The management of diarrhoea in adults

RCN guidance for nursing staff
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Foreword

Diarrhoea is a common and debilitating condition. Patients often feel embarrassed and find their ability to lead normal active lives severely affected, which can result in isolation and depression for those with chronic conditions. The impact of managing diarrhoea, whether acute or chronic, can also be felt by all those supporting or caring for patients, including family, carers or members of the health care team.

This resource recognises the complexity of caring for patients with diarrhoea, from patient assessment to development of a holistic care pathway that meets the patient’s physical and psychological needs. Developed with patients by a multidisciplinary project group, this guidance serves as a holistic resource to support nursing care across all health care settings.

We are very grateful to all those who have contributed to this resource from the conceptual workshops through to the project board and content reviewers.

Dr Peter Carter
RCN Chief Executive and General Secretary

How to use this resource

This guidance has been developed with patients and health care workers as a holistic document to recognise and support the management of acute diarrhoea in adult patients, regardless of the care setting. The resource can be used in its entirety, or for specific sections as required and may useful in supporting the development of health care organisations, local policies and procedures. It is suitable for all members of the nursing team and should be considered as complementary to local policies that impact on the management of diarrhoea.

Note: This guidance does not replace local organisational policies or guidelines on the management of diarrhoea, isolation of patients, prevention and management of *Clostridium difficile* and norovirus. Staff should always be aware of local policies and comply with them.
Introduction

What is diarrhoea? A question not frequently asked but perhaps it should be. Nursing teams really need to understand what diarrhoea is before they produce plans to assist patients to manage it.

This Royal College of Nursing (RCN) resource is designed to do just that – identify what diarrhoea is, and then give guidance on how best to manage the problem from a patient’s perspective. Subsequently, this should improve both the patient’s experience of care and increase job satisfaction for staff dealing with diarrhoea.

The emergence of Clostridium difficile (C. difficile) as a clinically and politically significant health care associated infection from 2005 onwards, together with the increasing impact of norovirus infection on the functioning of health care organisations, means that a sensitivity to diarrhoea has developed with a resulting high suspicion of infectiousness when it occurs. With the exception of ongoing seasonal challenges with norovirus, cases of C. difficile have dropped dramatically across the UK and, for the vast majority of patients presenting with diarrhoea as in-patients, the cause is found to be non-infectious. Whilst this should not lull staff into a false sense of security, it should serve to focus attention on the need for a thorough assessment of patients, a close look at the contributory factors and the prompt collection of specimens, in order to exclude infection and manage the patient appropriately and in a timely manner.

Diarrhoea is best defined medically in terms of frequency, consistency and either weight or volume of faeces. There is no uniformly accepted definition, but a stool or liquid stool frequency of more than three times per day and weighing more than 200g in total, is generally the accepted norm (Forbes, 2003). Weighing and measuring volume is not always routine practice, but can be a useful clarification tool with some patients.

This definition of diarrhoea may differ from local or national definitions for infectious diarrhoea caused by C. difficile (DH, 2009). Please refer to local policies for further information.

It is important to consider that the patient’s perspective on what diarrhoea is may differ from the medical definition – many patients may consider diarrhoea in terms of increased stool liquidity. This can lead to misunderstandings and poor communication between patients and those caring for them, and so it is important that there is agreement around the definition.

Diarrhoea is a symptom of an underlying pathology. It can impact upon quality of life and also be life threatening. Acute diarrhoea is defined as having a duration of less than four weeks, whilst chronic is considered to be longer than four weeks in duration (WGO, 2012). It is important to identify the underlying pathology in order to begin treatment.

Definitions relating to diarrhoea

A number of terms are often associated with, and used, when describing diarrhoea.

Frequency is often associated with diarrhoea. It relates purely to the number of stools passed. Urgency often accompanies diarrhoea, and is the sensation of the need to defecate without delay. Urgency can, on some occasions, lead to incontinence. Faecal incontinence is defined as the uncontrolled passage of solid or liquid faeces at socially inappropriate times and places (Kenefick, 2004). Incontinence and urgency can occur outside of the context of diarrhoea. Faecal impaction or loading is when the rectum, and often the lower colon, is full with hard or soft stool. This can result in impaction with overflow ‘spurious diarrhoea’, which is common in the older frail population (Harari, 2004). It can be misdiagnosed as diarrhoea and therefore treated incorrectly.
The gut

a. Description of the normal bowel

Anatomy and physiology

In order to understand the complexity of diarrhoea it is important to have knowledge and understanding of the anatomy and physiology involved with the gastro-intestinal tract (GI). Some of the body’s organs come into direct contact with ingested food, whilst the accessory organs aid the process of digestion.

The purpose of the GI tract is to break food down to enable it to be absorbed into the body to provide essential nutrients and energy. The GI tract also has an immune function by preventing disease causing micro-organisms from entering the body. Diarrhoea is associated with the large intestine, however causative factors may originate from beyond the bowel or as a result of external factors.

### The organs of the gastro-intestinal tract

- **Mouth** and most of the **pharynx**
- **Oesophagus** – propels food into the stomach
- **Stomach** – stores 1 to 2 litres capacity and mixes with gradual emptying and initiates digestion
- **Small intestine** – digests and absorbs nutrients, fluid and salts from the upper gut including iron and B12, plus bile acids in the ileum
- **Large intestine** – water re-absorption

### The accessory digestive organs

- **Teeth** – aid in the physical breakdown of food
- **Tongue** – assists in chewing and swallowing
- **Salivary glands** – produce saliva to moisten the mouth and initiate digestion
- **Liver** – produces bile which is stored in the gallbladder and sent to the duodenum through a duct
- **Bile** – emulsifies fats (separates it into small droplets) so they can mix with water and be acted upon by enzymes
- **Gallbladder** – stores bile and sends it to the duodenum through a duct
- **Pancreas** – produces hormones and enzymes involved in digestion

Diarrhoea is a symptom of an underlying pathology. It can be dangerous and life threatening. It is important to be aware of any changes to a patient’s bowel habits.

Within the body there are physiological processes which will determine:

- the mechanism of diarrhoea – either osmotic, secretory, inflammatory or abnormalities of motility
- the causes of diarrhoea – acute or chronic
- the classification of diarrhoea – common, uncommon or rare.

Artwork by Kevin Dawson and Ruth Eaves, Medical Illustration, Bolton NHS Foundation Trust 2013.
b. The gut and the immune system

The mucous membrane lining the gastro-intestinal (GI) tract is known as the intestinal mucosa. Because the surface area of the GI tract is roughly the size of a tennis court, and 100 times larger than the total surface area of the skin, the intestinal mucosa forms the largest surface area of the body that is in contact with the exterior environment, and as such plays a vital role in the prevention of microbial infections (bacterial, viral and parasitic) (Spencer, 2010). It is therefore unsurprising that the largest component of the entire immune system in humans is that associated with protecting the GI tract.

The intestinal mucosa contains large numbers of different types of immune cells (Reis and Mucida, 2012), and accounts for 70 to 80 per cent of the total number of immune cells in the human body (Furness et al, 1999). The GI immune system is often referred to as the gut-associated lymphoid-tissue (GALT) and the different types of GALT include Peyer’s patches (clusters of lymphoid follicles) and more widely distributed single lymphoid cells, both types of which lie just beneath the epithelium throughout the entire GI tract (Spencer, 2010). The presence of pathogenic micro-organisms or other ‘foreign’ bodies within the GI tract will induce an immune response with immunologically active molecules secreted by the GALT (Spencer, 2010); thus an anti-microbial response can be initiated.

The human GI tract contains huge numbers of ‘friendly’, health-enhancing bacteria known as the microbiota (Simrén and Doré, 2012). This massive resident population consists of hundreds of different types (both species and strains) of bacteria, which exhibit a range of activities and functions beneficial to human health (Mazmanian et al, 2008). One of the most important roles of the GI microbiota’s friendly bacteria is to establish and maintain a strong and effective immune system. The microbiota is an important site of interaction between the body’s immune system and micro-organisms. Not only does the gut microbiota form a physical barrier to pathogenic micro-organisms by various mechanisms, including competitive exclusion, more importantly, it activates key natural immune responses. In this capacity, the GI microbiota interact with components of the GI immune system, including the GALT, to enhance the immune response and help to control the growth of harmful, pathogenic micro-organisms. Studies have shown that different strains of bacteria can induce very different immune responses, suggesting that the composition of the microbiota can shape and influence human immune function (Lee and Mazmanian, 2010). Research has also demonstrated that humans require an intact and balanced GI microbiota for growth, development and lifelong health (Simrén and Doré, 2012). The role of the gut immune system in people with diarrhoea is therefore very important and, in order to maintain a healthy bowel, the relevance of nutrition and hydration is paramount (for further information see Section 6 of this resource on page 23).

c. The ageing bowel

The UK population is increasing in number and longevity. By 2032 the number of people aged 65 and over is estimated to exceed 16 million (Dunnell, 2008). This projected increase is clinically relevant because of the physiological changes which may occur in the ageing gut and its implications for nursing older people. Normal age-related changes include reduced colonic peristalsis, often leading to incomplete emptying of the bowel. This can result in a second bowel movement 30 to 45 minutes after the first. Neural impulses that sense the signal to defecate are slower and duller in older people and therefore are not always responded to, thus adding to the potential for constipation and impaction (Eliopoulos, 2010).

Anal sensation can also be impaired and external anal sphincter weakness is common in older people (Barrett, 2000). As the colon becomes hypotonic, that is a loss of tone, there is increased storage capacity, longer stool transit time and therefore greater stool dehydration (Boss and Seegmiller, 1981) leading to constipation.

**Did you know?**

Constipation or faecal impaction can lead to diarrhoea. It is usually referred to as overflow diarrhoea. Failure to diagnose overflow diarrhoea can lead to the wrong treatments being given, leading to worsening of symptoms.

Reduced activity, a poor diet, the effects of medication can all result in chronic constipation, which can lead to faecal impaction with overflow. This is often mistaken for diarrhoea. Faecal incontinence can be associated with faecal impaction which is defined as ‘rectum and colon full of hard faeces’ (Barrett, 2000). However, it is thought that fewer than
10 per cent of faecally-loaded patients have a rectum full of hard stool. Faecal impaction therefore is missed on per rectum (PR) examination as patients present with an empty rectum or have soft stools present.

Additional factors that impact on faecal incontinence and diarrhoea can be related to cognitive impairment, for example for people with dementia, growing memory loss, attention and executive function impairment. For patients with these, and other related conditions, their ability to go to the toilet independently may be affected. People in moderate stages of dementia may have difficulty with locating the toilet, managing to undress and/or to clean themselves; this may result in faecal retention and/or reluctance to defecate. In the advanced stages of disease the patient may not recognise the sensation to defecate.

With the ageing process also comes an increased susceptibility and vulnerability to some infectious diseases which puts the older person at increased risk of contracting infectious diarrhoea. The immune system declines as a result of immunosenescence. Immunosenescence is a result of a functional decline in the immune system, with a reduction of gut-associated lymphoid tissue and in intestinal antibody response (Fujihashi, 2009). This makes an older person more vulnerable to infection by pathogens. Antibiotic use in older people also puts them at risk of developing C. difficile infection. Diarrhoea is potentially life threatening in older people, in part due to immunosenescence but also to other co-morbidities which may exist or develop as a result.

d. Ways to maintain the normal bowel

Eating fruit, vegetables and wholegrain cereals is associated with reduced risk of certain cancers including those of the digestive system. These foods are high in fibre, antioxidants and other protective nutrients. Be careful not to eat excessive amounts of fibre as this can also cause problems with constipation or loose bowel movements that are difficult to control.

• Drinking enough fluids is just as important as eating the right kinds of food.
• Limit the amount of alcohol you consume. Women should drink no more than 2 to 3 units a day, men 3 to 4 units.
• Limit the amount of sugary and fatty foods.
• Chew well. Break down each mouthful into small pieces. This helps release the enzymes that aid digestion so that food is processed thoroughly and all the goodness extracted.
• Don’t miss meals. A lack of food in the system can cause excessive gas – and lead to a gurgling, wind-filled stomach.
• Try and avoid eating large or fatty meals before going to sleep.
• Being overweight or obese can affect health in general and is especially the case with regards to our digestive system.
• Aim for 30 minutes of moderate activity at least five times a week. Drink water whilst exercising to replace any water lost and to remain hydrated. It is essential to do exercise that you enjoy, this will help you to stay motivated and interested. You should also take some time off between activities and relax, allowing the body to recover and the muscles to recuperate.
• Going on holiday or taking a trip abroad can play havoc with our digestive system. A combination of long periods of inactivity on the plane or by the pool, changes in air cabin pressure, dehydration, and eating different foods and drinks can contribute to becoming bloated whilst on holiday and suffering from constipation or diarrhoea. It might help to prepare your digestive system in the run up before your holiday minimising the chances of falling ill once you’re there.
• The amount of sleep we get can affect our bowel habits. Much like the rest of our body, our digestive system needs time to rest. Going to bed and getting up at regular hours each day can help our digestive system work more effectively and improve the regularity of our bowel habits.
• Stress is quite difficult to avoid in today’s society. Problems occur when our lives cause a lot of stress, and one of the first parts of the body to react to stress is our digestive system.

• Smoking is bad for every aspect of your health which includes your digestive health. Smoking is responsible for many changes in the digestive system. It contributes to common disorders such as heartburn and peptic ulcers.

• As we get older, our bowels tend to become quite sluggish. This may be due to many factors, including changes in our diet and less exercise. There is some evidence to suggest the lower bowel itself changes in old age. In some cases this can lead to bowel emptying difficulties and leakage. It is important to seek help from your GP or continence adviser if this occurs. Other bowel problems, such as diverticular disease can also become more common as we age. The majority of the immune system is gut-associated; it is estimated that 85 per cent of the body’s lymph nodes are located in the gut. Our gut bacteria help support this; another reason why it is important that, as we get older, we try and maintain a healthy gut flora.

Adapted from the Bladder and Bowel Foundation’s Healthy Bowel guidance. www.bladderandbowelfoundation.org/bowel/healthy-bowel.asp

**Probiotics and the immune system**

Probiotics are defined by the World Health Organization (WHO) as “living micro-organisms that provide a health benefit to the host when ingested in adequate amounts” (Food and Agriculture Organisation of the United Nations/WHO, 2001). In relation to the impact of the gut microbiota (gut flora) on immune function, clinical benefits have been demonstrated by modulating the composition of the gut microbiota through the use of probiotics.

Probiotics have been shown to reduce the duration of diarrhoea by around 25 hours and reduced the incidence of diarrhoea lasting four or more days by 59 per cent (Allen, 2010). Furthermore, studies have shown that probiotics can lead to a relative risk reduction of antibiotic associated diarrhoea (AAD) of 42 to 47 per cent and 66 to 71 per cent for *C. difficile* associated diarrhoea (CDAD) (Avadhani and Miley, 2011; Videlock and Cremonini, 2012; Hempel, 2012; Johnston, 2012).

**Probiotic evidence is strain-specific**

The strain of probiotic provides the most detail about the type of bacteria. In probiotics, it is the specific strain that determines both the type of health benefits and the health conditions to which they apply. The benefits of one strain cannot be extrapolated to another (McFarland, 2009; Canani et al, 2007; Marteau, 2010).

**Analogy explaining the strain of probiotic bacteria**

<table>
<thead>
<tr>
<th>Genus/name</th>
<th>Species/surname</th>
<th>Strain/address</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Lactobacillus</em></td>
<td><em>casei</em></td>
<td>CNCM I-1518*</td>
</tr>
<tr>
<td>John</td>
<td>Smith</td>
<td>26 Elmtree Road</td>
</tr>
</tbody>
</table>

* CNCM I-1518 is the international reference for the strain on the Institute Pasteur database. The strain is the same as DN-114-001.

The World Gastroenterology Organisation (WGO) has produced helpful guidance on the probiotic strains (and products containing these strains) that have been shown to be of benefit in certain conditions and at what dosage. Most of the probiotic bacteria currently used belong to the *Lactobacillus* and *Bifidobacterium* genera. The theory is that certain strains of these ‘friendly’ bacteria can help to maintain a healthy gut microbiota and, consequently, help enhance immune function to help protect the body from infection. There is potential to help support a gut-stabilising effect from their use (Hempel, 2012; WGO, 2011).

The WGO advises that certain probiotics have been shown to be useful in reducing the severity and duration of acute and infectious diarrhoea in children and, in certain settings, the incidence in adults and children (WGO, 2011). For antibiotic-associated diarrhoea, the WGO states, ‘there is strong evidence of efficacy for *S. boulardii* or *L. rhamnosus* GG in adults or children who are receiving antibiotic therapy. One study indicated that *L. casei* DN-114 001 is effective in hospitalised adult patients for preventing antibiotic-associated diarrhoea and *C. difficile* diarrhoea.’ (WGO, 2011).

Probiotics can be found in different formats, such as foods or supplements. The potential health benefit of each product depends upon the specific strain of probiotic bacteria it contains. Several *Lactobacillus* species have been evaluated as chemoprophylactic agents for use in travellers. However, it must be remembered that results can vary and may be geographically inconsistent (Dupont, 2009).

Further information on diet and hydration, and how probiotics might be used to help manage diarrhoea is identified in more detail in Section 6 of this resource on page 23.
When things go wrong in the digestive process

a. Mechanisms of diarrhoea

The mechanisms of diarrhoea include osmotic, secretory, inflammatory or abnormalities of motility.

**Osmotic diarrhoea**

This can occur when too much water is osmotically drawn into the bowel. This occurs because:

- the patient has ingested a non-absorbable substance such as a laxative like magnesium sulphate or magnesium-containing antacid
- the patient has generalised malabsorption, where nutrients stay in the gut and create an osmotic influence by extracting water, as in coeliac disease and pancreatic insufficiency
- large amounts of artificial sweeteners containing sorbitol can produce osmotic diarrhoea. Osmotic diarrhoea stops when the patient stops eating or the malabsorptive substance is discontinued. Osmotic diarrhoea may be suspected if there is cessation of diarrhoea on fasting.

**Secretory diarrhoea**

Secretory diarrhoea can occur when there are both active increased intestinal secretions of fluid and electrolytes, as well as decreased absorption. Common causes are:

- abnormal mediators such as enterotoxins (e.g. cholera, *E. coli*, *C. difficile*) and neurohormonal agents (e.g. vasoactive intestinal peptide in the Verner-Morrison syndrome, bile salts (in the colon) following ileal resection
- some laxatives (e.g. docusate sodium).

The hallmark of secretory diarrhoea is continuation of diarrhoea on fasting (Kumar and Clarke, 2012).

**Inflammatory diarrhoea – mucosal destruction**

This occurs because of damage to the intestinal mucosal cell so that there is a loss of fluid and blood. In addition, there is defective absorption of fluid and electrolytes. Common causes are infective conditions (e.g. dysentery due to *Shigella*) and inflammatory conditions (e.g. ulcerative colitis, Crohn’s disease and coeliac disease).

**Abnormal gut motility**

Diabetic and hyperthyroid diarrhoea are due to abnormal motility of the gut. In many of these cases the volume and weight of the stool is not all that high, but frequency of defecation occurs.

b. Causes of diarrhoea

<table>
<thead>
<tr>
<th>Acute diarrhoea</th>
<th>Chronic diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious diarrhoea</td>
<td>Metabolic disease</td>
</tr>
<tr>
<td>Drug and alcohol use</td>
<td>AIDS-immune disease</td>
</tr>
<tr>
<td>Medical conditions</td>
<td>Functional</td>
</tr>
<tr>
<td>Other</td>
<td>Cancer</td>
</tr>
<tr>
<td>Did you know?</td>
<td>Endocrine</td>
</tr>
<tr>
<td>Diarrhoea can be classified as acute or chronic, within which it may be infectious or non-infectious, functional, inflammatory, endocrine, drug induced or neoplastic in origin.</td>
<td>Mal absorption</td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
</tr>
</tbody>
</table>
**Acute and chronic diarrhoea – definitions and causes**

Chronic diarrhoea is classified as diarrhoea persisting for greater than four weeks and necessitates investigation. Acute diarrhoea is classified as diarrhoea lasting for less than four weeks and is usually self limiting. Approximately 90 per cent of acute diarrhoeas are caused by infections and present with abdominal pain, nausea, vomiting, fever and generalised fatigue. Tenesmus can occur and is described as feeling the need to defecate even when the rectum is empty. This may result in the patient straining with associated pain and cramping. This, and the presence of blood and mucus in the stool, indicates inflammation and colonic involvement.

Most infectious diarrhoeas are acquired through faeco-oral transmission from water, food or person-to-person contact. Beef, fish and poultry may be the source of infection when improperly cooked or improperly stored. Food left out for long periods on a buffet table can also be a source. Travellers’ diarrhoea is a condition which can affect people who travel abroad. It is a syndrome that may be caused by one or more of several different organisms; the most common being enterotoxigenic *E.coli*, *Campylobacter spp*, *Salmonella spp* and some viruses (norovirus) and protozoa (*Cryptosporidium* and *Giardia*). Dysentery and cholera are less common causes of diarrhoea in travellers. The remaining 10 per cent of acute diarrhoeas have a variety of causes.

For acute diarrhoea of a non-infectious cause, diet is often blamed and those patients will frequently request guidance about what to eat and drink. Food-induced symptoms are very common. Although many recommendations have been made for dietary management in diarrheal diseases, there is little supportive evidence for efficacy for any of them. Co-ordination of diet with drug therapy is an important part of a comprehensive treatment plan for these patients (Schiller, 2006).

**Did you know?**

Sorbitol, a widely used sweetener in chewing gum, sweets and dietary products acts as a laxative. A stick of sugar free gum contains 1.25 gms of sorbitol. 20 gms per day will cause diarrhoea.

The possible side effects are usually found only within the small print on foods containing sorbitol (Bauditz, 2008).

The following table highlights the complex and different aetiologies involved in the causation of diarrhoea in both acute and chronic disease.

<table>
<thead>
<tr>
<th>Example causes of acute diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infectious diarrhoea</strong></td>
</tr>
<tr>
<td>Usually associated with infected food and water</td>
</tr>
<tr>
<td><strong>Bacteria</strong></td>
</tr>
<tr>
<td>• <em>Salmonella</em></td>
</tr>
<tr>
<td>• <em>Shigella</em></td>
</tr>
<tr>
<td>• <em>Campylobacter</em></td>
</tr>
<tr>
<td><strong>Viral</strong></td>
</tr>
<tr>
<td>• Rotavirus – infants and children are susceptible to infections commonly caused by rotovirus</td>
</tr>
<tr>
<td>• Norovirus – umbrella term for a range of viruses causing sudden vomiting and/or diarrhoea</td>
</tr>
<tr>
<td><strong>Travellers’ diarrhoea</strong></td>
</tr>
<tr>
<td>• More than 30 per cent of people travelling from temperate countries to the tropics develop self-limiting diarrhoea; incidence may be up to 60 per cent in those travelling from a high-income to a low-income country (HPA, 2011)</td>
</tr>
<tr>
<td>• Enterotoxic <em>Escherichia coli</em> (ETEC) is the cause of diarrhoea in up to 72 per cent of cases, the remainder being caused by retrovirus, adenovirus, <em>Salmonella spp</em>, <em>Shigella spp</em> and <em>Campylobacter spp</em></td>
</tr>
<tr>
<td>• Less common causes of prolonged diarrhoea in travellers are due to infection with <em>Giardia intestinalis</em> or <em>Entamoeba histolytica</em> (amebic colitis or ameobic dysentery)</td>
</tr>
<tr>
<td><strong>Drug and alcohol use</strong></td>
</tr>
<tr>
<td><strong>Alcohol</strong></td>
</tr>
<tr>
<td>• Laxatives</td>
</tr>
<tr>
<td>• Antibiotics</td>
</tr>
<tr>
<td>• Antibiotic-associated diarrhoea may occur in 20 per cent of patients receiving broad-spectrum antibiotics</td>
</tr>
<tr>
<td>• About 20 per cent of these are due to <em>C. difficile</em>. Non-<em>C. difficile</em> diarrhoea is usually mild and self-limiting</td>
</tr>
<tr>
<td><strong>Other drugs</strong></td>
</tr>
<tr>
<td>• Other drugs that may cause acute diarrhoea include: Digoxin, magnesium salts, proton pump inhibitors e.g. Omeprazole, H2 receptor antagonists e.g. Cimitadine, non-steroidal anti-inflammatory drugs (NSAIDs), Methyldopa, Theophylline, Metformin, Bronchodilators, antihypertensives, chemotherapeutic agents</td>
</tr>
</tbody>
</table>
### Example causes of acute diarrhoea continued

**Medical conditions**

**Food allergy/intolerance**
- Food allergy or intolerance to certain foods may cause acute diarrhoea

**AIDS**
- Infection with *Cryptosporidium parvum* is common in AIDS patients where CD4+ T cell count is low.
- The diarrhoea is usually prolonged and may become life threatening

**Ischaemic colitis**
- Older people are at risk, particularly those with cardiovascular disease, atherosclerosis, dyslipidaemia, hypertension and cardiac arrhythmias
- Patients usually present with severe lower abdominal pain, rectal bleeding and hypotension

**Other**

**Menstruation**

**Acute anxiety/stress**

**Environmental toxins**
- For example, organophosphate insecticides

**Running**
- Runners’ diarrhoea – the underlying mechanism is not clearly understood

**Neoplastic causes**
- Rare neoplastic causes include Zollinger-Ellison Syndrome and Medullary carcinoma of the thyroid

**Over-indulgence**
- Over-indulgence of food or alcohol may cause acute episodes of diarrhoea

### Causes of chronic diarrhoea

**Metabolic disease**

**Hyperthyroidism**

**Pancreatic cancer**
- Some tumours may secrete unusual peptides, which can cause diarrhoea e.g. in Vipoma

**Autoimmune disease**

**Blind loop syndrome**
- Affects large intestine. Blood and mucus in stools is often associated with abdominal pain

**Coeliac disease**

**Inflammatory bowel disease**

**Ulcerative colitis**
- Affects large intestine. Blood and mucus in stools is often associated with abdominal pain

**Crohn’s disease**
- In small intestine, pain and diarrhoea are common. Blood and mucus in stools is less common.
- In large intestine, blood and mucus in stools is often associated with abdominal pain

**Behçet’s disease**

**Other colitis**
- Microscopic colitis
- Lymphocytic colitis
- Collagenous colitis

**Functional**

**Irritable bowel syndrome (IBS)**

**Cancer**

**Colon cancer**
- There is usually a positive faecal occult blood

**Small bowel lymphoma**

**Endocrine**

**Thyrotoxicosis**

**Diabetes**

**Addison’s disease**

**Malabsorption**

**Chronic pancreatitis**
Causes of chronic diarrhoea continued

<table>
<thead>
<tr>
<th>Medical intervention</th>
<th>Radiation therapy</th>
<th>May cause radiation colitis</th>
</tr>
</thead>
</table>

**Digestive tract surgery**
May cause blind loop syndrome. This affects the small intestine and produces a frothy and foul smelling liquid stool due to bacterial overgrowth

**Emotional**

**Stress/anxiety**

**Constipation**

**Hard stools**
Hard stools present with constipation and may cause overflow diarrhoea. This is common in the elderly, in proctitis and with use of constipating drugs such as opiates

(Adapted from Kumar and Clarke, 2012)

**Antibiotics and the gut**

Antibiotics can disrupt the normal gut bacterial flora, also referred to as the gut microbiota, and can allow opportunistic health care associated pathogens such as *C. difficile* entry to, and multiplication in, the gut. It is therefore very important to be aware if patients have had recent antibiotics prescribed, either as single or multiple courses as this indicates a well-known risk factor for *C. difficile* infection. Antibiotics can affect the gut in different ways, for example, some broad spectrum antibiotics can destroy almost all gut bacteria. Erythromycin can increase gut motility and cause diarrhoea. Breakdown products of penicillin can act as an osmotic laxative. Tetracycline inhibits fat absorption leading to diarrhoea, whilst neomycin affects bile salt absorption, leading to diarrhoea.

All health care professionals have a responsibility relating to prudent prescribing and antibiotic stewardship. Use of antibiotics can lead to infection by *C. difficile*, an anaerobic bacterium present as a result of colonisation in the gut of three per cent of healthy adults and up to 66 per cent of infants. Colonisation of the gut by *C. difficile* is a precursor to infection. This occurs when spores present in the patient’s environment (home or hospital) are ingested. *C. difficile* spores are ubiquitous and their presence in water and soil as well as hospital environments is well recognised. *C. difficile* spores germinate in the bowel and can multiply rapidly producing toxins which cause diarrhoeal illness. *C. difficile* rarely causes problems in healthy individuals because it is kept in check by the resident microbiota.

Assessment and identification of those vulnerable to *C. difficile* infection can assist the prescriber and help them to rationalise their prescribing practices. Using risk assessment tools can assist in this process, along with following antibiotic guidelines and formularies. See the Department of Health’s (England) *Guidance on the diagnosis and reporting of C. difficile* (DH, 2012), *Guidance on prevention and control of Clostridium difficile Infection (CDI) in Healthcare Settings in Scotland* (HPS, 2009), The Northern Ireland Regional Infection Prevention and Control manual (DHSSPS, 2008).

c. Classifications of diarrhoea

<table>
<thead>
<tr>
<th>Common</th>
<th>Uncommon</th>
<th>Rare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastroenteritis viral (rota)</td>
<td>Coeliac disease</td>
<td>Autonomic neuropathy</td>
</tr>
<tr>
<td>Bacterial (Salmonella, Campylobacter)</td>
<td>Hypogammaglobulinemia</td>
<td>Tropical sprue</td>
</tr>
<tr>
<td>Parasitic (Giardia lamblia)</td>
<td>Bacterial overgrowth</td>
<td>Ischaemic colitis</td>
</tr>
<tr>
<td>Toxin (E. coli, Shigella)</td>
<td>Microscopic colitis</td>
<td>Whipple’s disease</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>Chronic pancreatitis</td>
<td>Collagenous colitis</td>
</tr>
<tr>
<td>Drugs (many)</td>
<td>Thyrotoxicosis</td>
<td>Addison's disease</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Pseudomembranous colitis</td>
<td>Hypoparathyroidism</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>Laxative abuse</td>
<td>Amyloidosis</td>
</tr>
<tr>
<td>IBD</td>
<td>Food allergy</td>
<td>Behcet’s disease</td>
</tr>
<tr>
<td>Hypolactasia</td>
<td>Ileal/gastric resection</td>
<td>Gastrinoma</td>
</tr>
<tr>
<td></td>
<td>NSAID enteropathy</td>
<td>Zinc deficiency</td>
</tr>
</tbody>
</table>
Assessment and diagnosis

Diagnosis can be challenging because a number of causes may present with a symptom of diarrhoea. A detailed patient history is crucial in helping with diagnosis.

In acute diarrhoea the initial assessment should focus on establishing if this is new onset diarrhoea. It could be that this is a usual pattern of elimination for the patient. It is also important to understand exactly what the patient means by ‘diarrhoea’ as this may not represent the medical definition of diarrhoea at all. Patients should also be asked about incontinence and urgency; nursing staff should be aware that a person may consider they have diarrhoea when they really have a disorder of continence. Patients may be reluctant to talk about incontinence and so it is important to ask the question within the assessment.

Did you know?

Individuals with functional bowel disease, such as irritable bowel syndrome, and in which there is no observable change in the structure of an organ, rarely have nocturnal disturbances. Those with organic disease (defined as any disease in which there is a physical change in the structure of an organ, such as in inflammatory bowel disease) are most likely to have symptoms of less than three months duration, with nocturnal or continuous symptoms and weight loss.

In assessing diarrhoea it is important to determine the duration, frequency, pattern and severity of symptoms. Pattern is important. Ask about stool characteristics: is the stool watery, bloody or fatty? Explain that a fatty stool tends to float in the toilet and may be difficult to flush and may present with a foul smell.

a. Establishment of new onset acute diarrhoea

Once new onset diarrhoea has been established, isolation of the patient is the most prudent approach within health care facilities, whilst attempting to identify the underlying cause. This approach will improve early identification of C. difficile infection (CDI) using application of the acronym ‘SIGHT’ (DH, 2009). Only when the cause of the diarrhoea has been identified can treatment and care be optimised. It is essential that a robust assessment of the cause of diarrhoea is undertaken and stool specimens are obtained promptly if infection is suspected in line with local policies so that C. difficile or other infectious conditions can be excluded or confirmed, and the patient de-isolated as soon as possible.

Note: it is essential that thorough risk assessment takes place as to the potential cause of a new onset of acute diarrhoea. Specimens should be obtained if no non-infectious cause is identified or infection is suspected. Faecal specimens should not be taken ‘just in case’ or on a repeat basis unless as advised by infection prevention teams.

SIGHT

- Suspect that a case may be infective where there is no clear alternative cause for diarrhoea.
- Isolate the patient while determining the cause of the diarrhoea.
- Gloves and aprons must be used for all contacts with the patient and their environment.
- Hand washing with soap and water should be carried out before and after each contact with the patient and their environment.
- Test the stool for toxin by sending a specimen immediately.

b. Managing the effects of diarrhoea

Assessment

Clinical assessment should include looking at the severity of the patient’s condition, responding to that in terms of seeking medical aid and deciding the best initial approach. The Royal College of Physicians (2012) recommends using the National Early Warning Score (NEWS). This tool facilitates a timely response to, and assessment of, an unwell patient. A score can be allocated to physiological measurements of six parameters – respiratory rate, oxygen saturation, temperature, systolic blood pressure, pulse rate and level of consciousness. A higher score may indicate a need to trigger a response for an action.
Assessing the need for rehydration and nutrition is important. The Malnutrition Universal Screening Tool (MUST) is a useful aid (Todorovic et al, 2003). Patients with acute diarrhoea can suffer from mild dehydration due to the loss of fluids. This is common and may be quickly reversed by drinking lots of fluids. Severe dehydration should be corrected as appropriate and medical advice should be sought (see Appendix 1).

Examination
The presence or absence of abdominal pain and its nature should be evaluated. It is often present in IBD (inflammatory bowel disease), IBS (irritable bowel syndrome) and ischaemic colitis. Another symptom which may accompany pain is abdominal bloating. Abdominal inspection and examination can be useful if you have the clinical skills to undertake this. It may reveal abdominal distension, an abdominal mass, or tenderness over a particular part of the bowel. The nature of the pain is important, as well as obtaining and maintaining a pain score.

Rectal bleeding may indicate a more substantial and clinically important pathology. Digital rectal examination (DRE) is a useful assessment tool but should only be carried out by nurses who have been assessed as competent to do so (RCN, 2012). DRE can establish the presence of faecal matter in the rectum, the amount and consistency, as well as assess anal pathology. Examination of the perianal region can reveal the following:

- haemorrhoids
- anal fissure
- anal skin tags
- rectal loading
- wounds – dressings and discharge
- anal lesions – possible malignancy
- anal fistula/induration (RCN, 2012).

Identifying the cause of diarrhoea
Once severity has been assessed and the appropriate actions taken, the assessment process should continue with a focus on identifying the underlying cause of diarrhoea. The following questions may be useful.

Are there any predisposing factors which may arouse suspicion of a CDI infection?

Factors to consider:
- any antibiotic exposure (e.g. multiple antibiotic courses)
- age (is the patient over 65?)
- previous GI surgery/manipulation
- a long length of stay in a health care setting
- a serious underlying illness
- use of proton pump inhibitors (PPI)
- a previous CDI
- nutritional supplements (HPA, 2008)
- any contact with another patient with *C. difficile* (e.g. patients in the same bay).

Are there any pre-disposing medical conditions which may account for the diarrhoea?

Factors to consider:
- inflammatory bowel disease (IBD)
- is there a history of gastrointestinal surgery?
- chronic pancreatitis
- coeliac disease
- HIV.

A discreet enquiry about sexual history may be necessary. Anal intercourse may be a cause of proctitis as well as a risk factor for sexually transmitted disease.

Is there a history of recent travel?
Epidemiological factors, such as foreign travel, may be suggestive of travellers’ diarrhoea or diarrhoea present in a household contact. Recent contact with a person with diarrhoea, or exposure to potentially contaminated food or water, could be suggestive of an infective origin.

What is their drug and alcohol history?
- Has there been any alcohol intake in the previous 24 hours? Binge drinking is defined as over eight units in a male and six units for a female (DH, 2010).
- Any laxative use (including treatment of hepatic encephalopathy in liver disease using osmotic laxatives)?
- Any oral iron?
- Any metformin?
- Any antibiotics?
As previously mentioned, antibiotic prescribing is known to increase the risk of antibiotic associated diarrhoea (AAD). This is when diarrhoea occurs as a result of altering bowel microbiota through the use of antibiotics. It can be significant for older people, particularly as it can mean an increased risk of *C. difficile*, which can lead to pseudomembranous colitis (NHS Knowledge Summaries, 2009).

Opiates or constipating drugs may lead to constipation which can present as diarrhoea. This is commonly known as overflow diarrhoea. Be aware of this when making an assessment. This is common in frail older people and in individuals with neurogenic bowel dysfunction, and may be misdiagnosed as diarrhoea and therefore treated incorrectly (Harari, 2004).

**What is their dietary history?**
Factors to consider:
- naso-gastric tube feeding
- dietary agents, for example, sorbitol use
- food poisoning.

**Is there any abdominal or pelvic radiation history?**
Be aware that a history of radiation may relate to radiation colitis.

Following assessment the patient may need to be transferred, either to another setting or within an organisation. Always consider the risk of infectious diarrhoea and the dignity and respect of the patient during transportation. The ambulance service will require information and they have a pathway to support ambulance transfers (see Appendix 2).

Developing patient-centred care for managing diarrhoea

The RCN’s *Principles of Nursing Practice* (2010) provides nursing teams with a patient-centred focus for planning individualised care. It takes into account the important care issues along with what really matters to individuals – in this case patients with diarrhoea – and how nurses can best help them manage this unpleasant and frequently unmentionable condition.

**Principle A – Dignity, humanity and equality**
Delivering quality care is essential when dealing with a patient suffering with diarrhoea, irrespective of the cause. This should include a clear, agreed management plan. This plan should cover how everyone involved perceives the issues and copes with the situation. It should include patients, family, staff and others involved in the care. It is particularly important to consider cultural differences, particularly those between the patient, the clinician and any carers involved in the care.

**Principle B – Accountability and responsibility**
Nursing staff must take responsibility for the care they provide and for their own judgments and actions. They should carry out these actions in a way that is agreed with their patients, families and carers, and meet the requirements of their professional bodies and the law. It is important when deciding on an appropriate management plan that practicalities of diarrhoea are taken into consideration.

Nursing staff have a responsibility to accurately record all issues that help or hinder patient care. For instance, using
the Bristol Stool Chart or the King’s Stool Chart (Appendices 3 and 4) as suitable tools for recording episodes of diarrhoea promotes behaviour that is in line with the code of practice.

**Principle C – Safety**

Safety is paramount when managing a patient with diarrhoea. This involves insight into the patient’s perception and level of understanding of the problem. Understanding how best to gather and record information is essential and once obtained, will lead to a decision on how best to manage the condition. The focus should be on improving the patient’s quality of experience, reducing their distress and maintaining their safety and dignity.

When planning care for patients, both in hospital settings and in home care settings, the risks associated with infectious diarrhoea must not be overlooked. Diarrhoea when just an occasional problem, is an embarrassing and difficult condition to manage. At worse, it can be life threatening due to dehydration, particularly in patients who are at the end of their life or are unable to communicate easily. However, there are other groups that may be compromised temporarily, such as pregnant women. These women should be advised to speak to their midwife if they develop unexpected diarrhoea. Patients who commence new medication should report such symptoms to their general practitioner.

**Principle D – Person-centred care**

Nursing staff should provide and promote care that puts people at the centre. This means involving patients, service users, their families and their carers in decisions which enable informed choices about treatment and care. Supporting patients with diarrhoea and providing a plan of care that is truly person-centred and safe, and not just system-orientated, must be the key element for managing this condition.

The care areas that always need to be addressed in any diarrhoea-related care plan are: safety and dignity – including privacy, skin care, nutrition, hydration and elimination. Advice on how to obtain samples is included in detail later, but it is important not to overlook other areas such as sexual and spiritual needs, and specific hygiene and mobility needs when planning person-centred care.

Consider the physical and psychological impact issues, such as poor mobility and difficulty in gaining access to toilets, including clear signage, incontinence aids and hygiene needs; these all need to be identified in the care plan. In particular, addressing the embarrassment of having to use the toilet in a public environment and the associated noises, smells and disposal are particularly important.

Emotional support is another important issue and taking time to discuss concerns, embarrassment and practical issues with the patient is essential. Ensure everyone associated with the patient’s care (for example, health and social care staff, support staff, relatives) are included in this discussion. The patient may need additional privacy and this might mean family members or personal carers are included in planning arrangements and provided with education on how to support the person with diarrhoea.

It is particularly important not to make assumptions about who should be involved in managing this situation.

Further advice on managing bowel function is available at: www.bladderandbowelfoundation.org

**Principle E – Effective communication**

Nursing staff need to be at the heart of the communication process. It should be remembered that all aspects of care need to be assessed and recorded. In addition, all reports on treatment and management need to be handled sensitively and confidentially. When planning how to manage a patient with diarrhoea the following issues need to be taken into consideration.

a) Confirm what is important to the patient regarding their condition and agree how the nurse can support the patient’s concerns.

b) What are the patient’s usual coping strategies? They may cope in their own home but not in different surroundings, for example, when in hospital how do they currently manage their problem?

c) What do other people think the problem is? Family or friends might have a different view to the patient and be able to offer alternative informed views.
Effective communication helps to manage patient expectations so always consider what the patient needs and/or wants to know.

It is important not to give false expectations. Consider how best to impart information but provide adequate content about the type of diarrhoea they have, the implications and predicted length of episode, as well as what might be possible or not possible.

Communicate advice to patients and family members, both at home and in care settings, on how to manage washing laundry and cleaning generally. Leaflets should be provided identifying infection management issues.

**Did you know?**
Always wash soiled laundry at the highest temperature possible for the fabric. Do not wash infected/soiled laundry with other family members’ clothes.

Effective communication should also address any equality and diversity issues, such as the impact of the patient’s beliefs and culture in dealing with their condition, availability of hand washing facilities and ability/expectations regarding disposal of potentially infected faeces.

Consider the individual’s culture when developing a plan of care. Use of appropriate language to personalise and tailor questions is vital to the specific individual, consider whether they have any form of language barrier. Always use an open question technique such as, ‘How often do you go to the loo/toilet?’

The following are some tips for communicating with individuals who have any aspect of cognitive difficulty or disability, for example, dementia, stroke, learning disability.

- Check understanding by asking the patient to explain in their own words what has just been described to them.
- If accompanied by a carer, ask them for advice on the best method of communicating.
- Give the patient time to respond.
- Observe body language for clues.
- Use visual prompts/pictures if possible.
- If the patient is unco-operative it may be that they are distressed. Attempt to find out what the problem is.

**Principle F – Applying skills and knowledge**

Nursing staff are expected to have up-to-date knowledge and skills. They should use these with intelligence, insight and understanding, in line with the needs of each individual in their care and for those who are planning to travel away from their usual place of residence (where access to toilet facilities may vary). For patients with diarrhoea, this will specifically include the following areas:

- safety and dignity
- nutrition and hydration
- elimination
- sexual and spiritual needs
- hygiene needs
- mobility needs
- emotional support.

As previously highlighted, it is immensely important when planning care to address the impact of mobility and access to toilets, incontinence aids, and hygiene needs, the embarrassment of having to use the toilet in a public environment and the associated noises, smells and disposal.

**Principle G – Continuous care across teams**

Nursing teams should work closely with other professionals, making sure the patient’s care and treatment is co-ordinated, is of a high standard and has the best possible outcome. This is particularly important when considering patient groups that are identified as having specific risks, such as through their existing physical, mental or condition-related state.

**Principle H – Leadership and responsive care**

Nurses and nursing staff should lead by example, develop themselves and other staff, and influence the way care is given in a manner that is open and responds to individual needs. This includes supporting patients with both chronic and acute diarrhoea. It is useful to highlight areas and techniques that are forgotten or not fully considered when helping patients cope with diarrhoea. These include some
practical issues relating to managing the condition, particularly for self-management approaches used by individuals who maintain a home-based care approach.

The specialist nurse in inflammatory bowel disease is a knowledgeable, experienced and proficient practitioner in the specialty (Woods, Belling and McClaren, 2006). Hernández-Sampelayo (2010) talks about the important role that nurses have in managing this disease process and also in providing patients with education, counselling, physical and emotional support.

A specialist nurse should be able to offer:

- access to specialist toilet facilities and use of a ‘Radar key’
- a ‘can’t wait’ card
- an emergency kit of items needed to deal with soiling and replacement– such as wet wipes, plastic bag and spare underwear and planned toilet routes
- information on support groups
- practical coping methods (plus/pads, etc.)
- faecal incontinence aids
- useful resources (for example, Inflammatory bowel disease nursing edited by Kathy Whayman, Julie Duncan and Marion O’Connor. Quay Books, 2011)
- help with urge resistance techniques, for example, sphincter exercises
- optimised medical management.

The attributes most highly valued by patients and their families include: easy availability, kindness, empathy, and the ability to communicate and to reinforce patients’ confidence (Woods et al, 2006).

Nurses and nursing staff need to provide highly responsive care when considering the psychological, emotional and physical needs of individuals with diarrhoea. Whilst safety and dignity are essential aspects of care for this group, the emotional, social and physical care needs of this particular condition provide some challenging and complicating factors to be considered. The psychological impact of isolation must be highlighted in the care plan and intentional rounding is an initiative to ensure that a patient’s care needs are met – can play an important role in this area (Fitzsimmons et al, 2011).

To meet and cater for these needs, consider the patient’s care setting, for example, the availability of a commode/toilet/hand washing facilities. Also consider the patient’s privacy and appreciate the signs of distress that a patient might be showing when staff or carers are present. These could be either physical or emotional signs of distress.

It is important to provide support and reassurance, but also to promote high quality professional care and support which might include educating colleagues, developing policies and producing educational materials for both patients and staff. Advocacy in this area is not always high profile, however for both patients and clinicians, this is a highly sensitive and emotionally charged area of care and nurses should be both adversarial and responsive, promoting good, safe care and motivating their patients to be actively involved in all aspects of their care.

The following table identifies some of the patient and nursing challenges to consider under diagnostic groupings.

<table>
<thead>
<tr>
<th>Challenges for patients/nursing staff</th>
<th>Patient risk/problem</th>
<th>Special consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility/physical</td>
<td>Immobile and/or risk of falls</td>
<td>Ease of access to facilities/assistance</td>
</tr>
<tr>
<td>Palliative care</td>
<td>Pain/skin integrity</td>
<td>Continence assessment/Waterlow assessment</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Exertion/breathing, Antibiotic usage</td>
<td>Height of bed/chair, Water in bathroom facilities, Antibiotic stewardship/individual prescribing</td>
</tr>
<tr>
<td>Stroke</td>
<td>Cognitive/communication</td>
<td>Sign board, bell or buzzer signal</td>
</tr>
<tr>
<td>Intestinal conditions</td>
<td>Urgency</td>
<td>Ease of facilities/dedicated facility</td>
</tr>
</tbody>
</table>
Clinical issues for consideration when managing diarrhoea

a. Sample taking

Issues that might appear obvious to experienced health care staff can pose significant problems to patients and many health care providers. For instance, how do you collect a specimen of faeces?

In hospital the recommended method is to use a bedpan in either a commode or toilet (refer to local policies/guidelines), however, sample taking at home poses many practical limitations and patient awareness may be very limited. There appears to be very few documented protocols for how to take or obtain faecal samples in the community. (HPA/BIA, 2007).

Public Health England (PHE) advice suggests that patients would prefer to be given disposable gloves. PHE advises that a margarine or tin foil container can be held by the patient to catch the loose stool as it is passed (HPA/BIA, 2009). If this is difficult for the patient, the container can be placed on newspaper put across the toilet bowl and held in place with the toilet seat.

The spoon provided with the sample pot can be used to collect the stool, or it can be poured directly into the sample pot. Do not fill the specimen container (four to 10 mls or two plastic tea spoons full is adequate). Remember to instruct the individual to throw the container and spoon away, well wrapped in paper and disposed of in the general rubbish, not the recycling bin. The importance of washing hands after collection should be emphasised. Instructions on when samples should be obtained, and how much is required, can differ between different laboratories.

For patients where specimen collection proves difficult due to the nature of the diarrhoea (e.g. where fluid soaks into incontinence pads) local policies should provide advice should a specimen be required. Local infection prevention teams should also be contacted for advice in such scenarios if information is not readily available.

For further information see the British Infection Association (BIA) and the Health Protection Agency (HPA) quick reference guide for primary care: Infectious diarrhoea – the role of microbiological examination of faeces. Quick reference guide for primary care. For consultation and local adaptation. www.hpa.org.uk From April 2013 the HPA ceases to exist and its functions will be transferred to PHE.

Guidance on where samples should be stored and how long

A fresh sample is ideal, but one obtained the night before and that has been placed in a sealed container and kept in a cool place, can be taken to either a surgery or hospital laboratory the following day. Writing the patient’s name, date and time on the sample pot is essential. A sticky label attached to the pot is ideal for a home obtained sample. The correct pot and form are essential for hospital samples. These should be taken to the laboratory in line with local policy.

Further information is available from NHS Choices: How should I collect and store a stool (faeces) sample? visit www.nhs.uk

Use of faecal collection systems

External collection systems can be used in both hospital and home settings. These stick on around the anal region and have a special contact pad to prevent skin damage, for example, a hydrocolloid dressing. They can be difficult to apply and maintain in position, particularly if someone is confused. This type of device is easier to use if the patient is immobile or unconscious.

Health care staff should take a proactive information sharing approach – such as addressing possible questions before being asked. This can reduce anxiety by anticipating something that a patient may be afraid to ask, for example, offer an explanation about quantity of faeces sample anticipated. Patients can be concerned that a collection device will only hold so much. Providing understanding about where, and when, the chosen collection method can be applied, for instance the patient may want to sit on a commode with it in place.

Use of more invasive internal faecal collection devices can
sometimes be appropriate. They are mostly used in hospital or palliative care organisations and there are many on the market with instruction leaflets available. However, whilst internal faecal collection devices can be very useful, they have to be used only when specialised continence services have been involved and an appropriate assessment formerly undertaken and documented.

b. Infection prevention considerations

When delivering care to patients with diarrhoea, staff should comply with local policies and guidance on standard precautions and decontamination of the clinical/patient environment. Standard precautions should be adopted regardless of the presence of infection.

**Colonisation of the gut with multi-resistant bacteria**

The presence of multi-resistant bacteria in the gut is acknowledged as a risk factor for the spread of these organisms in health care facilities. One significant family of gram-negative bacteria, the Enterobacteriaceae, are clinically significant with Carbapenemase-producing Enterobacteriaceae (CPE) a particular concern currently due to their spread and resistance to carbapenems, one of the last effective groups of antibiotics used to treat multi-resistant bacterial infections. Should CPE be present as colonisation in the bowel of patients who experience diarrhoea then a risk of transmission of this organisms exists. Public Health England is publishing guidance on the control of CPE (in draft at the time of publication) which applies to all health care settings and long-term facilities. The management of diarrhoea in patients colonised with CPE or other multi-resistant gram-negative bacteria should be included in local polices which staff should refer to.

**Cleansing** – keeping the area clean is essential. Use a product with a pH reflecting healthy skin 5.4 to 5.9. No-rinse skin cleaners help loosen and remove dirt, and remove gram negative and positive bacteria from the skin (Ronner et al, 2010)

**Moisturising** – provide a moisturiser to prevent damage by restoring the lipid barrier. This will help the skin to attract, hold and redistribute water and provide a barrier to protect from additional exposure.

**Protection** – use a product that provides a physical barrier through a substance that both moisturises and barriers, and so provides an element of skin hydration as a protective collection system.

Ensuring close observation of patients with diarrhoea or with the potential to develop diarrhoea will assist in maintaining good hygiene practice. A continence assessment and a risk assessment tool, such as the Waterlow assessment, will assist in this practice.

**Skin care essential management**

- Do use a product for cleansing with a pH between 5.4 to 5.9.
- Do not scrub when cleaning.
- Do undertake a continence assessment to decide on best approach.

The use of an algorithm about best approaches to skin care that both supports education for staff caring for the patient, the patient and the family is a useful addition to any care plan (Ronner, 2010).

d. Vulnerable at-risk population groups

**Older people**

The consequence of contracting acute diarrhoea can lead to malnutrition, dehydration, electrolyte imbalance, vitamin and mineral deficiencies and potentially weakness and death. Frail older people can become overwhelmed by the malaise and profuse diarrhoea associated with conditions such as *C. difficile* infection (CDI).

Assessment of bowel function is vital and should include normal patterns of elimination, assessment of diet and fluid intake, medication history, PR and abdominal examination.
End of life

The most important issues in diarrhoea management for patients at the end of their life relates to how, for their remaining time, their quality of life can be optimised. Changes in elimination, including diarrhoea and constipation may occur as a result of a number of factors. These include malabsorption, medications, stress, constipation with associated overflow diarrhoea, physiological abnormalities (GI bleeding and obstruction of the bowel).

It is important to consider how each patient’s individual needs will differ when suffering from diarrhoea, as it will affect patients differently depending on how much the diarrhoea is perceived to affect their quality of life. Any management must be approached in practical terms, must not be burdensome or cause undue side effects. Another issue for both end of life and palliative care patients can be poor appetite. Often the oral route for diet, hydration and medications can become very difficult nearing the terminal stages of life. Those who have experienced ongoing diarrhoea from early on in their illness, may become less able to manage as their ability to cope decreases, especially with personal hygiene. This can be very distressing for both patients and their carers and the role of the nurse in maintaining dignity, humanity and person-centred care is essential. An acute onset of diarrhoea at the end of life requires a thorough assessment in order to determine how best to treat and manage it given potential limitations of treatment as determined by the patient’s condition.

Dementia and people with cognitive impairment

People with dementia and those who care for them may need particular consideration and support in relation to managing diarrhoea. For those with dementia, problems may include finding and recognising the toilet, managing independently and coping with ‘accidents’ as a result of diarrhoea or incontinence. In addition, the person may have problems with communicating their need for support, or become distressed as a result. Those caring for the person may need to take a proactive approach to helping them use the toilet and supporting the person’s wellbeing and sense of dignity. This may include promoting use of the toilet, responding sensitively to episodes of diarrhoea and offering support sensitively. Independence should be encouraged through good signage, use of different coloured toilet seats, access to wipes for easy cleansing and use of incontinence pads (such as pull-ups). Carers will also need support and education about managing continence and diarrhoea as this can have a significant impact on their ability to cope.

Consideration must also be given to future planning, the Mental Capacity Act, best interest assessments and decision making. Advice from a mental capacity advocate should be sought to support the person and their carer(s).

Learning disability

In order to ensure staff consider appropriate involvement and compliance in both treatment and care plans for individuals who have learning difficulties, some adaptations or special considerations may be necessary. Support can be obtained from the hospital liaison nurse or the local learning disability community nursing service. It is advisable to tailor language in accordance with the person’s understanding, such as speaking more slowly and using shorter sentences. Alternative communication tools should be considered, such as the use of pictures, photographs, signs and symbols. More information is available at: www.changepeople.co.uk
Diet and hydration in the management of diarrhoea

a. Nutritional principles for people with acute or chronic symptoms of diarrhoea

Ensuring adequate nutrition and hydration is important at all times, but is especially so whilst suffering from diarrhoea. Adequate nutrition is defined as the consumption of a well-balanced varied diet, which provides an individual with all the nutritional requirements to maintain health and wellbeing. In addition to adequate nutrition, an individual’s hydration status is important to maintain kidney function, allow waste materials to pass freely from the body and regulate body temperature.

Acute diarrhoea

There is no evidence in adults that fasting or dieting is beneficial in the treatment of acute diarrhoea, or that solid food speeds or slows recovery (Wingate et al, 2001). Symptom management during the episode usually requires the substitution of food with fluids, such as savoury drinks and thin soups, until symptoms resolve. Consumption of solid food should be guided by appetite. Fatty, greasy or stimulant (such as caffeine) foods should be avoided. Increasing energy intake as tolerated, following an episode of acute diarrhoea, may be beneficial. For non-invasive travellers’ diarrhoea, drug treatment may be necessary in high-risk regions. It is wise to discuss this with individuals prior to travelling and recommend they discuss with a doctor the indications for drug treatment should the need arise.

Chronic diarrhoea

Chronic diarrhoea requires different nutritional management to that of acute diarrhoea. There are several conditions resulting in chronic diarrhoea, such as Coeliac disease and lactose intolerance, which require dietary manipulation as part of their primary treatment.

The presence of diarrhoea in these clinical conditions can indicate malabsorption, which is defined as nutritional depletion, dehydration and electrolyte losses.

Key dietary principles in the management of chronic diarrhoea

- Maintain a good fluid intake, for example, 10 to 15 cups of fluid per day (250mls = one cup). The choice of drinks is based on individual tolerance and preference. Provided that the drink does not worsen symptoms, any drink that helps to maintain energy or nutrient intake are acceptable, for example, milk based supplements or energy drinks.
- Recommend consumption of soft or easily digested foods, for example, white toast, soup, rice pudding. Once these are tolerated, the variety should be extended.
- Encourage small, frequent meals and snacks.
- Avoid spicy and greasy foods.

(Thomas, 2007)

Special diets used in the management of chronic diarrhoea

- Lactose-free diet.
- Low-residue diet.
- Gluten-free diet.

Seek guidance from a dietician before recommending any of the above as unnecessary dietary restrictions can compromise an individual’s nutritional status.

The principles of diet therapy in the treatment of malabsorption

- Dietary treatment of the primary disorder, for example, Coeliac disease.
- Dietary measures to provide symptom relief.
- The daily replacement of large losses of fluid and electrolytes.
- The restoration of optimal nutritional status.

(Thomas, 2007)
b. General dietary recommendations for people with diarrhoea

Dietary fibres

Fibre contributes to faecal weight as a result of the amount which remains undigested and unfermented, and also through the contribution to bacterial bulk following the entry of substrate into the colon.

Sources of fibre include:

- fruit and vegetables
- beans and pulses
- wholegrains
- bran.

Reducing fibre in the diet may help to manage the symptoms of diarrhoea. However, it is important to reintroduce fibre back into the diet once the diarrhoea has settled.

Hydration

Fluid loss can occur as a result of diarrhoea. Normally, the large quantities of digestive juices that are secreted into the GI tract are reabsorbed. If abnormal GI function results in excessive fluid loss, extracellular fluid, which crosses the mucosa into the gut replaces the secretions.

In normal circumstances, fluid requirements are 30 to 35mls/kg body weight. The Royal College of Nursing (2007) has produced a hydration best practice toolkit which provides practical tips on encouraging water consumption. Such practical tips include: assistance for those individuals who need it, the provision of chilled water where possible and the use of fluid balance charts to monitor fluid intake.

Eatwell plate

Following an episode of diarrhoea it is important to ensure an adequate and varied, balanced diet to optimise health.

The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.

Department of Health in association with the Welsh Government, the Scottish Government and the Food Standards Agency in Northern Ireland

If there is concern about an individual’s nutritional status, consider referral to the local nutrition and dietetic services.

Vitamins and minerals

If an individual’s dietary intake becomes compromised due to the duration of symptoms, it may be necessary to take a multivitamin. Seek advice from a dietician.

Dietary supplements

Hydration is important for gut health and is also important for people suffering from diarrhoea. There is evidence to show that using certain probiotics can reduce the length of a diarrhoea episode. Probiotics in the form of yoghurt drinks or fermented milks, which are available from chilled cabinets, can also be useful for individuals who are reluctant to eat supplements, as they are a way of encouraging fluids in small quantities.
The following section provides examples of tools that can be used to monitor and record the progress of patients with diarrhoea. It is good practice to have a care plan or pathway for both infectious diarrhoea and non-infectious diarrhoea.

In addition, it is helpful to use the following:

- diarrhoea assessment tools (that include prompts to assess, plan, implement and evaluate care). Examples include:
  - The Tameside Assessment Tool (Tameside and Glossop medicines management team)
- Care pathway documents:
  - Learning and disability team guidance
  - End of life care pathways e.g. Liverpool Care Pathway.
- Stool charts care pathways
  - Bristol Stool Chart (see Appendix 3)
  - King’s Stool Chart (see Appendix 4).
- Root cause analysis tools – various tools available.

The suggested examples are not exhaustive, however, they are commonly used and assist in consistent care practice.
The Hall Assessment Plan

Acute (new onset) diarrhoea – trust approach to patient care

Bowel movements of more than three times per day, correlating with the Bristol Stool Chart type 5 to 7, form the basis for this assessment.

Note: Always attempt to identify the underlying cause.

<table>
<thead>
<tr>
<th>Date:</th>
<th>Time of assessment:</th>
<th>Assessor:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>No</th>
<th>Yes</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this new onset diarrhoea according to the definition?</td>
<td></td>
<td></td>
<td>If ‘yes’ proceed with assessment. Isolate if there is no clear alternative cause. If ‘No’ discuss with medical team, flag with IPC Team</td>
</tr>
<tr>
<td>Was patient isolated?</td>
<td></td>
<td></td>
<td>If ‘yes’ at what time………………………</td>
</tr>
<tr>
<td>Was patient isolated?</td>
<td></td>
<td></td>
<td>If ‘no’ what reason………………………</td>
</tr>
</tbody>
</table>

1. Clinical assessment

Early Warning Score elevated above baseline? If ‘yes’ action as per NEWS guidelines
Moderate to severe abdominal pain If ‘yes’ seek medical advice
Rectal bleeding If ‘yes’ seek medical advice

2. Drug history

Laxatives Discuss stopping with medical team. If diarrhoea persists after 48 hrs – stool sample
Oral iron If ‘yes’ discuss with medical team
Metformin If ‘yes’ discuss with medical team
Opiates Consider spurious diarrhoea (overflow)

3. Overflow diarrhoea

See Appendix B

4. Dietary issues

Naso-gastric feeding If ‘yes’ discuss with medical team and dietician

5. Predisposing factors for CDT

See Appendix A – Collect stool sample and discuss with IPC Team

Appendix A

Increased risk for CDI

• Antibiotic exposure (multiple antibiotic courses)
• Age >65 years
• Gastro-intestinal surgery/manipulation
• Long length of stay in health care setting
• A serious underlying illness
• Proton pump inhibitor (PPI)
• Previous CDI
• Nutritional supplements (HPA, 2008)

Appendix B

Overflow diarrhoea

When a patient has constipation the faeces becomes so hard it cannot be expelled and only faecal fluid is passed. The signs are:
• only fluids are expelled
• it usually has the colour of faeces
• the patient has faecal soiling and incontinence
• it is not accompanied by abdominal pain.

Outcome:

Stool sample taken? Yes ☐ No ☐

What action taken?

Calder and Hall, 2012
Appendix 1: Clinical features of dehydration

- **Mild dehydration**
  - Lassitude.
  - Anorexia, nausea.
  - Light-headedness.
  - Postural hypotension.
  - Usually no signs.

- **Moderate dehydration**
  - Apathy/tiredness.
  - Dizziness.
  - Muscle cramps.
  - Pinched face.
  - Dry tongue or sunken eyes.
  - Reduced skin elasticity.
  - Postural hypotension.
  - Tachycardia.
  - Oliguria.

- **Severe dehydration**
  - Profound apathy.
  - Weakness.
  - Confusion, leading to coma.
  - Shock.
  - Tachycardia.
  - Marked peripheral vasoconstriction.
  - Systolic blood pressure less than 90 mmHg.
  - Oliguria or anuria.

(Farthing et al, 1996)
Appendix 2: National Ambulance Service Infection Control Network

Call to 999 with a patient with symptoms of acute diarrhoea and/or vomiting

AMPDS or pathways assessment

Green call

Clinical telephone advice

Refer to NHS Direct /111 for further support

Self care advice

Red call

Staff must assess:
- a complete set of routine observations
- physical signs of dehydration
- postural blood pressure
- onset and severity of symptoms
- previous contact with cases
- further cases within household or place of work/education
- recent foreign travel
- recent antibiotic use
- other medical conditions.

Following assessment, is patient well enough to be managed at home with referral to appropriate care pathway?

Patient safe to be managed in the community
- If required refer to GP/out-of-hours provider.
- Advise on calling 999 if symptoms worsen.
- Provide advice on specific symptoms to watch out for.
- Encourage clear fluids and ideally to include some fruit juice or soup.
- Encourage hand washing to reduce the risk of cross contamination.

Patient needs to be conveyed to hospital
- Unless absolutely essential, no additional relatives are to be conveyed with patient.
- On arrival at destination driver should liaise with triage nurse to ascertain most appropriate place for patient in department.
- Following patient handover, all surfaces in contact with patient must be cleaned using appropriate cleaning materials in accordance with local procedure.

Ambulance Service Pathway for the management of acute onset diarrhoea and/or vomiting

(Reproduced by kind permission of the London Ambulance Service NHS Trust)
Appendix 3: The Bristol Stool Chart

The Bristol Stool Form Scale

This chart lists the range of stool types most commonly passed. Ideally you should be aiming for a type 4 stool.

Type 1
Separate hard lumps, like nuts

Type 2
Sausage-like but lumpy

Type 3
Like a sausage but with cracks in the surface

Type 4
Like a sausage or snake, smooth and soft

Type 5
Soft blobs with clear-cut edges

Type 6
Fluffy pieces with ragged edges, a mushy stool

Type 7
Watery, no solid pieces

Reproduced with kind permission from Dr KW Heaton.
Family Doctor Publications Ltd and the British Medical Association (2006)
Understanding your Bowels by Dr KW Heaton. London: BMA.
Appendix 4: The King’s Stool Chart

<table>
<thead>
<tr>
<th>(A) Hard &amp; Formed</th>
<th>(1) Less than 100g</th>
<th>(2) Between 100 – 200g</th>
<th>(3) More than 200g</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hard or firm texture</td>
<td><img src="Image.png" alt="Image" /></td>
<td><img src="Image.png" alt="Image" /></td>
<td><img src="Image.png" alt="Image" /></td>
</tr>
<tr>
<td>• Retains a definite shape like a banana, a cigar or marbles</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(B) Soft &amp; Formed</th>
<th>(1) Less than 100g</th>
<th>(2) Between 100 – 200g</th>
<th>(3) More than 200g</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Retains general shape like peanut butter</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(C) Loose &amp; Unformed</th>
<th>(1) Less than 100g</th>
<th>(2) Between 100 – 200g</th>
<th>(3) More than 200g</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lacks a shape of its own may spread easily like porridge or thick milkshake</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(D) Liquid</th>
<th>(1) Less than 100g</th>
<th>(2) Between 100 – 200g</th>
<th>(3) More than 200g</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Runny like water</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

King’s Stool Chart © 2001 King’s College London

www.kcl.ac.uk/stoolchart

Instructions for use

1. First, consider the **consistency** of the faecal sample by comparison with both the verbal and photographic descriptors (A, B, C, D).
2. Then, consider the **weight** of the faecal sample by comparison with the photographic descriptors (1, 2, 3). Compare the size of the sample, using the life size 10cm scale, and compare it to the 10cm scale on each photographic descriptor.
3. Record the **frequency** of faecal output over a 24-hour period.
4. Any other **characteristics** of faecal output which are considered to be important must also be recorded eg incontinence, colour, etc.


Glossary

**Acute diarrhoea** – diarrhoea lasting for less than four weeks.

**Chronic diarrhoea** – diarrhoea persisting for greater than four weeks.

**Clostridium difficile or C. difficile** – an anaerobic spore producing bacteria which may be present in the human bowel without infection (colonisation) or which causes *C. difficile* infection characterised by the development of infectious diarrhoea.

**Diarrhoea** – defined medically in terms of frequency, consistency and either weight or volume of faeces. Local definitions may vary and local policies should be referred to.

**Faecal impaction** or loading – this occurs when the rectum, and often the lower colon, is full with hard or soft stool.

**Faecal incontinence** – the uncontrolled passage of solid or liquid faeces at socially inappropriate times and place

**Frequency** – the number of stools passed in a given time period.

**Gut microbiota** – the normal bacterial flora of the human bowel.

**Organic disease** – any disease in which there is a physical change in the structure of an organ, such as in inflammatory bowel disease.

**Pathogenic micro-organism** – a micro-organism (bacteria, protozoa, virus or fungi) that is capable of causing disease (infection).

**Peristalsis** – the successive waves of involuntary muscular contraction of the alimentary tract, which results in transport of food and waste products through the human gut.

**Urgency** – the sensation of the need to defecate without delay.

Abbreviations

- **AAD** – antibiotic-associated diarrhoea
- **CDAD** – *Clostridium difficile* associated diarrhoea
- **CDI** – *Clostridium difficile* infection
- **DRE** – digital rectal examination
- **GALT** – gut-associated lymphoid-tissue
- **GI** – gastro-intestinal
- **IAD** – incontinence-associated dermatitis
- **IBD** – inflammatory bowel disease
- **IBS** – irritable bowel syndrome
- **NSAIDs** – non-steroidal anti-inflammatory drugs
- **PPI** – proton pump inhibitors
- **PR** – per rectum
- **WGO** – World Gastroenterology Organisation
References


Furness et al, 1999 Nutrient tasting and signalling mechanisms in the gut. American Journal of Physiology 277,5 pt 1, G922-928


Health Protection Agency (2011) Foreign travel-associated illness – a focus on travellers’ diarrhoea. Published online at: www.hpa.org.uk [Accessed 10 January 2013]


Further reading

Readers may also find the Crohn’s and Colitis UK Managing Diarrhoea Information Sheet useful. This is available online at: www.nacc.org.uk/content/services/infosheets.asp [Accessed 10 January 2013]

Further information on the investigation of faecal specimens for bacterial pathogens is available from the Health Protection Agency website at: www.hpa.org.uk [Accessed 10 January 2013]

