This guideline covers

This guideline covers the diagnosis and management of diverticular disease in people aged 18 years and over. It includes symptoms and signs of diverticular disease, diagnosing acute diverticulitis, and managing complications of complicated acute diverticulitis. It also covers information and advice for people with the disease.

Who is it for?

- Healthcare professionals in primary care
- Healthcare professionals in secondary care
- People with diverticular disease, their families and carers, and the public

This draft guideline contains:

- the draft recommendations
- recommendations for research
- rationale and impact sections that explain why the committee made the recommendations and how they might affect practice
- the guideline context.

Information about how the guideline was developed is on the guideline’s page on the NICE website. This includes the evidence reviews, the scope, and details of the committee and any declarations of interest.
## Contents

1. Recommendations ................................................................................................................. 3
2. 1.1 Diverticulosis .................................................................................................................. 3
3. 1.2 Diverticular disease .......................................................................................................... 4
4. 1.3 Acute diverticulitis ........................................................................................................... 5
5. 1.4 Information ...................................................................................................................... 14
6. Terms used in this guideline ................................................................................................. 15
7. Recommendations for research ............................................................................................ 15
8. 1 Non-surgical management of acute diverticulitis ............................................................... 15
9. 2 Conservative management for preventing diverticular disease ......................................... 16
10. 3 Managing diverticular disease ......................................................................................... 16
11. 4 Information and support .................................................................................................. 16
12. 5 Timing of surgery for complicated acute diverticulitis ..................................................... 16
13. Other recommendations for research .................................................................................. 16
14. Rationale and impact ............................................................................................................ 17
15. Diverticulosis management and advice ................................................................................ 17
16. Diverticular disease ............................................................................................................. 18
17. Acute diverticulitis ............................................................................................................... 20
18. Information ........................................................................................................................ 29
19. Context .................................................................................................................................. 30
20. Finding more information and resources ............................................................................ 30
Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in your care. 

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

1.1 Diverticulosis

Management and advice

1.1.1 Tell people with diverticulosis that the condition is asymptomatic and no specific treatments are needed.

1.1.2 Advise people to eat a healthy, balanced diet including whole grains, fruit and vegetables. Tell them that:

- there is no need to avoid seeds, nuts or fruit skins
- if they have constipation and a low-fibre diet, increasing their fibre intake gradually may minimise flatulence and bloating.

1.1.3 Advise people to drink adequate fluid if they are increasing their fibre intake, especially if there is a risk of dehydration.

1.1.4 Consider bulk-forming laxatives for people with constipation.

1.1.5 Tell people about the benefits of exercise, and weight loss if they are overweight or obese, in reducing the risk of developing acute diverticulitis and symptomatic disease.

To find out why the committee made the recommendations on diverticulosis management and advice and how they might affect practice, see rationale and impact.
1. **Diverticular disease**

2. **Symptoms and signs**

3. 1.2.1 Suspect diverticular disease if a person presents with one or both of the following:

4. - intermittent abdominal pain in the left lower quadrant with constipation, diarrhoea or occasional large rectal bleeds (the pain may be triggered by eating and relieved by the passage of stool or flatus)

5. - tenderness in the left lower quadrant on abdominal examination.

6. Be aware that in a minority of people and in people of Asian origin, pain and tenderness may be localised in the right lower quadrant.

7. **Investigations and referral**

8. 1.2.2 For people with suspected diverticular disease:

9. - consider organising routine endoscopic and/or radiological investigations from primary care or

10. - follow the routine local referral pathway to secondary care.

11. 1.2.3 If the person meets the criteria for a suspected cancer pathway, refer by this route (see NICE’s guideline on suspected cancer: recognition and referral).

12. **Management and advice**

13. 1.2.4 Do not offer antibiotics to people with diverticular disease.
DRAFT FOR CONSULTATION

1.2.5 For advice on diet, fluid intake, weight loss and exercise, follow the recommendations on diverticulosis.

1.2.6 Advise people that:

- the benefits of increasing dietary fibre may take several weeks to achieve
- a high-fibre diet should be maintained for life.

1.2.7 Consider bulk-forming laxatives if:

- a high-fibre diet is unacceptable to the person or it is not tolerated or
- the person has persistent constipation or diarrhoea.

1.2.8 Consider analgesia, for example paracetamol, as needed if the person has ongoing abdominal pain.

1.2.9 Advise people to avoid nonsteroidal anti-inflammatory drugs and opioid analgesia if possible, because they may increase the risk of diverticular perforation.

1.2.10 Consider an antispasmodic if the person has abdominal cramping.

1.2.11 If the person has persistent symptoms or symptoms that do not respond to treatment, consider alternative causes and investigate and manage appropriately.

To find out why the committee made the recommendations on management and advice for people with diverticular disease and how they might affect practice, see rationale and impact

1.3 Acute diverticulitis

Symptoms and signs of acute diverticulitis

1.3.1 Suspect acute diverticulitis if a person presents with constant abdominal pain, usually severe and localising in the left lower quadrant, with any of the following:
• fever or
• a change in bowel habit and significant rectal bleeding or passage of mucous per rectum or
• tenderness in the left lower quadrant, a palpable abdominal mass or distention on abdominal examination, with a previous history of diverticulosis or diverticulitis.

Be aware that in a minority of people and in people of Asian origin, pain and tenderness may be localised in the right lower quadrant.

To find out why the committee made the recommendation on symptoms and signs of acute diverticulitis and how it might affect practice, see rationale and impact.

Symptoms and signs of complicated acute diverticulitis

1.3.2 Suspect a complication of acute diverticulitis and refer for same-day hospital assessment if the person has uncontrolled abdominal pain and any of the features in table 1.

Table 1 Symptoms and signs that suggest a complication of acute diverticulitis

<table>
<thead>
<tr>
<th>Symptom or sign</th>
<th>Possible complication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal mass on examination or peri-rectal fullness on digital rectal examination</td>
<td>Intra-abdominal abscess</td>
</tr>
<tr>
<td>Abdominal rigidity, guarding and rebound tenderness on examination</td>
<td>Bowel perforation and peritonitis</td>
</tr>
<tr>
<td>Altered mental state, raised respiratory rate, low systolic blood pressure, raised heart rate, low tympanic temperature, no urine output or skin discolouration</td>
<td>Sepsis</td>
</tr>
<tr>
<td>Faecaluria, pneumaturia or pyuria</td>
<td>Fistula</td>
</tr>
<tr>
<td>Colicky abdominal pain, absolute constipation (passage of no flatus or stool), vomiting or abdominal distention</td>
<td>Intestinal obstruction</td>
</tr>
</tbody>
</table>

To find out why the committee made the recommendation on symptoms and signs of complicated acute diverticulitis and how it might affect practice, see rationale and impact.
Investigation of suspected acute diverticulitis

Primary care

1.3.3 For people with suspected acute diverticulitis who are not referred for same-day hospital assessment:

- reassess in primary care if their symptoms persist or worsen and
- consider referral to secondary care for further assessment.

Secondary care

1.3.4 Offer a full blood count and C-reactive protein test to people with suspected complicated acute diverticulitis who have been referred for same-day hospital assessment.

1.3.5 If the person with suspected complicated acute diverticulitis has raised inflammatory markers, offer a contrast CT scan within 48 hours of hospital admission to confirm diagnosis and help plan management.

- If contrast CT is contraindicated perform a non-contrast CT if indicated.
- If CT is contraindicated, consider MRI or ultrasound scan depending on local expertise.

1.3.6 If inflammatory markers are not raised, think about the possibility of alternative diagnoses.

To find out why the committee made the recommendations on investigation of suspected acute diverticulitis and how they might affect practice, see rationale and impact.

Non-surgical management of acute diverticulitis

1.3.7 Consider a no antibiotic prescribing strategy (with watchful waiting) for people with acute diverticulitis if the person is systemically well.

1.3.8 Offer an antibiotic prescribing strategy if the person with acute diverticulitis is systemically unwell, is immunosuppressed or has significant comorbidity.
1.3.9 For guidance on the management of suspected sepsis see the NICE guideline on sepsis.

1.3.10 Offer intravenous antibiotics to people admitted to secondary care with suspected complicated acute diverticulitis.

1.3.11 Review intravenous antibiotics within 48 hours or after scanning if sooner (see recommendation 1.3.5) and consider stepping down to oral antibiotics where possible.

1.3.12 If the person has CT-confirmed uncomplicated acute diverticulitis, review the need for antibiotics and discharge them depending on any co-existing medical conditions.

1.3.13 When prescribing an antibiotic for suspected or confirmed acute diverticulitis, follow the advice in table 2.
### Table 2 Antibiotics for adults aged 18 years and over with suspected or confirmed acute diverticulitis

| Antibiotic | Dosage and course length
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First-choice oral antibiotic for suspected or confirmed uncomplicated acute diverticulitis</strong></td>
<td></td>
</tr>
<tr>
<td>Co-amoxiclav</td>
<td>500/125 mg three times a day for 5 days</td>
</tr>
<tr>
<td><strong>Alternative first-choice oral antibiotics if penicillin allergy or co-amoxiclav unsuitable</strong></td>
<td></td>
</tr>
<tr>
<td>Cefalexin with Metronidazole</td>
<td>500 mg twice or three times a day (up to 1 to 1.5 g three or four times a day for severe infection) for 5 days</td>
</tr>
<tr>
<td>Trimethoprim with Metronidazole</td>
<td>200 mg twice a day for 5 days</td>
</tr>
<tr>
<td><strong>First-choice intravenous antibiotics for suspected or confirmed complicated acute diverticulitis</strong></td>
<td></td>
</tr>
<tr>
<td>Co-amoxiclav</td>
<td>1.2 g three times a day</td>
</tr>
<tr>
<td>Cefuroxime with Metronidazole</td>
<td>750 mg three or four times a day (increased to 1.5 g three or four times a day if severe infection)</td>
</tr>
<tr>
<td>Amoxicillin with Gentamicin and Metronidazole</td>
<td>Initially 5 to 7 mg/kg once a day, subsequent doses adjusted according to serum gentamicin concentration</td>
</tr>
<tr>
<td>Ciprofloxacin5 with Metronidazole</td>
<td>400 mg twice or three times a day</td>
</tr>
<tr>
<td><strong>Alternative Intravenous antibiotics</strong></td>
<td></td>
</tr>
<tr>
<td>Consult local microbiologist</td>
<td></td>
</tr>
</tbody>
</table>

---

1. See BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breast-feeding and administering intravenous antibiotics.

2. A longer course may be needed based on clinical assessment. Continue antibiotics for up to 14 days in people with CT-confirmed diverticular abscess.

3. Review intravenous antibiotics within 48 hours or after scanning if sooner and consider stepping down to oral antibiotics where possible.


5. Only in people with allergy to penicillins and cephalosporins. See MHRA advice for restrictions and precautions for using fluoroquinolones due to very rare reports of disabling and potentially long-lasting or irreversible side effects (March 2019).
To find out why the committee made the recommendations on the non-surgical management of acute diverticulitis and how they might affect practice, see rationale and impact.

1 Emergency management of complicated acute diverticulitis

2 Management of abscesses

3 1.3.14 For people presenting in secondary care with complicated acute diverticulitis and suspected diverticular abscess, assess and manage in line with the NICE guideline on sepsis.

4 1.3.15 When prescribing an antibiotic for diverticular abscess, follow the advice in table 2.

5 1.3.16 Offer intravenous antibiotics and a contrast CT scan to people with complicated acute diverticulitis and suspected diverticular abscess.

6 • If contrast CT is contraindicated perform a non-contrast CT if indicated.

7 • If CT is contraindicated consider MRI or ultrasound scan depending on local expertise.

8 1.3.17 Review intravenous antibiotics within 48 hours or after scanning if sooner and consider stepping down to oral antibiotics where possible.

9 1.3.18 Use the scan results to guide treatment based on the size and location of the abscess.

10 1.3.19 If a person does not have confirmed diverticular abscess, review their need for antibiotics.

11 1.3.20 Consider either percutaneous drainage (if anatomically feasible) or surgery for abscesses greater than 3 cm.

12 1.3.21 Send samples of pus from the abscess (if it has been drained) to the microbiology laboratory to enable antibiotic therapy to be tailored to sensitivities.
1.3.22 For abscesses less than 3 cm switch to oral antibiotics when possible.

1.3.23 In people with a CT-confirmed diverticular abscess, if the condition does not improve clinically or there is deterioration, consider re-imaging to inform the management strategy.

To find out why the committee made the recommendations on the management of abscesses and how they might affect practice, see rationale and impact.

Management of bowel perforations

1.3.24 Offer either laparoscopic lavage or resectional surgery to people with diverticular perforation with generalised peritonitis after discussing the risks and benefits of the 2 options with them (see table 3). If faecal peritonitis is identified intraoperatively, proceed to resectional surgery.
### Table 3 Factors to take into account when deciding whether to have lavage or resection for diverticular perforation with generalised peritonitis

<table>
<thead>
<tr>
<th></th>
<th>Laparoscopic lavage</th>
<th>Resectional surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What the procedure involves</strong></td>
<td>In diverticulitis this involves washing the abdominal cavity and colon with water or solution using keyhole surgery.</td>
<td>The surgical removal of the diseased colon followed by either reattaching the remaining segments of the colon or forming an end stoma.</td>
</tr>
<tr>
<td><strong>Effect on quality of life</strong></td>
<td>There was no significant difference in quality of life scores reported for lavage and surgery.</td>
<td></td>
</tr>
<tr>
<td><strong>Mortality</strong></td>
<td>Although there was some benefit seen in mortality for lavage, this evidence was very uncertain.</td>
<td></td>
</tr>
<tr>
<td><strong>Needing a stoma</strong> (where the bowel is connected surgically to an opening in the abdomen and stools are collected in a bag or pouch)</td>
<td>A stoma is not needed.</td>
<td>A stoma may be needed.</td>
</tr>
<tr>
<td><strong>Pain</strong></td>
<td>Less likely to relieve pain than resectional surgery.</td>
<td>More likely to relieve pain than lavage because the damaged bowel has been removed.</td>
</tr>
<tr>
<td><strong>Recurrent diverticulitis</strong></td>
<td>Fewer people had recurrent diverticulitis after surgery than after lavage because the diseased bowel is removed. However, the evidence was very uncertain.</td>
<td></td>
</tr>
<tr>
<td><strong>Needing more operations</strong></td>
<td>Evidence comparing unplanned surgery with lavage showed that fewer people needed reoperations after surgery than after lavage. Evidence that included unplanned surgery and planned surgery (scheduled stoma reversal after resectional surgery) showed that fewer people needed reoperations after lavage. However, in both cases the evidence was very uncertain.</td>
<td></td>
</tr>
<tr>
<td><strong>Postoperative complications</strong></td>
<td>There was no difference in the number of infections or in the need for further intervention between lavage and surgery. People who had surgery had a greater reduction in post-surgical abscesses than those who had lavage, but this evidence was of low quality.</td>
<td></td>
</tr>
</tbody>
</table>

To find out why the committee made the recommendation on the management of bowel perforations and how it might affect practice, see rationale and impact.

### Anastomosis and colectomy for people with complicated acute diverticulitis

**(elective and emergency surgery)**

1.3.25 Offer people with complicated acute diverticulitis:
1. In people undergoing resection of the colon, consider resecting back to the compliant bowel.

To find out why the committee made the recommendation on anastomosis for people with complicated acute diverticulitis and it might affect practice, see rationale and impact.

To find out why the committee made the recommendation on colectomy for people with complicated acute diverticulitis and it might affect practice, see rationale and impact.

**Elective surgical management after resolution of complicated acute diverticulitis**

1. Consider open or laparoscopic resection for elective surgery for people who have recovered from complicated acute diverticulitis but have continuing symptoms.

To find out why the committee made the recommendation on the elective surgical management after resolution of complicated acute diverticulitis and how it might affect practice, see rationale and impact.

**Management of recurrent acute diverticulitis**

1. Do not offer an aminosalicylate or antibiotics to prevent recurrent acute diverticulitis.
To find out why the committee made the recommendation on the management of recurrent acute diverticulitis and how it might affect practice, see rationale and impact.

1.4 **Information**

**Diverticulosis**

1.4.1 Give people with diverticulosis, and their families and carers where appropriate, verbal and written information on:

- diet and lifestyle
- the course of diverticulosis and the likelihood of progression
- symptoms that indicate complications or progression to diverticular disease.

**Diverticular disease**

1.4.2 Give people with diverticular disease, and their families and carers where appropriate, verbal and written information on:

- diet and lifestyle
- the course of diverticular disease and the likelihood of progression
- symptoms and symptom management
- when to seek medical advice.

**Acute diverticulitis**

1.4.3 Give people with acute diverticulitis, and their families and carers where appropriate, verbal and written information on:

- diet and lifestyle
- the course of acute diverticulitis and likelihood of complicated disease or recurrent episodes
- symptoms
- when and how to seek further medical advice
- possible investigations and treatments
• risks of interventions and treatments, including antibiotic resistance, and how invasive these are
• role of surgery and outcomes (postoperative bowel function and symptoms).

To find out why the committee made the recommendations on information for people with diverticulosis, diverticular disease and acute diverticulitis, and how they might affect practice, see rationale and impact.

Terms used in this guideline

Acute diverticulitis
Inflammation or infection associated with diverticula. Symptoms include constant abdominal pain, usually severe and localising in the left lower quadrant. Other features, including fever, may also be present.

Complicated acute diverticulitis
The presence of complications associated with inflamed or infected diverticula. These complications may include abscess, fistula, stricture perforation and sepsis.

Diverticular disease
The presence of diverticula with mild abdominal pain or tenderness and no systemic symptoms.

Diverticulosis
The presence of diverticula without symptoms.

Recommendations for research
The guideline committee has made the following recommendations for research.

Key recommendations for research

1 Non-surgical management of acute diverticulitis
What is the clinical and cost effectiveness of antibiotics for the management of acute complicated diverticulitis in primary care?
1. To find out why the committee made the research recommendation on the risk factors associated with the progression of diverticulosis to diverticular disease see rationale and impact.

2. **Conservative management for preventing diverticular disease**

   4. What is the most clinically and cost-effective conservative management for preventing diverticular disease in people with diverticulosis?

   7. To find out why the committee made the research recommendation on preventing diverticular disease in people with diverticulosis see rationale and impact.

3. **Managing diverticular disease**

   9. What is the most clinically and cost-effective treatment for diverticular disease?

   11. To find out why the committee made the research recommendation on management of diverticular disease see rationale and impact.

4. **Information and support**

   14. What information and support do people with diverticulosis, diverticular disease or acute diverticulitis need?

   16. To find out why the committee made the research recommendation on information and support see rationale and impact.

5. **Timing of surgery for complicated acute diverticulitis**

   19. What are the clinically and cost effective surgical approaches to managing complicated acute diverticulitis, including timing of surgery (elective or emergency)?

   21. To find out why the committee made the research recommendation on timing of surgery for complicated acute diverticulitis see rationale and impact.

**Other recommendations for research**

24. **Risk factors for diverticular disease for people with diverticulosis**

   25. What are the risk factors for diverticulosis progressing to diverticular disease in people with known diverticulosis?
Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect practice. They link to details of the evidence and a full description of the committee's discussion.

Diverticulosis management and advice

Recommendations 1.1.1 to 1.1.5

Why the committee made the recommendations

Diverticulosis is asymptomatic and there are no specific treatments for it. The committee therefore considered making a recommendation about lifestyle and dietary advice to address the common questions asked by newly diagnosed patients about these factors to prevent progression of the disease. However, although some evidence was found on the management of diverticulosis, it did not meet the criteria for including in the review on what is the most clinically and cost-effective management strategy for preventing diverticular disease in people with diverticulosis. The committee were aware of evidence (which did not meet the review criteria) that vigorous exercise was associated with a reduction in risk of developing acute diverticulitis. Increased body mass index was also associated with an increased risk of symptomatic disease. In the absence of evidence that could be used to draft recommendations, formal consensus methods and the knowledge and experience of the committee were used instead. The recommendations should be straightforward to implement and may reduce the possibility of developing diverticular disease.

In light of the lack of evidence on this topic, and the need to know what factors might increase the risk of diverticulosis progressing to diverticular disease, the committee considered this an important area for research. It made research recommendations on risk factors for diverticular disease and on conservative management for preventing diverticular disease.

How the recommendations might affect practice

The recommendation reflects current practice.
Diverticular disease

Symptoms and signs

Recommendation 1.2.1

Why the committee made the recommendation

The evidence on symptoms and signs comprised a single study with no clinically important outcomes and was based on a population with diverticulitis rather than diverticular disease. Because of a lack of evidence, recommendations were made using formal consensus methods and the knowledge and expertise of the committee on the most common presentation of diverticular disease. Most people experience pain on the left side of the abdomen where the diverticula most often occur in the sigmoid colon. For this reason people are often tender in the left lower quadrant. However, it was important to highlight that people of Asian origin may experience right-sided symptoms. Other symptoms are variable but people experience constipation, diarrhoea or both with occasional rectal bleeds. The symptoms alone are not specific enough to indicate diverticular disease but should be considered in conjunction with intermittent abdominal pain.

How the recommendation might affect practice

The recommendation reflects current practice.

Full details of the evidence and the committee’s discussion are in: Evidence review B. Symptoms and signs of diverticular disease.

Investigations and referral

Recommendations 1.2.2-1.2.3
Why the committee made the recommendations

There was no evidence on diagnosing diverticular disease so the guideline committee made recommendations based on their knowledge of current best practice. Where diverticular disease is suspected current practice is to use imaging or endoscopy to confirm the presence of diverticula or exclude other diseases such as cancer. Patients will often have their bowel investigated by either endoscopy with a flexible sigmoidoscopy or colonoscopy or a CT virtual colonoscopy.

How the recommendations might affect practice

The recommendations reflect current practice.

Full details of the evidence and the committee’s discussion are in Evidence review C: Diagnosis of diverticular disease.

Management and advice

Recommendations 1.2.4–1.2.11

Why the committee made the recommendations

Very limited evidence was identified on a high fibre diet, antibiotics, aminosalicylates, probiotics, symbiotics and laxatives and there was no evidence on non-steroidal anti-inflammatory drugs (NSAIDs). The evidence that was available didn’t help the committee to understand the impact of these interventions on the progression of disease or people’s quality of life. The committee used formal consensus methods together with their expertise and knowledge to make recommendations on diet and lifestyle advice and how to manage pain and cramping.

Bulk-forming laxatives are effective as they help to soften the stool and can also help to solidify loose stools in people with constipation. Paracetamol is indicated for pain and the committee highlighted the importance of avoiding NSAIDs and opioid analgesia because of the risk of diverticular perforation. Some people experience abdominal cramping and anti-spasmodics may help with this.

In line with best practice in antimicrobial stewardship, the committee made a recommendation not to use antibiotics in the absence of acute diverticulitis.
Having a greater understanding of how best to manage symptoms and prevent the disease developing into acute diverticular disease could have a positive impact on a person’s health and wellbeing. It could also help avoid potential subsequent treatment costs. The committee therefore made a research recommendation in this area.

These recommendations are about managing the symptoms of diverticular disease rather than preventing progression to acute diverticulitis. However, the development of acute diverticulitis was included as an outcome in this review and in the research recommendation that was developed as it was considered by the committee to be a critical factor for decision-making. The committee noted the importance of considering alternative causes and further investigations in people with persistent symptoms or who do not respond to treatment.

**How the recommendations might affect practice**

The recommendations reflect current practice.

Full details of the evidence and the committee’s discussion are in: Evidence review D: Management of diverticular disease.

**Acute diverticulitis**

**Symptoms and signs of acute diverticulitis**

Recommendation 1.3.1

**Why the committee made the recommendation**

There was no relevant evidence on the symptoms and signs of acute diverticulitis, so recommendations were made using formal consensus methods. The committee thought that clearly defining the symptoms and signs of acute diverticulitis, along with its associated complications, would help clinicians and patients in clearly differentiating these distinct clinical conditions. Committee members thought that often diverticular disease, symptomatic diverticular disease and acute diverticulitis are used interchangeably, creating confusion about which condition the patient has and therefore what management is appropriate. The recommendation focused on
symptoms and signs that were specific to acute diverticulitis and is consistent with current practice. It is aimed at primary care to support the identification of the condition.

How the recommendation might affect practice
The recommendation reflects current practice.

Full details of the evidence and the committee’s discussion are in Evidence review F: Referral criteria for acute diverticulitis.

Return to recommendations

Symptoms and signs of complicated acute diverticulitis
Recommendation 1.3.2

Why the committee made the recommendation
There was no relevant evidence on symptoms and signs of complicated acute diverticulitis, so a recommendation was made using formal consensus methods. The recommendation focused on symptoms and signs that differentiated uncomplicated from complicated acute diverticulitis; if any of these symptoms and signs are present, same-day hospital assessment is necessary. This recommendation is consistent with current practice.

How the recommendation might affect practice
The recommendation reflects current practice.

Full details of the evidence and the committee’s discussion are in Evidence review I: Indications for surgery.

Return to recommendations

Investigation of suspected acute diverticulitis
Recommendations 1.3.3–1.3.6

Why the committee made the recommendations
There was insufficient evidence available on diagnostic tests for people who are not referred for same-day hospital assessment. The committee highlighted the
importance of reassessment or referral if the person’s symptoms persist or worsen, as this could indicate complicated acute diverticulitis or an alternative diagnosis.

For people with suspected complications of acute diverticulitis referred for urgent same-day hospital assessment, the committee agreed that less costly clinical tests of full blood count and C-reactive protein (CRP) should be offered initially to identify inflammation. This could inform the decision making and help decide which patients should undergo further investigation for acute diverticulitis. The committee acknowledged that contrast CT is recognised as the gold standard diagnostic test for acute diverticulitis and its complications. It agreed that having an early CT scan to assess for acute diverticulitis would mean that complications could be identified sooner. This would subsequently reduce length of hospital stay and the number of later colonoscopies. In addition, having the scan within 48 hours of admission would also help guide treatment planning – for example, to identify people with uncomplicated diverticular disease who can be given oral antibiotics and discharged.

The committee agreed that MRI or ultrasound are accepted alternatives to CT where CT is contraindicated. The choice should depend on the availability of local expertise. Ultrasound may not be able to diagnose diverticulitis in isolation, but it may identify factors such as colonic wall thickening and inflammation. Therefore, it can be considered where CT is contraindicated. Ultrasound may be used as an adjunct to rule out other disease.

There was no evidence for colonoscopy and sigmoidoscopy in diagnosing acute diverticulitis. The committee were aware of the risk of perforation and agreed that these procedures should not be offered for acute diverticulitis.

**How the recommendations might affect practice**

Full blood count and CRP are routinely used to assess for inflammation and indication of acute diverticulitis. This reflects current best practice but is not used across all NHS settings. Therefore implementing this recommendation will mean a change in practice for some providers.

Currently, 60% of people with acute diverticulitis undergo CT examination to confirm the diagnosis. This recommendation will increase the use of CT scanning. However, the increase in cost associated with this will be offset by a decrease in hospital stay,
along with a decrease in use of intravenous antibiotics and potentially further endoscopy. Evidence shows that performing a CT can reduce the use of subsequent endoscopy.

Full details of the evidence and the committee’s discussion are in Evidence review G: Diagnostic tests for acute diverticulitis.

Return to recommendations

Non-surgical management of acute diverticulitis

Recommendations 1.3.7–1.3.13

Why the committee made the recommendations

For people with suspected acute diverticulitis who are not referred for urgent same-day hospital assessment, the committee agreed that watchful waiting is an option if the person is systemically well and has no co-morbidities that increase the risk of infection. This decision would be in the context of shared decision making. Oral antibiotics are appropriate if the person is systemically unwell but does not meet the criteria for referral with suspected complicated acute diverticulitis.

The evidence supports current practice of treating an acute episode of diverticulitis with intravenous antibiotics in secondary care. If CT confirms uncomplicated acute diverticulitis, switching to oral antibiotics does not affect outcomes. The committee recommended antibiotics for this group because they were aware of evidence that watchful waiting could increase recurrence rates and the probability of further surgery. In support of antibiotic stewardship and to avoid antibiotic resistance the committee recommended that the person should be reassessed if necessary and the need for antibiotic therapy should be reviewed.

The need for intravenous antibiotics should be reviewed within 48 hours in line with current good practice on antibiotic prescribing or after the CT scan. The CT will confirm if the person has an abscess or not. The total course of antibiotic treatment should be for a maximum of 5 days and then reviewed. The duration of antibiotics used in the studies was variable and 5 days was based on current clinical practice and the knowledge and expertise of the committee.
In light of the lack of evidence on this topic, and the need to prevent antibiotic resistance, the committee considered this an important area for research. It made a research recommendation on antibiotics for people with acute diverticulitis managed in primary care.

**How the recommendations might affect practice**

The recommendation to offer an initial treatment of intravenous antibiotics before CT scanning for confirmation reflects current practice, so the committee agreed there should be no change in practice. Using oral antibiotics beyond this point in place of intravenous antibiotics may reduce the resource requirement in caring for people with acute diverticulitis.

Full details of the evidence and the committee’s discussion are in Evidence review H: Non-surgical management of acute diverticulitis.

**Timing of surgery for complicated acute diverticulitis**

**Why the committee did not make any recommendations**

In the studies in the evidence reviewed people were offered an intervention based on demographic and clinical characteristics meaning it was difficult to assess the true effect of interventions on patient outcomes. Therefore the committee decided not to make any practice recommendations.

The committee thought this was an area that needed further research and therefore have developed a research recommendation.

Full details of the evidence and the committee’s discussion are in Evidence review J: Timing of surgery for complicated acute diverticulitis.

**Management of abscesses**

Recommendations 1.3.14–1.3.23
Why the committee made the recommendations

The quality of the evidence for this topic meant that it was not possible to demonstrate greater effectiveness of one intervention over another. The results showed harms as well as benefits of treatment. The committee therefore made recommendations based on a combination of their clinical expertise and the approaches taken in the studies. The committee highlighted the risk of sepsis and agreed it was important to refer people with suspected diverticular abscess to secondary care for same day assessment to receive intravenous antibiotics in line with the NICE sepsis guideline. This was considered to be standard practice.

The need for intravenous antibiotics should be reviewed within 48 hours in line with current good practice on antibiotic prescribing or after the CT scan. The CT will confirm if the person has an abscess or not.

The committee agreed that offering a CT scan for people with suspected diverticular abscess may help to determine the most appropriate treatment for each person based on the characteristics of the abscesses, such as size and location. This was based on clinical experience and the fact that most of the included studies used CT scan to confirm and assess abscesses. MRI or ultrasound should be offered if CT is contraindicated.

The committee also decided that only abscesses greater than 3 cm should be considered for percutaneous drainage because of technical difficulties in performing this procedure on smaller abscesses. This was based on clinical expertise and was the approach taken by most of the included studies and is consistent with the committee’s knowledge and experience.

The committee agreed that if percutaneous drainage is an anatomically feasible option this could be considered alongside a discussion with the patient about the risks and benefits of surgery. In people with a CT-confirmed diverticular abscess, re-imaging may be considered if the condition does not improve clinically or if there is deterioration. This will guide the management strategy – for example, if further surgery is needed or if a previous collection that was not drainable percutaneously (for example because it was too small) is now drainable.
How the recommendations might affect practice
The recommendations reflect current practice and make reference to the NICE guideline on sepsis.

Full details of the evidence and the committee’s discussion are in Evidence review N: Percutaneous drainage versus resectional surgery for the management of abscesses.

Management of bowel perforations
Recommendations 1.3.24

Why the committee made the recommendation
The committee noted that, based on the evidence, there appeared to be few differences between resection of the bowel and lavage in terms of patient outcomes.

The committee agreed that for people with diverticular perforations with generalised peritonitis both options should be discussed and a decision made based on patient preferences. A patient decision table has been developed to support this discussion.

No evidence was found for the treatment of faecal peritonitis (also known as Hinchey stage IV perforation). But the committee agreed that resection of the bowel was better than lavage because this was the only way to prevent further faecal contamination of the peritoneal cavity. This is because of the more serious nature of this condition indicated by the presence of faeces in the peritoneal cavity.

How the recommendation might affect practice
The committee considered that the use of lavage is currently not common in the UK for treating diverticular perforation and that implementing this recommendation may therefore require a change from current practice by the majority of providers.

Full details of the evidence and the committee’s discussion are in Evidence review O: Laparoscopic lavage for the management of bowel perforations.

Return to recommendations
Anastomosis for people with complicated acute diverticulitis

Recommendation 1.3.25

Why the committee made the recommendation

The committee agreed that there was too much uncertainty surrounding most of the evidence to recommend one intervention over the other for complicated acute diverticulitis. Very few outcomes indicated a clinical benefit of either primary anastomosis or temporary stoma. For this reason, the committee concluded that both primary anastomosis (which is a join in the bowel, with or without diverting stoma) and Hartmann’s procedure should be options for people admitted to surgery for this condition. Based on the expertise and knowledge of the committee, surgeon experience, the patient’s age, any other conditions the patient has and how well they can carry out everyday activities and patient condition should be considered. In the emergency setting frail patients with multiple medical problems who are septic at the time of surgery may benefit from a Hartmann’s procedure instead of a primary anastomosis (with or without diverting stoma) as this removes the risk of a subsequent anastomatic leak. However, the committee recognised that those patients having a stoma in this setting often find these are permanent and not reversed.

How the recommendations might affect practice

The recommendation reflects current practice.

How the committee made the recommendations

No evidence was found on the extent of colectomy for people with acute diverticulitis. A recommendation was developed based on the experience of the surgeons on the
committee. Committee members discussed the difference between resecting back to normal bowel and resecting back to compliant bowel. The committee agreed that ‘normal bowel’ could be interpreted by some as bowel without diverticula, rather than bowel with normal structure. To avoid this confusion, resecting back to compliant bowel, which refers to bowel that is functional and is not restricted in terms of movement, was included in the consensus recommendation and reflects the current advice by national bodies.

**How the recommendation might affect practice**

The recommendation reflects current practice.

Full details of the evidence and the committee’s discussion are in [Evidence review L](Evidence%20review%20L): Management of complicated acute diverticulitis - extent of colectomy.

**Elective surgical management after resolution of complicated acute diverticulitis**

Recommendation 1.3.27

**Why the committee made the recommendation**

The committee concluded that there was insufficient evidence to say whether laparoscopic resection or open resection was the better management option for people who have recovered from complicated acute diverticulitis but who have continuing symptoms.

**How the recommendations might affect practice**

The recommendation reflects current practice.

Full details of the evidence and the committee’s discussion are in [Evidence review K](Evidence%20review%20K): Laparoscopic versus open sigmoid resection for acute diverticulitis.

**Management of recurrent acute diverticulitis**

Recommendation 1.3.28
Why the committee made the recommendation

The committee noted that the evidence supported current practice of not using an aminosalicylate in managing recurrent diverticulitis. Aminosalicylates are not licensed to treat diverticulitis in the UK and there is little evidence to support their use in this area.

The committee agreed that there was insufficient evidence to support the use of antibiotics to prevent recurrent diverticular disease. In support of antibiotic stewardship and to avoid antibiotic resistance the committee recommended not offering antibiotic therapy.

How the recommendation might affect practice

The recommendation to not offer an aminosalicylate or antibiotics for the prevention of recurrent diverticulitis reflects current practice. Therefore the committee agreed there should be no change in practice.

Full details of the evidence and the committee’s discussion are in Evidence review P: Management of recurrent acute diverticulitis.

Information

Recommendations 1.4.1–1.4.3

Why the committee made the recommendations

There was limited evidence on the support and information needed for people with diverticulosis, diverticular disease and diverticulitis and their families and carers. The evidence was from a symptom-based questionnaire and reported on the timing and success of surgery and symptoms. The committee agreed that it was important for those affected to have relevant information on these topics, but also used its knowledge and experience to expand on these topics in the recommendations.

The committee decided that given the limited evidence, this was an area that needed further research to inform the type of information people want. Therefore they made a research recommendation.
How the recommendations might affect practice

The recommendation reflects current practice.

Full details of the evidence and the committee's discussion are in Evidence review. Q: Information and support

Return to recommendations

Context

Diverticulosis is a digestive condition characterised by small pouches (diverticula) that protrude from the walls of the large intestine.

The true prevalence of diverticular disease is difficult to define because most patients are asymptomatic. It is age dependent and relatively uncommon in people under 40 years, although in recent years there has been a dramatic rise in the prevalence in this age group. In people aged over 65 years the prevalence increases up to 65%.

About 80–85% of people affected by diverticular disease remain asymptomatic while 10–15% develops symptomatic diverticular disease including acute diverticulitis and its complications (perforation, abscess formation, haemorrhage, fistula and obstruction). Key aspects of this guideline include the management of diverticulosis, diagnosis and management of diverticular disease, acute diverticulitis and complicated acute diverticulitis.

Areas of the guideline with the potential for the greatest impact on practice include CT scanning for acute diverticulitis and offering resection or lavage for bowel perforations.

Finding more information and resources

To find out what NICE has said on topics related to this guideline, see our web page on digestive tract conditions.

© NICE 2019. All rights reserved. Subject to Notice of rights.