NICE has accredited the process used by surgical specialty associations and Royal College of Surgeons to produce its commissioning guidance. Accreditation is valid for five years from September 2012.

More information on accreditation can be viewed at: www.nice.org.uk/accreditation
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## Glossary

<table>
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<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSAID</td>
<td>Non-steroidal anti-inflammatory drugs</td>
</tr>
<tr>
<td>H2RA</td>
<td>Histamine2-receptor antagonists</td>
</tr>
<tr>
<td>PPI</td>
<td>Proton Pump Inhibitors</td>
</tr>
<tr>
<td>GORD</td>
<td>Gastro-oesophageal reflux disease</td>
</tr>
</tbody>
</table>
**Introduction**

This guide focuses on the treatment of gastro-oesophageal reflux symptoms, such as heartburn, regurgitation and swallow discomforts. It should be understood that for most this is a chronic, lifelong condition, requiring a balance of lifestyle measures, medical treatments and occasionally referral for further interventions. For some patients, surgical intervention leads to a better long term result which is cost-effective.

In morbidly obese patients with GORD, bariatric surgery may be the optimum surgical treatment for GORD.

Email: manager@augis.org  
www.augis.org

**1. High Value Care Pathway for GORD**

**1.1 Primary care**

*History*

- Review of all current medication and over-the-counter herbal preparations, specifically NSAIDs/ corticosteroids/ bisphosphonates/ nitrates/ theophylline.
- Identify psychological–social stressors.
- Assess severity of symptoms – Use GerdQ (see directory [patient information] below).
- Physical examination to rule out upper abdominal mass.

*Investigation*

- Full blood count/urea and electrolytes/liver function test/coeliac screen (if iron deficiency anaemia) may assist decision on specialist assessment

*Referral for endoscopy (suspected oesophagogastric cancer)*

- Offer **urgent** upper gastrointestinal endoscopy (to be performed within 2 weeks) in people:
  - with dysphagia
OR

- aged 55 and over with weight loss and any of the following:
  - upper abdominal pain
  - reflux
  - dyspepsia

- Consider **non-urgent** direct access upper gastrointestinal endoscopy in people with haematemesis

- Consider **non-urgent** direct access upper gastrointestinal endoscopy in people aged 55 or over with:
  - treatment-resistant dyspepsia

OR

- upper abdominal pain with low haemoglobin levels or

- raised platelet count with any of the following:
  - nausea
  - vomiting
  - weight loss
  - reflux
  - dyspepsia
  - upper abdominal pain

OR

- nausea or vomiting with any of the following:
  - weight loss
  - reflux
  - dyspepsia
  - upper abdominal pain
Lifestyle advice

- Lifestyle and healthy eating: suggest that the patient decrease the fat content in their diet; make the patient aware of potential food triggers including chocolate/ coffee/ alcohol/ onion/ garlic/ spicy foods
- Weight reduction
- Smoking cessation
- Avoiding recumbency for three hours after meals
- Raising head of bed by 20 cm, or using multiple pillows
- Management of psychological–social stressors if present

Evidence to support this advice is weak but adjustments can help patients cope with reflux so should be considered and tried.

Medical treatment

- Alginate/antacid combination/H2RA treatments useful for mild heartburn.
- A trial of a PPI for one to two months for more persistent symptoms. Many patients require long term therapy necessitating at least annual review. Aim to use lowest effective dose.
- If the patient responds poorly to PPI consider doubling the dose. Reassessment at two to three months +/- Upper GI Endoscopy if symptoms continue.
- If PPI is not well tolerated or effective then patients may respond to H2RA.
- Helicobacter Pylori eradication is not a recognised treatment option for GORD

Consider Referral to Secondary care provider for surgical management if:

- The patient’s quality of life remains significantly impaired
- There are persistent symptoms despite medical treatment and lifestyle modification
- If the patient is intolerant of, or gets side-effects from anti-reflux medication
- If the patient with predominantly volume or regurgitation symptoms
- If the patient expresses a preference to consider surgery rather than continue long term medical treatment. Perform a GerdQ Questionnaire to identify the degree of symptom burden before onward referral as this can be useful in postoperative follow-up.
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GASTRO-OESOPHAGEAL REFLUX DISEASE

- All patients on long term medical treatment for GORD should be made aware of the option of surgery
- Consider the risk versus benefit balance for investigations and treatment before referral

1.2 Secondary Care

Secondary care will provide a re-assessment of the need for further intervention and a balance of the potential risks and outcomes.

Indications for surgical procedures include:

- Volume reflux with regurgitation as a predominant symptom
- Breakthrough symptoms of heartburn that are refractory to optimal medical therapy.
- Intolerance of proton pump inhibitors
- Patient preference to avoid lifelong medication
- Atypical symptoms such as aspiration, cough or hoarse voice if confirmed on pH testing

Investigation

- Upper GI Endoscopy to assess the degree of oesophageal injury, diagnose the presence or absence of Barrett’s oesophagus and exclude other pathology
- Oesophageal manometry and 24-hour pH monitoring studies to prove the presence of pathological reflux and to exclude the presence of underlying oesophageal motility disorders
- Consider intra-luminal impedance study or prolonged 24 hr pH studies if diagnostic difficulties

What does surgery involve?

Anti-reflux surgery should be performed laparoscopically in greater than 90% of patients, and can be performed as a day case or with a short inpatient admission. An increasing number of units are carrying out these operations as day cases, and all units should be encouraged to develop day case laparoscopic anti-reflux surgery.
There are a number of different surgical procedures described (e.g. Nissen, Toupet and Watson fundoplication's), which are all variations of the degree and shape of folding the stomach around the lower oesophagus.

The components of anti-reflux surgery involve:
- Repairing the hiatus (the opening in the diaphragm through which the oesophagus passes), thus fixing a hiatus hernia
- Fundoplication, which creates a barrier to the reflux of gastric contents into the oesophagus by wrapping the upper part of the stomach (fundus) around the oesophagus, creating a sling

There is debate around the 'optimal' fundoplication, but the approach depends on the training and personal experience of the operating surgeon. It would not be appropriate to recommend any particular type of fundoplication over another.

The most important determinant of a good outcome in a population after anti-reflux surgery is appropriate selection of patients for surgery.

There are some situations where an adverse outcome is more likely and they include:
- Failure of acid suppression to make any difference to symptom control. Classical and volume reflux symptoms should be partially controlled or, at least, helped by acid-suppression therapy.
- Normal preoperative 24-hour pH tracing.
- Co-existent oesophageal motility disorder.
- Gastroparesis or significant symptoms suggestive of irritable bowel syndrome.
- Atypical reflux symptoms – this group has a lower success rate from surgery than patients with classical or volume reflux.

2. Procedures explorer for GORD

1. Nissen 360 degree fundoplication + repair hiatus
2. Watson partial anterior fundoplication + repair hiatus
3. Toupet partial posterior fundoplication repair hiatus
There is no strong evidence of benefit of one type of fundoplication over another and thus surgeons should do whichever procedure they are comfortable with.

There is no evidence of benefit using the da Vinci robot for antireflux surgery.

There is no evidence of benefit of the use of absorbable or non-absorbable meshes.

Procedures that are under research regulation or restricted to long term registry follow-up (these are not recommended for commissioning but may form part of the range of procedures offered at specialist centres performing suitable registered research projects):

1. **Stretta**: endoscopic microwave ablation
2. **Esophyx**: endoscopic plication (Transoral Incisionless Fundoplication TIF)
3. **Linx**: magnetic bead bracelet around oesophagus
4. **Endostim**: electrical stimulation of the lower oesophageal sphincter

Users can access further procedure information based on the data available in the quality dashboard to see how individual providers are performing against the indicators. This will enable CCGs to start a conversation with providers who appear to be 'outliers' from the indicators of quality that have been selected.

The Procedures Explorer Tool is available via the [Royal College of Surgeons](https://www.rcseng.ac.uk) website.

### 3. Quality dashboard for GORD

The evidence shows clearly that laparoscopic anti-reflux surgery provides an equivalent or better clinical outcome to the most effective medical therapy. Longer term studies show that laparoscopic anti-reflux surgery is more cost-effective than medication.

Overall patients report 85-90% satisfaction with the results of surgery.

Laparoscopic anti-reflux surgery has a low mortality (less than 1:1000) with most deaths ascribed to postoperative cardiac events. Complications specific to laparoscopic anti-reflux surgery can be divided into immediate or delayed, with the former being much rarer (less than 1:100), but tending to require operative intervention.

Immediate complications include:

- bleeding;
- perforation of oesophagus/proximal stomach;
- re-herniation of the stomach into the chest;
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GASTRO-OESOPHAGEAL REFLUX DISEASE

- slippage of the wrap.

Delayed complications include:
- persistent severe dysphagia (difficulty in swallowing) necessitating intervention
- re-herniation of the stomach into the chest
- undoing or slippage of the wrap

Side effects of the surgery include:
- mild dysphagia (difficulty in swallowing)
- early satiety (getting full up easily after eating)
- passing excessive flatus
- gas bloat – the sensation of ‘trapped wind’ after eating due to the inability to ‘burp’ after surgery;
- diarrhoea – relatively rare and the exact mechanism is unclear.

There is increasing uptake of day-case laparoscopic anti-reflux surgery; there is a 5-10% unplanned admission rate, and an unplanned readmission rate of 10-20% in the first week after surgery - this does not translate into higher reoperation rates.

The quality dashboard provides an overview of activity commissioned by CCGs from the relevant pathways, and indicators of the quality of care provided by surgical units.
The quality dashboard is available via the Royal College of Surgeons website.

4. Levers for implementation

4.1 Audit and peer review measures

The following measures and standards are those expected at primary and secondary care.
Evidence should be able to be made available to commissioners if requested.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care</td>
<td>Assessment Use of the GERDQ questionnaire before referral</td>
</tr>
<tr>
<td></td>
<td>Referral Appropriate lifestyle and medical therapy and review before referral</td>
</tr>
<tr>
<td>Secondary</td>
<td>Assessment Ensure adequate balance of potential risks and benefits of</td>
</tr>
</tbody>
</table>
**Commissioning guide 2016**

**GASTRO-OESOPHAGEAL REFLUX DISEASE**

<table>
<thead>
<tr>
<th>care</th>
<th>endoscopy, manometry and pH tests before decision for intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Offer procedures with NICE recommendation. Do not offer untested procedures outside registered research trial</td>
</tr>
</tbody>
</table>

### 4.2 Quality Specification/CQUIN

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Data specification (if required)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length of stay</strong></td>
<td>Provider demonstrates a median of one day</td>
<td>Data available from HES</td>
</tr>
<tr>
<td><strong>Rates for laparoscopic approach</strong></td>
<td>Provider demonstrates a laparoscopic rate of &gt;90%</td>
<td>Data available from HES</td>
</tr>
<tr>
<td><strong>Rates of conversion to open surgery</strong></td>
<td>Provider demonstrates conversion rates of &lt;5%</td>
<td>Data available from HES</td>
</tr>
<tr>
<td><strong>Readmission rates</strong></td>
<td>Provider demonstrates readmission rates of &lt;5% (2 days) and &lt;10% (thirty days)</td>
<td>Data available from HES</td>
</tr>
<tr>
<td><strong>Re-operation rates</strong></td>
<td>Provider demonstrates re-operation rates of &lt;5%</td>
<td>Data available from HES</td>
</tr>
<tr>
<td><strong>Surgeon minimum volume</strong></td>
<td>Provider demonstrates minimum number of operations per surgeon per year &gt;5</td>
<td>Data available from HES</td>
</tr>
<tr>
<td><strong>Patient Reported Outcome Measured by GERDQ questionnaire</strong></td>
<td>Provider demonstrates satisfactory outcome &gt;80%</td>
<td></td>
</tr>
</tbody>
</table>
## 5. Directory

### 5.1 Patient Information for GORD

<table>
<thead>
<tr>
<th>Name</th>
<th>Publisher</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid reflux and oesophagitis</td>
<td>Patient.co.uk</td>
<td><a href="http://www.patient.co.uk/health/acid-reflux-and-oesophagitis">http://www.patient.co.uk/health/acid-reflux-and-oesophagitis</a></td>
</tr>
<tr>
<td>Fight Oesophageal reflux together</td>
<td>FORT</td>
<td><a href="http://www.fortcharity.org.uk">http://www.fortcharity.org.uk</a></td>
</tr>
<tr>
<td>Heartburn and cancer awareness and support</td>
<td>HCAS</td>
<td><a href="http://www.h-cas.org">http://www.h-cas.org</a></td>
</tr>
</tbody>
</table>

### 5.2 Clinician information for GORD

<table>
<thead>
<tr>
<th>Name</th>
<th>Publisher</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>GORD and dyspepsia in adults: investigation and management (CG184)</td>
<td>NICE</td>
<td><a href="https://www.nice.org.uk/guidance/cg184">https://www.nice.org.uk/guidance/cg184</a></td>
</tr>
<tr>
<td>Suspected cancer: recognition and referral (NG12)</td>
<td>NICE</td>
<td><a href="https://www.nice.org.uk/guidance/ng12">https://www.nice.org.uk/guidance/ng12</a></td>
</tr>
<tr>
<td>Dyspepsia and GORD in adults (QS96)</td>
<td>NICE</td>
<td><a href="https://www.nice.org.uk/guidance/qs96">https://www.nice.org.uk/guidance/qs96</a></td>
</tr>
<tr>
<td>Laparoscopic insertion of a magnetic bead band for GORD (IPG431/1)</td>
<td>NICE</td>
<td><a href="https://www.nice.org.uk/guidance/IPG431">https://www.nice.org.uk/guidance/IPG431</a></td>
</tr>
</tbody>
</table>
6. Benefits and risks of implementing this guide

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Benefit</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient outcome</strong></td>
<td>Ensure access to effective conservative, medical and surgical therapy</td>
<td>Unrecognised deterioration on conservative therapy</td>
</tr>
<tr>
<td><strong>Patient safety</strong></td>
<td>Reduce chance of missing oesophageal malignancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reduce re-operations for reflux disease</td>
<td></td>
</tr>
<tr>
<td><strong>Patient experience</strong></td>
<td>Improve access to patient information, support groups</td>
<td>Inappropriate or excess self-medication</td>
</tr>
<tr>
<td><strong>Equity of access</strong></td>
<td>Improve access to effective procedures</td>
<td>Unnecessary and ineffective surgery</td>
</tr>
<tr>
<td><strong>Resource impact</strong></td>
<td>Reduce unnecessary referral and intervention</td>
<td></td>
</tr>
</tbody>
</table>
7. Further information

7.1 Research recommendations

- Use of GERD-Q score to guide referral and management

7.2 Evidence base


### 7.3 Guide development group for GORD

A commissioning guide development group was established to review and advise on the content of the commissioning guide. This group met once, with additional interaction taking place via email and teleconference.

<table>
<thead>
<tr>
<th>Name</th>
<th>Job Title/Role</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Nick Maynard</td>
<td>Chair and Consultant General Surgeon</td>
<td>AUGIS</td>
</tr>
<tr>
<td>Mr Ashraf Rasheed</td>
<td>Consultant General Surgeon</td>
<td>AUGIS</td>
</tr>
<tr>
<td>Mr Ian Beckingham</td>
<td>Consultant General Surgeon</td>
<td>AUGIS</td>
</tr>
<tr>
<td>Dr John Painter</td>
<td>Consultant Gastroenterologist</td>
<td>City Hospitals Sunderland NHS Foundation Trust</td>
</tr>
<tr>
<td>Ms Ruth Marsden</td>
<td>Patient representative</td>
<td>Vice Chair, Healthwatch and Public Involvement Association</td>
</tr>
</tbody>
</table>

### 7.4 Funding statement

The development of this commissioning guidance has been funded by the following sources:

- The Royal College of Surgeons of England funded the costs of literature search
The Association of Upper Gastrointestinal Surgeons (AUGIS) of Great Britain and Ireland supported the meetings and administration to support the guideline development.