopamin\$ adj3 (receptor\$ or antagonist\$)).tw. (29089)
- 46 prokinetic\$.tw. (2029)
- 47 Metoclopramide/ (4516)

- 48 (metoclopramide or maxolon).tw. (5018)
- 49 Domperidone/ (1556)
- 50 (domperidone or motilium).tw. (1883)
- 51 (itopride or ganaton).tw. (73)
- 52 (mosapride or biononus).tw. (211)
- 53 or/44-52 (41139)
- 54 21 and 53 (1541)
- 55 exp Laparoscopy/ (66357)
- 56 laparoscopes/ (3399)
- 57 surgical procedures, Minimally Invasive/ (16403)
- 58 (laparoscop\$ or celioscop\$ or keyhole\$).tw. (77671)
- 59 or/55-58 (101549)
- 60 Fundoplication/ (3485)
- 61 fundoplicat\$.tw. (4270)
- 62 gastroplicat\$.tw. (51)
- 63 nissen.tw. (2360)
- 64 (toupet or lind or watson or besley or hill).tw. (17231)
- 65 (antireflux\$ or anti-reflux\$ or anti reflux\$).tw. (4603)
- 66 or/60-65 (25195)
- 67 59 and 66 (3160)
- 68 21 and 67 (2451)
- 69 29 or 43 or 54 or 68 (6046)

**Health economics studies for RQ8 on Barrett’s oesophagus surveillance**

The searches were undertaken in June 2012. Search filters to retrieve economic evaluations and quality of life papers were appended to the following search strategy to identify relevant evidence.

Database: Ovid MEDLINE(R) <1946 to June Week 3 2012>

Search Strategy:

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- 1 Barrett Esophagus/ (5540)
- 2 barrett\$.tw. (6502)
- 3 ((column\$ or speciali\$ or intestinali\$) adj3 (epithel\$ or oesophag\$ or esophag\$ or mucos\$)).tw. (4150)
- 4 ((metaplas\$ or dysplasi\$ or neoplasia\$) adj3 (column\$ or intestin\$ or epithel\$ or oesophag\$ or esophag\$ or mucos\$ or high-grade\$ or low-grade\$)).tw. (13889)
- 5 or/1-4 (21677)
- 6 exp Mass Screening/ (91380)
- 7 exp Population Surveillance/ (44528)
- 8 (screen\$ or surveillan\$ or monitor\$).tw. (850390)
- 9 or/6-8 (903995)
- 10 exp Endoscopy/ (232503)
- 11 endoscop\$.tw. (117555)
- 12 chromoendoscop\$.tw. (493)
- 13 (esophagoscop\$ or oesophagoscop\$).tw. (1734)
- 14 exp Biopsy/ (206772)
- 15 biops\$.tw. (253125)
- 16 or/10-15 (607756)
- 17 9 and 16 (43821)
- 18 5 and 17 (2236)

### **Health economics filters**

The MEDLINE economic evaluations and quality of life search filters are presented below. They were translated for use in the MEDLINE In-Process and Embase databases.

### **Specific economic evaluations filter**

1. "Value of Life"/ (5218)
2. Quality-Adjusted Life Years/ (5682)
3. quality adjusted life.tw. (4551)
4. (qaly\$ or qald\$ or qale\$ or qtime\$).tw. (3807)
5. disability adjusted life.tw. (870)
6. daly\$.tw. (882)



7. Health Status Indicators/ (17920)
8. (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw. (12459)
9. (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw. (898)
10. (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw. (1936)
11. (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw. (18)
12. (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw. (308)
13. (euroqol or euro qol or eq5d or eq 5d).tw. (2690)
14. (hye or hyes).tw. (52)
15. health\$ year\$ equivalent\$.tw. (36)
16. (health adj3 state adj3 utilit\$).tw. (232)
17. (utilit\$ adj3 (health\$ or valu\$ or weight\$ or scor\$ or measure\$)).tw. (4170)
18. (hui or hui1 or hui2 or hui3).tw. (698)
19. disutili\$.tw. (168)
20. rosser.tw. (72)
21. quality of wellbeing.tw. (5)
22. quality of well-being.tw. (297)
23. qwb.tw. (150)
24. willingness to pay.tw. (1659)
25. standard gamble\$.tw. (578)
26. time trade off.tw. (600)
27. time tradeoff.tw. (190)
28. tto.tw. (456)
29. (preferen\$ weight\$ or health state preferen\$).tw. (209)
30. Or/1-29

### **Economic evaluations**

- 1 Economics/

- 2 exp "Costs and Cost Analysis"/
- 3 Economics, Dental/
- 4 exp Economics, Hospital/
- 5 exp Economics, Medical/
- 6 Economics, Nursing/
- 7 Economics, Pharmaceutical/
- 8 Budgets/
- 9 exp Models, Economic/
- 10 Markov Chains/
- 11 Monte Carlo Method/
- 12 Decision Trees/
- 13 econom\$.tw.
- 14 cba.tw.
- 15 cea.tw.
- 16 cua.tw.
- 17 markov\$.tw.
- 18 (monte adj carlo).tw.
- 19 (decision adj2 (tree\$ or analys\$)).tw.
- 20 (cost or costs or costing\$ or costly or costed).tw.
- 21 (price\$ or pricing\$).tw.
- 22 budget\$.tw.
- 23 expenditure\$.tw.
- 24 (value adj2 (money or monetary)).tw.
- 25 (pharmacoeconomic\$ or (pharmaco adj economic\$)).tw.
- 26 or/1-25

**Quality of life**

1. "Value of Life"/
2. Quality-Adjusted Life Years/
3. quality adjusted life.tw.

4. (qaly\$ or qald\$ or qale\$ or qtime\$).tw.
5. disability adjusted life.tw.
6. daly\$.tw.
7. Health Status Indicators/
8. (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw.
9. (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw.
10. (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw.
11. (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw.
12. (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw.
13. (euroqol or euro qol or eq5d or eq 5d).tw.
14. (hye or hyes).tw.
15. health\$ year\$ equivalent\$.tw.
16. (health adj3 state adj3 utilit\$).tw.
17. (utilit\$ adj3 (health\$ or valu\$ or weight\$ or scor\$ or measure\$)).tw.
18. (hui or hui1 or hui2 or hui3).tw.
19. disutili\$.tw.
20. rosser.tw.
21. quality of wellbeing.tw.
22. quality of well-being.tw.
23. qwb.tw.
24. willingness to pay.tw.
25. standard gamble\$.tw.
26. time trade off.tw.
27. time tradeoff.tw.
28. tto.tw.
29. (preferen\$ weight\$ or health state preferen\$).tw.

30. or/1-30