Halton Joint Strategic Needs Assessment 2018

Gastro-intestinal (digestive) diseases

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Description	The document describes the policy context, estimated prevalence, risk factors and sub-groups of need, current service provision and national best practice in relation to gastro-intestinal diseases in Halton.
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Related documents	• PHE Liver Disease Profile here • PHE/ Right Care 2017 2nd Atlas of Variation for Liver Disease and 2017 2nd Atlas of Variation for NHS Diagnostics: Endoscopy here • Halton Alcohol Strategy: reducing alcohol relation ham across the life course 2014 to 2019 here • A Smokefree Future: A Tobacco Control Plan for Halton 2017-2022 • A Whole Systems Approach to Tackling Obesity in Halton 2019-2022 • Protected Characteristics Profile: Gastrointestinal Diseases

Please quote the JSNA

We would like to know when and how the JSNA is being used. One way, is to ask people who use the JSNA when developing strategies, service reviews and other work to quote the JSNA as their source of information.

List of Abbreviations

BME	Black and minority ethnic
BMI	Body Mass Index
CCG	Clinical Commissioning Group
DALY(s)	Disability Adjusted Life Year(s)
DSR	Directly age standardised rate
FH	Familial hypercholestraemia
FI	Faecal incontinence
GI	Gastro intestinal
GP	General Practitioner
GORD	Gastro-oesophageal reflux disease
HDIS	HES Digital Information Service
HES	Hosital Episode Statistics
H.pylori	Helicobacter pylori
HPT	Health Protection Team
H2	Histomine 2
IBS	Inflammatory bowel syndrome
IID	Infectious intestinal disease
IMD	Index of Multiple Deprivation
JSNA	Joint Strategic Needs Assessment
LCI	Lower confidence interval
LOS	Lower oesophageal sphincter
LSOA	Lower Super Output Area
NAFLD	non-alcoholic fatty liver disease
NCRAS	National Cancer Registration and Analysis Service
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NRT	Nicotine replacement therapy
NSAIDs	Nonsteroidal anti-inflammatory drugs
ONS	Office for National Statistics
PCMD	Primary care mortality database
PHE	Public Health England
PPIs	Proton pump inhibitors
QOF	Quality Outcomes Framework
UCI	Upper confidence interval

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Key issues for consideration by commissioners

Priority	Goal	Description
Intelligence	Intelligence for Gastrointersinal (GI) conditions that fit for purpose	Sharing and integration of data and information that enables an understanding of long-term morbidities in the population and the total burden of need facing the health and social care system for people with GI conditions There is currently no routine data at a local level on what GI conditions are being seen and treated in general practice and therefore the true population prevalence is not known.
Strategy	Comprehensive local strategy for GI diseases	There has never been a national service framework or national policy on tackling GI diseases. This means there is limited guidance on service provision for the management of patients with gastrointestinal and hepatic (liver) disorders. Some conditions will become more prevalent with the ageing population, such as cancer, gastritis, constipation, diverticula and incontinence – therefore a strategy is crucial. GI diseases place a considerable burden on the local healthcare system. As such, a strategic approach to tackling them would be valuable. A strategy should also consider: a) addressing the wider determinants of health b) promoting evidence-based interventions at both a population level and targeted for those population groups most in need c) identifying those at risk and intervening appropriately with evidence-based interventions. d) reducing inequalities in hospital admisisons and mortality, both between Halton and nationally and within Halton
Prevention	Greater emphasis on reducing the incidence and impact of GI diseases	<u>Children</u> Support for parents in strategies to reduce infection risk in the home and manage illness.

Priority	Goal	Description
		Encouraging breastfeeding is another key intervention to address Halton's significantly high rates of gastroenteritis in under 5s. <u>Early detection</u> Encourage higher bowel screening uptake and improve coverage of hepatitis testing amongst high risk groups. <u>Health Promotion</u> Ensure access to lifestyle services and advice for all those who need it. Weight management, diet & exercise advice, reducing alcohol, stop smoking can help prevent conditions such as liver disease and GI cancers. Alcohol admissions are significantly high in Halton. Colorectal cancer incidence significantly high; pancreatic cancers are generally increasing and oesophageal not reducing along with the national average. It is important that ways to fully implement the key prevention strategies of alcohol, tobacco and healthy weight are realised, espeically in light of a reduced public health budget.
Primary care	Link in with prevention agenda	Use Making Every Contact Count opportunities to support, encourage and signpost patients to undertake appropriate preventative actions Employ a higher index of suspicion when dealing with patients who have red flag symptoms. Use best practice approaches for early identification Raise awareness of liver disease symptoms
	Ensure those with GI conditions receive the appropriate care interventions	Managing treatments and advising on self care approriately may reduce hospital admissions. Almost 10% of all prescribed items are for GI conditions.
	Ensure appropriate referrals for diagnostic procedures	Halton has significantly high rates of gastroscopies of upper GI, endoscopies and flexible sigmoidoscopies. Much of the demand for gastroscopy comes through

Priority	Goal	Description
		referrals made by primary care. Need to understand if this is simply a reflection of higher prevalence of GI disease locally or referral practice. There are a range of NICE guidelines available for the management and treatment of GI diseases. However, there has been no assessment of the extent to which these are being implemented locally.
Secondary care	Reduce the level of emergency admissions	Both elective and non-elective admissions have increased apart from hernia, other digestive conditions and diseases of the peritoneum. Hospital admissions for male liver disease and gastritis have increased significantly . Managing treatments and advising on self care approriately in primary care may reduce hospital admissions. This underlines the importance of Making Every Contact Count, linking patients to addressing alcohol intake, smoking and healthy eating, as well as addressing the wider determinants of health.
Impact	Reduce cost burden of GI diseases	The burden of gastrointestinal and liver disease is heavy for patients, the NHS, and the economy. It was identified in NHS Halton CCG's 2016 Right Care Commissioning for Value pack as a priority area in terms of cost and outcomes (in particular costs).[a]
	Reduce individual burden	Many GI conditions are not life threatening but affect quality of life for the individual.
	Reduce premature mortality	Liver disease is one of most common causes of premature death. Death rates in Halton are significantly higher than England for males and females. There needs to be a focus on prevention around the main risk factors: • Alcohol misuse

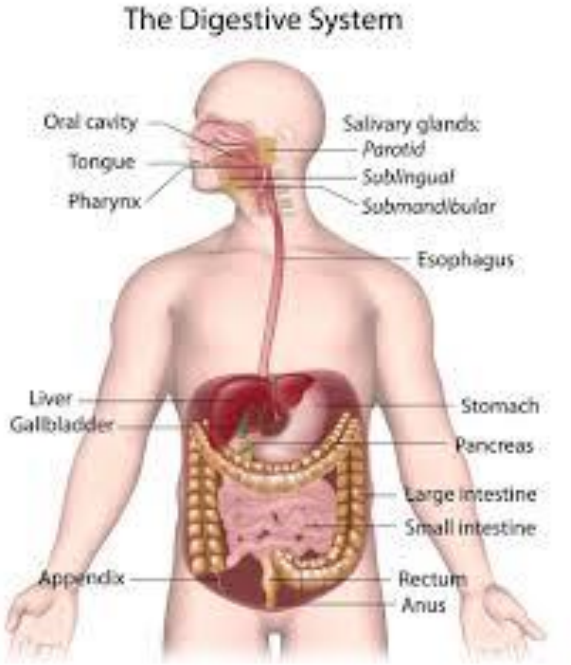
a. Note the Public Health England Spend & Outcomes Tool (SPOT) identified GI as being in the low spend, worse outcome quadrant. However, SPOT used earlier 2013/14 data whilst Right Care compared NHS Halton CCG to the best / lowest 5 CCGs.

Priority	Goal	Description
		• Obesity • Hepatitis B and C
	Reduce level of inequalities	There is a relationship between deprivation and levels of both hospital admissions and death rates locally. This may be explained by differences in key modifiable risk factors such as smoking, diet and alcohol use. What is less clear is how deprivation impacts on GI diseases directly. However, local efforts to impairve GI diseases needs to take account of the need to reduce ineqalities as well as bring about overall improvements.

1. Introduction

Diseases and conditions of the gastro-intestinal (digestive) tract can take many forms. They can be acute infections such as gastroentiritis or other acute conditions such as appendicitis. They can also take the form of long-term, chronic conditions, Crohn's disease of gastroesophageal reflux. There are also a wide range of cancers that can affect any part of the digestive system.

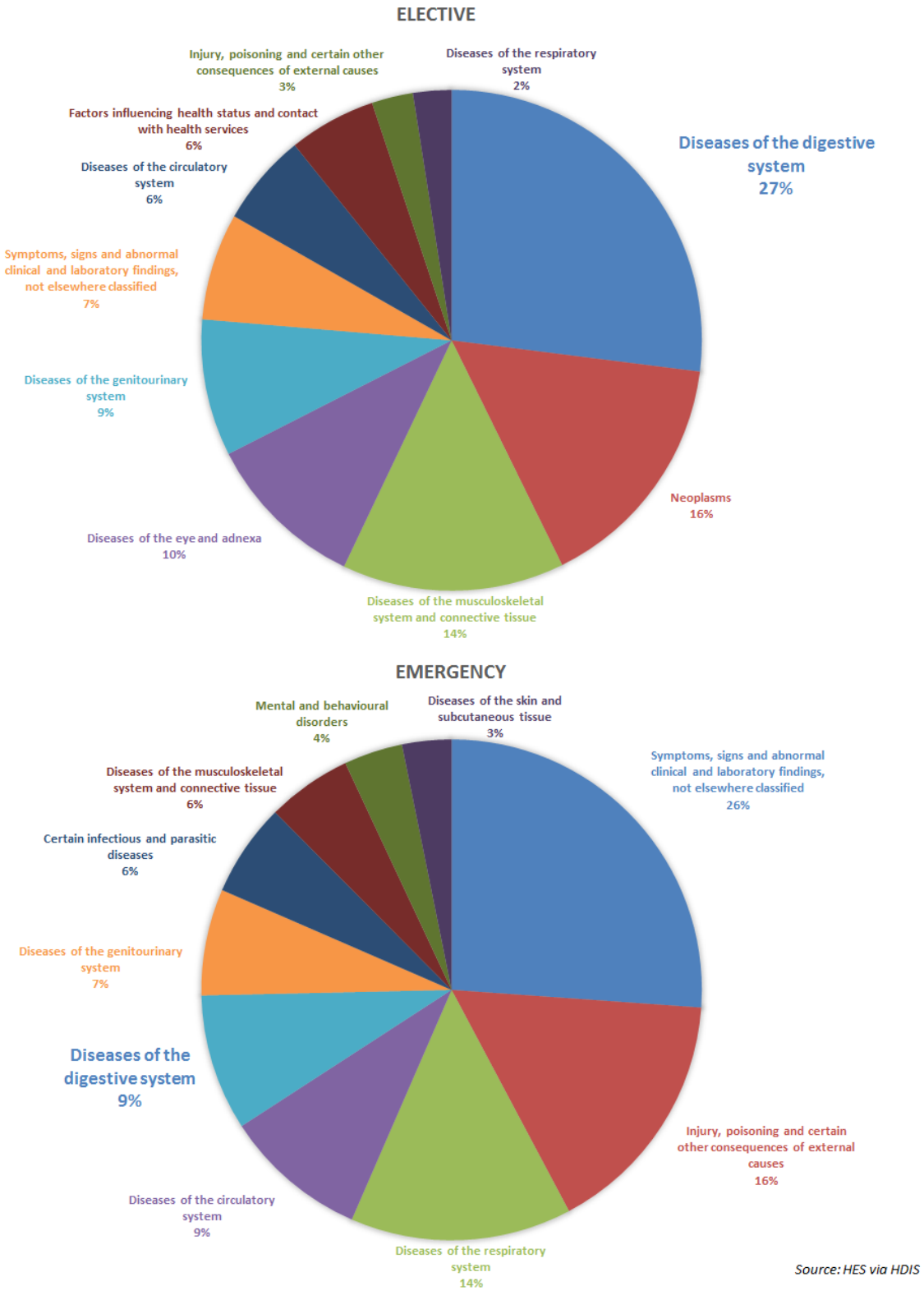
Figure 1: Gastro-intestinal (digestive) system



In terms of cost, gastrointestinal diseases were identified in NHS Halton CCG's 2016 Right Care Commissioning for Value pack as a priority area. Indeed they were identified in all 12 Cheshire & Merseyside CCG Commissioning for Value packs as a priority area.

Hopsital admissions are a prime driver for this. Admissions of the digestive system make up 22.2% of all elective admissions and 7.3% of emergency admisisons. This is the highest percentage for a single classification of diseases for elective admissions and fifth highest cause for emergency admisisons.

Figure 2: Percentage of admissions, top ten causes, 2012/13 to 2016/17



Source: HES via HDIS

Whilst not one of the 'big five' in terms of Disability Adjusted Life Years (DALYs) – a measure of the amount of disability or ill health a disease causes - they constitute the highest single case of DALYs of the lesser conditions, causing 824 DALYs of which 230 were from cirrhosis of the liver. They are the fifth highest cause of deaths in the borough at 69 or 5.8% in 2017. Of the 394 deaths due to cancers, those affecting the stomach and other digestive organs accounted for the largest single system category of cancer deaths at 97 (lung was the next highest at 92). This accounts for 7.3% of all deaths and and a quarter of all cancer deaths.

Despite the impact GI diseases have on the NHS and wider societal costs, unlike other conditions, there has never been a national service framework or national policy on tackling GI diseases. This means there is limited guidance on service provision for the management of patients with gastrointestinal and hepatic (liver) disorders. In 2007 Gut,: an International Journal of Gastroenterology and Hepatology, produced a detailed supplement report describing the service, economic and personal burden of such disorders in the UK. [1]

It concluded that:

- The burden of gastrointestinal and liver disease is heavy for patients, the NHS, and the economy
- Gastrointestinal disease is the third most common cause of death
- It is the leading cause of cancer death
- It is the most common cause of hospital admission
- There have been increases in the incidence of most gastrointestinal diseases
- Socioeconomic deprivation is linked to a number of gastrointestinal diseases as well as poorer prognosis for colorectal, gastric, and oesophageal cancers
- The burden on patients' health related quality of life has been found to be substantial for symptoms, activities of daily living, and employment, with conditions with a high level of disruption to sufferers' lives
- However, impact on patients is neither fully nor accurately reflected in routine mortality and activity statistics despite this high burden on health related quality of life
- Waiting times form the bulk of patients' concerns
- An extensive and systematic study of the problem of access for the delivery of gastrointestinal services has yet to be carried out and significant publications reporting inequalities in the delivery of gastrointestinal services are lacking

There has not been a specific public health focus on gastrointestinal conditions but they do form an important part of public health priorities incuding:

- Healthy Start in Life: link between breastfeeding and gastroenteritis in babies
- Healthy Adults: alcohol related liver disease and outbreaks of food-borne infections
- Healthy Ageing: bowel cancer screening

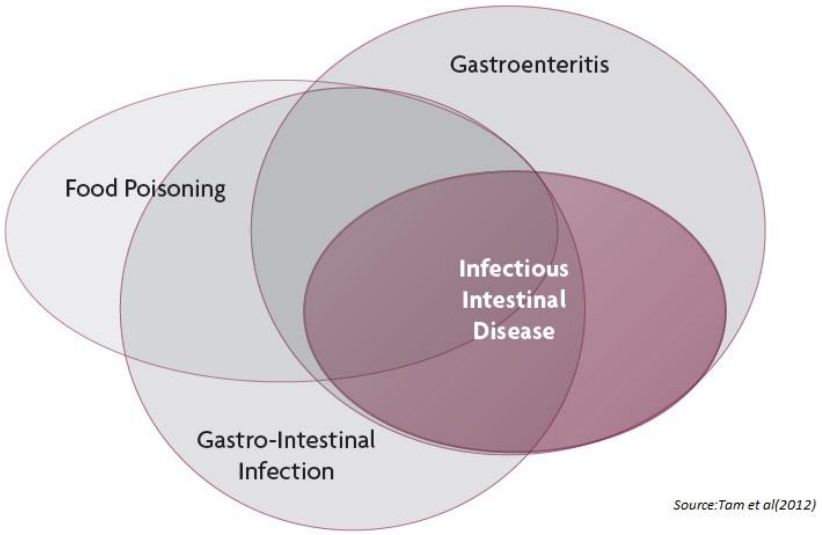
2. Level of need in the population: Acute infectious conditions

2.1. Infectious intestinal disease (IID)

IID is an important public health problem worldwide. In developed countries whilst death rates due to IID are low the impact it has on levels of illness is significant. In the mid-1990s it was estimated that around 1 in 5 people in England suffered from IID each year and the annual cost to the nation was around £750 million. Recent estimates from the Food Standards Agency suggest that the annual cost of foodborne illness (a proportion of all IID) in England and Wales is high at around £1.5 billion.[2]

IID commonly presents as an acute episode of diarrhoea and vomiting in otherwise healthy people. There may also be systemic upset with fever, but usually the illness is short-lived and resolves completely. Defining IID more precisely is difficult and confusion arises from the variety of different terms used to describe gastro-intestinal and foodborne disease. Figure 2 gives a schematic illustration of the inter-relationship between the use of the four terms gastro-intestinal infection, IID, gastroenteritis, and food poisoning.

Figure 3: The inter-relationship between terms used to describe gastrointestinal and food-borne disease



IID is a subset of both gastro-intestinal infection and gastroenteritis since it is always characterised by gastro-intestinal symptoms. The term gastroenteritis refers to inflammation of the stomach and intestines and includes non-infectious causes such as alcohol, food intolerance, Crohn's disease, and ulcerative colitis. There are several gastro-intestinal infections that do not necessarily give rise to symptoms of gastroenteritis such as botulism, Helicobacter pylori infection, listeriosis, and poliomyelitis, and some that are caused by non-infectious agents such as mycotoxins or mercury.

There are three main sources of routinely collected data on IID in the UK:

- Statutory notifications from clinicians of cases of food poisoning
- Voluntary reports from diagnostic laboratories of laboratory confirmed infections
- Standard report forms submitted by health protection units on general outbreaks of IID

In addition, there are several voluntary, primary care and community surveillance schemes that provide information on consultation rates for IID.

2.2. Gastroenteritis

2.2.1. Overall

Definition: What is it?

- **Gastroenteritis** is a transient disorder due to enteric infection with viruses, bacteria, or parasites. It is characterized by the sudden onset of diarrhoea, with or without vomiting. Food poisoning is a common cause. It is defined by the UK Government's Advisory Committee on the Microbiological Safety of Food as 'any disease of an infectious or toxic nature caused by or thought to be caused by the consumption of food or water.' Organisms associated with food poisoning commonly include Salmonella, Norovirus, Campylobacter, and Escherichia coli 0157. Less commonly implicated are Bacillus species, Cryptosporidium, Entamoeba histolytica (amoebiasis), Giardia, and Shigella. In some cases of food poisoning, symptoms are primarily caused by toxins produced by the organism (rather than by the organism itself)[3][4].

- **Episodes of diarrhoea can be classified into several categories:[5]**
  - **Acute diarrhoea** is defined as three or more episodes of partially-formed or watery stool in a day, lasting for less than 14 days
  - **Persistent diarrhoea** is an acutely starting episode of diarrhoea that lasts for more than 14 days
  - **Dysentery** is an acute infectious gastroenteritis characterized by loose stools with blood and mucus, often accompanied by pyrexia and abdominal cramps. Organisms that can cause bloody diarrhoea include Campylobacter, Entamoeba histolytica, Escherichia coli, Salmonella serotypes, and Shigella
  - **Traveller's diarrhoea** is diarrhoeal disease starting during, or shortly after, foreign travel. The organisms that most commonly cause traveller's diarrhoea are Escherichia coli, Salmonella, Viruses, Cryptosporidium, and Giardia[6]
  - **Antibiotic-associated diarrhoea** usually refers to diarrhoea that occurs in a person who is taking (or recently took) antibiotics, and it is increasingly common.[7] A frequent causative organism is Clostridium difficile. For more information, see the CKS topic on Diarrhoea - antibiotic associated

Which organisms can cause gastroenteritis?

Gastroenteritis is more commonly caused by viruses than by bacteria or parasites. In some cases, symptoms of food poisoning are primarily caused by toxins produced by the organism (rather than by the organism itself).

Viruses

- **Rotavirus** is the most common cause of infantile gastroenteritis
- **Norovirus** is the most common cause of viral infectious gastroenteritis in adults
- **Adenovirus** commonly causes infections of the respiratory system but can also cause gastroenteritis, particularly in children

Bacteria

- The following bacteria can cause infective diarrhoea in humans:
  - Campylobacter (the most commonly reported bacterial cause of infectious intestinal disease in England and Wales)
  - Escherichia coli
  - Salmonella (non-typhoidal)
  - Shigella
  - Yersinia enterocolitica (rare)
- In some cases, symptoms are primarily caused by toxins produced by the bacteria (rather than by the bacteria itself).

Parasites

The following parasites can cause diarrhoeal disease in humans:

- Cryptosporidium
- Entamoeba histolytica
- Giardia

Toxins

- When symptoms are primarily caused by toxins produced by the organism (rather than by the organism itself), diarrhoea and vomiting usually have a rapid onset and last for less than 12 hours
  - The bacteria most commonly implicated are:
    - *Staphylococcus aureus* — usually found in cooked meats and cream products
    - *Bacillus cereus* — mainly found in reheated rice
    - *Clostridium perfringens* — usually found in reheated meat dishes or cooked meats

Prevalence: How common is it?

- About 20% of the UK population develop infectious intestinal disease each year:
  - Of those infected, only one in six presents to a GP
  - Of those who present, only a small proportion will have a stool specimen sent for investigation
- Among people presenting in primary care, viral infections are most common
- Rotavirus and Campylobacter are the organisms most commonly identified in people who present in general practice, with norovirus infections increasing.

Local picture

Based on national prevalence, if 20% of Halton's estimated 127,306 population contracted an IID in a year, this would equate to 25,461 cases. If 6% of these consult their GP about it, this would be 1,528 consultations per year.

Campylobacter causes food poisoning and is the most commonly reported bacterial gastrointestinal pathogen in England. The majority of infections result in self-limiting diarrhoea, however, infection has also been associated with chronic sequelae such as Guillaine Barré syndrome. Campylobacter causes a substantial community and healthcare burden in the UK.

The bacteria lives in the gastrointestinal tract of a wide range of livestock (especially poultry) and wildlife species and in pets such as dogs and cats. People can get Campylobacter from raw or undercooked meat, especially chicken meat, unpasteurised milk or untreated water. Bacteria can spread easily through poor hygiene in food preparation, for example if you do not wash your hands, you can spread bacteria from chicken to salads. Raw chicken should not be washed as the bacteria can splash on to skin and ready-to-eat foods.

Many causes are notifiable. Figure 4 shows the rates of these.

Figure 4: Gastrointestinal infection rates

Compared with benchmark Better Similar Worse Lower Similar Higher Not Compared

Benchmark Value: Worst/Lowest | 25th Percentile | 75th Percentile | Best/Highest

Indicator	Period	Halton			Region England	England	England		
		Recent Trend	Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
Campylobacter incidence rate/100,000 New data	2017	–	155	122	96*	97	174		16
Non-typhoidal Salmonella incidence rate/100,000	2017	–	15	11.8	14.6*	15.7	46.7		7.8
Giardia incidence rate/100,000	2017	–	4	3.2	4.8*	8.5	51.2		0.0
Cryptosporidium incidence rate/100,000	2017	–	9	7.1	7.7*	7.3	21.9		0.0
Shigella incidence rate/100,000	2017	–	1	0.8	2.4*	3.5	46.4		0.0
STEC (Shiga toxin-producing Escherichia coli) serogroup O157 incidence rate/100,000	2016	→	2	1.6	1.4*	1.2	9.8		0.0
STEC (Shiga toxin-producing Escherichia coli) serogroup O157 5-year incidence rate/100,000	2012 - 16	–	7	1.11	1.65*	1.35	3.69		0.10
Typhoid & paratyphoid incidence rate/100,000	2015	→	0	0.00	0.39*	0.54	4.51		0.00

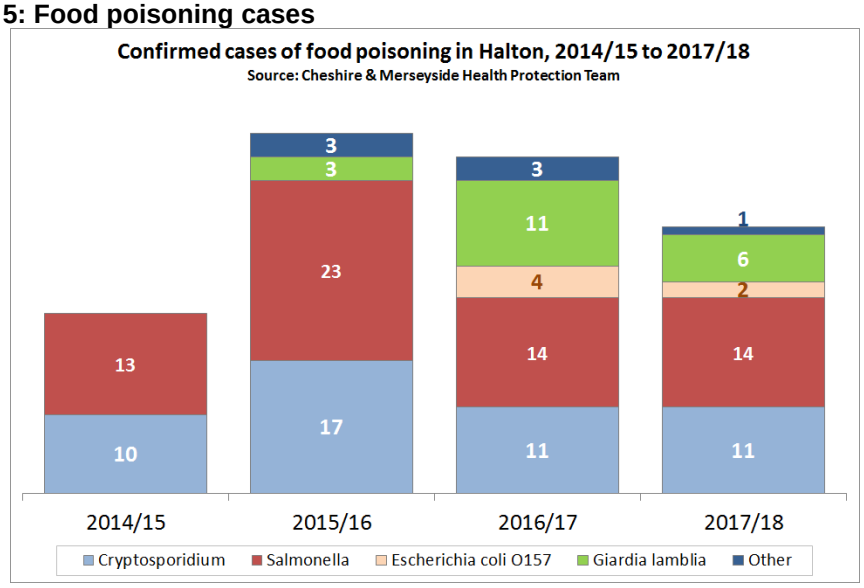
Source: Public Health England

Halton has a similar rate of gastrointestinal infections to England for the majority of the indicators above. The only exceptions are Giardia where it was significantly better than the England average in 2017, and Camplylobacter, where the rate of infection was significantly worse than England.

As with national findings, confirmed cases of food poisoning are rare. During 2016/17 a total of 43 cases of food poisoning were reported to Public Health England (PHE). This compares to 47 for 2015/16 and 25 for 2014/15 in Halton.

The most common cause of food poisoning reported was Salmonella, followed by Cryptosporidium and Giardia. The Cryptosporidium cases were linked to an outbreak. In terms of Giardia, cases increased over 70% since the previous year. However these were sporadic and not linked to any particular cause.

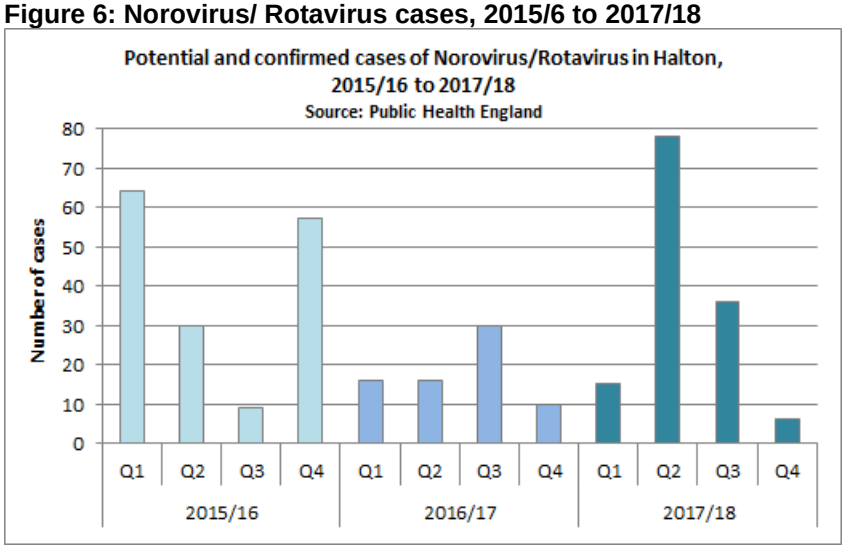
Figure 5: Food poisoning cases



During 2016/17 there were less than 5 cases of dysentery in Halton. All of these were related to shigella bacteria.

There does not seem to be a consistent pattern of norovirus/rotovirus infections, when viewed quarter by quarter throughout the year, although the numbers include both confirmed and unconfirmed cases.

Figure 6: Norovirus/ Rotavirus cases, 2015/6 to 2017/18



An oral vaccine against rotavirus infection, a common cause of diarrhoea and sickness, is now given as two doses for babies aged 8 and 12 weeks, alongside their other routine childhood vaccinations. A snapshot sample of vaccination uptake March to July 2016 shows Halton's rate was similar or higher than Merseyside and England.

Table 1: Rotavirus vaccination coverage for children who had reached 25 weeks of age

	Mar-16		Apr-16		May-16		Jun-16		Jul-16	
	% vaccinated with dose 1 of Rotarix®	% vaccinated with dose 2 of Rotarix®	% vaccinated with dose 1 of Rotarix®	% vaccinated with dose 2 of Rotarix®	% vaccinated with dose 1 of Rotarix®	% vaccinated with dose 2 of Rotarix®	% vaccinated with dose 1 of Rotarix®	% vaccinated with dose 2 of Rotarix®	% vaccinated with dose 1 of Rotarix®	% vaccinated with dose 2 of Rotarix®
HALTON CCG	92.6	92.6	92.5	89.2	98.2	93.6	95.8	93.8	98.3	96.6
EASTERN CHESHIRE CCG	96.8	95.7	97.9	94.3	96.1	89.4	96.8	91.1	96.7	93.4
KNOWSLEY CCG	94.4	90.1	94.9	87.7	93.0	88.5	97.4	88.9	95.9	88.4
SOUTH CHESHIRE CCG	91.8	84.9	96.1	92.1	93.9	89.2	96.6	95.2	95.8	91.0
SOUTH SEFTON CCG	91.7	85.4	93.3	91.4	94.9	90.5	95.2	86.9	93.4	87.6
SOUTHPORT AND FORMBY CCG	91.1	86.7	96.1	90.8	93.1	86.2	94.9	91.0	96.7	94.6
ST HELENS CCG	96.2	90.8	96.5	91.4	95.1	91.8	95.2	91.2	96.0	91.5
VALE ROYAL CCG	95.3	92.9	94.9	93.7	98.8	92.9	98.5	94.0	95.8	93.7
WARRINGTON CCG	96.6	94.9	97.1	96.6	98.3	94.8	96.7	94.5	98.7	96.1
WEST CHESHIRE CCG	95.8	89.5	96.9	92.9	95.5	91.1	93.4	85.2	96.1	91.8
WIRRAL CCG	95.2	89.5	94.1	88.6	95.4	92.8	95.4	91.9	97.9	94.4
LIVERPOOL CCG	87.7	81.0	89.5	81.1	94.7	89.6	92.9	88.9	94.0	89.4
CHESHIRE, WARRINGTON & WIRRAL	95.3	90.9	96.1	92.5	96.0	91.7	95.8	91.6	97.0	93.5
MERSEYSIDE	91.4	86.2	92.7	86.5	94.8	90.2	94.7	89.5	95.2	90.6
ENGLAND	93.5	89.0	93.8	89.3	94.1	89.9	94.2	90.1	94.6	90.5

Source: Public Health England

2.2.2. Gastroenteritis in children

NICE guideline CG84[8] outlines that infective gastroenteritis in young children is characterised by the sudden onset of diarrhoea, with or without vomiting. The illness usually resolves without treatment within days; however, symptoms are unpleasant and affect both the child and family or carers. Severe diarrhoea can quickly cause dehydration, which may be life threatening. The guideline estimated that approximately 10% of children younger than 5 years present to healthcare services with gastroenteritis each year, and diarrhoeal illness accounted for 16% of medical presentations to a major paediatric emergency department in the UK.

Table 2: Emergency hospital admissions for gastroenteritis in children aged under 5 (crude rate per 10,000 population)

		2014/15	2015/16	2016/17
Aged under 1	Halton	308.9	202.3	294.5
	North West	251.7	222.7	256.7
	England	173.1	152.3	176.5
Aged 1	Halton	183.5	109.4	194.4
	North West	171.4	141.2	161.9
	England	116.5	91.4	100.7
Aged 2-4	Halton	71.7	52.9	80.5
	North West	64.5	82.1	89.6
	England	43.1	53.7	53.5

Source: HES via PHE Fingertips

Significantly higher than England
Not significantly different to England
Significantly lower than England

Table 2 shows that Halton had significantly higher rates of hospital admission for gastroentiritis in under 5s in 2014/15 and 2016/17 than the England average.

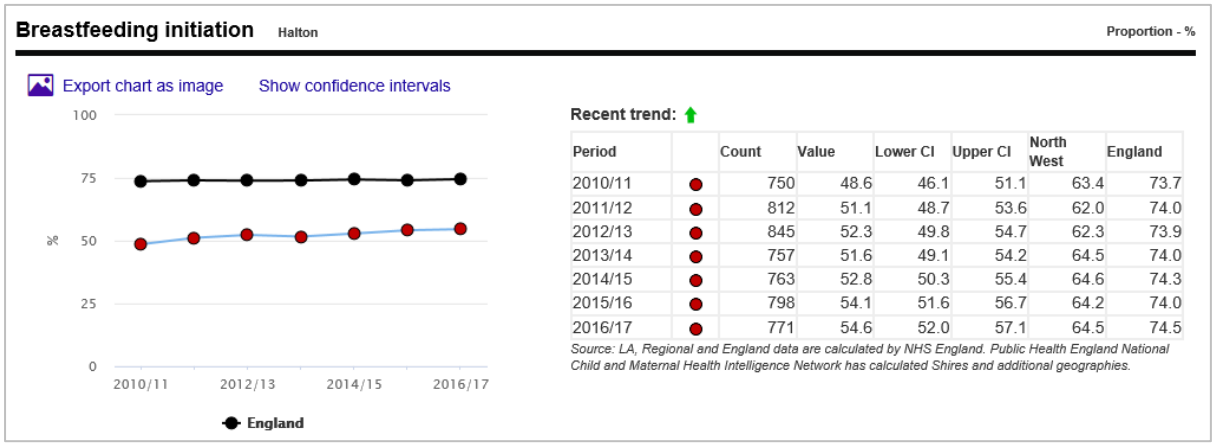
The management of gastroenteritis in children is multifaceted, and the NICE guideline covers diagnosis, assessment of dehydration and shock, fluid management, nutritional management and the role of antibiotics and other therapies.

The purpose of the indicator is to help monitor National Health Service (NHS) success in treatment outside hospital of types of childhood gastroenteritis that have limited morbidity or need for hospital-based care and low mortality, through e.g. encouraging breast feeding, better diet, hygiene, and management of infections; better support for young parents in the care of their children and in the management of illnesses in the home; providing support as well as facilitating access to health advice and therapy through NHS Direct and enhanced primary care.

Action to address low levels of breastfeeding as well as infant nutrition and parenting can be found in the Early Years JSNA at
https://www3.halton.gov.uk/Pages/health/JSNA/childrens/earlyyearsjsna.pdf

There have been small improvements in breastfeeding initiation rates in recent years, but levels in Halton remain relatively low, with overall rates probably masking inequalities. The level is statistically significantly worse then the England picture.

Figure 7: Trend in breastfeeding initiation



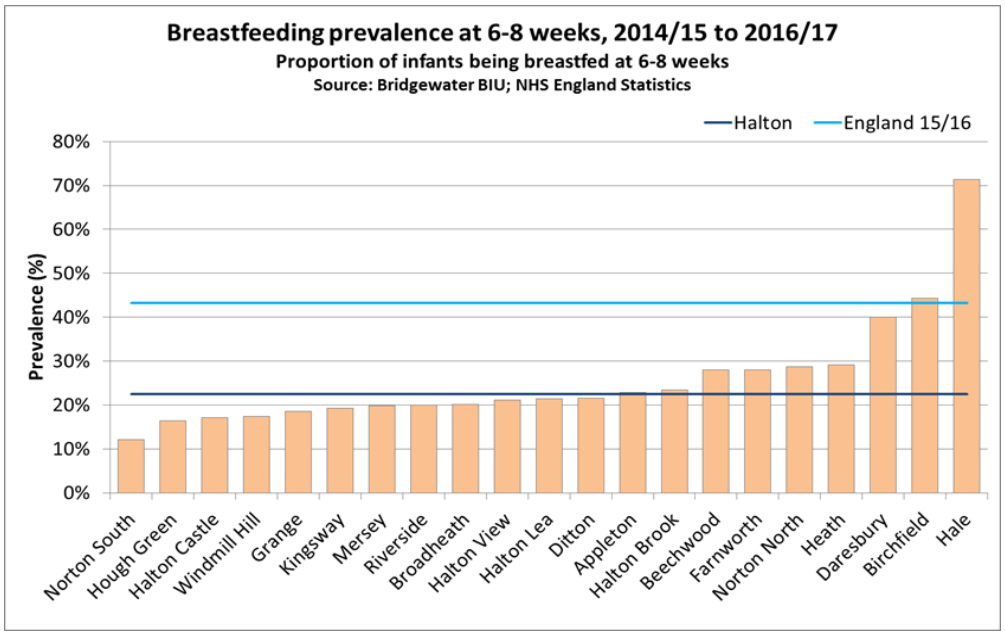
Period		Count	Value	Lower CI	Upper CI	North West	England
2010/11		750	48.6	46.1	51.1	63.4	73.7
2011/12		812	51.1	48.7	53.6	62.0	74.0
2012/13		845	52.3	49.8	54.7	62.3	73.9
2013/14		757	51.6	49.1	54.2	64.5	74.0
2014/15		763	52.8	50.3	55.4	64.6	74.3
2015/16		798	54.1	51.6	56.7	64.2	74.0
2016/17		771	54.6	52.0	57.1	64.5	74.5

Source: LA, Regional and England data are calculated by NHS England. Public Health England National Child and Maternal Health Intelligence Network has calculated Shires and additional geographies.

Source: PHE Fingertips

Breastfeeding rates drop off significantly in the first few weeks. This is especially marked in Halton, where by the 6-8 week check mark they are over half that of the initiation rates and half that of England rates. So, whilst just over half of women in Halton attempt breastfeeding, compared to 3 out of 4 women nationally, only 1 in 5 do so for even a short period of time.

Figure 8: Breastfeeding rates are 6-8 week checks, 2016/17, at GP practice level



For healthcare services, increasing rates of breastfeeding saves money in the short term, due to less hospital admissions from gastrointestinal and respiratory infections. In 1995, it was estimated that the NHS spends £35 million per year in England and Wales treating gastro-enteritis in formula-fed infants and that, for every one per cent increase in breastfeeding at 13 weeks, £500,000 would be saved[9]. If this data is updated with inflation at 3%, a 1% increase in breastfeeding could save approximately £672,000 per year. It is estimated that if all UK infants were exclusively breastfed, the number hospitalised each month with diarrhoea would be halved, and the number hospitalised with a respiratory infection would be cut by a quarter[10]. NICE believe it to be "highly likely to be a cost effective intervention.[11]

3. Level of need in the population: Acute non-infectious conditions

3.1. Appendicitis

- Appendicitis is an acute inflammation of the appendix, which is a small, narrow tube (about 5–10 cm) that is connected to the caecum (the proximal part of the large intestine)
- It is thought to be caused by infection secondary to obstruction
- Complications of appendicitis include appendix perforation, generalized peritonitis, appendix mass or abscess, adhesions, sepsis, and death. However, the prognosis is good if the person is managed promptly
- The diagnosis of appendicitis relies on a thorough history and examination
- The classic symptoms are:
  - Abdominal pain — this is the primary presenting complaint. The pain is typically worsened by movement
  - Nausea
  - Constipation
  - Vomiting (profuse vomiting may indicate development of peritonitis)

- **Risk factors for appendicitis include:**[12][13][14][15][16]
  - **Age —** it is most common between the ages of 10–20 years but can occur at any age (although it is rare before the age of 2 years)
  - **Male sex —** it is slightly more common in men than women, with a male to female ratio of 1.4 to 1
  - **Frequent antibiotic use —** a balance of microbial gut flora is important for prevention of infection and digestion. Frequent use of antibiotics leads to imbalance of gut flora that may eventually cause a modified response to viral infection, thereby triggering appendicitis
  - **Smoking —** there is an increased incidence of acute appendicitis in smokers compared with non-smokers, and children exposed to passive smoking have a significantly increased incidence of acute appendicitis

Prevalence: How common is it?[17][18][19]

- **Appendicitis is one of the most common causes of an acute abdominal pain in adults and children in the UK.** It accounts for more than 40,000 hospital admissions in England every year
- **In pregnancy,** appendicitis is the most common non-obstetric surgical emergency, with an incidence of 0.15–2.10 per 1,000 pregnancies

NICE Clinical Knowledge Summary recommends immediate hospital admission[20] for all people with suspected appendicitis as delayed diagnosis and treatment account for much of the mortality and

morbidity associated with appendicitis. This is important as the typical symptoms and signs of appendicitis are only present in 50% of people. In particular there should be a low threshold for admitting certain groups of people:

- **Young children and elderly people**
  - Expert opinion in review articles on the management of appendicitis is that people at the extremes of ages have increased mortality from appendicitis because of delayed presentation or diagnosis and/or subtle/atypical clinical features[21][22]
  - An accurate history may not be possible from the very young or from older people presenting with confusion; this may further delay diagnosis[23]
- **Pregnant women**
  - A high index of suspicion is needed in pregnant women because a delay in diagnosis and treatment may result in appendix perforation, which is associated with an increase in both maternal (up to 4% of cases) and fetal (1.5–35%) mortality[24][25]
- **People with signs of complications**
  - Appendiceal perforation is associated with increased morbidity and mortality compared with non-perforating appendicitis[26]
  - The overall mortality rate of 0.2–0.8% can be attributed to complications of appendicitis rather than to surgical treatment[27]

Local picture

Analysis of hopsital admisisons data for Halton residents shows that over 50% of cases are in men with the peak ages for both genders being 10-14 to 20-24 then declining, with another peak in the 85-89 age group. For all but two age groups, admission rates are higher in men than women as well as the overall gender split.

Figure 9: Emergency hospital admissions due to appendicitis by gender

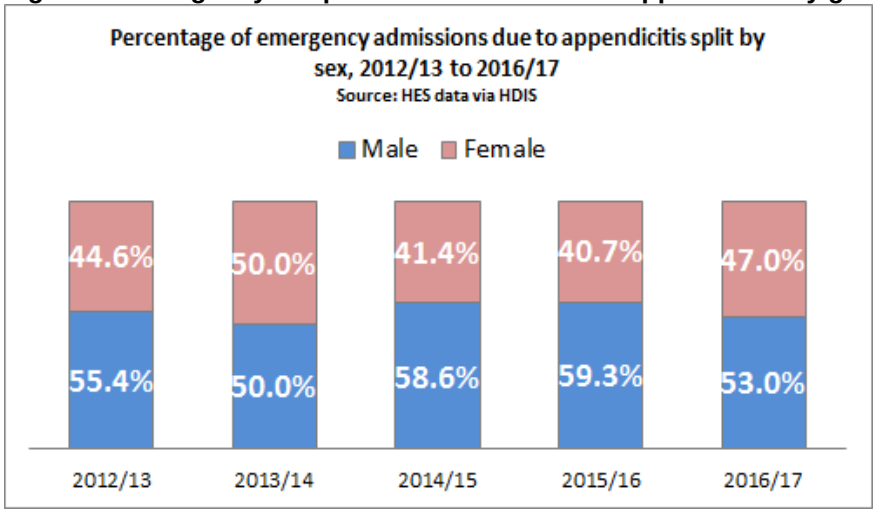
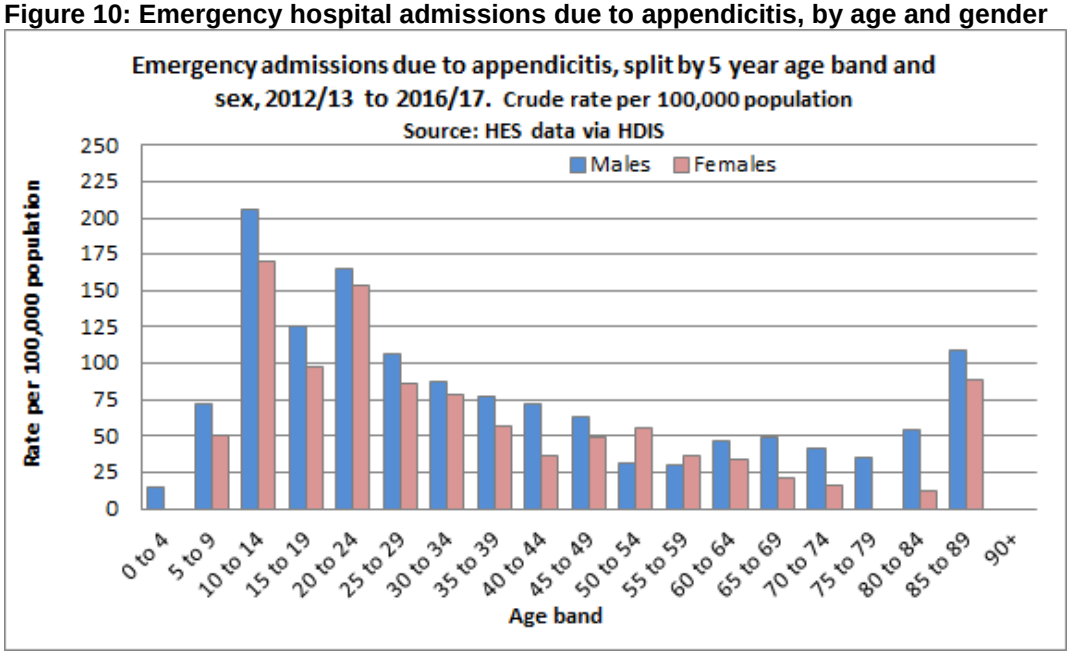
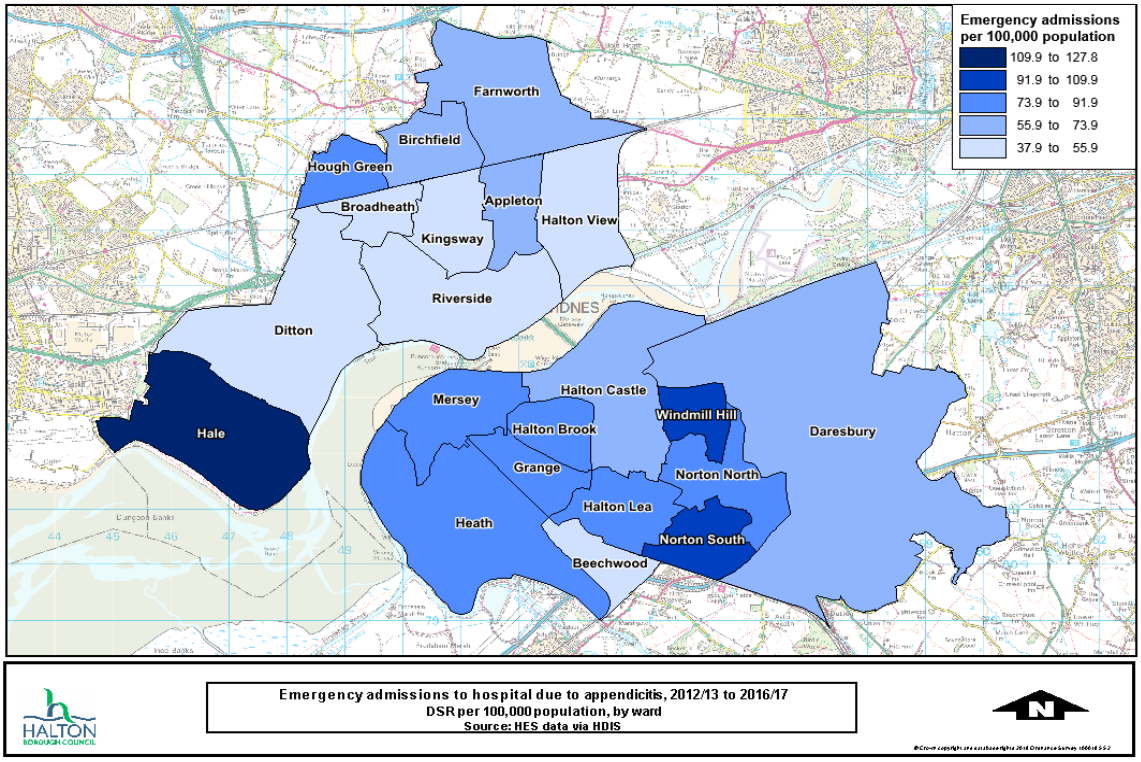


Figure 10: Emergency hospital admissions due to appendicitis, by age and gender



Whilst there are geographical differences, analysis shows that there is no particular relationship with deprivation. The high rate in Hale needs to be interpreted with caution due to the small population size.

Figure 11: Emergency hospital admissions due to appendicitis, by electoral ward, 2012/13 to 2016/17



3.2. Acute upper gastrointestinal bleeding

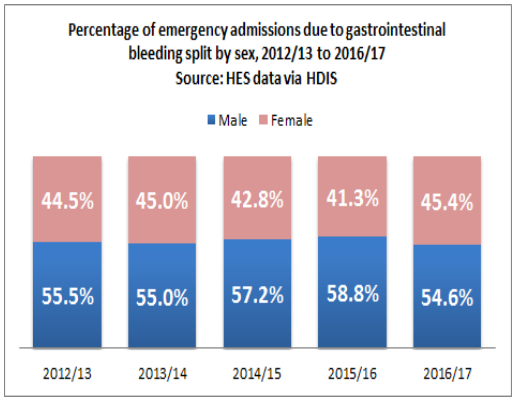
Acute upper GI bleeding is a common medical emergency that has a 10% hospital mortality rate. Despite changes in management, mortality has not significantly improved over the past 50 years.[28] Elderly patients and people with chronic medical diseases withstand acute upper GI bleeding less well than younger, fitter patients, and have a higher risk of death. Almost all people who develop acute upper gastrointestinal bleeding are treated in hospital and the guideline therefore focuses on hospital care. The most common causes are peptic ulcer and oesophago-gastric varices (enlarged/inflammed sub-muccosal veins).

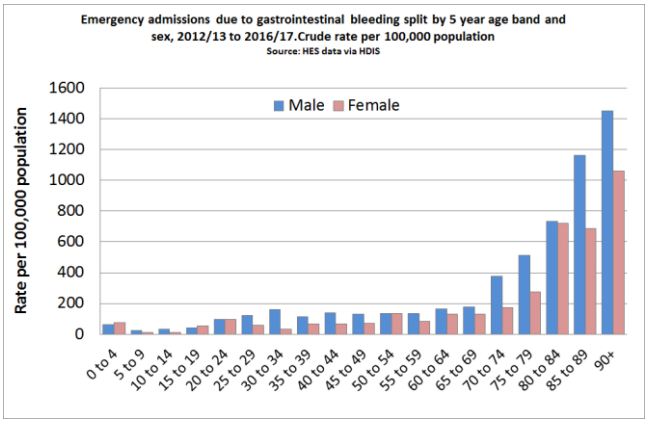
Endoscopy is the primary diagnostic investigation in patients with acute upper GI bleeding but it has not always been clear whether urgent endoscopy is cost effective as well as clinically valuable. Endoscopy aids diagnosis, yields information that helps predict outcome and most importantly allows treatments to be delivered that can stop bleeding and reduce the risk of re-bleeding.
Drugs may have a complementary role in reducing gastric acid secretion and portal vein pressure. Not every patient responds to endoscopic and drug treatments; emergency surgery and a range of radiological procedures may be needed to control bleeding.

Figure 12: Emergency admissions for GI bleeding, numbers by diagnosis, percentage and rate by gender and age, 2012/13 to 2016/17

Diagnosis	1213	1314	1415	1516	1617	Total
Gastrointestinal haemorrhage	93	66	69	88	93	409
Haematemesis	78	60	57	46	69	310
Melaena	20	23	26	26	45	140
Total	**191**	**149**	**152**	**160**	**207**	**859**

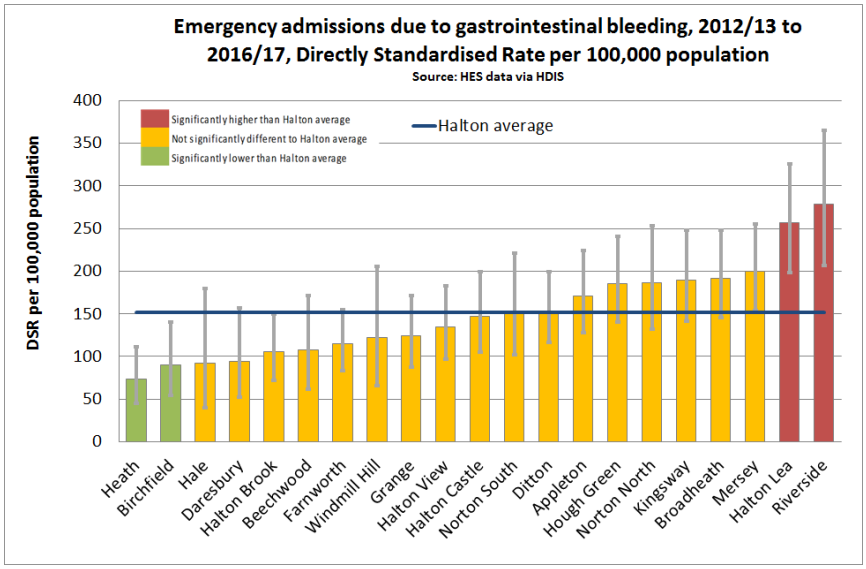
Source: HES via HDIS





There is geographical variation in emergency admissions for GI bleeding in Halton. Between 2012/13 and 2016/17, Riverside and Halton Lea wards had significantly higher rates than the borough average, where as Heath and Birchfield had significantly lower rates.

Figure 13: Rate of emergency admissions due to GI bleeding, by electoral ward, 2012/13-2016/17



4. Level of need in the population: conditions of the upper gastro-intestinal tract

4.1. Oral disease

In addition to the two most common oral health issues - dental caries (tooth decay) and periodontal (gum) disease - there are a number of other important oral conditions which impact on oral health and well-being including:

- Oral cancer
- Dental trauma (fracture of teeth due to injury)
- Tooth wear (dental erosion, attrition and abrasion)
- Dry mouth
- Mouth ulcers
- Cold sores
- Tooth sensitivity
- Halitosis (bad breath)

What is the burden of oral disease? [29]

Despite great achievements in oral health of populations globally, problems still remain in many communities all over the world - particularly among under-privileged groups. Dental caries[b] and periodontal diseases have historically been considered the most important global oral health burdens. The distribution and severity of oral diseases vary among different groups and different parts of the country, with socio-behavioural and environmental factors playing an important role in oral disease and health.

Dental caries is still a major oral health problem in most industrialized countries, affecting 60-90% of schoolchildren and the vast majority of adults. Throughout the world, losing teeth is still seen as a natural consequence of ageing. While in some industrialized countries there has been a positive trend of reduction in tooth loss among adults in recent years, the proportion of adults aged 65 years and older with few or none of their natural teeth is still high in some countries.

Globally, most children have signs of gingivitis and, among adults, the initial stages of periodontal diseases are prevalent. Severe periodontitis, which may result in tooth loss, is found in 5-15% of most populations. Juvenile or early-onset aggressive periodontitis, a severe periodontal condition affecting individuals during puberty that leads to premature tooth loss, affects about 2% of youth.
In industrialized countries, studies show that smoking is a major risk factor for adult periodontal disease, responsible for more than half of the periodontitis cases among this age group. Risk decreases when smokers quit and the prevalence of periodontal disease has decreased in countries experiencing reductions in tobacco use.

Reliable data on the frequency and severity of oro-dental trauma are still lacking in most countries. Recent studies from certain industrialized countries revealed that the prevalence of dental traumatic

b. Dental caries is the scientific term for tooth decay or cavities. It is caused by specific types of bacteria. They produce acid that destroys the tooth's enamel and the layer under it, the dentin.

injuries is on the increase, ranging from 16-40% and 4-33% among 6-year-old and 12-14-year-old children respectively. A significant proportion of dental trauma relates to sports, unsafe playgrounds or schools, road accidents or violence.
Estimates of the frequency of different traits of malocclusion are available from a number of countries, primarily from Northern Europe and North America. For example, prevalence rates of dento-facial anomalies are reported at 10%, according to the Dental Aesthetic Index. Malocclusion is not a disease but rather a set of dental deviations which in some cases can influence quality of life. There is insufficient evidence that orthodontic treatment enhances dental health and function. Treatment is often justified by the potential enhancement of social and psychological wellbeing through improvements in appearance.

Diagnosis and treatment of cranio-facial anomalies such as cleft lip and palate present a number of challenges to public health. Orofacial clefts occur in around 1 per 500-700 births; the rate varying substantially across ethnic groups and geographical areas. Other conditions that may lead to special health care needs include Down's syndrome, cerebral palsy, learning and developmental disabilities, and genetic and hereditary disorders with oro-facial defects. Oro-facial clefts appear to have substantial environmental causes, the higher risk first of all associated with maternal tobacco, alcohol and nutritional factors. There is no consistent evidence of time trends, nor is there consistent variation by socioeconomic status but these aspects have not been adequately studied.
Given the extent of the problem, oral diseases are major public health problems. Their impact on individuals and communities, as a result of pain and suffering, impairment of function and reduced quality of life, is considerable. Moreover, traditional treatment of oral disease is extremely costly, the fourth most expensive disease to treat in most industrialized countries. In low-income countries, if treatment were available, the costs of dental caries alone in children would exceed the total health care budget for children.

A core group of modifiable risk factors are common to many chronic diseases and injuries. The four most prominent non-communicable diseases (NCDs) - cardiovascular diseases, diabetes, cancer and chronic obstructive pulmonary diseases - share common risk factors with oral diseases, preventable risk factors that are related to lifestyle. For example, dietary habits are significant to the development of NCDs and influence the development of dental caries. Tobacco use has been estimated to account for over 90% of cancers in the oral cavity, and is associated with aggravated periodontal breakdown, poorer standards of oral hygiene and thus premature tooth loss.
The greatest burden of all diseases is on the disadvantaged and socially marginalized. A major benefit of the common risk factor approach is the focus on improving health conditions for the whole population as well as for high risk groups; thereby reducing inequities. The solutions to the chronic disease problems are to be found through shared approaches. The WHO Global Strategy for the prevention and control of non-communicable diseases is a new approach to managing the prevention and control of oral diseases. Continuing surveillance of levels and patterns of risk factors is of fundamental importance to planning and evaluating community preventive activities and oral health promotion.

Local picture

Compared with England, children's dental health in Halton is similar apart from 12 year olds who had worse dental health. However, data on 12 year olds was last collected in 2008/09, so it is difficult to state with certainty if this situation remains. This is despite most of the risk factors associated with dental outcomes being worse in Halton compared to England.[30]

Table 3: Child dental health: key indicators

Indicator	Period	England	North West	Halton
4.02 - Proportion of five year old children free from dental decay	2014/15	75.2%	66.6%	73.3%
dmft (decayed, missing or filled teeth) in five year olds	2014/15	0.84	no data	0.93
Incisor caries prevalence in three year olds	2012/13	3.9%	5.1%	2.6%
Proportion of three year olds free from dental decay	2012/13	88.4%	85.8%	89.7%
dmft in three year olds	2012/13	0.36	0.47	0.25
Proportion of twelve year olds free from dental decay	2008/09	66.4%	no data	58.2%
DMFT in twelve year olds	2008/09	0.74	no data	1.02

Compared with benchmark: Better | Similar | Worse

Source: Public Health England

Disease of the oral cavity, salivary glands and jaw make up a substantial proportion of admissions of the GI system. The peak age is seen in the 25-29 year olds and falls with age. Apart from 5-9 year olds and 70+, the rate is higher for females than males, with overall numbers higher in females each year.

Table 4: Elective admissions due to diseases of oral cavity, salivary glands and jaws, 2012/13 to 2016/17

	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Males	459	519	516	512	554	2560
Females	590	544	599	603	651	2987
Persons	**1049**	**1063**	**1115**	**1115**	**1205**	**5547**

Source: HES data via HDIS

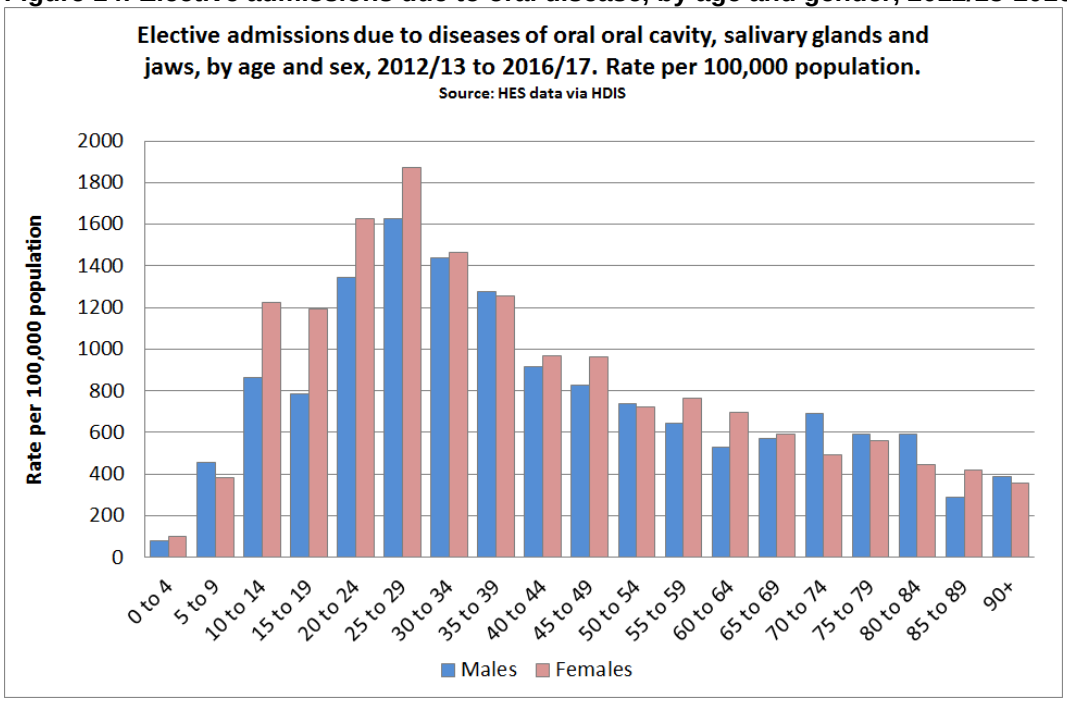
Nearly half of all oral disease admisions are due to dental caries (decay), with three-quarters due to tooth problems. This does not include cancers of the head and neck which are covered in the cancers section of this report.

Table 5: Breakdown of hospital admissions due to oral disease, by sub-category of disease, 2012/13-2016/17

Diagnosis	Admissions	Percent
Dental caries	2586	46.6%
Other disorders of teeth and supporting structures	1295	23.3%
of which: Retained dental root	*1038*	*18.7%*
Embedded and impacted teeth	410	7.4%
Diseases of pulp and periapical tissues	283	5.1%
Gingivitis and periodontal diseases	283	5.1%
Dentofacial anomalies	229	4.1%
Disorders of tooth development and eruption	228	4.1%
Other diseases of lip and oral mucosa	78	1.4%
Diseases of tongue	48	0.9%
Diseases of salivary glands	25	0.5%
Other diseases of jaws	23	0.4%
Other disorders of gingiva and edentulous alveolar ridge	20	0.4%
Other diseases of hard tissues of teeth	15	0.3%
Cysts of oral region, not elsewhere classified	12	0.2%
Stomatitis and related lesions	12	0.2%
Total	**5547**	*100%*

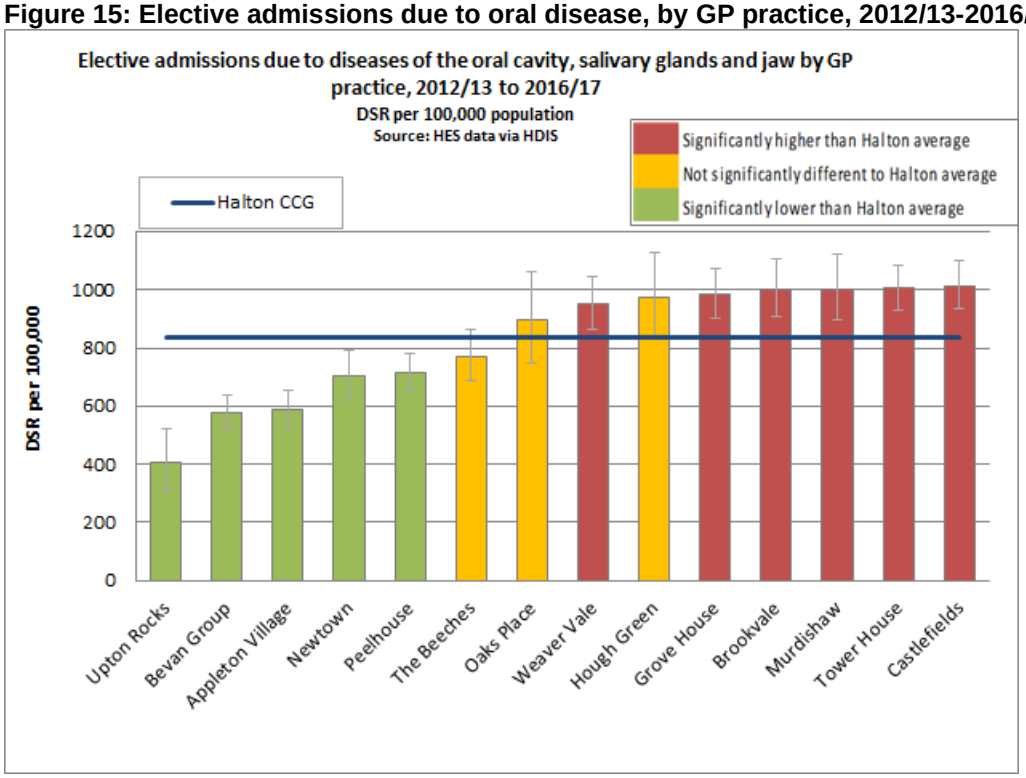
Source: HES via HDIS

Figure 14: Elective admissions due to oral disease, by age and gender, 2012/13-2016/17



Elective admissions for diseases of the oral cavity at GP practice level vary from 63 in Upton Rocks, giving a directly age standardised rate (DSR) of 406.4 per 100,000 population to 660 at Tower House practice, giving a DSR of 1004.5, although the highest rate is amongst patients registered with Castlefields practice (1013.6 per 100,000 population). The practices with the statistically higher rates are in Runcorn and the ones with statistically lower rates in Widnes.

Figure 15: Elective admissions due to oral disease, by GP practice, 2012/13-2016/17



4.2. Oesophageal disease

Oesophageal diseases include a spectrum of disorders affecting the oesophagus. The most common condition of the oesophagus in Western countries is gastroesophageal reflux disease, which in chronic forms is thought to result in changes to the epithelium of the oesophagus, known as Barrett's oesophagus.

4.2.1. Dyspepsia

Definition: What is it?

Dyspepsia is a term used to describe a number of symptoms associated with the upper gastrointestinal tract that may include upper abdominal pain or discomfort, a feeling of upper abdominal 'fullness' or 'heaviness', reflux, heartburn, belching, nausea, and vomiting.

Dyspepsia in pregnancy: What causes it?

Dyspepsia in pregnancy is commonly due to gastro-oesophageal reflux. The cause of gastro-oesophageal reflux in pregnancy is thought to involve both mechanical and hormonal factors. A decrease in lower oesophageal sphincter pressure is considered to be the predominant factor. Rising levels of progesterone and oestrogen are thought to be responsible for the decreased pressure.[31][32]

Prevalence: How common is it?

- Gastro-oesophageal symptoms can start at any stage of pregnancy[33]
- The prevalence appears to increase with gestational age, with 30–80% of women suffering from dyspepsia at some time during their pregnancy[34][35][36][37][38]
- A prospective longitudinal cohort study of the evolution of GORD symptoms during pregnancy found that[39]
    - Of pregnant women, 12.5% had heartburn at least once a week in the first trimester, 21.5% in the second trimester, and 35.3% in the third trimester. Daily heartburn occurred in around 10% of women in the third trimester
    - In the third trimester, 40.7% of women experienced regurgitation at least once a week (compared with 3.6% of non-pregnant women)

What are the risk factors?

- The following risk factors have been associated with gastro-oesophageal reflux symptoms in pregnancy:[40][41][42]
    - Symptoms of gastro-oesophageal reflux prior to pregnancy
    - Increasing gestational age
- The evidence for the following risk factors is less certain:
    - Pre-pregnancy body mass index (BMI)
    - Weight gain during pregnancy
    - Maternal age

Dyspepsia – proven functional[43][44

- **The term 'dyspepsia'** is used to describe a complex of upper gastrointestinal tract symptoms which are typically present for four or more weeks, including upper abdominal pain or discomfort, heartburn, acid reflux, nausea and/or vomiting
    - If symptoms of heartburn and acid regurgitation predominate, then gastro-oesophageal reflux disease is the more likely diagnosis[45]

- **Functional dyspepsia (also known as non-ulcer dyspepsia)** refers to people with dyspepsia symptoms and normal findings on endoscopy (gastric or duodenal ulcer, gastric malignancy, or oesophagitis have been excluded) [46]
    - Functional dyspepsia is the most common diagnosis arising from endoscopy for dyspepsia symptoms
    - Two sub-types of functional dyspepsia have been defined, which may overlap:
        - Epigastric pain syndrome, where intermittent or burning pain is localized to the epigastrium
        - Post-prandial distress syndrome, where there is post-prandial fullness or early satiety

- **The cause of functional dyspepsia remains uncertain** and is likely to be multifactorial: [47][48][49][50]
    - Gastroduodenal dysmotility, hypersensitivity to gastric distention, gastric acid secretion abnormalities, and psychosocial factors may be contributory

- Infectious gastroenteritis may also increase the risk of developing subsequent functional dyspepsia
- The role of Helicobacter pylori (H. pylori) infection is uncertain — infection results in chronic gastric and duodenal mucosal inflammation and H. pylori gastritis is detected in about half of people with functional dyspepsia. This may lead to abnormalities in gastroduodenal motility and sensitivity

Prevalence: How common is it?

The exact prevalence of functional dyspepsia is difficult to establish, as the definitions used vary between studies, and endoscopy is needed to make a formal diagnosis, once other diagnoses are excluded.

- About **40% of the adult population have dyspepsia symptoms each year**. Population surveys suggest that about **25% of people will consult their GP** to discuss dyspepsia symptoms, and dyspepsia accounts for 1.2–4% of all primary care consultations in the UK
- In people with dyspepsia symptoms who undergo endoscopy, 70–80% of people have no clinically significant findings, and may be classified as having functional dyspepsia .
- Primary care consultations for functional dyspepsia increase with age, and the prevalence is similar in men and women.

4.2.2. Gastro-oesophageal reflux disease (GORD)

- Gastro-oesophageal reflux disease (GORD) is usually a chronic condition where there is reflux of gastric contents (particularly acid, bile, and pepsin) back into the oesophagus, causing predominant symptoms of heartburn and acid regurgitation[51]
- 'Proven GORD' refers to endoscopically-determined reflux disease, which may be due to:[52][53]
  - Oesophagitis, when oesophageal inflammation and mucosal erosions are seen
  - Endoscopy-negative reflux disease (or non-erosive reflux disease), when a person has symptoms of GORD but endoscopy is normal (seen in up to two-thirds of people)
- GORD is thought to be caused by a combination of mechanisms, such as transient relaxation (reduced tone) of the lower oesophageal sphincter, increased intra-gastric pressure (for example straining and coughing), delayed gastric emptying, and impaired oesophageal clearance of acid

What are the risk factors?

Risk factors for developing gastro-oesophageal reflux disease (GORD) may include:

- Stress and anxiety
- Smoking and alcohol
- Trigger foods, such as coffee and chocolate which may reduce lower oesophageal sphincter (LOS) tone, and fatty foods which delay gastric emptying
- Obesity
- Drugs that decrease LOS pressure, such as alpha-blockers, anticholinergics, benzodiazepines, beta-blockers, bisphosphonates, calcium-channel blockers,

corticosteroids, nonsteroidal anti-inflammatory drugs (NSAIDs), nitrates, theophyllines, and tricyclic antidepressants
- Pregnancy (hormonal changes are thought to decrease LOS pressure in some women)
- Hiatus hernia (may lower LOS tone)
- Family history (genetic factors are suggested by twin studies and familial clustering)

Prevalence: How common it is?

The exact prevalence of gastro-oesophageal reflux disease (GORD) and dyspepsia is difficult to establish, as the definitions used vary between studies, and endoscopy is needed to make a formal diagnosis of GORD:[54]

- About 40% of the adult population have dyspepsia symptoms each year. Population surveys suggest that about 25% of people will consult their GP to discuss dyspepsia symptoms
  - In people with dyspepsia symptoms who undergo endoscopy, 40% are found to have GORD
- A systematic review of the epidemiology of GORD found:[55]
  - Prevalence estimates to be **8.8–25.9%** in Europe
  - There are higher prevalence rates in northern than southern Europe
  - There has been an increase in the prevalence of GORD worldwide since 1995
  - The UK and US incidence is approximately 5 per 1000 people
- The prevalence of GORD increases with age, and it is slightly more common in women overall[56]
  - Men are more likely to have severe oesophagitis, and women are more likely to have endoscopy-negative reflux disease[57]

Local picture

Applying prevalence rates to Halton's adult (age 18 and over, revised 2016 estimate from Office for National Statistics, of 98,947) population would give a figure of **between 8,707 and 25,627**. Given that the higher prevalence rates were in Northern European countries Halton's level is likely to be towards the higher end of this range.

4.3. Gastric (Stomach) disease

Gastric diseases refer to diseases affecting the stomach. Inflammation of the stomach by infection from any cause is called gastritis. When gastritis persists in a chronic state, it is associated with several diseases, including atrophic gastritis, pyloric stenosis, and gastric cancer. Another common condition is gastric ulceration, peptic ulcers. Ulceration erodes the gastric mucosa, which protects the tissue of the stomach from the stomach acids. Peptic ulcers are most commonly caused by a bacterial Helicobacter pylori infection.

4.3.1. Gastritis

Gastritis is inflammation of the lining of the stomach. It may occur as a short episode or may be of a long duration. There may be no symptoms but, when symptoms are present, the most common is upper abdominal pain. Other possible symptoms include nausea and vomiting, bloating, loss of appetite and heartburn.

Gastritis is usually caused by one of the following:

- a H. pylori bacterial infection is the most common cause, although about 21% of people with (predominantly) chronic gatritis may be H. pylori negative[58]
- excessive use of cocaine or alcohol
- regularly taking aspirin, ibuprofen or other painkillers classed as NSAIDs
- a stressful event – such as a bad injury or critical illness, or major surgery
- less commonly, an autoimmune reaction – when the immune system mistakenly attacks the body's own cells and tissues (in this case, the stomach lining)

H. pylori gastritis

Many people become infected with H. pylori bacteria and don't realise it. These stomach infections are common and don't usually cause symptoms. However, an H. pylori infection can sometimes cause stomach ulcers which can lead to recurring bouts of indigestion, as the bacteria can cause inflammation of the stomach lining. This sort of gastritis is more common in older age groups and is usually the cause of chronic (persistent) non-erosive cases. An H. pylori stomach infection is usually lifelong, unless it's treated with eradication therapy, a course of antibiotics alongside a medication called a proton pump inhibitor.

Although being infected with H.pylori does not necessarily lead to other conditions, it is present in almost all cases of duodenal ulcer and most cases of gastric ulcer. The evidence is not certain about whether H. pylori is a cause of duodenal ulcer or whether the two are simply associated[59]. There is also some evidence that it is a major risk factor for gastric cancers[60]. How H. pylori infects someone and the risk factors are still emerging. Results of studies thus far have varied depending on the population examined; there is a lack of evidence on UK populations or similar. However studies conducted identify the following risk factors[61] [62]:

- Age (more common in older people)
- Lower socioeconomic status
- Eating meat

- Smoking
- Low education standard
- Living standards e.g. overcrowding, clean water, living in a developing country

Treating gastritis

Treatment aims to reduce the amount of acid in the stomach to relieve symptoms, allowing the stomach lining to heal and to tackle any underlying cause. It is possible to treat gastritis via over-the-counter medication, depending on the cause.

Easing symptoms

- antacids – these over-the-counter medicines neutralise the acid in your stomach, which can provide rapid pain relief
- histamine 2 (H2) blockers such as ranitidine – these medicines decrease acid production, and are available both over the counter and on prescription
- proton pump inhibitors (PPIs) such as omeprazole –these medicines decrease acid production even more effectively than H2 blockers, and are available both over the counter and on prescription
- If the person thinks the cause of their gastritis is repeated use of NSAID painkillers, they should try switching to a different painkiller that isn't in the NSAID class, such as paracetamol.
- Lifestyle changes may also help:
    - eating smaller, more frequent meals
    - avoiding irritating (spicy, acidic or fried) foods
    - avoiding or cutting down on alcohol
    - managing stress

Reasons to consult a GP for gastritis:

- indigestion symptoms lasting a week or longer, or it's causing you severe pain or discomfort
- reason to believe it's brought on by prescribed medication
- vomiting blood or have blood in your stools (stools may appear black)

Diagnosing gastritis

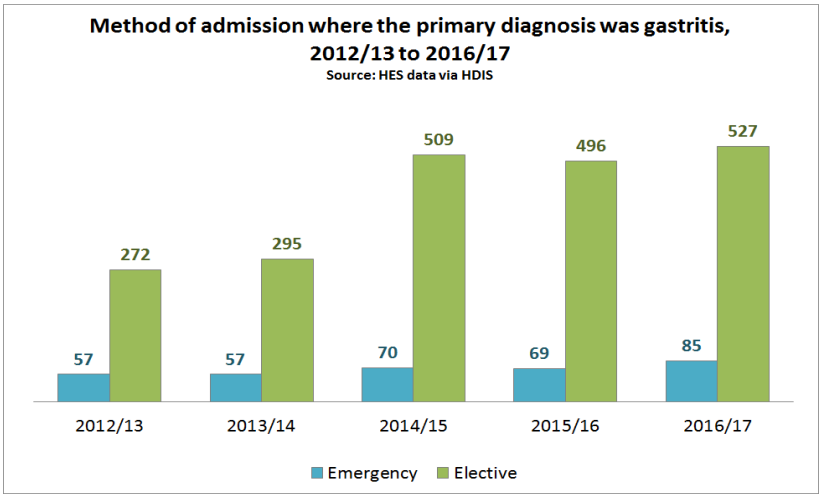
The GP may recommend one or more of the following tests:

- a stool test – to check for infection or bleeding from the stomach
- a breath test for Helicobacter pylori (H. pylori) infection – this involves drinking a glass of clear, tasteless liquid that contains radioactive carbon and blowing into a bag
- an endoscopy – a flexible tube (endoscope) is passed down your throat and into the oesophagus and stomach to look for signs of inflammation
- a barium swallow – the patient is given some barium solution to swallow, which shows up clearly on X-rays as it passes through the digestive system

Local picture

The number of admissions due to gastritis nearly doubled between 2012/13 and 2016/17. Whilst numbers of emergency admissions increased, it was in elective admissions that the substantial increase occurred. Over 86% of all admissions due to gastritis during the period 2012/13 to 2016/17 were via the elective (planned) route. The relative percentages have been fairly consistent over the time period.

Figure 16: Hospital admissions due to a primary diagnosis of gastritis, 2012/13 to 2016/17



	Emergency	Elective
2012/13	17.3%	82.7%
2013/14	16.2%	83.8%
2014/15	12.1%	87.9%
2015/16	12.2%	87.8%
2016/17	13.9%	86.1%
Total	13.9%	86.1%

Source: HES data via HDIS

Females account for over 60% of elective admissions due to gastritis; admissions rise with age for both men and women. Numbers are much lower for emergency admissions. The gender pattern is not as pronounced although overall there were slightly more women than men admitted as emergency cases most years.

Figure 17: Elective admissions for gastritis, by gender

	Males	Females
2012/13	40.1%	59.9%
2013/14	40.3%	59.7%
2014/15	36.9%	63.1%
2015/16	40.3%	59.7%
2016/17	38.0%	62.0%
Total	38.9%	61.1%

Source: HES via HDIS

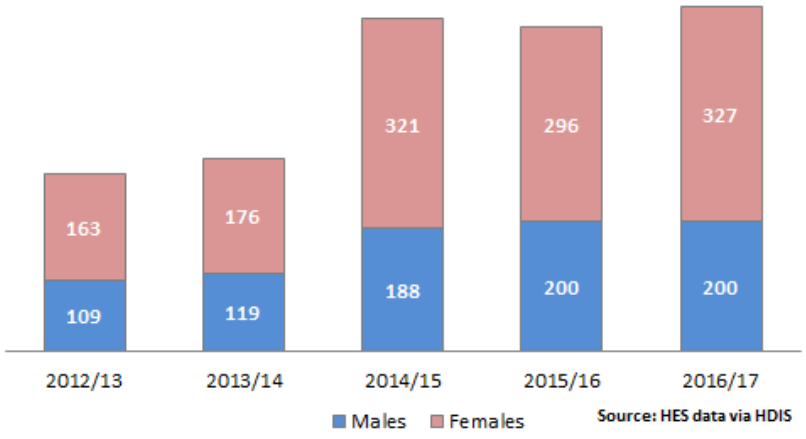
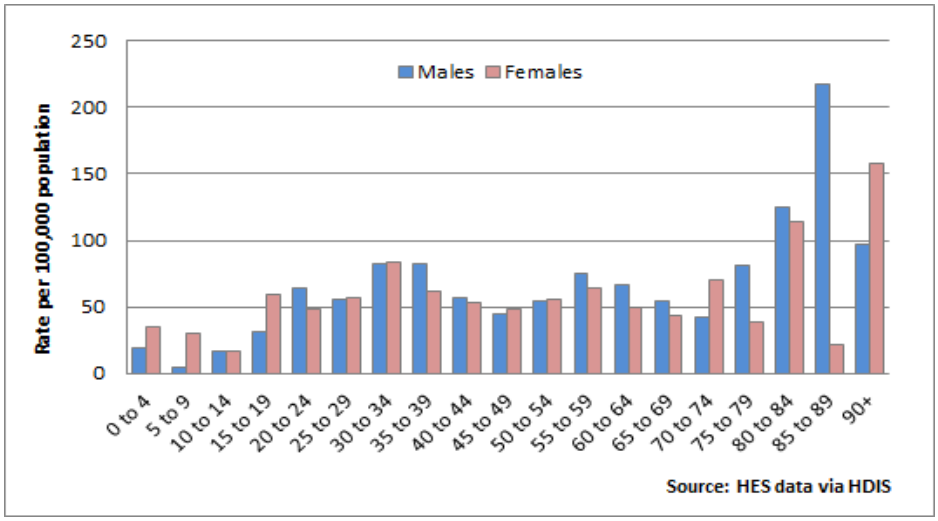


Table 6: Emergency admissions due to gastritis, 2012/13 to 2016/17, by gender

Year	Number			Percentage	
	Male	Female	Persons	Male	Female
2012/13	31	26	57	54.2%	45.8%
2013/14	27	30	57	48.3%	51.7%
2014/15	38	32	70	53.4%	46.6%
2015/16	33	36	69	48.6%	51.4%
2016/17	37	48	85	44.2%	55.8%
Total	**166**	**172**	**338**	**49.4%**	**50.6%**

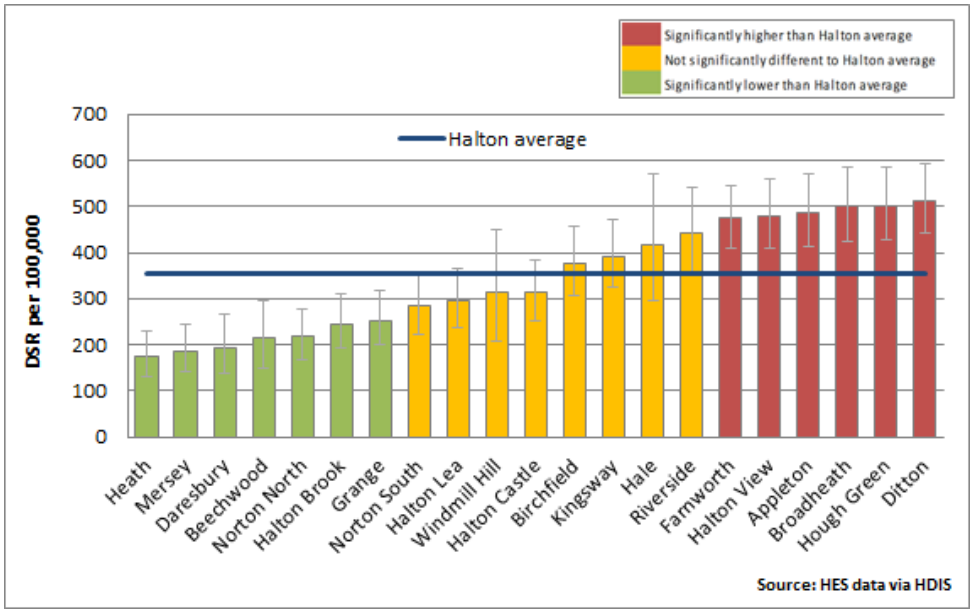
Source: HES data via HDIS

Figure 18: Elective admissions by age and gender



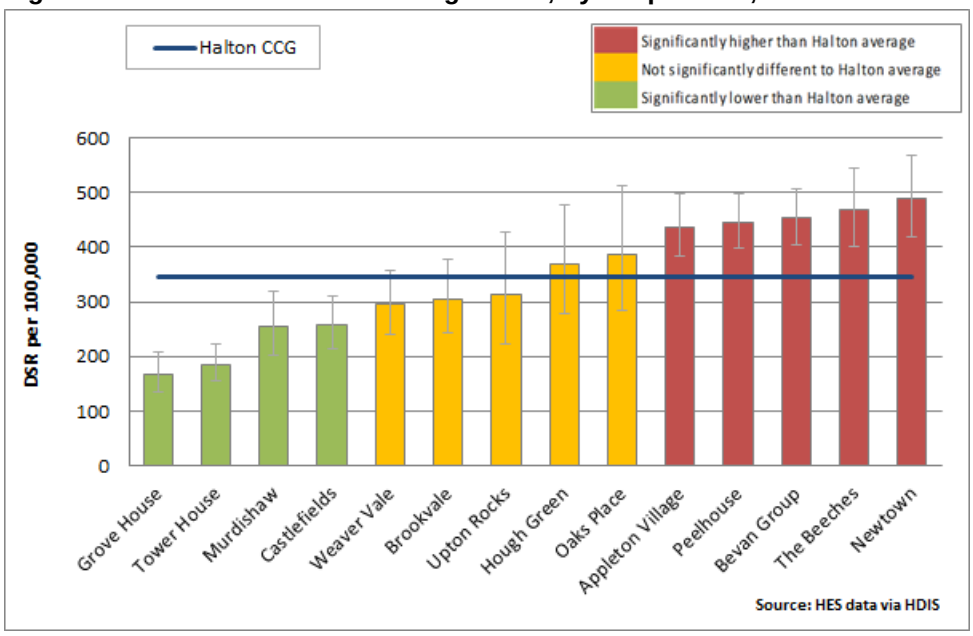
There is also geographical variation, with rates varying from 175.5 per 100,000 (directly age standardised rate) in Heath ward to 514.1 per 100,000 population in Ditton ward. The borough average was 353.7 (LCI 338.5 UCI 369.3). Six wards had rates statistically higher than the borough average and seven had rates statistically lower.

Figure 19: Elective admissions for gastritis, by electoral ward, 2012/13 to 2016/17



Both electoral ward and GP practice level analysis show a Widnes-Runcorn split, with higher admissions being in Widnes and lower ones in Runcorn. So whilst GP practice lists will draw patients from more than one electral ward, few patients will be registered with a GP on the opposite side of the mersey to where they live.

Figure 20: Elective admissions for gastritis, by GP practice, 2012/13 to 2016/17



4.3.2. Peptic ulcer disease [63]

Proven gastric or duodenal ulceration describes a breach in the epithelium (lining) of the gastric or duodenal mucosa that penetrates the muscularis mucosae, which is confirmed on endoscopy. Collectively, gastric and duodenal ulceration is known as peptic ulcer disease. The main risk factors for the development of peptic ulcer disease include[64][65]:

- Helicobacter pylori infection — 95% of duodenal and 70–80% of gastric ulcers are associated with H. pylori infection. Infection causes increased gastric acid secretion in some cases, which increases the risk of mucosal ulceration. In other cases, gastric acid secretion is decreased causing chronic atrophic gastritis, which increases the risk of gastric ulceration and possible gastric malignancy.
- Drugs — such as NSAIDs, aspirin, bisphosphonates, corticosteroids, potassium supplements, selective serotonin reuptake inhibitors, and recreational drugs such as crack cocaine.
    - NSAIDs and aspirin are the main drugs associated with the development of peptic ulcer disease. NSAIDs increase the risk of complications of peptic ulcer disease four-fold, and aspirin use doubles the risk of complications.
    - NSAIDs may have an additive effect if there is co-existent H. pylori infection, further increasing the risk of peptic ulceration.
- Smoking, alcohol consumption, and stress — studies show conflicting evidence so no definitive assessment can be made

Prevalence: How common is it?

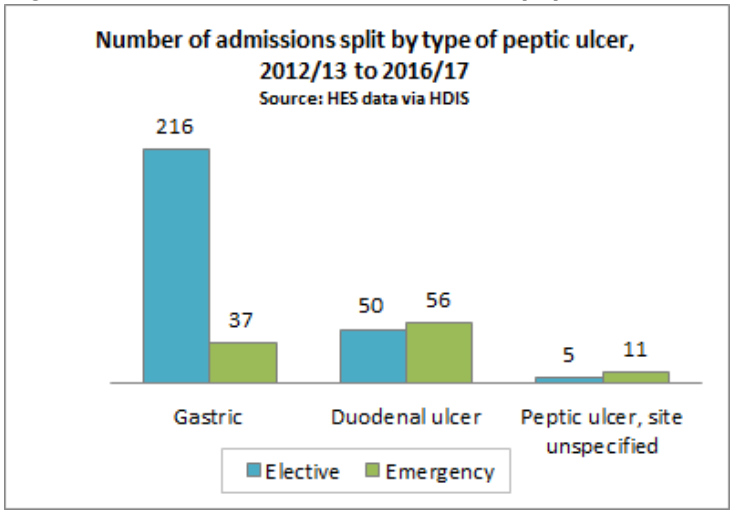
The exact prevalence of peptic ulcer disease is difficult to establish, as the definitions used vary between studies, and endoscopy is needed to make a formal diagnosis

- In people with dyspepsia symptoms who undergo endoscopy, about 13% have a gastric or duodenal ulcer
- The rate of newly-diagnosed peptic ulcers has remained constant, but the recurrence rate has fallen rapidly in the past 20–30 years with the introduction of Helicobacter pylori eradication therapy and widespread use of acid suppression therapy
    - The prevalence of people with duodenal ulcers has declined progressively from 22.2% in 1979 to 5.7% in 1998
    - The lifetime prevalence of peptic ulcer disease in the general population is estimated to be about 5–10%
- The incidence of peptic ulcer disease is about 0.1–0.3% per year, but this varies with age and sex:
    - The incidence of duodenal ulcers peaks at 45–64 years of age, and is twice as common in men as in women
    - In contrast, the incidence of gastric ulcers increases with age, and the incidence is similar in men and women

Local picture

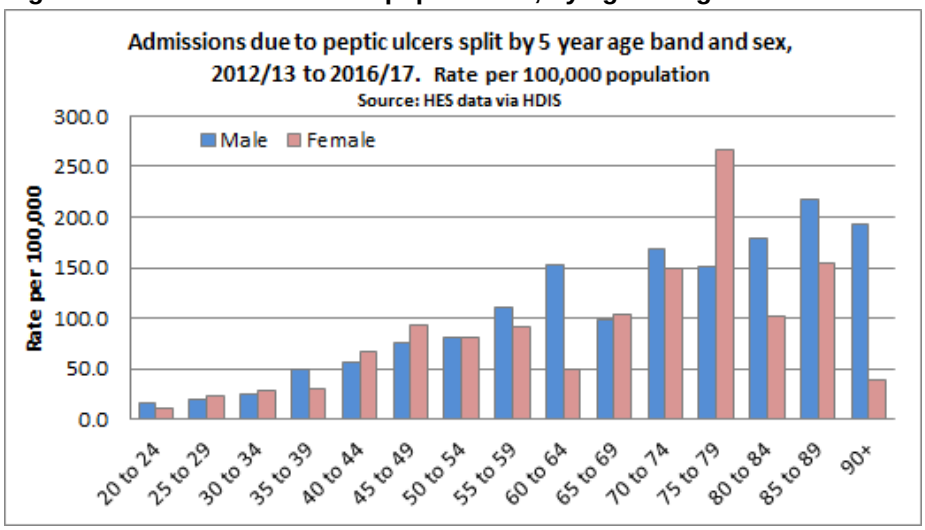
If we assume the incidence and lifetime prevalence in Halton follow a similar pattern to that described in the previous section then around 7,256 people in the borough may have a duodenal ulcer and between 6,365 – 12,730 people in the borough may have a peptic ulcer, with 127 – 382 new cases of peptic ulcer per year. A major proportion of precribing for GI conditions is for H. pylori eradication therapy and other medication to treat ulcers (see section 8.2). Gastric ulcers account for the majority of hospital admisisons due to peptic ulcers. 72.3% were via the elective route with the gender split being more or less even (50.4% males and 49.6% women).

Figure 21: Number of admissions due to peptic ulcer



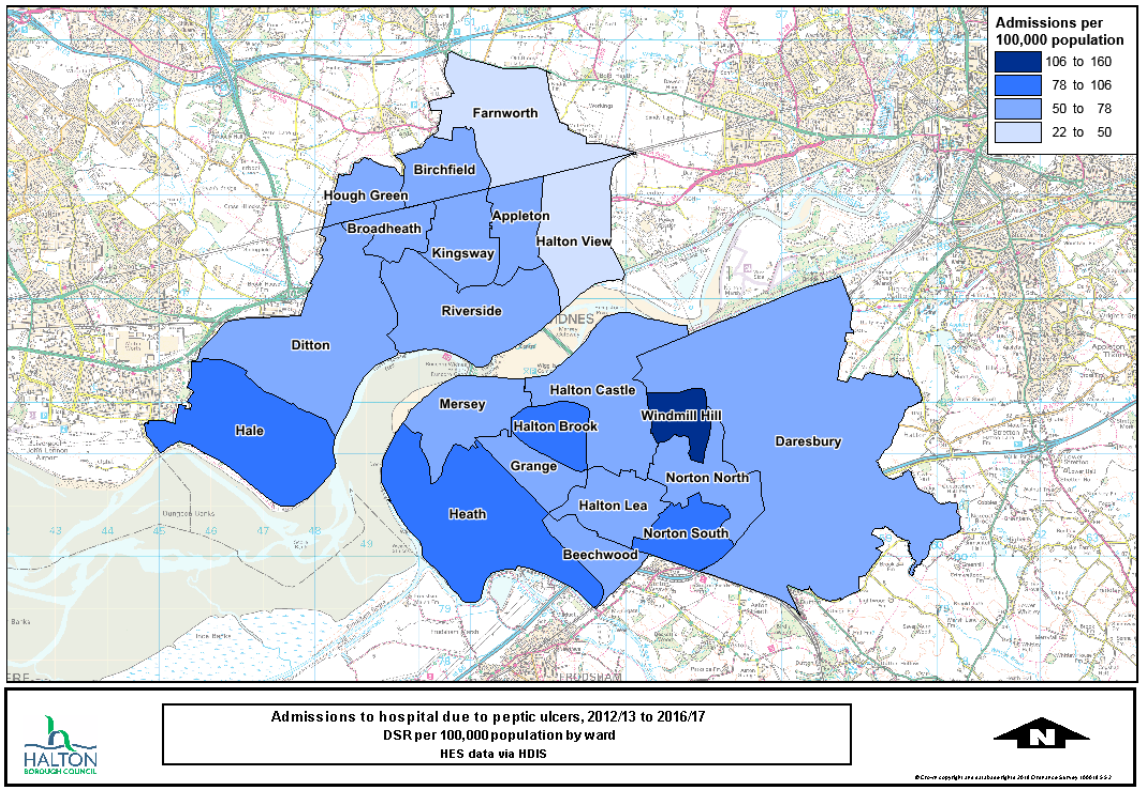
Admissions are generally are higher in older people than younger, although the pattern is not clear cut.

Figure 22: Admissions due to peptic ulcer, by age and gender



At a ward level rates vary from 22.6 per 100,000 in Halton View (directly age standardised rate) to 159 per 100,000 population in Windmill Hill. However, with wide confidence intervals it is only these two wards where rates are statistically significantly different to the overall borough rate of 64.2.

Figure 23: Hospital admissions for peptic ulcer, by electoral ward, 2012/13 to 2016/17



4.4. Pancreatic diseases

Pancreatic diseases that affect digestion refers to disorders affecting the exocrine pancreas, which is a part of the pancreas involved in digestion.
One of the most common conditions of the exocrine pancreas is acute pancreatitis, which in the majority of cases relates to gallstones that have impacted in the pancreatic part of the biliary tree, or due to acute or chronic alcohol abuse. Other forms of pancreatitis include chronic and hereditary forms. Chronic pancreatitis may predispose to pancreatic cancer and is strongly linked to alcohol use. NICE's Clinical Knowledge Summaries have not been able to identify any accurate figures for the incidence and prevalence of chronic pancreatitis in the UK. Although one French and one American study reported incidence of 8.3 per 100,000 people per year and 4.45 per 100,000 people per year respectively. They reported prevalence of 0.03% and 0.04%.

Other rarer diseases affecting the pancreas may include pancreatic pseudocysts, exocrine pancreatic insufficiency, and pancreatic fistulas.

Pancreatic disease may present with or without symptoms. When symptoms occur, such as in acute pancreatitis, a person may suffer from acute-onset, severe mid-abdominal pain, nausea and vomiting.

4.4.1. What is acute pancreatitis? [66][67][68]

- **Acute pancreatitis** is an acute inflammatory process of the pancreas with varying involvement of local tissues or more remote organ systems
  - **Mild** acute pancreatitis is characterised by the absence of complications (local or systemic) or organ dysfunction. It usually has an uneventful recovery
  - **Moderately severe** acute pancreatitis is characterized by local complications and/or transient organ dysfunction which resolves within 48 hours
  - **Severe** acute pancreatitis is characterised by persistent organ dysfunction (failure to resolve in 48 hours) often leading to local complications such as pancreatic necrosis, abscess, and pseudocyst formation
- It may not be possible to differentiate between mild and severe acute pancreatitis based on the clinical findings at presentation

Prevalence: How common is acute pancreatitis?

- The reported worldwide annual incidence of acute pancreatitis is 13–45 cases per 100,000 people[69]
- In the UK, most hospitals serving a population of 300,000–400,000 people will admit approximately 100 people with acute pancreatitis per year
- Most people (80%) with acute pancreatitis will have mild acute pancreatitis. The remainder will have moderately severe or severe acute pancreatitis[70]

What are the causes of, and risk factors for acute pancreatitis?

- **Acute pancreatitis is most commonly caused by** gallstones or alcohol misuse, accounting for around three quarters of cases:
  - Gallstones — obstruction of the pancreatic duct initiates the activation of pancreatic enzymes, which cause auto-digestion of pancreatic tissue, stimulating a local inflammatory response
  - Alcohol — the mechanism of pancreatic injury in alcohol-related pancreatitis is poorly understood. Several mechanisms have been described, such as alcohol acting as a direct toxin to the pancreatic cells causing inflammation and cell destruction, or increased ductal pressures caused by protein deposition causing retrograde flow and intra-pancreatic enzymatic activation

Risk factors for acute pancreatitis, some of which can act as a direct cause, include:

- Endoscopic procedures such as endoscopic retrograde cholangiopancreatography
- Blunt abdominal trauma
- Surgery near the pancreas such as biliary tract procedures, gastric surgery, and splenectomy
- Metabolic conditions such as hypertriglyceridaemia and hypercalcaemia
- Infections such as mumps, coxsackie B4 virus, and Mycoplasma pneumonia infection
- Drugs such as thiazide diuretics, azathioprine, tetracyclines, oestrogens, valproic acid, and dipeptidylpeptidase-4 inhibitors (for example sitagliptin and vildagliptin)
- Anatomical or functional disorders such as pancreas divisum and sphincter of Oddi dysfunction
- Autoimmune conditions such as systemic lupus erythematosus and Sjogren's syndrome
- Pancreatic adenocarcinoma or peri-ampullary tumours

Local picture

Apart from 2012/13 there have been between 62-79 cases of hospital admissions due to acute pancreatitis per year. There are slightly more females than males affected but the gender difference is not as marked as some other gastro-intestinal admissions.

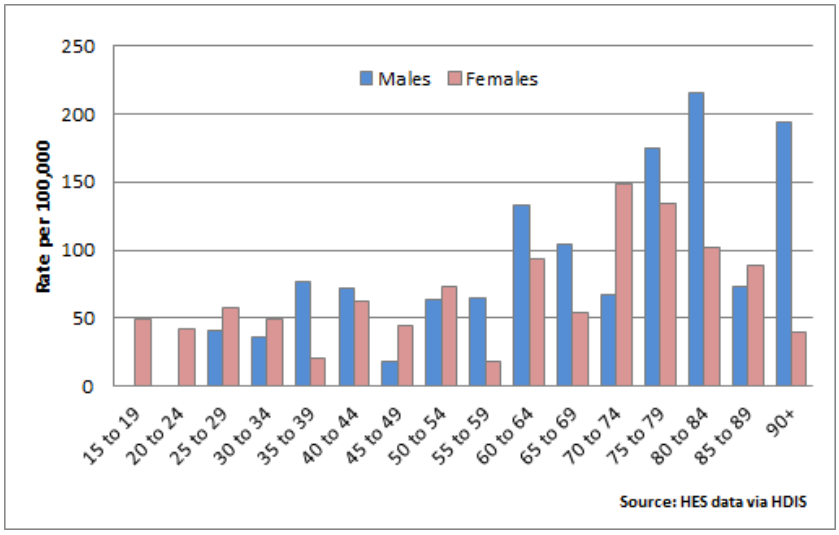
Table 7: Number of admissions to hospital due to acute pancreatitis, by gender, 2012/13 to 2016/17

	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Males	22	28	36	33	40	159
Females	20	34	43	33	33	163
Persons	**42**	**62**	**79**	**66**	**73**	**322**

Source: HES data via HDIS

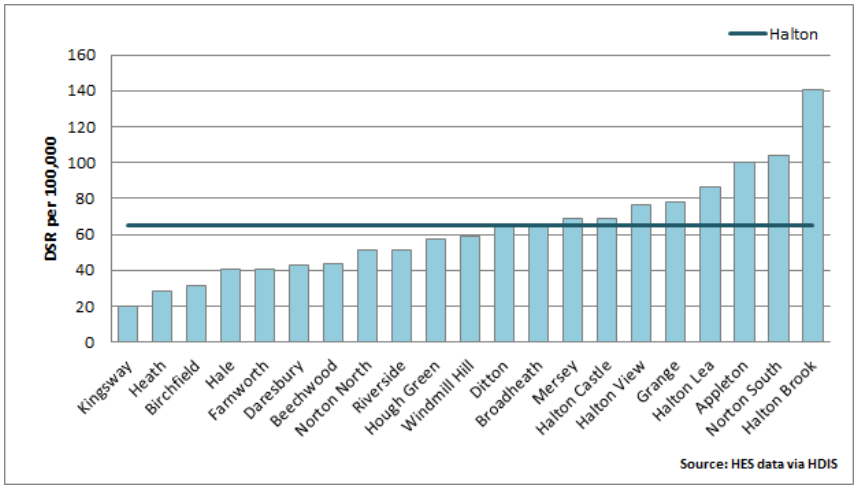
When broken down further and translated into an age and gender specific rate per 100,000 population, the gender split is not clear cut. In half of cases the rate is higher for men than women with a lower rate for men in the younger age bands but no clear pattern from 35-39 age group onwards.

Figure 24: emergency admissions due to acute pancreatitis, by age and gender, 2012/13-2016/17



At an electoral ward level, even when analysis uses a five year aggregated dataset, small numbers per ward mean wide confidence intervals. This means that, despite a seemingly wide variation, from 19.8 per 100,000 in Kingsway to 140.8 per 100,000 population in Halton Brook, it is not possible to say the variation is anything but by chance as it is not statistically significant.

Figure 25: emergency admissions due to acute pancreatitis, by electoral ward, 2012/13-2016/17



4.5. Gallbladder and biliary tract

Diseases of the hepatobiliary system affect the biliary tract (also known as the *biliary tree*), which secretes bile in order to aid digestion of fats. Diseases of the gallbladder and bile ducts are commonly diet-related, and may include the formation of gallstones that impact in the gallbladder (cholecystolithiasis) or in the common bile duct (choledocholithiasis).

Gallstones are a common cause of inflammation of the gallbladder, called cholecystitis. Inflammation of the biliary duct is called cholangitis, which may be associated with autoimmune disease, such as primary sclerosing cholangitis, or a result of bacterial infection, such as ascending cholangitis.

Disease of the biliary tree may cause pain in the upper right abdomen, particularly when pressed. It can be investigated using ultrasound or an endoscopic procedure. Treatment may be using drugs including antibiotics, or by the surgical removal of the gallbladder.

4.5.1. Gallstones

Definition: What are gallstones?[71][72]

- A gallstone (cholelithiasis) is a solid deposit that forms within the gallbladder
- One or more gallstones may form in a person
- In some people, one or more gallstones pass out of the gallbladder into the cystic duct or the common bile duct
  - Cholecystolithiasis describes gallstones in the gallbladder
  - Choledocholithiasis describes gallstones in the common bile duct
- Gallstone disease is a general term that describes the presence of one or more stones in the gallbladder or other parts of the biliary tree, and the symptoms and complications they may cause
- Most people with gallstone disease are asymptomatic and will never know that they have gallstones

What causes gallstones?

- Gallstones occur when there is an imbalance in the chemical composition of bile which results in precipitation of one or more of the constituents[73]
- Gallstones can be classified by the dominant constituent that precipitates[74]

Risk factors for developing gallstones include:

- Obesity[75]
- Increasing age[76]
- Female gender[77]
- Weight cycling (intentionally losing weight then regaining the weight)[78][79]
- Diabetes mellitus[80]
- Use of oral contraceptives[81]
- Use of hormone replacement therapy (HRT)[82]
- Smoking[83]
- Crohn's disease[84]
- Genetic and ethnic factors[85]

Prevalence: How common is it?

- The prevalence of people with gallstones is reported to be 5-30% of adults in western countries[86][87].
- A UK study of necroscopy subjects found that the prevalence of gallstones became progressively higher with increasing age[88]

Local Picture

- Applying the 5-30% prevalecne rate to Halton's population equates to an estimated **4,947 and 29,684** Halton residents aged 18 and over having gallstones.

The number of elective admissions due to gallstones has been fairly constant between 2012/13-2014/15 and 2014/15-2016/17 at 783-788, but the number admitted as an emergency, whilst lower, has been rising from 387 to 427. Over 70% of elective cases are in women and the number of admisisons is higher in women for all age groups apart from the very older age groups.

Figure 26: Percentage of admissions for gallstones split by sex, 2012/13 to 2016/17

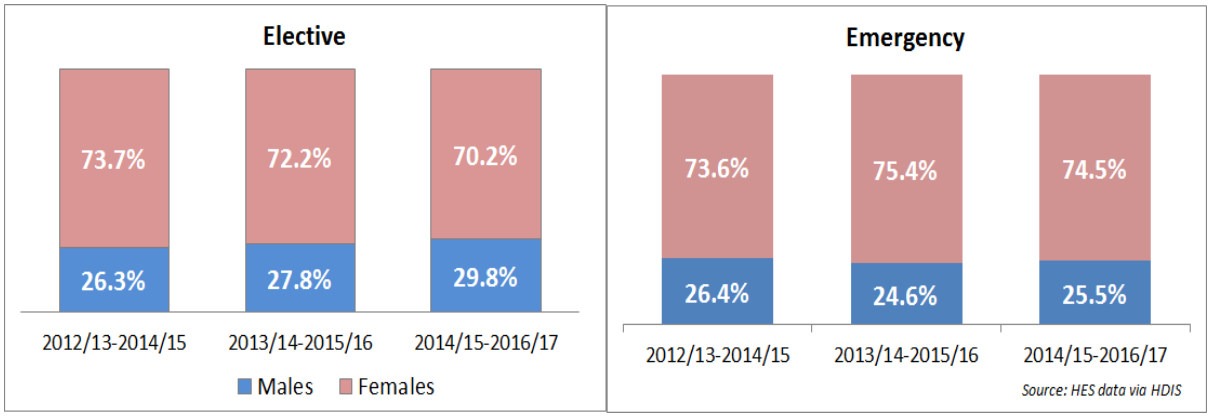
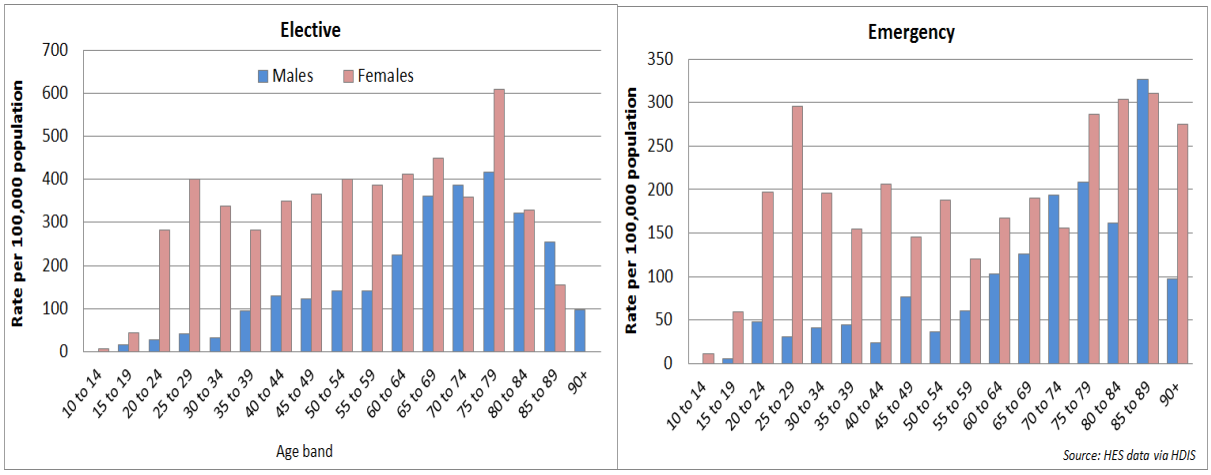


Figure 27: Admissions for gallstones split by age band and sex, 2012/13 to 2016/17, crude rate per 100,000 population



For elective admissions, Farnsworth has a rate statistically lower than the Halton average rate with Grange, Heath and Norton South rates statistically higher than the borough average. For emergency admissions Hale and Birchfield have rates statistically lower with Norton North and Norton South statistically higher than the borough average. Thus Norton South has the highest rates for both elective and non-elective (emergency) admissions due to gallstones.

Figure 28: Geographical spread of elective admissions due to gallstones

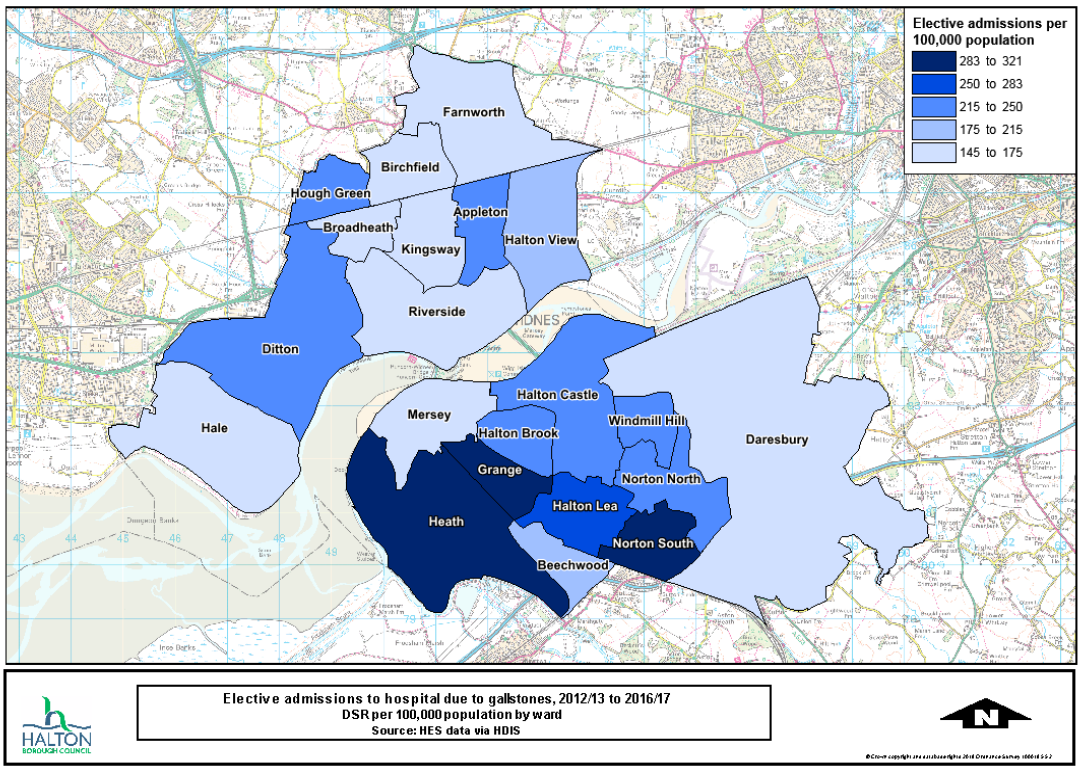
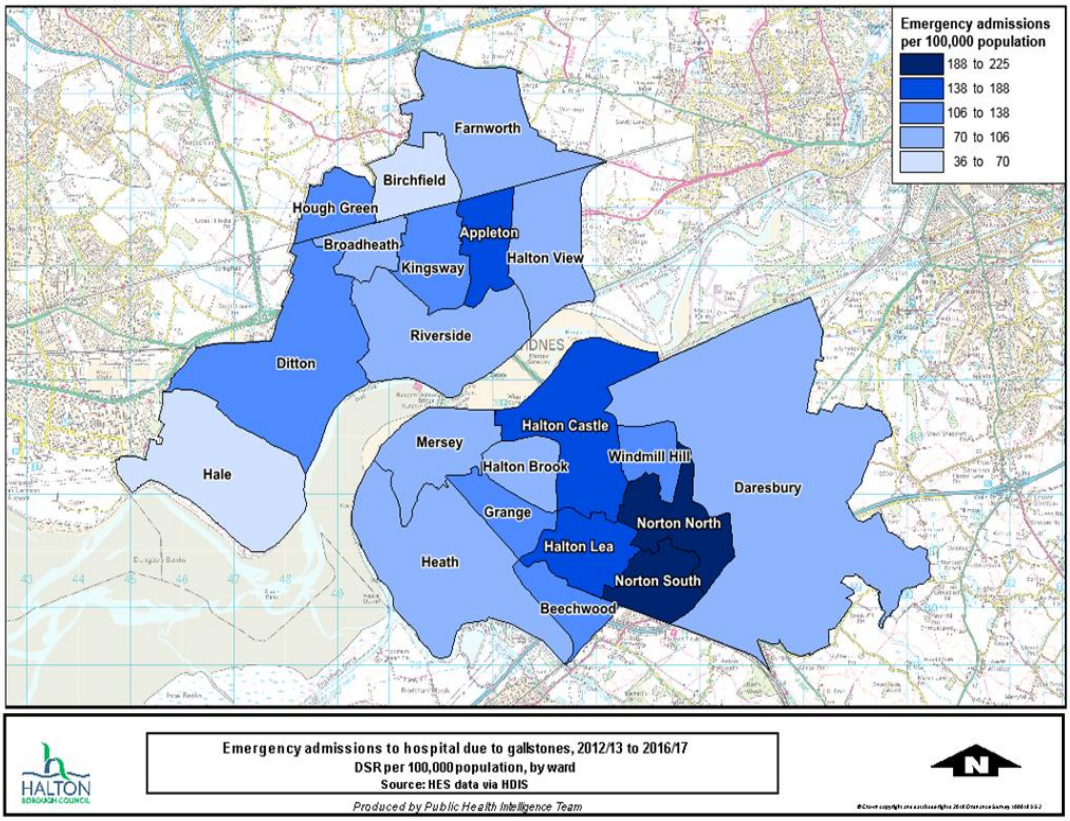
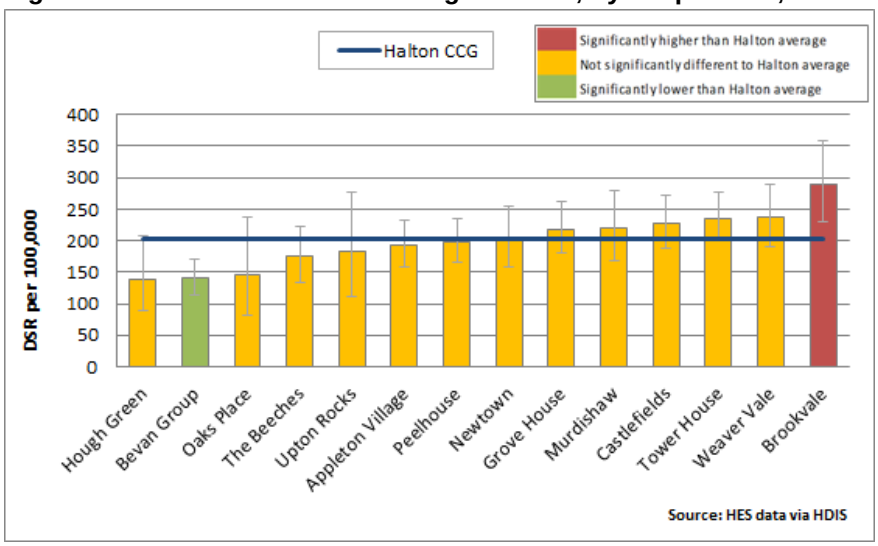


Figure 29: Geographical spread of emergency admissions due to gallstones



Analysis of elective admissions due to gallstones by GP practice shows that whilst there is variation, wide confidence intervals means only Bevan Group and Brookvale have rates statistically significantly different to the CCG average.

Figure 30: Elective admissions for gallstones, by GP practice, 2012/13 to 2016/17



4.6. Hernia

A hernia is the abnormal exit of tissue or an organ, such as the bowel, through the wall of the cavity in which it normally resides. Hernias come in a number of different types. Most commonly they involve the abdomen, specifically the groin. Groin hernias are most common of the inguinal type but may also be femoral. Other hernias include hiatus, incisional, and umbilical hernias. Symptoms are present in about 66% of people with groin hernias. This may include pain or discomfort especially with coughing, exercise, or going to the bathroom. Often it gets worse throughout the day and improves when lying down. A bulging area may occur that becomes larger when bearing down. Groin hernias occur more often on the right than left side. The main concern is strangulation, where the blood supply to part of the bowel is blocked. This usually produces severe pain and tenderness of the area. Hiatus or hiatal hernias often result in heartburn but may also cause chest pain or pain with eating.

Risk factors for the development of a hernia include: smoking, chronic obstructive pulmonary disease, obesity, pregnancy, peritoneal dialysis, cardiovascular disease, and previous open appendectomy, among others. Hernias are partly genetic and occur more often in certain families. It is unclear if groin hernias are associated with heavy lifting. Hernias can often be diagnosed based on signs and symptoms. Occasionally medical imaging is used to confirm the diagnosis or rule out other possible causes. The diagnosis of hiatus hernias is often by endoscopy.

Groin hernias that do not cause symptoms in males do not need to be repaired. Repair, however, is generally recommended in women due to the higher rate of femoral hernias which have more complications. If strangulation occurs immediate surgery is required. Repair may be done by open surgery or by laparoscopic surgery. Open surgery has the benefit of possibly being done under local anesthesia rather than general anesthesia. Laparoscopic surgery generally has less pain following the

procedure. A hiatus hernia may be treated with lifestyle changes such as raising the head of the bed, weight loss, and adjusting eating habits. The medications, H2 blockers or proton pump inhibitors may help. If the symptoms do not improve with medications the surgery known as laparoscopic fundoplication may be an option.

About 27% of males and 3% of females develop a groin hernia at some time in their life. Inguinal, femoral and abdominal hernias were present in 18.5 million people and resulted in 59,800 deaths in 2015. Groin hernias occur most often before the age of one and after the age of fifty. It is not known how commonly hiatus hernias occur with estimates in North America varying from 10 to 80%.
A **hiatus hernia** is a type of hernia in which abdominal organs (typically the stomach) slip through the diaphragm into the middle compartment of the chest. This may result in gastroesophageal reflux disease (GORD) with symptoms such as a taste of acid in the back of the mouth or heartburn. Other symptoms may include trouble swallowing and chest pains. Complications may include iron deficiency anemia, volvulus, or bowel obstruction.

The most common risk factors are obesity and older age. Other risk factors include major trauma, scoliosis, and certain types of surgery. Symptoms from a hiatus hernia may be improved by changes such as raising the head of the bed, weight loss, and adjusting eating habits. Medications that reduce gastric acid such as H2 blockers or proton pump inhibitors may also help with the symptoms although they can also create significant side effects. If the condition does not improve with medications, a surgery to carry out a laparoscopic fundoplication may be an option. Between 10% and 80% of people in the United States are affected.

Incidence of hiatal hernias increases with age; approximately 60% of individuals aged 50 or older have a hiatal hernia. Of these, 9% are symptomatic, depending on the competence of the lower oesophageal sphincter; 95% of these are "sliding" hiatus hernias, in which the lower oesophageal sphincter protrudes above the diaphragm along with the stomach, and only 5% are the "rolling" type (para-oesophageal), in which the lower oesophageal sphincter remains stationary, but the stomach protrudes above the diaphragm.

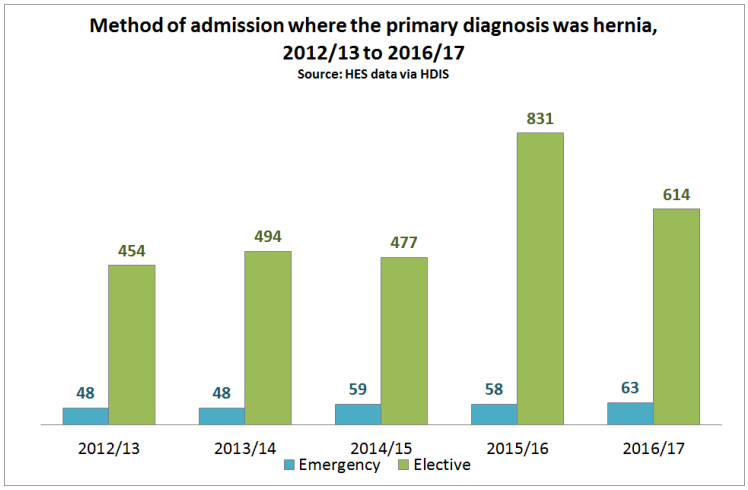
Hiatus hernia is most common in North America and Western Europe and rare in rural African communities. Some have proposed that insufficient dietary fibre and the use of a high sitting position for defecation may increase the risk.

Local Picture

Applying the lifetime prevalence rates of 27% for men and 3% for women to Halton's population equates to about **16,729 men and 1,948 women.**

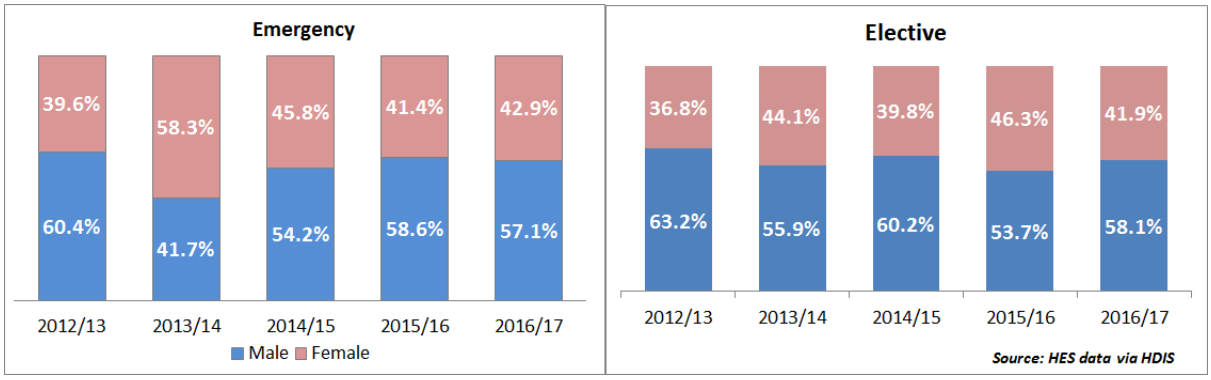
The vast majority of admissions for hernia are elective. There has been a slight increase in the number of emergency admissions but numbers are small. Between 2012/13 to 2014/15 there was minimal change in the number of admissions. However, in 2015/16 there was a substantial rise of 42.5%. However, the number dropped in 2016/17.

Figure 31: Number of admissions due to hernia, by route of admission, 2012/13 to 2016/17



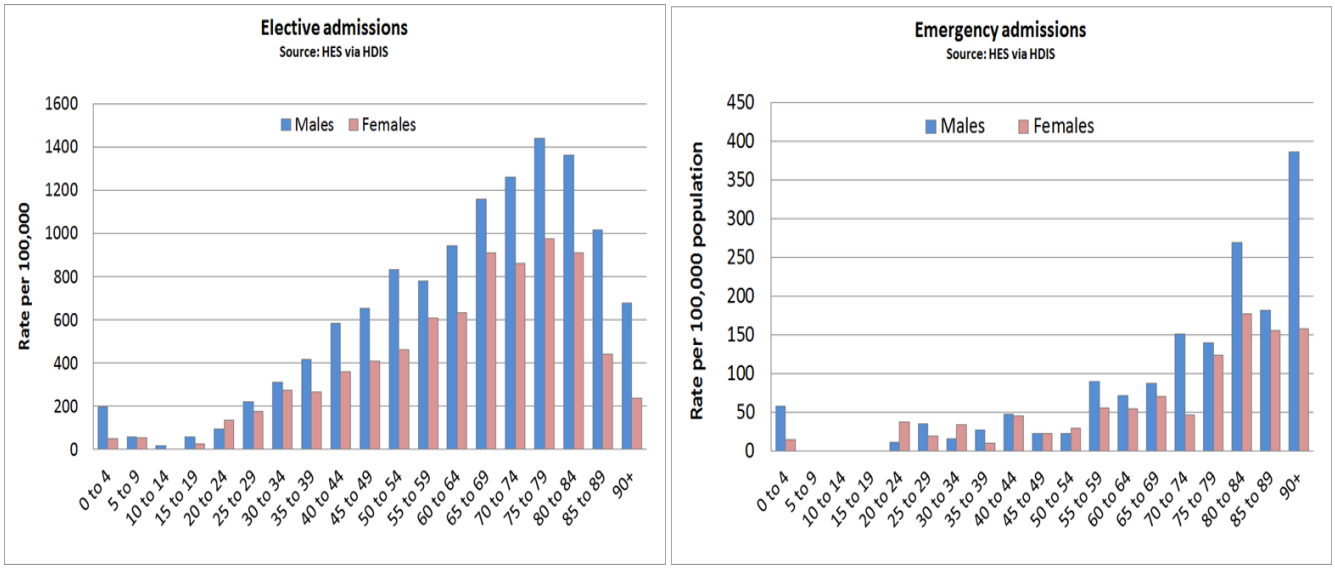
Apart from emergency admissions for hernia in 2013/14, the gender split shows a greater proportion of admissions are in males than females. The gender split is similar for both emergency and elective admissions and has been fairly consistent over time.

Figure 32: Percentage of admissions for hernia split by sex, 2012/13 to 2016/17



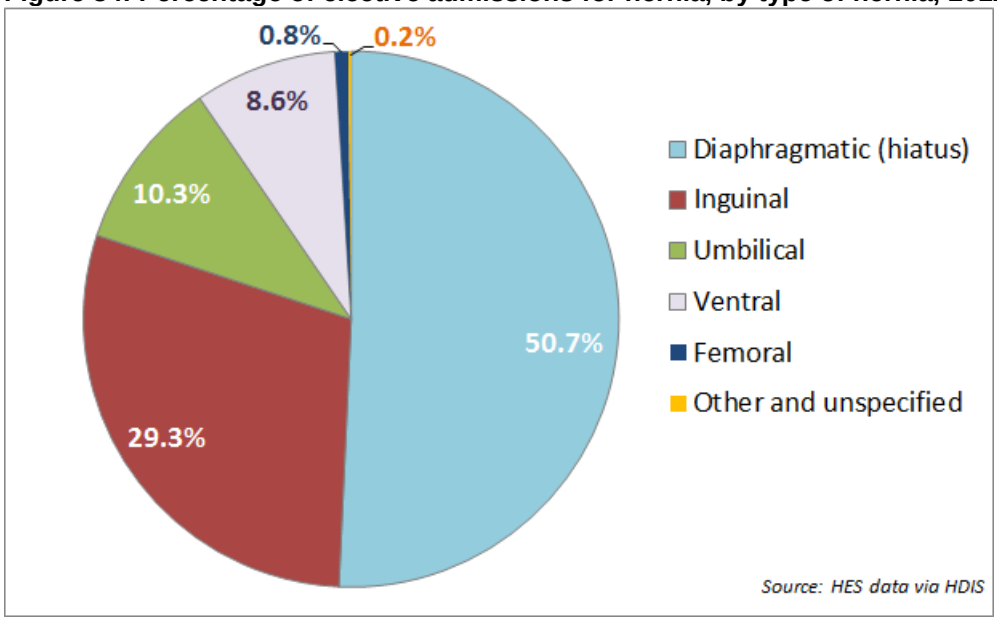
This gender split pattern is also consistent across the age groups, the higher rates in males than females in all ages groups apart from 20-24 for both elective and emergency and also 30-34 and 50-54 for emergency admissions. However, rates are low in both these age groups.

Figure 33: Hospital admissions due to hernia, by age and gender, crude rate per 100,000 population, 2012/13-2016/17



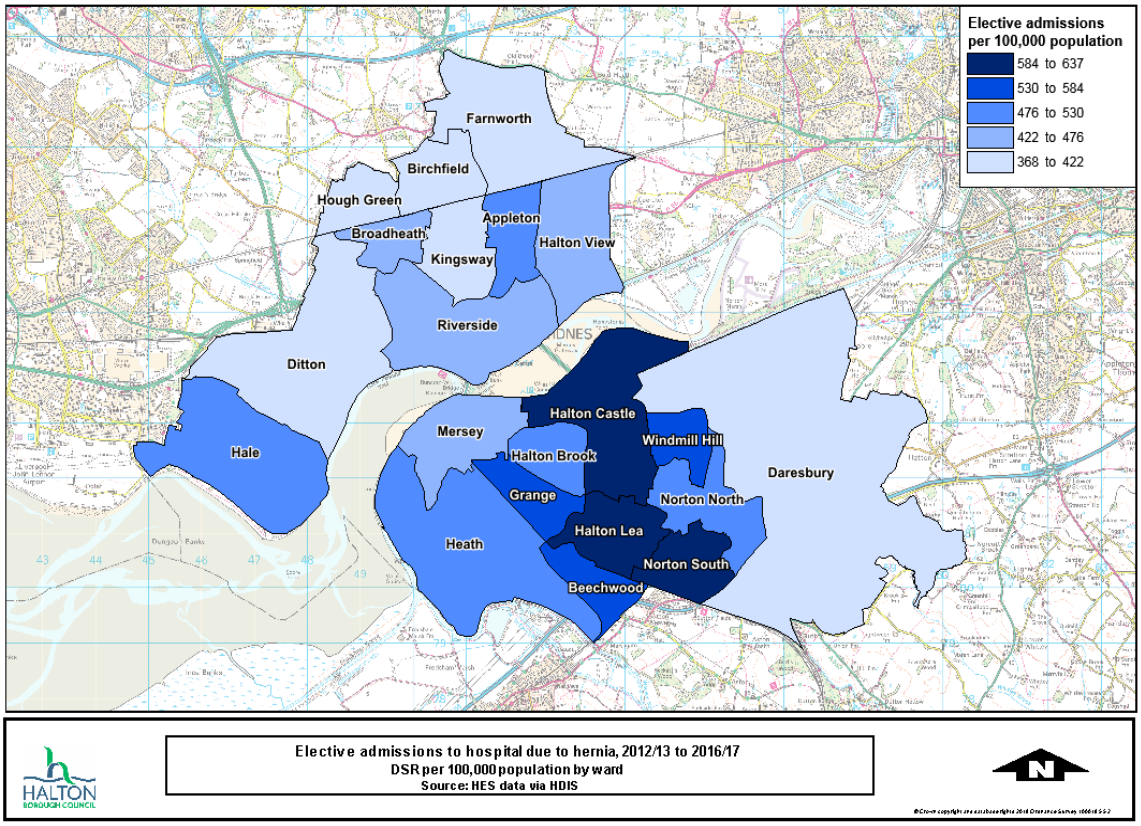
The most common type of hernia's that cause elective admissions are hiatal hernia's which account for just over half, followed by inguinal which account for nearly 1 in 3 (accounting for 8 out of 10 of the elective admissions between these two types).

Figure 34: Percentage of elective admissions for hernia, by type of hernia, 2012/13 to 2016/17



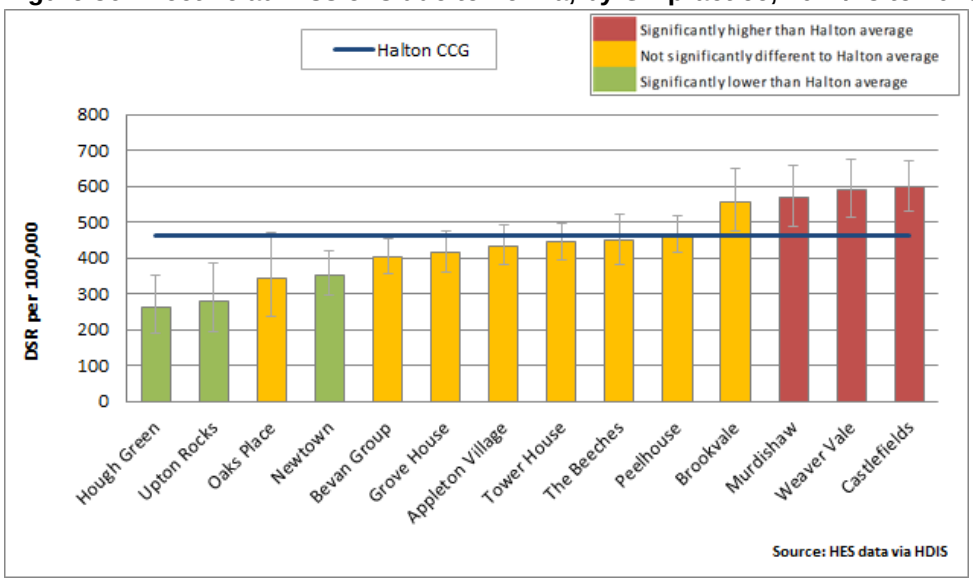
The overall Halton directly age standardised rate per 100,000 population for elective admissions due to hernia is 478.7. Rates range across the borough 368.7 in Hough Green to 636.7 in Norton South. Rates are statistically lower than the borough average in Farnsworth and Hough Green. Rates are statistically higher in Halton Castle, Halton Lea and Norton South.

Figure 35: Elective admission rates by electoral ward, 2012/13 to 2016/17



At a GP practice level, elective admissions due to hernia are statistically lower in three Widnes practices and statistically higher in three Runcorn practices

Figure 36: Elective admissions due to hernia, by GP practice, 2012/13 to 2016/17



5. Level of need in the population: conditions of the lower gastro-intestinal tract

5.1. Coeliac disease

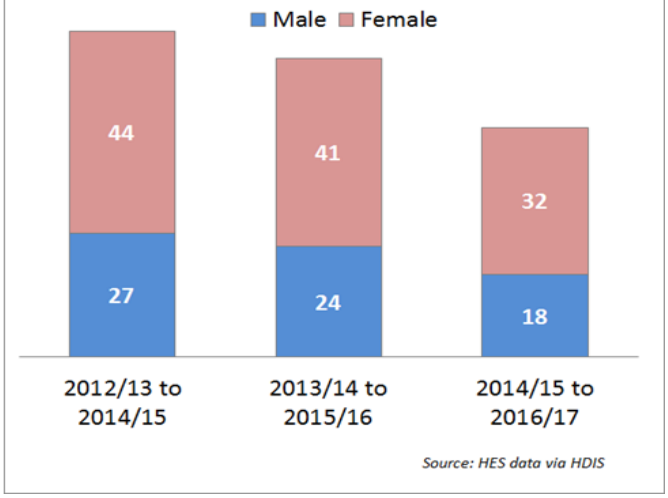
- Coeliac disease is an autoimmune disorder in which a heightened immunological response to peptides derived from gluten proteins results in chronic inflammation and damage (villous atrophy) to the lining of the small intestine
- It can present with a wide range of clinical features, both gastrointestinal and non-gastrointestional
- In the UK population, screening studies suggest that 1 in 100 people are affected
- Complications of coeliac disease include anaemia, osteoporosis, splenic dysfunction, bacterial overgrowth, and cancer such as Hodgkin's and non-Hodgkin's lymphoma
- Coeliac disease is under-diagnosed, and it is estimated that for every person diagnosed with coeliac disease, seven to eight people remain undiagnosed[89] . Coeliac disease is approximately twice as common in females than males.

Local picture

Applying the 1 in 100 estimated proportion affected by coelic disease would give an estimated 1,273 Halton residents affected. Over a 5-year period 2012/13 to 2016/17 there were 100 elective and less than 5 emergency admissions due to coeliac disease in Halton.

Figure 37: Number of elective admissions due to coeliac disease, split by gender, 2012/13 to 2016/17

	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Total	24	26	21	18	11	100



5.2. Constipation

This is a symptom-based disorder which describes defecation that is unsatisfactory because of infrequent stools, difficulty passing stools, or the sensation of incomplete emptying.

- The Rome IV diagnostic criteria for constipation include spontaneous bowel movements occurring less than three times a week
- Stools are often dry, hard, or lumpy, and may be abnormally large or small
- In reality, constipation is often defined as passage of stools less frequently than the person's normal pattern. In the UK, normal stool frequency in children ranges from an average of 4 per day in the first week of life to 2 per day at 1 year of age. The normal adult range (between 3 stools per day and 3 stools per week) is usually attained by 4 years of age
- Constipation is termed idiopathic (functional) if it cannot be explained by any anatomical or physiological abnormality
- Chronic constipation usually describes symptoms which are present for at least 8-12 weeks in the preceding six months

Risk factors for developing constipation include:[90][91][92]

- **Social**
  - Low fibre diet or low calorie intake[93]
  - Difficult access to toilet, or changes in normal routine or lifestyle
  - Lack of exercise or reduced mobility
  - Limited privacy when using the toilet
- **Psychological**
  - Anxiety and/or depression
  - Somatization disorders
  - Eating disorders
  - History of sexual abuse
- **Physical**
  - Female sex
  - Older age
  - Pyrexia, dehydration, immobility
  - Sitting position on a toilet seat compared with the squatting position for defecation.

Prevalence: how common is it?

Constipation is a common problem which may occur at any age. The reported prevalence rates vary in the literature due to differences in study populations and the clinical definition of constipation used.

- A UK primary care cohort study found the prevalence of GP-diagnosed constipation ranged from 12 per 1,000 people in 2005 to 12.8 per 1000 people in 2009[94].
  - Constipation is more common with increasing age[95][96]
  - The incidence of constipation is 2–3 times higher in women than in men[97][98]
  - Constipation is more common during pregnancy than in the general population, affecting about 40% of women[99] — this may be due to the physiological, biochemical, and dietary changes that occur during pregnancy[100].

- Note: the prevalence of constipation may be underestimated in studies due to the high proportion of affected people self-treating rather than consulting a healthcare professional[101].

Constipation in children: what causes it? [102][103][104]

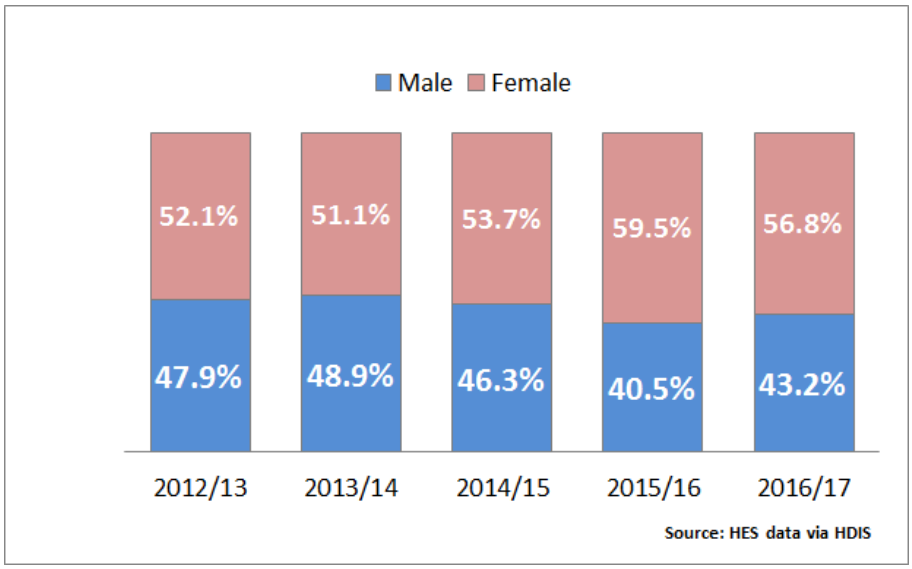
- Contributing factors for constipation include pain, fever, inadequate fluid intake, reduced dietary fibre intake, toilet training issues, the effects of drugs such as sedating antihistamines or opiates, psychosocial issues, and a family history of constipation.
- Constipation is more common in children who are physically inactive or with impaired mobility (for example children with cerebral palsy) or a neurodevelopmental disorder (such as Down's syndrome or autistic spectrum disorder).
- Childhood constipation is one of the most common reasons for referral to paediatrics, and accounts for 3% of general paediatric consultations.
- The prevalence of childhood constipation is 10–20% in the UK, depending on the criteria used for diagnosis.
- In the UK, 30% of children aged 4–11 years will have constipation lasting less than 6 months, and 5% will have constipation lasting more than 6 months.
- Peak incidence of constipation is at the time of toilet training (typically around 2–3 years of age).
- Constipation is largely under-reported as the signs and symptoms frequently go unrecognised. It may manifest with withholding behaviours to prevent the painful passage of stools; these are often confused with straining. Parents may not be aware of the link between soiling and constipation.

Local Picture

Applying the 12-12.8% prevalence rate to Halton's population of 127,306 people would give an estimated 15,277 – 16,295 people suffering with constipation.

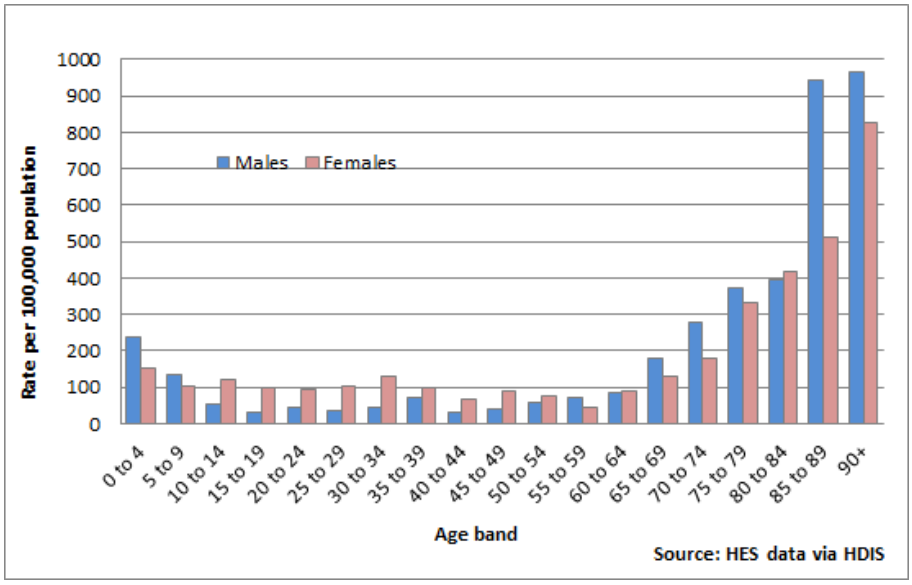
Unlike other gastro-intestinal disease admissions, where a great many cases (often the majority) are elective, all cases of admisisons due to constipation are via the emergency route. During the period 2012/13 to 2016/17 this accounted for 763 of the 6,888 emergency admisisons, or 11.1%.
Overall there are slightly more women than men admitted to hospital due to constipation.

Figure 38: Emergency admissions due to constipation, by gender



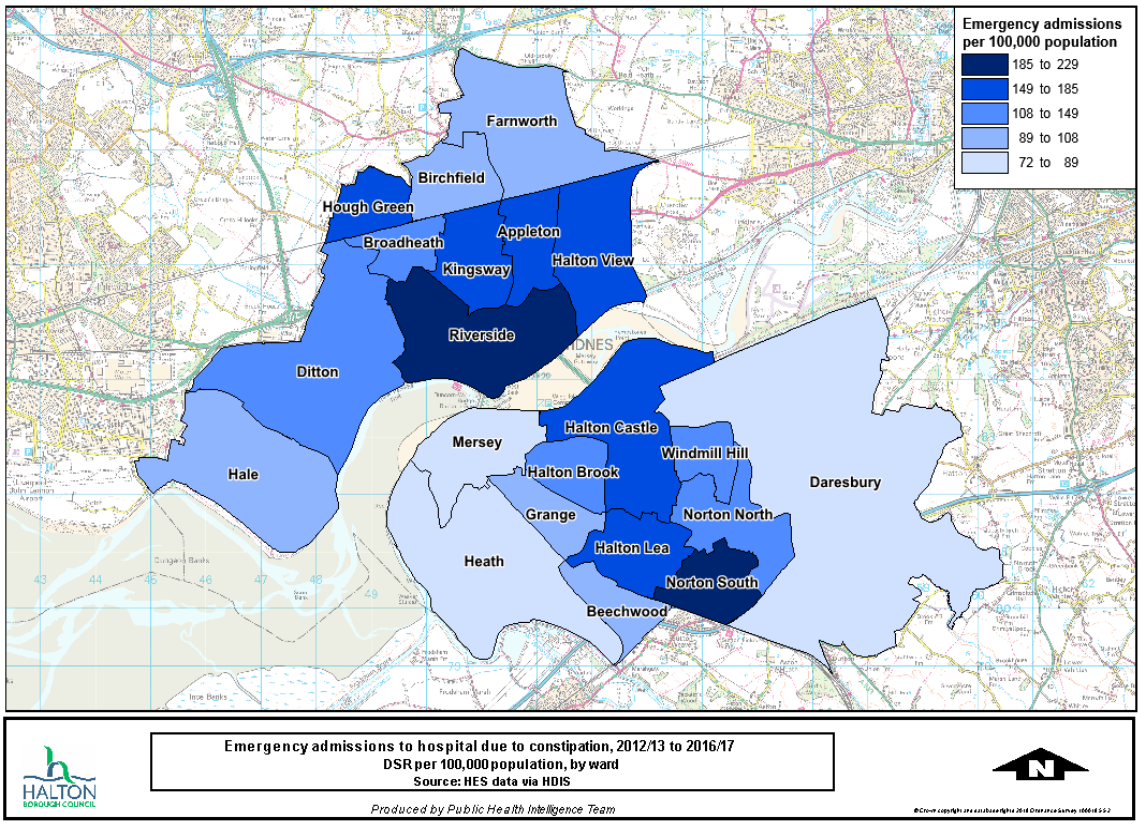
However, at both extremes of the age spectrum, the rate of admissions is higher amongst males.

Figure 39: Emergency admissions due to constipation, by age group and gender



During the same time period, the number of admission per electoral ward ranged from a low of 9 in Hale to 59 in Norton South. However, when converted to a directly age standardised rate per 100,000 population the lowest rate was in Daresbury and the highest in Riverside.

Figure 40: Geographical spread of emergency hospital admissions due to constipation, 2012/13-2016/17



5.3. Inflammatory bowel disease

5.3.1. Crohn's disease

Definition[105][106][107][108][109]

- Crohn's disease is a chronic, relapsing-remitting, non-infectious inflammatory disease of the gastrointestinal tract.
  - The inflammation involves discrete parts of the gastrointestinal tract, anywhere from the mouth to the anus; these are called 'skip lesions' because they leave normal areas in between.
  - The full thickness of the intestinal wall is inflamed, in contrast to the inflammation in ulcerative colitis, which is limited to the intestinal mucosa.
  - In a population-based study (n = 306), Crohn's disease was located in the terminal ileum in 45%, colon in 32%, ileocolon in 19%, and upper gastrointestinal tract in 4% of people.
- Extra-intestinal manifestations (outside the intestines) are common affecting up to 35% of people with Crohn's disease. These include:
  - iritis (inflammation that affects the iris, colored ring around the eye's pupil).
  - arthritis (redness, warmth, swelling, and decreased range of motion of the affected joints, typically that casue pain and discomfort).

  - erythema nodosum (skin condition that is characterised by painful red, rounded lumps typically which appear on the shins and around the ankles).
  - pyoderma gangrenosum (condition that causes tissue to become necrotic, causing deep ulcers that usually occur on the legs).
- Crohn's disease and ulcerative colitis are collectively known as 'inflammatory bowel disease'.
  - In about 5% of people, it is not possible to differentiate histologically between Crohn's disease and ulcerative colitis, and the term 'inflammatory bowel disease type-unclassified' (previously known as 'indeterminate colitis') may be used.

What are the risk factors?

Crohn's disease is thought to be an immune-mediated condition caused by environmental triggering events in genetically susceptible people[110][111][112][113]

- **Family history:** A family history of Crohn's disease is present in about 25–40% of children, and siblings of a person with Crohn's disease are 17–35 times more likely to develop the condition than the general population[114]. A genetic component has also been suggested by large concordance studies in twins in northern Europe.
- **Smoking:** The risk of Crohn's disease is increased in smokers (in contrast to ulcerative colitis, where the risk is decreased). A meta-analysis found the odds ratio for the risk of Crohn's disease in smokers compared with non-smokers to be 1.7[6][115]. In addition, smoking may increase the risk of disease relapse and need for surgical resection.
- **Infectious gastroenteritis**: The risk of Crohn's disease is increased four-fold following an episode of infectious gastroenteritis, particularly in the following year, however the absolute risk is low.
- **Appendicectomy**: The risk of Crohn's disease increases early after an appendicectomy and decreases to that of the general population after about 5 years post-operatively. A meta-analysis found that the relative risk of Crohn's disease within a year post-appendicectomy was 6.7, and after 5 years, the relative risk was 1.1[116]. Subsequent research, however, has found conflicting evidence for this association, which may be related to diagnostic difficulties in detecting Crohn's disease in these people.
- **Drugs**
  - Nonsteroidal anti-inflammatory drugs (NSAIDs) may increase the risk of relapse or exacerbation of inflammatory bowel disease, but the absolute risk is low
  - The risk of inflammatory bowel disease may be increased in women using oral contraceptive drugs. A meta-analysis of 14 studies (n = 75,815) of people with inflammatory bowel disease found that the pooled relative risk for Crohn's disease for women currently using an oral contraceptive was 1.46[117]

Prevalence: How common is it?

The exact incidence and prevalence rates of Crohn's disease are not known, as detection rates and diagnostic criteria differ between studies.[118][119]

- The incidence and prevalence of Crohn's disease is increasing worldwide[120].

- The incidence of Crohn's disease in the UK is about 83 per million people per year[121] and 5.2 per 100,000 children per year[122].
    - The incidence of Crohn's disease increased markedly between the 1950s and 1980s[123]
- The prevalence of Crohn's disease is 10.6 per 100,000 people in the UK.
    - Crohn's disease presents most commonly in adolescence and early adulthood, but it may occur at any age.
    - 20–30% of cases present before the age of 20 years[124].
    - The average age at diagnosis is about 30 years
    - Crohn's disease occurs in men and women at approximately equal rates
    - A general practice serving 2000 people will have about four people with inflammatory bowel disease, and a new case of Crohn's disease will be identified every 7 years, on average[125]

Local picture

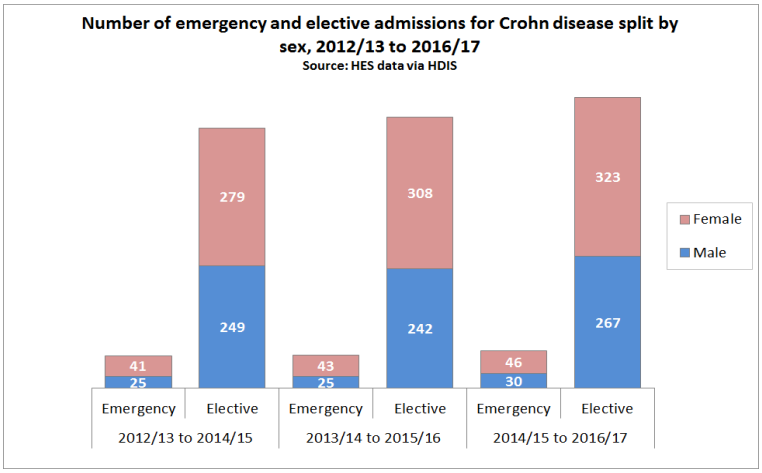
Based on the 4 in 2,000 GP patients with inflammatory bowel disease, an estimated 260 Halton patients may have the condition. Chron's disease is much rarer with an estimate of only about 14 people in the borough having the condition (based on 10.6 per 100,000 prevalence rate).

There were slightly more women admitted to hospital due to Crohn's disease than men. For both men and women the vast majority of admissions are elective. 60% of all patients admitted via the elective route during the time period 2012/13-2016/17 had just one admission with 40% having more than one admisison and 13 people being admitted 20 or more times during this five year period.

Figure 41: Hospital admissions due to Crohn's disease, by gender

Number of elective admissions for each patient, 2012/13 to 2016/17

	1 admission	2 admissions	3-9 admissions	10-19 admissions	20+ admissions
No. of patients	109	31	15	14	13



5.3.2. Ulcerative colitis

- People with acute severe ulcerative colitis require emergency hospital admission because it may be a life-threatening emergency or they may require specialist hospital treatment for symptom control.
  - In adults, NICE based their categories of symptom severity on the Truelove and Witts' severity index.
  - In children and young people, NICE based their categories of symptom severity on the Paediatric Ulcerative Colitis Activity Index.

Definition: What is it?

- Ulcerative colitis is a chronic, relapsing-remitting, non-infectious inflammatory disease of the gastrointestinal tract. The mucosa of the rectum and a variable length of the colon are inflamed.
  - This is in contrast to Crohn's disease, where the full thickness of the intestinal wall is inflamed and any part of the gastrointestinal tract, from the mouth to the anus, can be affected.
- The extent of ulcerative colitis is classified as:[126]
  - Ulcerative proctitis — inflammation is limited to the rectum and does not extend proximally to the sigmoid colon.
  - Left-sided colitis — inflammation does not extend proximally beyond the splenic flexure.
  - Extensive colitis (pancolitis) — inflammation extends proximally beyond the splenic flexure to involve the entire colon.

What causes it?

- Ulcerative colitis is thought to be caused by the interaction of environmental factors with immunological factors.[127][128] It is probably an autoimmune condition triggered by colonic bacteria causing inflammation in the gastrointestinal tract[129].
- Although the details are not well understood, a number of risk factors are well documented.
- The wide variations in incidence and prevalence have been used as evidence that ulcerative colitis is caused by the interaction of environmental and genetic factors[130]

What are the risk factors?

- **Family history**
  - First-degree relatives of people with ulcerative colitis have a 10–15% increased risk of developing the disease compared with people without a family history.[131]. However, the genetics are complex and not fully understood[132].
- **Oral contraceptives**
  - A meta-analysis found evidence of an association between the use of oral contraceptives and the development of inflammatory bowel disease, in particular Crohn's disease.[133] However, the Faculty of Sexual and Reproductive Healthcare states that causal association between combined oral contraceptive use and the onset of ulcerative colitis has not been confirmed[134].

- **Not smoking**
  - The risk of ulcerative colitis is *decreased* in smokers (in contrast to Crohn's disease, where smoking increases the risk). A systematic review and meta-analysis found the odds ratio for the risk of ulcerative colitis in smokers compared with non-smokers to be 0.58 (95% CI 0.45 to 0.75)[135].
  - However, ex-smokers have an approximately 70% greater risk of developing ulcerative colitis than people who have never smoked, and the disease is often more extensive and refractory[136].

Incidence and prevalence: How common is it?

- Ulcerative colitis is the most common form of inflammatory bowel disease (IBD):[137]
  - The incidence in the UK is around 10 per 100,000 people every year, with a prevalence of around 240 per 100,000 people. This amounts to around 146,000 people in the UK with a diagnosis of ulcerative colitis.
  - The peak incidence is between 15 and 25 years of age, with a second smaller peak between 55 and 65 years of age.

Local picture

Applying the UK prevalence rate to Halton's population would give an estimated 306 people with ulcerative colitis.

During the five year time period 2012/13-2016/17 there were 608 elective and 71 emergency admissions to hospital due to ulcerative colitis. These numbers reflect 2.4% of elective and 1% of emergency admissions due to gastrointestinal diseases.

5.4. Irritable bowel syndrome

Definition: What is it?[138][139[140]

- Irritable bowel syndrome (IBS) is a chronic, relapsing, and often lifelong disorder of the lower gastrointestinal tract, with no discernible structural or biochemical cause.
- Typical clinical features are abdominal pain:
  - Associated with a change in stool form and/or frequency.
  - Which may be related to defaecation, and there may be associated bloating.
- IBS may be classified by the predominant stool type according to the Rome IV criteria into the following sub-types, however these are no longer considered distinct disorders, but exist on a spectrum depending on the person's quantity, intensity, and severity of different symptoms:
  - Diarrhoea predominant (IBS-D), which is the commonest sub-type.
  - Constipation predominant (IBS-C).
  - Mixed, fluctuating between diarrhoea and constipation (IBS-M).
  - Unclassified (IBS-U).

What causes it?

The exact underlying cause of irritable bowel syndrome (IBS) is unknown, but is likely to be multifactorial involving the interplay of environmental and genetic factors.

Possible mechanisms include: [141][142][143]

- Abnormal gastrointestinal motility
- Visceral hypersensitivity
- Abnormal gastrointestinal immune function
- Changes in colonic microbiota
- Abnormal autonomic activity
- Abnormal central pain processing of afferent gut signals (altered 'brain-gut interactions')

Possible causes or risk factors include:[144][145][146[147]

- Genetic — twin studies and family studies confirm familial aggregation of IBS[148], and a US case-control study found a person with a first-degree relative with IBS had an odds ratio of 2.75 of developing the condition themselves[149]
- Enteric infection (for example, following gastroenteritis)
- Gastrointestinal inflammation (for example, secondary to inflammatory bowel disease)
- Dietary factors (such as alcohol, caffeine, spicy and fatty foods) — up to 90% of people report that food triggers symptoms[150]
- Drugs, such as antibiotics
- Psychosocial such as associated stress, anxiety and/or depression — influence the physiological functioning of the gastrointestinal tract via the brain-gut axis, and may affect the person's pain experience, symptom behaviour, expectations of treatment, and clinical outcome.

Prevalence: How common is it?

The exact prevalence of irritable bowel syndrome (IBS) may be underestimated, as many people with symptoms do not seek medical advice.[151][152][153]

- The global prevalence of IBS in the general population is estimated to be 5–20%
- It most commonly affects young people aged 20–30 years, and the prevalence decreases with increasing age
- It is more common in women than in men — a large systematic review of population-based studies (n = 188, 229) found the pooled odds ratio was 1.67 in women, compared with men[154].

Local picture

Applying the global prevalence estimation to Halton's population gives an possible 6,365 – 25,461 people living with the condition.

During the five year time period 2012/13-2016/17 there were 163 elective and 44 emergency admissions to hospital due to IBS. These numbers reflect 0.64% of elective and 0.6% of emergency admissions due to gastrointestinal diseases.

5.5. Diverticular disease [155][156][157][158][159][160]

What is it?

- **Diverticula** are sac-like protrusions of mucosa through the muscular wall of the colon. They are usually multiple, 5–10 mm in diameter, and occur in the sigmoid colon in about 85% of people.
  - About 15% of diverticula are found in the right colon, and this is more common in people of Asian origin
  - The exact cause of diverticulosis and diverticulitis is not known, but diverticulum formation may be associated with a low-fibre diet. This lowers stool bulk, slows transit times, and increases intraluminal pressure. This is theorized to promote herniation of the mucosa through relatively weak areas adjacent to the vasa recta (where blood vessels penetrate the wall)
- **Diverticulosis** is a condition where diverticula are present without symptoms
- **Diverticular disease** is a condition where diverticula cause symptoms, such as intermittent lower abdominal pain, without inflammation and infection
- **Diverticulitis** is a condition where diverticula become inflamed and infected, typically causing severe lower abdominal pain, fever, general malaise, and occasionally rectal bleeding
  - 'Uncomplicated' diverticulitis refers to localized diverticular inflammation that does not extend to the peritoneum
  - 'Complicated' diverticulitis refers to diverticulitis associated with complications, such as abscess, peritonitis, fistula, obstruction, or perforation.

What are the risk factors?

The exact cause for the development of diverticular disease and diverticulitis is not known, but the following risk factors may be involved:

- Genetic — monozygotic (identical) twins are twice as likely as dizygotic (non identical) twins to develop diverticulosis
- Low-fibre diet — there is conflicting evidence on the relationship between dietary fibre and the development of diverticular disease and risk of recurrent diverticulitis. A lower prevalence of diverticulosis is noted in vegetarians consuming a high-fibre diet
- Smoking — has been linked to the development of diverticulitis
- Obesity — has been linked to the development of diverticulitis and an increased risk of diverticular bleeding
- Drugs, such as nonsteroidal anti-inflammatory drugs (NSAIDs), opioids, and corticosteroids — have been associated with an increased risk of perforation of diverticula.

Prevalence: How common is it?

The exact prevalence of diverticulosis is not known, as most people are asymptomatic.

- The prevalence of diverticulosis and acute diverticulitis is increasing

- About 75% of people with diverticula have asymptomatic diverticulosis, and about 25% will develop symptomatic diverticular disease
- The presence of diverticula is rare before the age of 40 years, and the risk increases with age:
  - Diverticulosis occurs in 5–10% of people aged 45 years and older
  - Diverticulosis occurs in about 80% of people aged 85 years and older
- For people with diverticulosis, the lifetime risk of developing acute diverticulitis is about 4–25%
- About 5% of people with diverticula will develop complicated disease.

Local picture

During the five year time period 2012/13-2016/17 there were 1,696 elective and 357 emergency admissions to hospital due to diverticular disease of intestine. These numbers reflect 6.7% of elective and 5.2% of emergency admissions due to GI diseases.

5.6. Faecal incontinence

Faecal incontinence (FI) is a sign or a symptom, not a diagnosis. Therefore, it is important to diagnose the cause or causes for each individual. Because it is a stigmatising condition, active case-finding will often be needed, probably best targeted at high-risk groups.

Little is known about the natural history of the condition but for some groups (such as women immediately after childbirth) there does seem to be some spontaneous resolution of symptoms. For understandable reasons, faecal incontinence has remained a largely hidden problem, with many patients feeling too embarrassed or ashamed to admit their symptoms to healthcare professionals, or even to family and friends.

There is no consensus on methods of classifying the symptoms and causes of faecal incontinence. It is most commonly classified according to symptom, character of the leakage, patient group or presumed primary underlying cause. For many people faecal incontinence is the result of a complex interplay of contributing factors, many of which can co-exist. Some factors may be relatively simple to reverse. Therefore, a detailed initial assessment and structured approach to management is needed, starting with addressing reversible factors and, only if this fails to restore continence, progressing to specialised options and investigations.

Because faecal incontinence is a socially stigmatising condition, healthcare professionals should actively yet sensitively enquire about symptoms in high-risk groups.

High-risk groups

- frail older people
- people with loose stools or diarrhoea from any cause
- women following childbirth (especially following third- and fourth- degree obstetric injury)
- people with neurological or spinal disease/injury (for example, spina bifida, stroke, multiple sclerosis, spinal cord injury)
- people with severe cognitive impairment

- people with urinary incontinence
- people with pelvic organ prolapse and/or rectal prolapse
- people who have had colonic resection or anal surgery
- people who have undergone pelvic radiotherapy
- people with perianal soreness, itching or pain
- people with learning disabilities

Healthcare professionals should take a proactive approach to bowel management for specific groups of people:

- people with faecal loading or constipation.
- patients with limited mobility
- hospitalised patients who are acutely unwell and who develop acute faecal loading and associated incontinence
- people with cognitive or behavioural issues
- people with neurological or spinal disease/injury resulting in faecal incontinence
- people with learning disabilities
- severely or terminally ill people
- people with acquired brain injury

Prevalence of faecal incontinence

Figures on FI show variation due to the use of differing definitions and little information on the subgroups affected, though prevalence rates are thought to be much lower than those for urinary incontinence. It is unclear why there is a dearth of research into this area, though it may be due to stigma surrounding the condition. A Cochrane Review has estimated prevalence to be between 1.6% and 15% and other studies show similar results[161]. Whilst FI remains a greater taboo subject than urinary incontinence; it is quite prevalent, with an estimated 1–10% of adults living with this condition[162][163]. The Department of Health estimate figures to be around 1% of the general adult population living at home, but this rises to 17% in the 'very elderly' and 25% in institutional care[164]. Perry et al found 1.4% of those aged 40 and over had major FI, 0.4% major FI with bowel symtoms that significantly affected their quality of life[165]. Prevalence rose with age but was not significantly different in men and women.

A systematic review by Sharma et al recognised that faecal incontinence is an under-reported but common problem, which is associated with substantial economic burden and potentially devastating impact on quality of life[166]. Despite this people are often reluctant to talk about it even when part of research. This is seen in the different prevalence rates seen in studies using different research methodologies, with lower rates via telephone or face-to-face interviews compared to postal surveys, even when similar definitions of faecal incontinence are used. It estimated a prevalence of 8.3-8.4% for FI of at least once per month when direct survey methods used compared to 11.2-12.4% for postal methods. Prevalence for functional FI (defined by ROME II criteria) was 5.9%. Given the different methodologies for collecting data and difference definitions (at any point in last year to several times a month) they estimated prevalence ranged from 1.4% to 19.5%.

Based on these prevalence rates it is possible to estimate very crude estimates of the number of adults (those aged 18 and over) in Halton who may have some degree of FI. Given these estimates are based on a number of surveys it has not been possible to take account of any differences in age structure between the research samples and Halton's population. As such there may be a level of under or over estimation.

Table 8: Estimated prevalence as FI amongst adults in Halton

Frequency	Prevalence rates		Halton estimates (based on 18+ population estimate in 2016 of 98,947) (ONS)	
	Lowest	Highest	lower rate	higher rate
Several times a month	0.9%	3.3%	891	3,265
at least once per month	8.3%	17.0%	8,213	16,821
any in past year	2.2%	13.1%	2,177	12,962
no time frame specified	4.7%	15%*	4,651	14,842

* note Coyne rate was higher but omited due to inadequate sampling frame to adequately represent general adult population

Source: Sharma et al, 2016

The incidence is higher in women, in the postnatal period, in older adults and nursing home residents, and there is a strong association with urinary incontinence, which often co-exists in the same patient.[167] Faecal incontinence is a marker for increased mortality in older adults; in a study of patients after stroke, 12-month mortality was 20% compared with 8% in continent residents and was a marker for terminal illness in patients admitted to acute elderly care wards[168] [169].

FI in children

FI in children is a significant gastrointestinal problem, with great personal and social impacts. It is characterised by recurrent loss of faecal matter into the underwear in a child over the age of 4 years. Both functional and organic causes contribute to its aetiology with the former predominating. Community prevalence of this distressing problem ranges from 0.8% to 7.8% globally. Male: female ratio varies from 3:1 to 6:1.[170]

Taking the child population between the ages of 4 and 18 years of age in Halton (22,070) this would translate to between 177 and 1,722 children living in Halton who may have some level of FI.

Quality of care

In September 2012, the All Party Parliamentary Group commissioned a survey of continence care services in England. The survey sought to provide a snapshot but was unable to provide the level of detail and analysis previously delivered in the Royal College of Physician's National Audit of Continence Care 2010.

In 2006, the audit showed that integrated continence services, so crucial for delivering joined up continence care "are a dream rather than a reality". Successive audits in 2005, 2006 and most recently

in 2010 have found significant deficits in training, diagnosis, treatment and patient communications, with older people receiving worse care.

The All Party Parliamentary Group For Continence Care 2013 survey found:[171]

- Incontinence is a significant factor in admissions to hospitals and residential care settings
- Poorly managed continence care in older people and those with disabilities contributes to ill health, falls and fractures, severe infections and pressure ulcers
- Continence (bladder and bowel) problems affect about one in 12 children and are associated with bullying, loss of self-esteem and family stress, including domestic abuse
- Incontinence is more prevalent than asthma, epilepsy or dementia
- Referrals are rising whilst budgets are decreasing and the costs for management products (pads and other products) are increasing
- Management products are rationed in many areas and patients must supplement or self-fund which affects the most disadvantaged and vulnerable people
- Staffing levels have remained the same or reduced despite increasing demand
- From 2006-2007 data revealed that approximately 1.3 million people sought help for continence problems. Data from 2010-2011 shows this has escalated to 2.3 million people. This has resulted in increasing costs to the NHS from £77m in 2006/7 to £121m in 2010/11
- As such products are supplied to a level determined by budget rather than based on clinical need with many services no longer supplying product for 'light' incontinence.

5.7. Anal fissure

- An anal fissure is a tear or ulcer in the lining of the anal canal, immediately within the anal margin. It is classified as:
  - Acute — present for less than 6 weeks
  - Chronic — present for 6 weeks or longer
  - Primary — has no clear underlying cause
  - Secondary — has a clear underlying cause, such as constipation, inflammatory bowel disease, sexually transmitted infection (such as HIV infection and AIDS), or colorectal cancer
- Anal fissures are common. They mostly affect people aged 15–40 years but can occur at any age. Primary anal fissures are uncommon in elderly people and warrant further investigation for an underlying cause
- Clinical features of anal fissure include anal pain with defecation (with or without bright red rectal bleeding) and anal spasm
- During 2012/13 to 2016/17 there were 47 emergency admissions due to anal fissures and 228 elective admisisons amongst Halton residents. These numbers account for 0.7% of all emergency and 0.9% of all elective admissions due to gastrointestinal diseases/conditions

6. Level of need in the population: Liver Disease

Against a backdrop of falling mortality rates for other major causes of disease in the United Kingdom (UK), mortality from liver disease is increasing considerably, and accounts for approximately 2% of all deaths in England.[172] The UK has experienced a rapid rise in levels of alcohol consumption over recent decades[173] and patterns of alcohol consumption are a key driver for the rise in liver disease.[174] Indeed alcohol-related liver disease accounts for over a third (37%) of all liver deaths in England.[175] Non-alcohol-related fatty liver disease (NAFLD) is largely linked to obesity with an additional contribution from diabetes or metabolic syndrome. Rates of obesity in England have been rising and in 2008, almost a quarter of all adults and over 15% of children aged between two and 15 years were estimated to be obese (body mass index 30kg/m2 or over). These figures have risen to 20% of Year 6 children (2016/17) and 61.3% of adults having excess weight (overweight and obese) (2015/16). Drinkers who are overweight are at a particularly high risk of developing liver disease.[176] It is estimated that approximately 216,000 people living in the UK are chronically infected with hepatitis C, and national data sources (hospital admissions for end stage liver disease, liver transplants and death notifications) all show that hepatitis C-related liver disease is continuing to rise.[177] Chronic hepatitis B also leads to development of cirrhosis and liver cancer. Although prevalence of hepatitis B is estimated to be relatively low in this country, it varies for different ethnic groups and among those born in endemic countries. Rates of chronic infection, and therefore the largest burden of disease, are highest among people born in Africa and Asia.[178]

Whilst rates of liver disease are on the rise in England, they are not equally distributed across the country, nor are they equally distributed across different sections of the population. The age standardised mortality rate for liver disease in the North West of England is, for example, twice the rate in the East of England.[179] The number of deaths from liver disease among males exceeds the number of deaths among females in England; this is particularly evident for alcohol-related liver disease where the number of deaths among males between 2001 and 2009 were approximately double the number of deaths among females. While age is generally the biggest risk factor for most long term conditions, the average annual number of liver disease deaths in England is greatest among those aged 50 to 59 years. [180] Consequently, in the Public Health Outcomes Framework, reducing mortality from liver disease will be a key indicator in domain four: healthcare public health and preventing premature mortality.[181]

Levels of risky alcohol consumption and obesity, both risk factors for liver disease, are increasing, and therefore the current 2% contribution of liver disease to all deaths in England may signal the start of a liver disease epidemic. Consequently, health professionals have a responsibility to monitor the full burden of liver disease and its risk factors and ensure that public health service provision is fit for purpose to meet current needs and reduce and prevent future mortality and morbidity.

In the North West, life expectancy for both males and females is significantly lower than the England average. Inequalities in the North West have been shown to be associated with deaths from liver disease, with the most deprived areas of England having three times as many deaths from alcohol-related liver disease as the least deprived. This is particularly significant for the North West because nearly a third of the North West's local neighbourhoods (Lower Super Output Areas [LSOA]) are

grouped within the most deprived quintile.[182] As previously mentioned, obesity in England has been rising and recent child obesity figures show the estimated percentage of obese children in the North West region is significantly higher than the England average. If no action is taken to reduce/prevent obesity the costs of treating illnesses that result from inequality in the levels obesity are predicted to rise from £2 billion to £5 billion by 2025.[183]

Over the last 15 years, all-cause mortality has been declining sharply, as it has in England as a whole. This pattern of reducing mortality is observed both for all-age mortality, and for 'premature' mortality (commonly measured as deaths under 75 years of age). Contrary to the general trend, absolute mortality from liver disease has been increasing over the last 15 years and at a faster rate in the North West compared with England as a whole.

There are many causes for liver disease but for most cases it is largely preventable through lifestyle change. Those that have developed the disease can be supported to maintain better health with the correct medical and social support. Unfortunately, awareness about liver disease is not high and many patients do not experience symptoms until the disease is advanced.

The impact of liver disease is significant:

- people with liver disease die younger than people within other major groups (nationally the average age is 59)
- liver disease has a significant impact on the economy and is of high cost to the NHS (estimated £896 million in 2013-4)
- liver disease is not always identified or managed as well in primary care as other chronic diseases
- liver disease is the 5th most common cause of death in the UK and the leading cause of premature death

Liver disease is one of the top causes of death in England and people are dying from it at younger ages. Most liver disease is preventable and much is influenced by alcohol consumption and obesity prevalence, which are both amenable to public health interventions.

6.1. Causes of Liver Disease

Liver disease includes the following conditions:

- Steatosis (fatty liver deposits in the liver)
- Fibrosis (scarring of the liver)
- Hepatitis (inflammation of the liver)
- Cirrhosis (permanent scarring of the liver, the cause of most liver deaths)
- Liver cancer (95% of deaths are from secondary liver cancer)

The three most significant causes of liver disease that are modifiable are:

- Alcohol misuse, which causes 50-60% of liver disease
- Obesity, which causes 15-25% of liver disease
- Hepatitis B and C, which causes 25% of liver disease[184]

6.2. Alcohol

6.2.1. Levels of alcohol misuse

Alcohol consumption is a contributing factor to hospital admissions and deaths from a wide range of conditions. Alcohol misuse is estimated to cost the NHS about £3.5 billion per year and society as a whole £21 billion annually. Alcohol-related harm is determined by the volume of alcohol consumed and the frequency of drinking occasions. As such, the risk of harm is directly related to levels and patterns of consumption. In January 2016 the Chief Medical Officer issued revised guidance on alcohol consumption https://www.gov.uk/government/publications/alcohol-consumption-advice-on-low-risk-drinking. The new guideline advises that in order to keep to a low level of risk of alcohol-related harm adults should drink no more than 14 units of alcohol a week.

Using combined data from the Health Survey for England for 2011 to 2014 to produce more robust local authority estimates shows that Halton has an estimated lower percentage of its population abstaining from alcohol and a higher percentage binge drinking on their heaviest drinking day compared to both the North West and England levels. However, wide confidence intervals for these local estimates means the difference cannot be said to be statistically different. However, the level of those drinking over the recommneded weekly amount is also higher and this is statistically worse than the regional and national levels.

Table 9: Estimated levels of alcohol use in Halton

		Halton			North West	England
		Value	Lower CI	Upper CI		
Percentage of adults who abstain from drinking alcohol	●	11.6	6.8	19	16.3	15.5
Percentage of adults binge drinking on heaviest drinking day	●	22.3	15.1	31.8	20.2	16.5
Percentage of adults drinking over 14 units of alcohol a week	●	42.7	33.1	53	27.6	25.7

Compared with benchmark ● Better ● Similar ● Worse

Source: Calculated by Public Health England using data from the Health Survey for England.

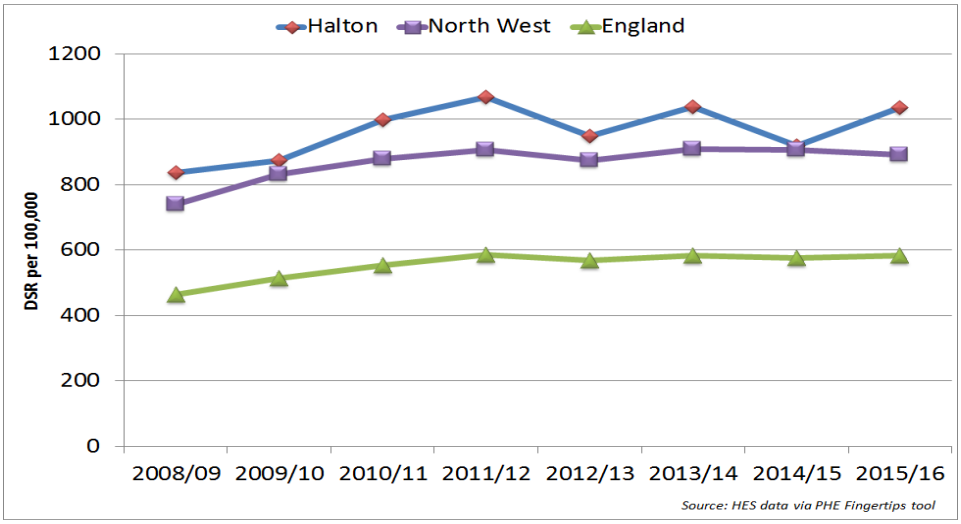
6.2.2. Hospital admissions due to alcohol including alcoholic liver disease (ICD 10 code K70)

As a result of the level of alcohol misuse seen in Halton hospital admissions known as where the primary diagnosis or any of the secondary diagnoses are an alcohol-specific (wholly attributable) condition are statistically higher than both the North West and England. This covers the following conditions:[185]

- Alcohol-induced pseudo-Cushing's syndrome
- Mental and behavioural disorders due to use of alcohol
- Degeneration of nervous system due to alcohol
- Alcoholic polyneuropathy
- Alcoholic myopathy
- Alcoholic cardiomyopathy

- Alcoholic gastritis
- Alcoholic liver disease
- Alcohol-induced acute pancreatitis
- Alcohol-induced chronic pancreatitis
- Fetal alcohol syndrome (dysmorphic)
- Excess alcohol blood levels
- Accidental poisoning by and exposure to alcohol
- Intentional self-poisoning by and exposure to alcohol
- Poisoning by and exposure to alcohol, undetermined intent
- Evidence of alcohol involvement determined by blood alcohol level
- Evidence of alcohol involvement determined by level of intoxication

Figure 42: Trend in hospital admission rates for alcohol specific conditions, all age, persons



Of the 1,282 admissions during 2015/16, the level was nearly twice as high for men than women – 837 males and 445 females. This is a consistent pattern and follows the regional and national gender split. Levels are statistically higher in Halton overall and for both genders compared to England.

Table 10: Hospital admissions due to alcohol-specific conditions, by gender, 2008-09 to 2015-16

		2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Males	Count	656	679	826	874	773	826	753	837
	Value	1,110	1,145	1,399	1,468	1,301	1,396	1,264	1,398
	Lower CI	1,026	1,059	1,303	1,370	1,209	1,301	1,174	1,304
	Upper CI	1,200	1,236	1,500	1,571	1,398	1,495	1,359	1,497
	North West	1,027	1,148	1,203	1,247	1,210	1,241	1,249	1,229
	England	658	728	780	827	799	815	804	812
Females	Count	376	396	406	452	390	447	382	445
	Value	583	624	633	705	620	709	600	700
	Lower CI	525	564	573	641	560	644	541	636
	Upper CI	645	689	698	773	685	778	663	768
	North West	467	530	572	584	554	590	582	571
	England	283	313	342	359	348	366	359	367

Source: HES via PHE Fingertips tool

However, considering just alcoholic liver disease (ICD 10 code K70), rates have increased significantly in males in Halton since 2012/13 (table 11) and the most recent 2016/17 data shows that the rate was significantly higher than England. Rates for females peaked in 2014/15 and now remain slightly higher than but not significantly different to the national average. Rates for men during 2015/16 and 2016/17 were between two and three times higher than for females in Halton, mirroring the regional and national trend.

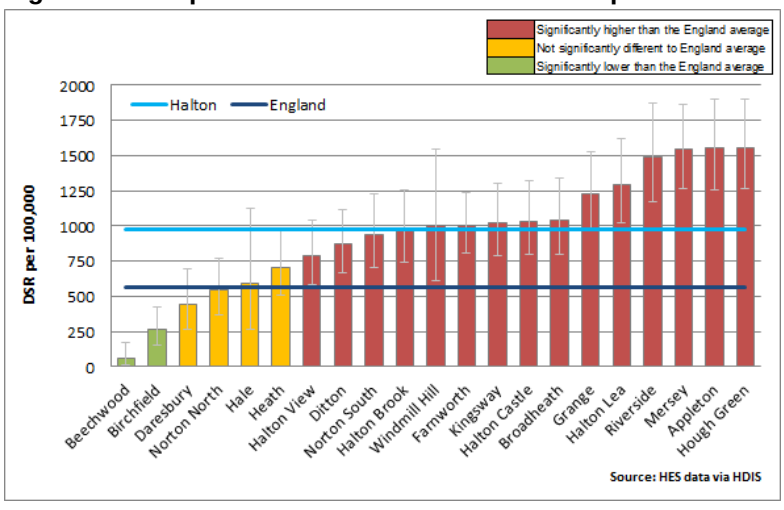
The majority of electoral wards have rates statistically higher than England. Only four have statistically similar rates to England and two statistically better (lower) rates.

Table 11: Hospital admissions due to alcoholic liver disease, by gender, 2012/13 to 2016/17

Males							
Period	Benchmark	Count	Value	Lower CI	Upper CI	North West	England
2012/13	🟢	14	22.5	12.3	37.7	73	44.2
2013/14	🟡	23	40.6	25.5	61.1	70.1	44
2014/15	🟡	26	42.5	27.7	62.4	76	48.1
2015/16	🔴	58	96.3	73.0	124.6	77.6	50.8
2016/17	🔴	58	93.7	71.1	121.2	77.9	53.0
Females							
2012/13	🟡	12	19.2	9.9	33.6	36	19.8
2013/14	🟡	12	18.3	9.5	32	35.4	20.3
2014/15	🔴	26	40.4	26.4	59.2	34.7	22.2
2015/16	🟡	24	37.2	23.8	55.5	35.8	23.9
2016/17	🟡	17	27	15.6	43.3	39.9	24.8

Compared with benchmark 🟢 Better 🟡 Similar 🔴 Worse *Source: HES via PHE Fingertips tool*

Figure 43: Hospital admissions due to alcohol-specific conditions, electoral ward level

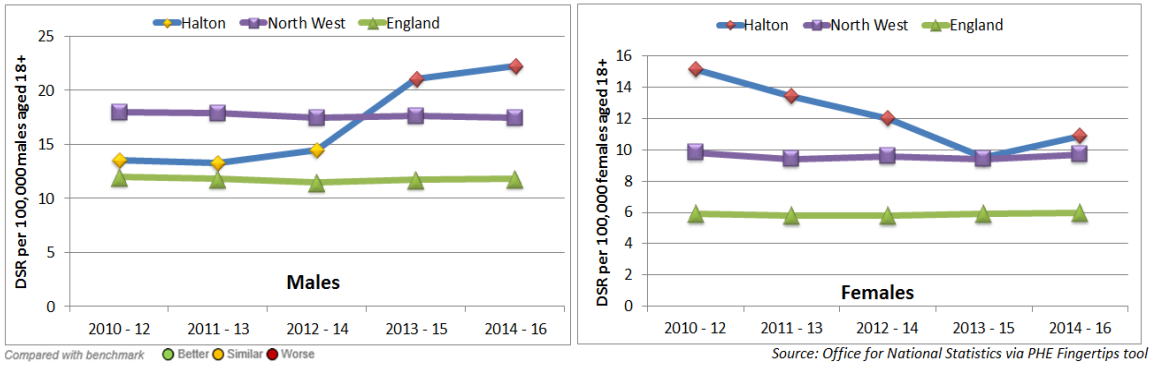


6.2.3. Deaths due to alcoholic liver disease

There has been an increase in the number of deaths due to alcoholic liver disease, from 22 males in the time period 2010-12 to 37 by 2014-16. Conversely, for females there had been a reduction. During 2010-12 there were 25 deaths amongst women, falling to 17 by 2013-15, then a slight rise to 19 during

the time period 2014-16. The rise for males has been against a backdrop of stable rates for England and the North West meaning the rates have been statistically worse than England for the last two reporting periods. For females whilst rates have been falling and are now similar to the North West level, they have been statistically worse then England for all but the period 2013-15.

Figure 44: Under 75 mortality rate from alcoholic liver disease (classified by underlying cause of death recorded as ICD code K70)



6.3. Non-alcoholic fatty liver disease (ICD 10 code K760)

Non-alcoholic fatty liver disease (NAFLD) is the term for a range of conditions caused by a build-up of fat in the liver.

Risk factors for developing NAFLD are:

- Being obese or overweight – particularly if there is a lot of fat around the waist (an "apple-like" body shape)
- having type 2 diabetes
- having high blood pressure
- having high cholesterol
- being over the age of 50
- being a smoker

NAFLD is usually seen in people who are overweight or obese. It's estimated that up to 1 in every 3 people in the UK has early stages of NAFLD where there are small amounts of fat in their liver. Early-stage NAFLD doesn't usually cause any harm, but it can lead to serious liver damage, including cirrhosis, if it gets worse. Having high levels of fat in your liver is also associated with an increased risk of problems such as diabetes, heart attacks and strokes. If detected and managed at an early stage, it's possible to stop NAFLD getting worse and reduce the amount of fat in the liver.
NAFLD develops in 4 main stages. Most people will only ever develop the first stage, usually without realising it. In a small number of cases it can progress and eventually lead to liver damage if not detected and managed. The main stages of NAFLD are:

1. simple fatty liver (steatosis) – a largely harmless build-up of fat in the liver cells that may only be diagnosed during tests carried out for another reason
2. non-alcoholic steatohepatitis (NASH) – a more serious form of NAFLD, where the liver has become inflamed; this is estimated to affect up to 5% of the UK population

3. fibrosis – where persistent inflammation causes scar tissue around the liver and nearby blood vessels, but the liver is still able to function normally
4. cirrhosis – the most severe stage, occurring after years of inflammation, where the liver shrinks and becomes scarred and lumpy; this damage is permanent and can lead to liver failure (where your liver stops working properly) and liver cancer.

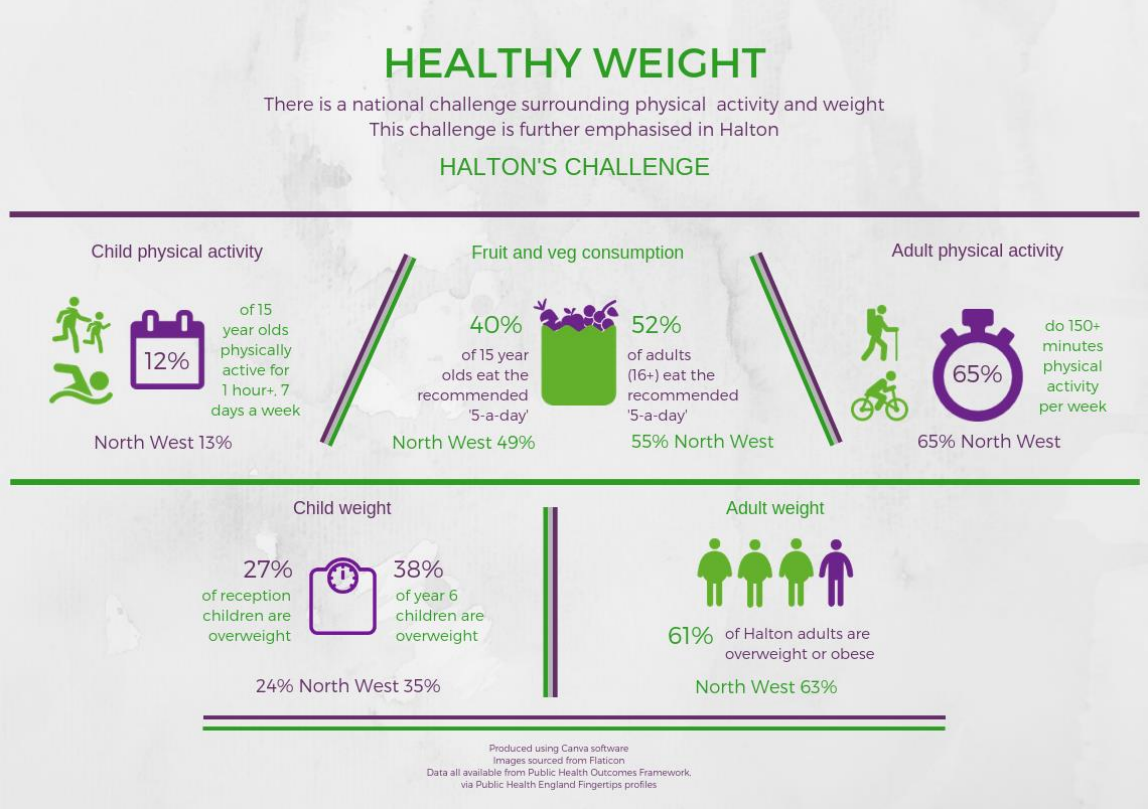
It can take years for fibrosis or cirrhosis to develop. This makes it amenable to lifestyle changes to prevent the disease getting worse. However NAFLD has been diagnosed in people without any of these risk factors, including young children.

6.3.1. Obesity Prevalence

Halton faces a number of challenges concerning the levels of obesity in its population. Almost two thirds (61.1%; 61.3% in England) of adults aged 18+ were estimated to be overweight or obese in 2016/17[186].

In children, 26.6% of 4-5 year olds and 38.1% of 10-11 year olds were overweight or obese in 2016/17. The proportion has increased slightly from 24.4% for 4-5 year olds and 35.6% for 10-11 year olds since 2006/07. Halton has significantly higher rates than the England average. The figure below summarises the data around healthy weight.

Figure 45: Obesity challenge in Halton[c]



c.Healthy Weight JSNA https://www3.halton.gov.uk/Pages/health/JSNA/lifestyles/JSNAhealthyweight.pdf

6.3.1. Levels of other risk factors

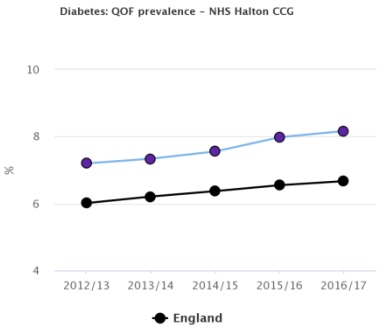
Diabetes

Levels of diabetes are high and have been increasing due to the ageing population and increasing levels of obesity. It should be noted however, that this is GP diagnosed prevalence. Therefore the difference may be due to better case finding as the estimated prevalence is similar to England. The gap between the estimated and diagnosed prevalence is small in Halton.

Figure 46: Estimated and diagnosed prevalence of diabetes, NHS Halton CCG, 2012/13 to 2016/17

Source: QOF and Public Health England via PHE Fingertips tool

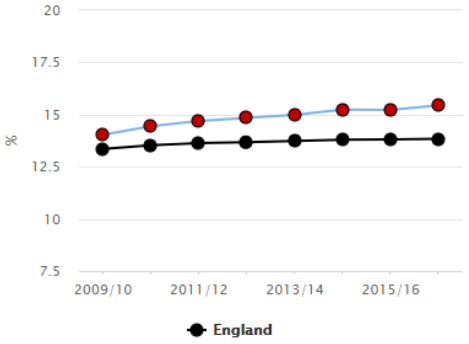
Indicator	Period		England	Cheshire and Merseyside NHS regio...	NHS Eastern Cheshire CCG	NHS Halton CCG	NHS Knowsley CCG	NHS Liverpool CCG	NHS South Cheshire CCG	NHS South Sefton CCG	NHS Southport And Formby CCG	NHS St Helens CCG	NHS Vale Royal CCG	NHS Warrington CCG	NHS West Cheshire CCG	NHS Wirral CCG
Diabetes: QOF prevalence	2016/17		6.7	6.8	6.2	8.2	7.5	6.2	6.8	6.6	7.2	7.6	7.0	6.8	6.5	7.0
Estimated prevalence of diabetes (undiagnosed and diagnosed)	2017		8.5	-	8.5	8.4	8.6	8.1	8.3	8.9	9.5	9.0	8.4	7.9	8.2	8.9



Hypertension

Levels of GP diagnosed prevalence are statistically higher (worse) than the England average rate and this has been the case over a number of years (indicated by the red dots). Rates have risen slightly in Halton against a background of a flat trend for England. However, this may be due to proactive case finding efforts locally as it is estimated that a great number of people with hypertension have not been diagnosed. The modelled estimates have been retired so are no longer updated. However, they indicated that in 2011 the estimated prevalence was 25.1% of the population.

Figure 47: Diagnosed prevalence of hypertension, NHS Halton CCG, 2012/13 to 2016/17



Recent trend:

Period		Count	Value	Lower CI	Upper CI	Cheshire and Merseyside	England
2009/10		17,496	14.0*	-	-	14.3*	13.4
2010/11		17,966	14.4*	-	-	14.6*	13.5
2011/12		18,238	14.7*	-	-	14.7*	13.6
2012/13		19,093	14.8	14.7	15.0	14.8*	13.7
2013/14		19,332	15.0	14.8	15.2	14.8*	13.7
2014/15		19,403	15.2	15.0	15.4	14.9	13.8
2015/16		19,818	15.2	15.0	15.4	15.0	13.8
2016/17		20,138	15.4	15.2	15.6	15.2	13.8

Source: QOF

Source: QOF via PHE fingertips

The red dots indicate levels that are statistically higher (worse) than the England rates.

Cholesterol

- Over half of all adults in England have raised cholesterol (>5mmol/L)
- Healthy adults should aim for total cholesterol of 5mmol/l or less and LDL-cholesterol of 3mmol/l or less
- Adults at increased risk from a heart attack should aim for a 40% or more reduction in their LDL-cholesterol. Targets will be different for all individuals but as a guide a total cholesterol below 4mmol/l, an LDL-cholesterol below 1.8mmol/l and a non-HDL cholesterol below 2.5mmol/L
- In 2013 in England 300 million prescriptions were issued to help treat cardio-vascular disease

Inherited Cholesterol Conditions

- One in 250 people in the UK may have Familial Hypercholesterolaemia (FH), an inherited form of high cholesterol where cholesterol is doubled or more from birth
- Whilst more than 260,000 people in the UK may have FH, less than 10% of these people have been diagnosed.
- It is estimated that 56,000 children in the UK have FH; only 600 of these are known.

The prevalence of raised cholesterol is not known locally as it is now only performance monitored as part of the diabetes mellitus QOF and the National Diabetes Audit. It is no longer measured and reported as part of the Coronary Heart Disease, Periferal Artirial Disease or Stroke & Trans-Ischemic Attack QOF indicators. However, from the diabetes sources we do know that the percentage of people in Halton diabetics whose cholesterol level is above recommended levels is higher than nationally and regionally. This is the case for both Type 1 and Type 2 Diabetes.[187]

Age: % population aged 50+

The CCG registered population (September 2017) was 130,860. Of this 48,473 were aged 50 and over constituting 37% of the total GP registered population. Projections from the Office of National Statistics (ONS) suggest both the number and proportion of the registered popualtion aged 50+ will increase over the medium and longer term.

Table 12: CCG registered population aged 50 and over, 2017 and projected to 2039

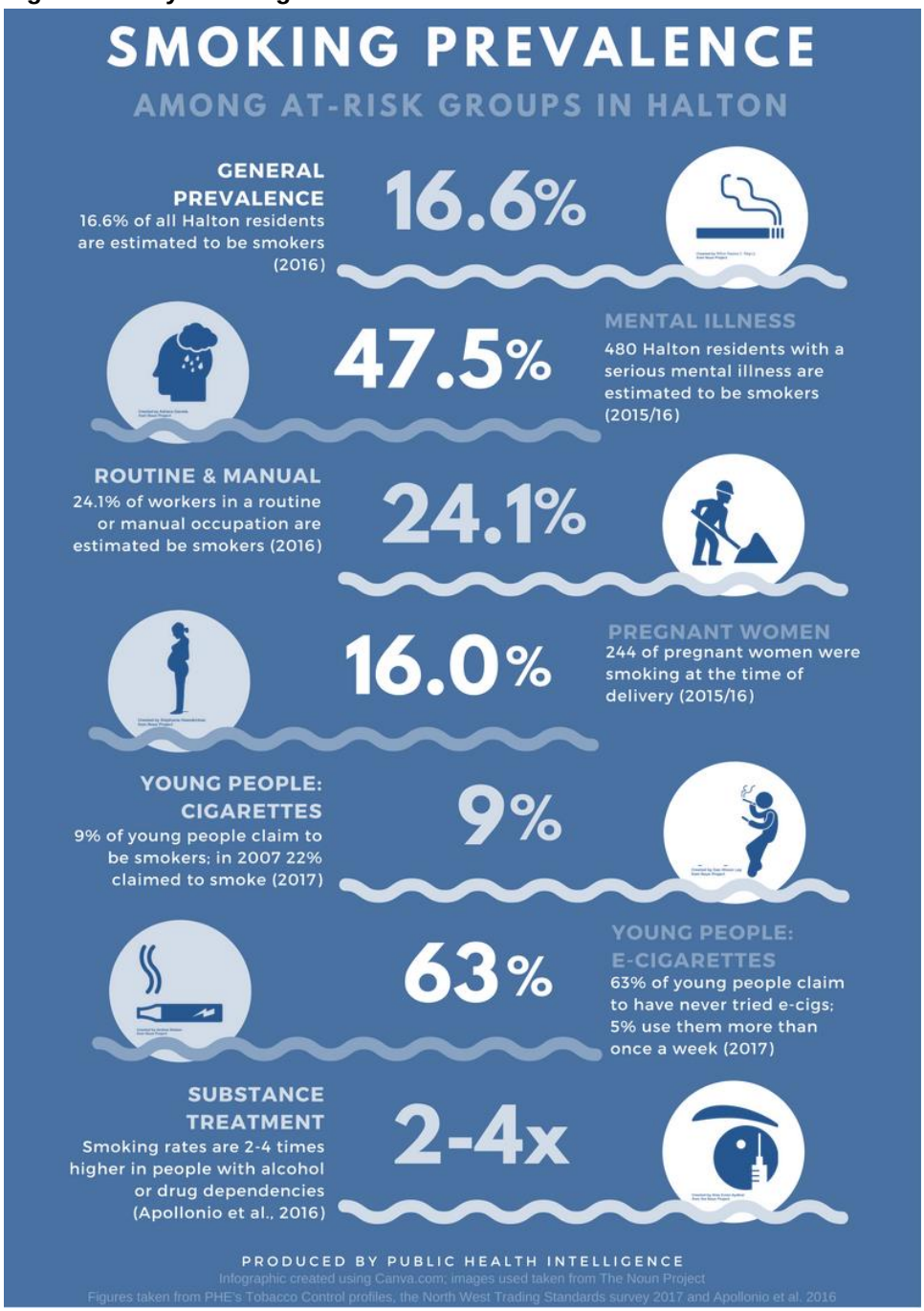
2017		2020		2025		2030		2035		2039	
48,473	37%	50,000	39%	53,000	41%	54,000	41.5%	55,000	42%	56,000	42.7%

Source: 2017 NHS Digital; other years, ONS population projections (rounded to nearest thousand)

Smoking

Smoking prevalence has been decreasing and the overall population prevalence is now similar to the England level. However, the gap between this overall population level and that seen in routine and manual workers remains resistant to change. Whilst the prevalence has also reduced in this group, the gap remains.

Figure 48: Key smoking statistics for Halton[d]



d. Tobacco JSNA https://www3.halton.gov.uk/Pages/health/JSNA/lifestyles/tobacco.pdf

6.3.3. Levels of non-alcohol related fatty liver disease (NAFLD)

6.3.4. Hospital admissions

The only local data on NAFLD is hospital admissions, which are rare. The table below shows that over a 3 year period 2012/13 to 2014/15 there were 10 admissions.

Table 13: Admissions due to NAFLD, numbers (Halton only) and crude rate per 100,000 population

Period	Statistical comparison	Halton				North West	England
		Count	Rate	Lower CI	Upper CI		
2010/11 - 12/13	●	7	1.9	0.7	3.8	2.5	3.2
2011/12 - 13/14		-	*	-	-	2.2	3
2012/13 - 14/15	●	10	2.6	1.3	4.9	2.2	3

Source: NHS Digital via PHE Fingertips tool

6.3.5. Deaths

As with admissions, deaths due to NAFLD are low (classified by underlying cause of death recorded as ICD code K760). Again, it is difficult to draw conclusions based on four reporting periods but rates have dropped and are now statistically similar to England.

Table 14: Premature mortality (aged under 75) due to NAFLD

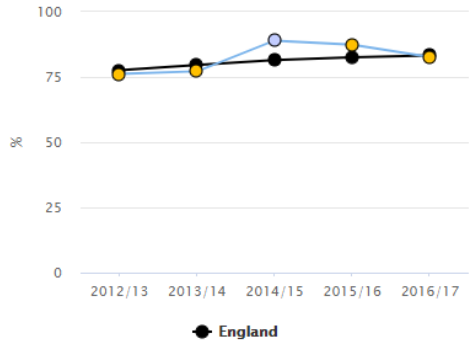
Period	Statistical comparison	Halton				North West	England
		Count	Rate	Lower CI	Upper CI		
2011 - 13	●	7	1.96	0.71	3.9	1.21	0.61
2012 - 14	●	7	2.02	0.8	4.09	1.22	0.59
2013 - 15	●	4	1.01	0.24	2.7	1.21	0.57
2014 - 16	●	3	0.85	0.18	2.48	1.31	0.54

Source: Public Health England (based on ONS source data)

6.4. Hepetitis B and C

Hepatitis C is a long lasting infection that affects the liver. At the early stages, many people infected are asymptomatic and often unaware they have the infection. However, if left untreated it can lead to serious health complications such as cirrhosis of the liver and liver cancer. Hepatitis C disproportionately affects marginalised population groups who often have poorer access to healthcare and health outcomes, with 9 in 10 cases in the UK being among injecting drug users.[188] Regular testing is among high risk groups is therefore crucial, to ensure early detection and access to treatment if required. In 2016/17 the majority of eligible people in drug misuse treatment services received a hepatitis C test (82.7%), similar to the regional and national averages. This has increased from 76.1% in 2012/13.

Figure 49: Persons in drug misuse treatment who inject drugs: Percentage of eligible persons who have received a hepatitis C test



Recent trend:

Period		Count	Value	Lower CI	Upper CI	North West	England
2012/13		150	76.1	69.7	81.6	66.2*	77.5
2013/14		166	77.2	71.2	82.3	72.3*	79.6
2014/15		153	89.0	83.4	92.8	78.6*	81.5
2015/16		138	87.3	81.3	91.7	80.6*	82.5
2016/17		129	82.7	76.0	87.8	84.6*	83.3

Source: Public Health England, (based on National Drug Treatment Monitoring System data)

In 2016 there were 4 confirmed new cases of chronic hepatitis C in Halton. The rate was lower than the national average (3.3 per 100,000 compared to 19.7). [189]

Hepatitis B is rare in the UK but the high risk groups are healthcare workers, people who inject drugs, men who have sex with men, children born to mothers with hepatitis B, and people travelling to parts of the world where the infection is more common[190]. Most adults are able to fight off the virus and fully recover, although most infected children develop a long term infection (chronic hepatitis B) which can lead to cirrhosis and liver cancer. Hepatitis B vaccination is part of the routine child immunisation programme and also recommended for all those in a high risk group. The table below shows those completing the course of those eligible entering substance misuse treatment: the proportion is much higher in Halton than regional and national averages.

Table 15: Persons entering substance misuse treatment - Percentage of eligible persons completing a course of hepatitis B vaccination

Period		Halton				North West	England
	Statistical comparison	Count	Rate (%)	Lower CI	Upper CI		
2012/13		25	8.9	6.1	12.8	4.7	8.4
2013/14		49	20.9	16.1	26.5	7	8.4
2014/15		84	40.8	34.3	47.6	9.1	8.7

Source: Public Health England, National Drug Treatment Monitoring System (NDTMS)

In 2016 there were 3 new diagnosed cases of acute hepatitis B in Halton. This rate was similar to the national and regional average. [191]

7. Level of need in the population: Cancers of the gastro-intestinal tract

Gastro-Intestinal (GI) cancer is a term for the group of cancers that affect the digestive system. This includes cancers of the oesophagus, gallbladder, liver, pancreas, stomach, small intestine, bowel (large intestine or colon and rectum), and anus. GI cancer is the most common form of cancer, accounting for more than 25% of all cancers.

The most common cancers of the GI system are:[192][193]

- **Oesophageal cancer** - over 8,000 new oesophageal cancers are diagnosed each year in the UK. A full time GP is likely to diagnose approximately 1 person with oesophageal cancer every 3-5 years. Five year survival is approximately 15%.
- **Pancreatic cancer** - nearly 9,000 new pancreatic cancers are diagnosed each year in the UK. A full time GP is likely to diagnose approximately 1 person with pancreatic cancer every 3-5 years. Five year survival is less than 5%.
- **Stomach cancer** - over 7,000 new stomach cancers are diagnosed each year in the UK. A full time GP is likely to diagnose approximately 1 person with stomach cancer every 3-5 years. Five year survival is approximately 20%.
- **Gallbladder cancer** - around 700 new gallbladder cancers are diagnosed each year in the UK. It is seen in almost twice as many women as men.
- **Liver cancer** - over 4,000 new primary liver cancers are diagnosed each year in the UK. A full time GP is likely to diagnose approximately 2-4 people with liver cancer in their whole career.
- **Colorectal (bowel) cancer** - around 40,000 new colorectal cancers are diagnosed each year in the UK, up to a quarter of these following screening. A full time GP is likely to diagnose approximately 1 person with colorectal cancer every year. Five year survival is approximately 60%, though this figure includes cancers detected by screening as well as those identified after symptoms have occurred.
- **Anal cancer** - just over 1,000 new anal cancers are diagnosed each year in the UK, meaning that a full time GP is likely to diagnose approximately 1-2 people with anal cancer during their career. Anal cancer occurs in both sexes, though nearly two-thirds occur in women. Five-year survival is around 60%.

Mouth, Head and Neck Cancer[e]:

While oral and pharyngeal cancers are both preventable, they remain a major challenge to oral health programmes. The prevalence of oral cancer is particularly high among men, the eighth most common cancer of the world. Incidence rates for oral cancer vary in men from 1-10 cases per 100,000 inhabitants in many countries. Sharp increases in incidence rates of oral/pharyngeal cancers have been reported for several countries such as Germany, Denmark, Scotland, Central and Eastern Europe and, to a lesser extent, Japan, Australia, New Zealand and USA.

e. Head and neck (Malignant neoplasm of lip, base of tongue, other and unspecified parts of tongue, gum, floor of mouth, palate, other and unspecified parts of mouth, parotid gland, other and unspecified major salivary glands, tonsil, oropharynx, nasopharynx, pyriform sinus, hypopharynx, other and ill-defined sites in the lip, oral cavity and pharynx, nasal cavity and middle ear, accessory sinuses and larynx ICD-10 code - C00-C14, C30-C32)

- At the end of 2010 around 50,359 people were living up to 20 years after a cancer diagnosis (prevalence)
- There are 19 new cases of head and neck cancer per 100,000 population diagnosed each year in England (incidence)
- It is the sixth most common cancer in men worldwide
- While it mainly affects men, more women are being diagnosed in recent years
- It mainly affects older people, but younger people are now being diagnosed
- When diagnosed early, the chance of survival is greatly improved.

What are the risk factors?

The cause of mouth, head and neck cancer is not always known but your risk is greater if you:

- Smoke cigarettes, cigars, pipes or marijuana
- Chew smokeless tobacco, paan, gutkha and quid
- Drink alcohol and products containing alcohol
- Are exposed to the Human Papilloma Virus (HPV). HPV has been linked to cancer in the tonsil and throat area
- Are overexposed to the sun. This increases your risk of lip cancer.

Prevention

- The key to the prevention of oral cancer is to **not use tobacco** (or to give up tobacco use if already a user), and to adopt a sensible approach to the consumption of alcohol. It is estimated that at least three-quarters of oral cancers could be prevented by eliminating tobacco smoking and **reducing alcohol** consumption.
- Use a **lip balm** that contains sun block
- A **healthy diet** with at least five servings of fresh fruit and vegetables may also reduce the risk of oral cancer.
- Check your mouth regularly for changes, for example, when brushing your teeth
- Visit your **dentist** regularly, even if you have no teeth and wear dentures.

Local Picture

Data on head and neck cancers shows that Halton's incidence and mortality is similar to England's

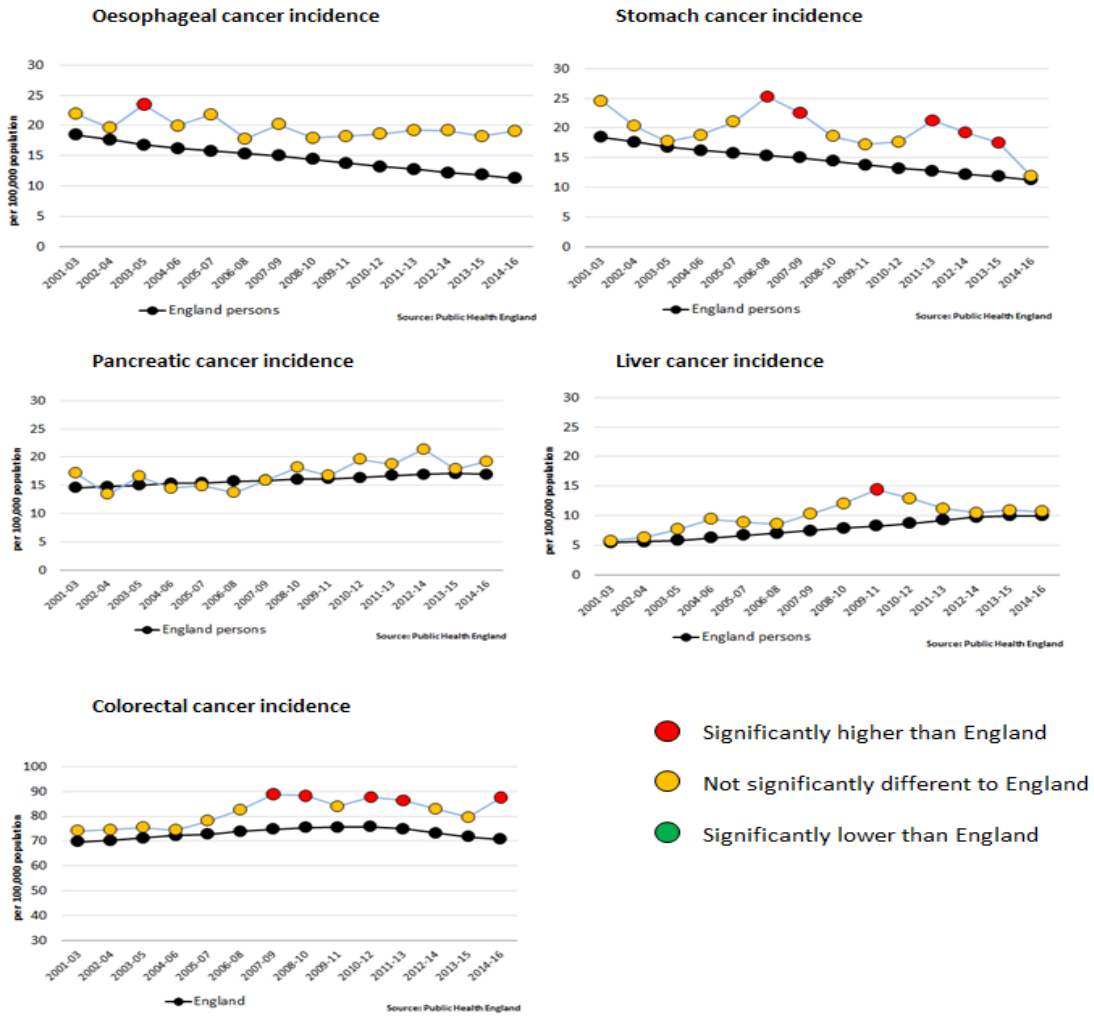
Figure 50: Halton head and neck cancers

Source: Macmillan Local Cancer Intelligence

Data is also available on the incidence (number of new cases per year) of oesophagael, stomach, pancreatic, liver and colorectal cancers. With a small population, Halton's rates are subject to fluctuation; the trend is shown in Figure 48 below.

The latest published data is for 2014-16: the only cancer with statistically significantly higher rates than England was colorectal. Stomach cancer saw significantly higher rates during 2011-13 to 2013-15 but reduced during 2014-16. Oesophageal cancer rates have reduced in England overall since 2001-13, but Halton has not seen a reduction, meaning the gap has increased. Rates are generally higher in males than females, in Halton and nationally.

Figure 51: Trends in incidence of cancer of organs within the digestive system



Prevalence data (i.e. the total number living with the condition within the population) from National Cancer Registration and Analysis Service (NCRAS) at PHE is shown in Tables 16, 17 and Figure 52. These are people living up to 21 years since their diagnosis.

Table 16: Prevalence of digestive cancers in Halton 2015

Cancer	Cases						
	< 1 yr	1 yrs - < 2 yrs	2 yrs - < 5 yrs	5 yrs - < 10 yrs	10 yrs - < 15 yrs	15 yrs - < 21 yrs	21 year Total
Colorectal	80	50	136	146	61	45	**518**
Head & neck	22	16	41	57	15	15	**175**
Oesophagus	10	7	9	-	-	-	**51**
Stomach	-	-	9	7	-	-	**45**
Pancreas	-	-	6	-	-	-	**31**
Liver	-	-	-	-	-	-	**15**

numbers less than 6 have been suppressed *Source: NCRAS (PHE)*

The most common digestive cancer is colorectal, with 518 people in Halton living with the condition in 2015 (for up to 21 years since diagnosis). The rate is shown below as a comparison to the regional and national average. This indicates that Halton has a slightly higher prevalence of colorectal cancer to England but similar to the North West. However, the rate of people living 10 years or more after diagnosis is lower in Halton than in the North West and England. This would seem to indicate that people diagnosed with colorectal cancer in Halton, since 1995, are generally surviving for a shorter period after diagnosis.

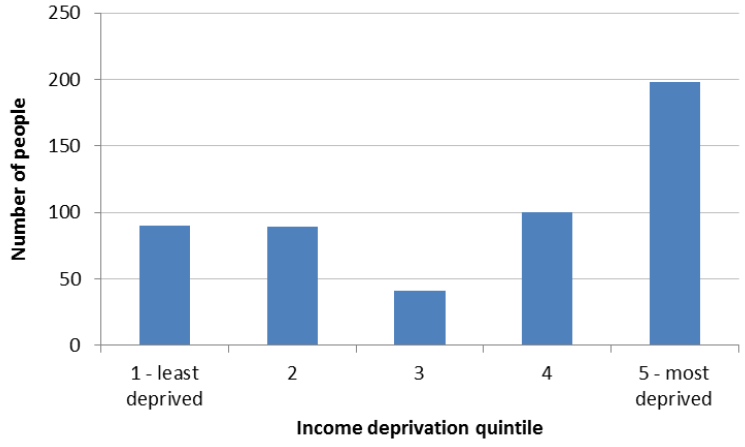
Table 17: Prevalence of colorectal cancer

Area	Crude Rates per 100,000 (cases / total population in 2015)						
	< 1 yr	1 yrs - < 2 yrs	2 yrs - < 5 yrs	5 yrs - < 10 yrs	10 yrs - < 15 yrs	15 yrs - < 21 yrs	21 year Total
Halton CCG	63.2	39.5	107.5	115.4	48.2	35.6	409.4
North West	50.7	42.5	103.3	111.3	61.6	42.8	412.1
England	49.0	39.6	97.3	108.0	59.9	41.7	395.4

Source: PHE

The majority of people living with colorectal cancer in Halton live in the most income deprived fifth (quintile) in England. This is partly due to the fact that Halton is a deprived borough and has proportionally more people living in quintile 5. The opposite pattern is seen in England, where most people with colorectal cancer live in the least deprived and the fewest in the most deprived.

Figure 52: Prevalence of colorectal cancer by income deprivation quintile



Source: NCRAS, PHE

Staging

Cancer staging is used to determine the size of a tumour and whether or not the tumour has spread from the primary site to the lymph nodes and other parts of the body. A numerical system used to record the size and potential spread of a tumour at diagnosis. Staging is essential as it helps doctors to determine the best treatment.

There have been improvements in the percentage of colorectal cancers with a stage reported from 51% in 2003-2006 to 89.7% in 2015. Data shows that for the GI cancers in which staging data is available, there are similar or higher percentages with a stage recorded in Halton than England. There are higher percentages of all GI cancers diagnosed at an early stage in Halton than the national average, which is positive.

Table 18: GI cancers staging data 2015

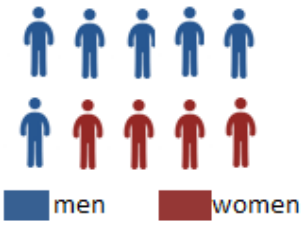
Tumor group	Halton			England		
	% staged	% early stage (1+2)	% late stage (3+4)	% staged	% early stage (1+2)	% late stage (3+4)
Colorectal	89.7%	42.3%	47.4%	90.3%	40.2%	50.1%
Pancreas	80.0%	33.3%	46.7%	78.0%	17.2%	60.8%
Stomach	100.0%	33.3%	66.7%	80.0%	24.8%	55.1%
Oesophagus	95.8%	29.2%	66.7%	85.0%	23.9%	61.1%
Grand Total	90.5%	38.5%	52.0%	86.7%	33.1%	53.6%

Source: National Cancer Intelligence Network

Mortality

Lung cancer remains the single largest cause of cancer deaths for both men and women in Halton: in 2012-16 there were 286 male deaths and 244 female, totalling 530. Deaths due to cancers of the digestive system account for the second highest cause with 469 deaths during the same period. Of these, 276 were in men and 193 in women.

Figure 53: gender split of cancer deaths of the digestive organs, Halton, 2012-2016



Age is a key factor in the likelihood of dying from cancer of the digestive system, with few deaths before the age of 75.

Figure 54: Death rate due to digestive cancers, by age and gender, Halton 2012-16

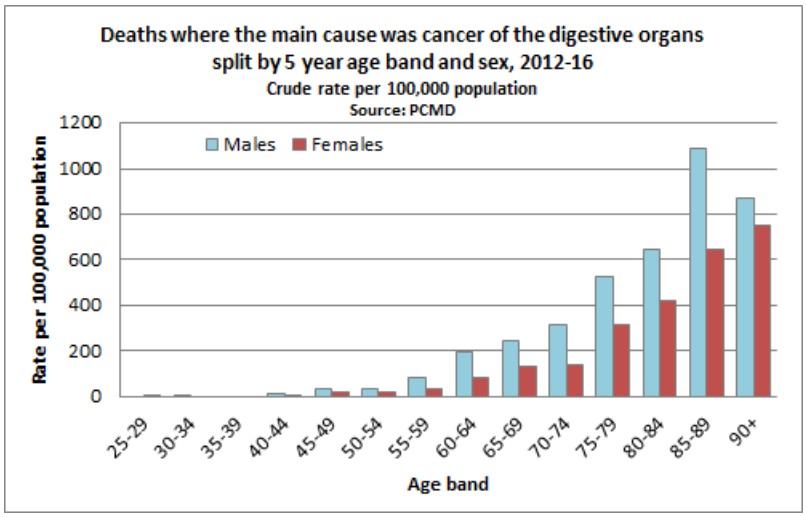


Table 19: Breakdown of cancer deaths of the digestive organs, by organ(s), Halton, 2012-16

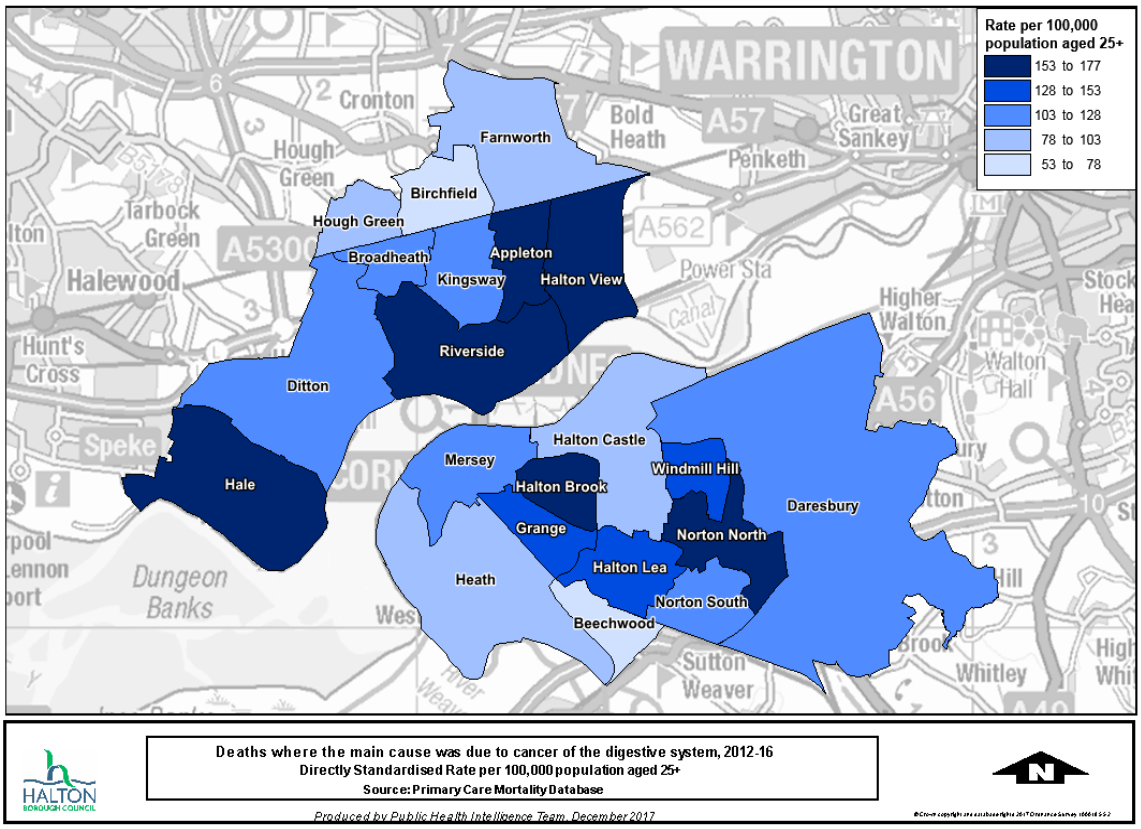
Type of cancer	Deaths	Percent
Malignant neoplasm of pancreas	87	18.6%
Malignant neoplasm of oesophagus	86	18.3%
Malignant neoplasm of colon	67	14.3%
Malignant neoplasm of stomach	51	10.9%
Malignant neoplasm of rectum	44	9.4%
Malignant neoplasm of liver and intrahepatic bile ducts	41	8.7%
Malignant neoplasm of other and ill-defined digestive organs	37	7.9%
Malignant neoplasm of rectosigmoid junction	33	7.0%
Malignant neoplasm of gallbladder	...	...
Malignant neoplasm of anus and anal canal	...	...
Malignant neoplasm of other and unspecified parts of biliary tract	...	...
Malignant neoplasm of small intestine	...	...
Total	469	100%

... numbers less than 10 suppressed

Source: Primary Care Mortality Database

As with cancer deaths generally, there is geographical variation. The highest rates were seen in Halton View, Hale, Norton North and Appleton wards, while the lowest was in Birchfield. However caution should be applied as numbers for each ward are relatively small.

Figure 55: Cancer death rates of the digestive organs, by electoral ward, 2012-16



Survival times

One way of assessing the quality of services is to look at survival times. Cancer survival rates in the UK continue to lag behind those of other European countries, research suggests, with experts flagging the need for earlier diagnosis and improved access to treatments. For example, while the five-year survival rates for colon cancer hit 57% on average across Europe, the figure for the UK was 52%.[194]

There is huge variation in survival between cancer types. Ten-year age-standardised net survival for patients diagnosed during 2010-2011 in England and Wales ranges from 98% for testicular cancer to just 1% for pancreatic cancer.[195] Of the 21 most common cancers, 12 have ten-year survival of 50% or more, and four types – testicular cancer, malignant melanoma, prostate cancer and Hodgkin lymphoma – have survival in excess of 80%. Some cancer types, however, remain difficult to diagnose and/or treat, and survival is less than 20% for stomach, brain, oesophageal, lung and pancreatic cancers.

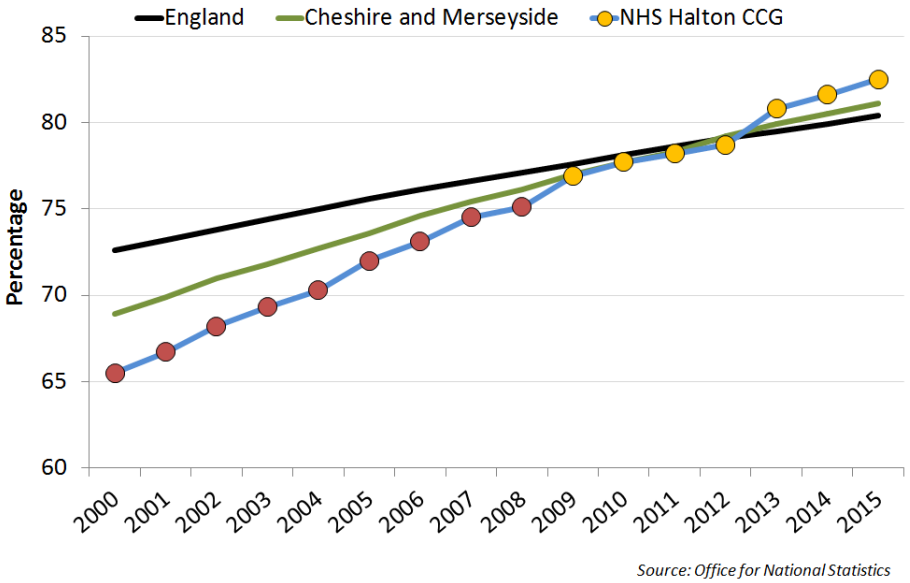
Table 20: Trend in national survival rates for GI cancers

	1971-72			1980-81			1990-91			2000-01			2005-06			2010-11 (prediction)		
	1year	5years	10years	1year	5years	10years	1year	5years	10years	1year	5years	10years	1year	5years	10years	1year	5years	10years
Oesophagus																		
All patients	15·0%	4·3%	3·5%	19·1%	5·3%	4·3%	24·2%	6·5%	5·1%	31·1%	8·8%	7·0%	36·4%	11·5%	9·3%	42·0%	15·3%	12·4%
Men	14·7%	4·0%	3·3%	18·5%	4·8%	3·8%	24·1%	6·1%	4·8%	32·5%	9·1%	7·3%	38·3%	12·0%	9·4%	44·3%	15·6%	12·0%
Women	15·6%	4·8%	3·9%	20·0%	6·2%	5·0%	24·3%	7·1%	5·6%	28·8%	8·2%	6·5%	33·4%	10·8%	9·1%	38·6%	14·7%	13·1%
Stomach																		
All patients	15·4%	5·2%	4·0%	20·6%	8·2%	6·7%	26·8%	10·9%	8·9%	33·9%	14·1%	11·3%	37·8%	16·3%	13·1%	41·7%	18·8%	15·0%
Men	15·3%	5·2%	4·0%	20·7%	8·1%	6·7%	27·0%	10·6%	8·6%	34·7%	13·9%	11·0%	39·3%	16·5%	13·0%	43·8%	19·5%	15·3%
Women	15·5%	5·3%	4·0%	20·5%	8·4%	6·8%	26·5%	11·5%	9·4%	32·4%	14·5%	11·8%	35·2%	16·1%	13·1%	37·9%	17·7%	14·4%
Colon																		
All patients	41·5%	24·6%	22·8%	54·0%	34·2%	31·8%	62·1%	41·6%	38·6%	66·7%	47·5%	44·5%	70·3%	52·6%	50·3%	73·9%	58·2%	56·9%
Men	42·6%	25·3%	23·0%	55·2%	34·6%	31·5%	63·5%	41·9%	38·1%	68·1%	47·6%	43·6%	71·9%	52·9	49·4%	76·1%	59·2%	56·5%
Women	40·4%	23·8%	22·6%	52·7%	33·8%	32·1%	60·7%	41·3%	39·0%	65·4%	47·5%	45·4%	68·6%	52·3%	51·1%	71·7%	57·3%	57·4%
Rectum																		
All patients	53·3%	24·2%	20·1%	60·6%	32·5%	28·2%	67·8%	42·0%	37·7%	74·0%	51·2%	47·1%	76·7%	55·5%	51·7%	79·2%	59·7%	56·1%
Men	54·1%	23·6%	19·1%	61·4%	32·0%	27·1%	68·7%	41·7%	36·7%	74·8%	51·0%	46·4%	77·5%	55·4%	51·0%	79·9%	59·6%	55·5%
Women	52·2%	25·0%	21·6%	59·5%	33·2%	29·6%	66·6%	42·4%	39·0%	72·8%	51·4%	48·2%	75·6%	55·7%	52·7%	78·1%	59·8%	57·0%
Pancreas																		
All patients	10·6%	2·3%	1·2%	12·1%	2·8%	1·5%	13·0%	2·8%	1·5%	14·7%	2·7%	1·2%	17·4%	3·0%	1·2%	20·9%	3·3%	1·1%
Men	10·2%	2·4%	1·3%	12·4%	3·1%	1·7%	13·5%	3·2%	1·7%	15·3%	3·0%	1·4%	18·1%	3·2%	1·2%	21·7%	3·6%	1·1%

Source: Quarsema, Coleman and Rachet (2014)

At a local level, data on GI cancer survival is only available for colorectal cancer at the 1-year level. Survival rates have generally been lower than the England average for both Halton and Cheshire & Merseyside. They were statistically significantly lower until 2009 for Halton (indicated by the red data points in the chart below). Although since 2013, 1-year survival rates have been higher than England the difference is not statistically significant so we can say the rates are similar (indicated by the amber data points). Over the last 15 years 1-year survival from colerectal cancer in Halton GP registered patients has increased from 65.5% to 82.5%. Survival rates have also increased nationally and across the sub-region but by slightly lower levels.

Figure 56: Trend in 1-year colorectal cancer survival rate, NHS Halton CCG registered patients aged 15-99 years



Source: Office for National Statistics

8. Service provision

8.1. Public Health

8.1.1. Public Health England (PHE)

PHE is an executive agency, sponsored by the Department of Health and Social Care. It exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. This includes a health protection and surveillance role.

Figure 57: Public Health England roles

The local health protection team (HPT) within PHE work to prevent and reduce the effect of diseases and chemical and radiation hazards. They provide support to health professionals, including:

- local disease surveillance
- alert systems
- investigating and managing health protection incidents
- national and local action plans for infectious diseases

PHE aims to detect possible outbreaks of disease and epidemics as rapidly as possible. Accuracy of diagnosis is secondary, and since 1968 clinical suspicion of a notifiable infection is all that's required. 'Notification of infectious diseases' is the term used to refer to the statutory duties for reporting notifiable diseases in the Public Health (Control of Disease) Act 1984 and the Health Protection (Notification) Regulations 2010.

Diseases notifiable to local authority proper officers under the Health Protection (Notification) Regulations 2010 include food poisoning and infectious bloody diarrhoea.

8.1.2. Halton Borough Council Environmental Health Team

The Environmental Health Team have a role in preventing, investigating and managing incidents and outbreaks of gastrointestinal diseases from the following principal sources:

- Food
- Water
- Environmental sources e.g. animals

Food

The Environmental Health Team are responsible for enforcing food safety law. This includes inspection of food premises, investigation of complaints, sampling of food and responding to food incidents such as the removal of unsafe food from the food chain. The overall objective of the service is to ensure food is safe for human consumption and this includes ensuring food is protected from contamination by gastrointestinal pathogens such as salmonella and campylobacter. Most of these pathogens give rise to the classic food poisoning symptoms of diarrhoea and vomiting. In most cases, food poisoning is a relatively minor illness but the young, old and immune compromised can be more seriously affected. E.coli O157 is a more serious infection and the toxin produced by the bacteria can cause serious complication particularly in young children. Unfortunately cases of E.coli O157 can prove fatal and so investigation of outbreaks and management of cases will be an urgent public health priority.

Water

The majority of cases of gastrointestinal illness associated with water in the UK are caused by ingesting contaminated water during recreational activities such as swimming and water sports. The environmental health team will investigate cases and outbreaks of illness associated with water sources to prevent further spread of infection. The most common form of illness associated with recreational water is Cryptosporidium. This includes ensuring adequate disinfection measures are in place at swimming pools and providing hygiene advice to patients to prevent further spread.

Environmental

Many gastrointestinal illnesses are zoonotic and can be acquired by direct or indirect contact with animals. Sources of animal related infections include farm visitor attractions and exotic pets such as reptiles. The environmental health department will investigate sources of animal related diseases to prevent further spread of infection.

Liaison with Public Health England

The environmental health department will liaise with Public H ealth England in relation to the management of outbreaks and serious individual cases of infectious disease. In addition the majority of gastrointestinal infections are notifiable and must be reported to the local authority. Public Health England co-ordinate all notifications on behalf of Halton. Currently the Environmental Health Department are only notified of outbreaks or serious cases of illness that require a public health response. Less serious infections are no longer routinely reported and so Halton does not have a full picture on the level of gastrointestinal illness in the borough.

Holiday acquired infections

Many gastrointestinal illnesses reported in the borough are acquired abroad. Whilst it is not possible to investigate sources of these infections management of the case in the UK may be required to prevent further person to person spread.

8.1.3. Halton Borough Council Health Improvement: smoking cessation for adults

Specialist Service

Halton Stop Smoking Service is a small team offering sessions Monday to Saturday morning, including 2 evening sessions. The venues are in community and clinical seetings across the borough. The cessation sessions offer a choice of one to one appointments or 'drop in' depending on the clients preference. Home visits are also available on request for 'housebound' clients. Texting and telephone counselling are also available as forms of support with clients' consent. The team are National Centre for Smoking Cessation trained and follow NICE and National Stop Smoking Service Guidelines to deliver a comprehensive service, which includes behavioural and pharmocatherapy support. Methods of measuring the success of the service are via carbon monoxide validated quits at 4 week review.

Intermediate Service

Provision at this level is via either GP practices or pharmacies.

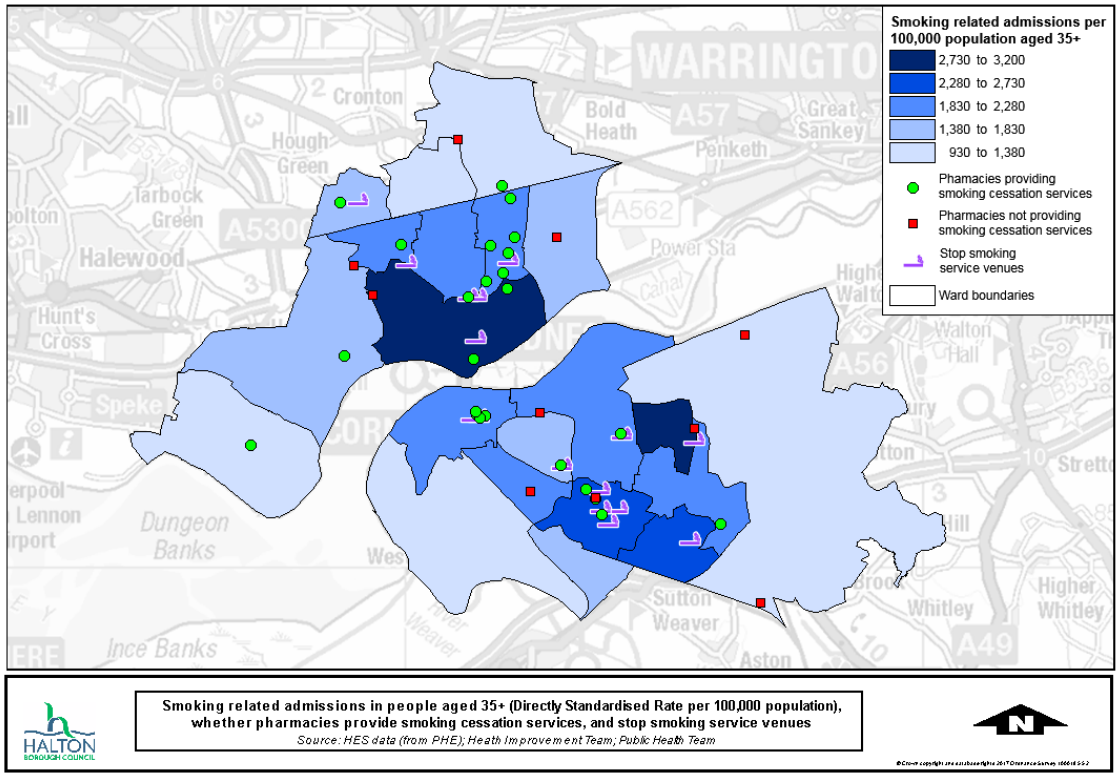
GP provision

Halton has a substantial history of GP practice engagement in smoking cessation support which pre-dates the availability of nicotine replacement therapy (NRT) on prescription. GP staff, usually practice nurses, run 4 week cessation support on a one-to-one basis with their patients who want help to quit smoking.

Smoking cessation services in community pharmacies

Halton has 24 pharmacies providing smoking cessation services, 14 in Widnes and 10 in Runcorn.

Figure 58: Location of NHS smoking cessation support



Under Local Commissioned Services pharmacies can offer three levels of support to those wanting to stop smoking. Most provide all three levels of service (11 out of 14 in Widnes and 9 out of 10 in Runcorn). Two provide intermediate services only and 2 Varenicline only.

Stop Smoking Voucher Dispensing Service

The stop smoking dispensing service dispenses of NRT against vouchers issued by the Specialist Smoking Cessation Service.

Stop Smoking Intermediate Service

The Pharmacy Stop Smoking Intermediate Service has been established to deliver one-to-one support and advice to the user, from a trained pharmacist or a member of the Pharmacy team. Where appropriate nicotine replacement therapy is supplied or a referral is made to the person's GP for a prescription of alternative stop smoking drugs. The service is provided during normal pharmacy opening hours but may not necessarily be available on every day that the pharmacy is open.

Varenicline

Commissioners from Cheshire and Merseyside local authority public health teams have developed a Patient Group Direction (PGD) for the administration of Varenicline. This enables community pharmacies to directly assess the clinical suitability of patients for and provide products such as *Champix,* which has a higher quit rate than NRT products, directly to patients without the need for a prescription from a GP.

8.1.4. Halton Borough Council Health Improvement : Weight Management Service

Child and Adolescent Weight Management

All schools in Halton are committed to the Fit 4 Life schools programme. The programme is divided into three age cohorts:

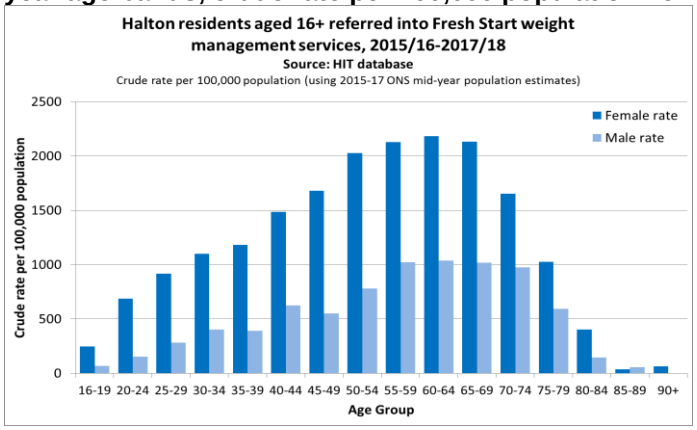
- **Key Stage 1 (4-7 years)** is a 1-2 week programme comprising of healthy eating and active play.
- **Key Stage 2 (7-11 years)** is a 4 week programme comprising of energy balance, eat well plate and food groups, fats, sugars and salt, food labelling and parent presentations.
- **Key Stage 3 and 4 (11-16 years)** is a 1-2 week programme comprising of benefits of a healthy lifestyle, sugary drinks, healthy eating, key messages to feeling good, physical activity health messages, and food labelling.

The Children and Family Weight Management (Fit 4 Life Community) programme comprises various programmes of activities and education, which encourages children, young people and their families to exercise regularly, eat a nutritionally-balanced diet while helping overweight children to achieve a healthy weight. The Fit 4 Life community programme is delivered as a partnership between the Health Improvement Team and the Widnes Vikings. All families accessing the Fit 4 Life community programme are now offered a one to one consultation. This allows for the family to learn more about the programme and for staff to answer any questions/alleviate any anxieties in accessing the programme. This has helped with recruitment onto the programme.

Adult Weight Management

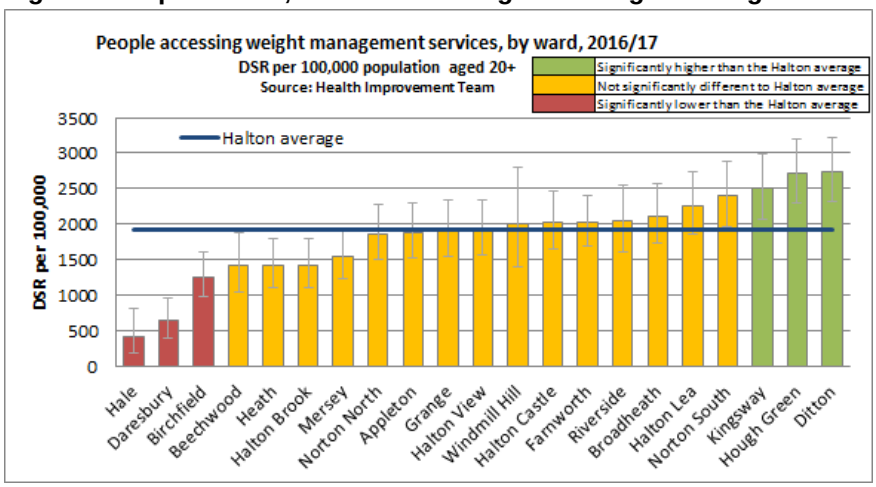
The adult weight management service provides community based group exercise, dietary advise and behaviour change support. People can self-refer or be referred by a healthcare professional. The sessions are free of charge with two sessions per week offered for 10 weeks. There is also follow-up to provide on-going support to maintain/ achieve further weight reduction and also for monitoring the effectiveness of the service. Adults of any age from 16 onwards can access the service, although rates of those accessing the service tend to be in the middle-age and older-age groups. A higher percentage of cleints are women than men.

Figure 59: Referrals into Fresh Start WM service (ages 16+), 2015/16-2017/18, by gender and 5-year age bands, crude rate per 100,000 population 16+

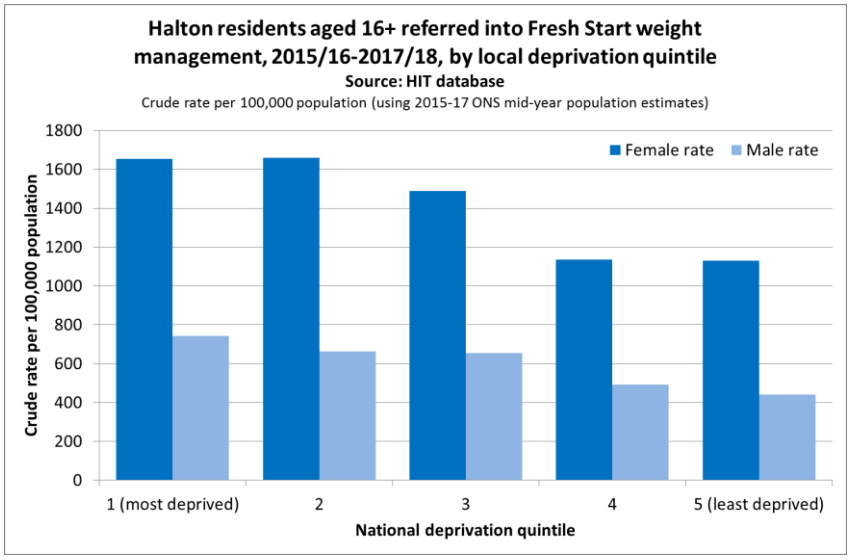


The rate of people accessing the specialist weight management services continues to be higher in the more deprived areas. The areas with higher obesity levels are also those with higher rates of people accessing the NHS weight management services i.e. Hough Green, Kingsway and Norton South.

Figure 60: Uptake rate, adults accessing NHS weight management services, 2013/14-2015/16



The deprivation relationship is similar for both men and women referred to the service. Overall, the strength of the correlation is medium (0.54) with 30% of the variation in referrals being due to deprivation.



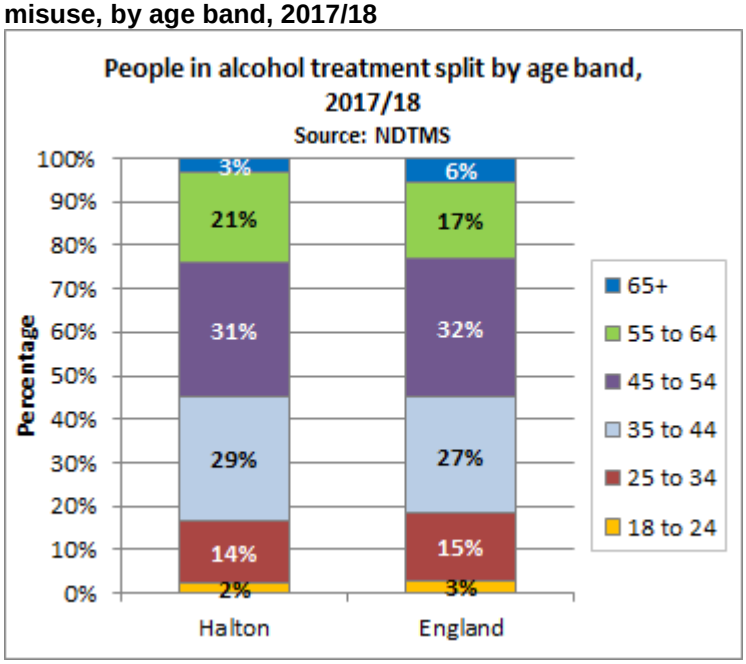
Weight management service outcomes data is based on NICE[196] and Department of Health[197] guidance that an effective programme should aim to elicit a 3% to 5% weight reduction in obese adults during a 3 month period. There is a rolling programme of people completing the programmes, with data collection at 12 weeks and follow up at 6 months and 2 years for complex clients. Performance data for the latest reporting period is not currently available due to service reconfiguration. Previous analysis for 2014/15 showed that over half of clients completing the 12 week programme had lost 3% weight and had made substantial improvements to their health scores including self esteem scores. A third had lost 5% or more weight.

8.1.5. Alcohol Service

Services for those who need to support to change their alcohol consumption behaviours is commissioned by Halton Borough Council's Public Health Team. The mainstay of provision is via a single provider, CGL, who offer an integrated, recovery orientation substance misuse service. It focuses on the individual service users treatment journey, focussing on their holistic needs (including housing, education and employment). By tailoring support in a flexible way it hopes to maximise improvements in substance misuse, health and social functioning. At a population level thei aim is to bring about a reduction in crime and public health risks.

In 2017/18 at total of 294 people entered the service for treatment for alcohol misuse; 183 men (62%) and 111 women (38%). These were similar proportions to England. The majority were between the ages of 35 and 54.

Figure 61: Age breakdown of people in drug and alcohol treatment services, due to alcohol misuse, by age band, 2017/18



Halton's successful completion rate[f] has consistently been higher than England's.

Table 21: Percentage of successful completions

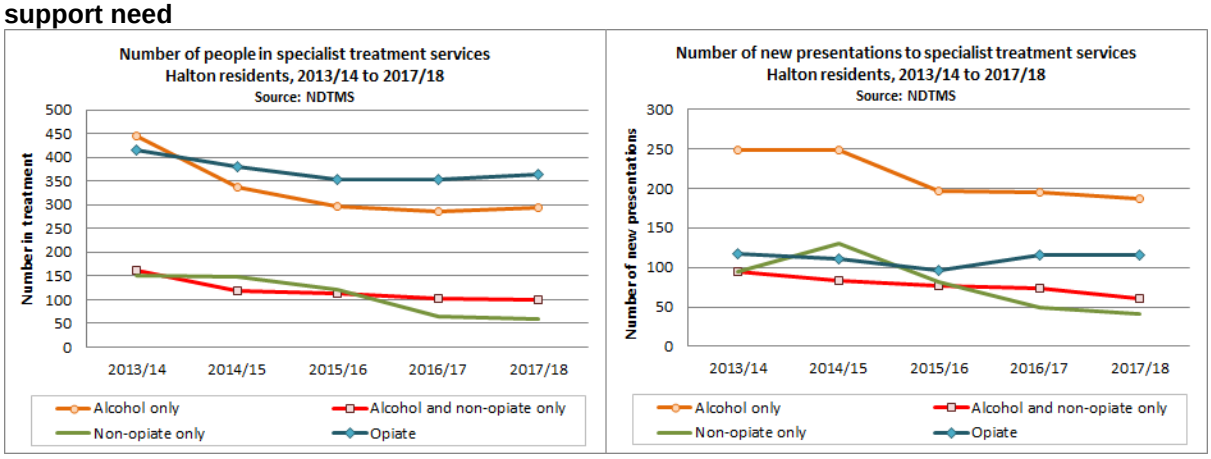
	2013/14	2014/15	2015/16	2016/17	2017/18
Halton	58.1%	53.9%	50.8%	41.3%	48.3%
England	39.2%	39.1%	39.1%	40.0%	40.1%

Source: NDTMS

However, many people in drug and alcohol treatment services have more than one substance issue to tackle. Whilst opiod users represent the single highest category of user in Halton's service, alcohol use is the second highest. It represents the highest numbers in terms of new presentations to our treatment service.

[f] Defined as the percentage of alcohol users that left alcohol treatment successfully who do not re-present to treatment within 6 months

Figure 62: Trend in numbers in service and new users entering service, by main substance support need



8.2. Primary care

Gastrointestinal symptoms and related disease account for 10% of consultations in primary care. Despite this, there is no routinely collected data at a local level of what GI conditions general practice is seeing. The only data is on prescribing.

Treating GI conditions accounts for the third highest percentage of all categories of prescribing although it is a substantially smaller proportion compared to the top 2 categories. Halton prescribes a similar percentage of its overall prescribed items for GI compared to Cheshire & Merseyside and England.

Table 22: Prescribed items, by category, 2016/17

Chapter Name	Halton		Cheshire & Merseyside		England		Diff in % from Halton	
	Items	%	Items	%	Items	%	C&M	England
Cardiovascular System	793,972	27.4%	16,114,043	28.2%	320,327,088	29.2%	0.8%	1.8%
Central Nervous System	605,989	20.9%	11,459,100	20.1%	205,423,609	18.7%	-0.9%	-2.2%
Gastro-Intestinal System	280,868	9.7%	5,552,522	9.7%	98,374,185	9.0%	0.0%	-0.7%
Endocrine System	253,372	8.7%	4,986,787	8.7%	107,274,314	9.8%	0.0%	1.0%
Respiratory System	221,935	7.7%	4,129,517	7.2%	72,316,379	6.6%	-0.4%	-1.1%
Nutrition And Blood	157,415	5.4%	3,361,508	5.9%	58,077,506	5.3%	0.5%	-0.1%
Infections	113,038	3.9%	2,102,759	3.7%	41,290,878	3.8%	-0.2%	-0.1%
Skin	95,227	3.3%	1,918,372	3.4%	37,026,738	3.4%	0.1%	0.1%
Musculoskeletal & Joint Diseases	89,730	3.1%	1,664,837	2.9%	33,124,133	3.0%	-0.2%	-0.1%
Obstetrics,Gynae+Urinary Tract Disorders	65,465	2.3%	1,378,436	2.4%	29,480,791	2.7%	0.2%	0.4%
Appliances	56,338	1.9%	1,131,795	2.0%	25,399,815	2.3%	0.0%	0.4%
Eye	40,227	1.4%	921,132	1.6%	19,666,242	1.8%	0.2%	0.4%
Immunological Products & Vaccines	30,939	1.1%	653,813	1.1%	13,561,923	1.2%	0.1%	0.2%
Ear, Nose And Oropharynx	28,884	1.0%	600,304	1.1%	11,867,582	1.1%	0.1%	0.1%
Dressings	22,017	0.8%	364,890	0.6%	8,544,259	0.8%	-0.1%	0.0%
Stoma Appliances	17,182	0.6%	298,583	0.5%	5,646,836	0.5%	-0.1%	-0.1%
Malignant Disease & Immunosuppression	9,823	0.3%	203,027	0.4%	4,373,767	0.4%	0.0%	0.1%
Anaesthesia	4,966	0.2%	104,199	0.2%	1,731,377	0.2%	0.0%	0.0%
Incontinence Appliances	4,873	0.2%	95,861	0.2%	2,045,448	0.2%	0.0%	0.0%
Other Drugs And Preparations	4,435	0.2%	72,563	0.1%	1,276,885	0.1%	0.0%	0.0%
Preparations used in Diagnosis	0	0.0%	2	0.0%	53	0.0%	0.0%	0.0%
Total	**2,896,695**		**57,114,050**		**1,096,829,808**			

Source: NHS Digital

Breaking GI prescribing down, the highest percentage of items are Antisecretory Drugs and Mucosal Protectants for the treatment of upper GI conditions, predominantly helicobacter pylori infection, dyspepsia and gastro-oesophageal reflux disease. As with the overall GI prescribing, the relative percentages are similar in Halton to Cheshire & Merseyside and England.

Table 23: Breakdown of prescribing for GI conditions 2016/17

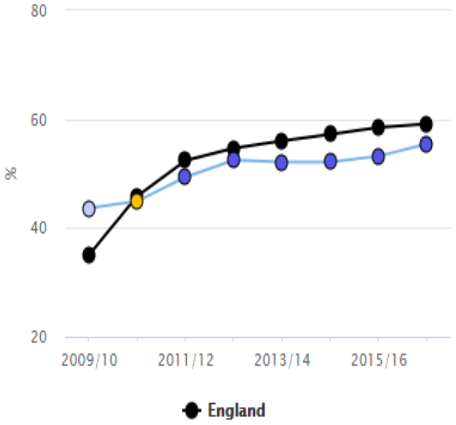
Chapter Name	Halton		Cheshire & Merseyside		England		Diff in % from Halton	
	Items	%	Items	%	Items	%	C&M	England
Antisecretory Drugs+Mucosal Protectants	183,652	6.3%	3,543,585	6.2%	63,568,625	5.8%	-0.1%	-0.5%
Laxatives	45,469	1.6%	1,010,598	1.8%	18,638,772	1.7%	0.2%	0.1%
Dyspep&Gastro-Oesophageal Reflux Disease	16,817	0.6%	334,227	0.6%	4,918,937	0.4%	0.0%	-0.1%
Antispasmod.&Other Drgs Alt.Gut Motility	16,289	0.6%	311,522	0.5%	4,697,795	0.4%	0.0%	-0.1%
Chronic Bowel Disorders	7,368	0.3%	128,648	0.2%	2,435,660	0.2%	0.0%	0.0%
Acute Diarrhoea	5,702	0.2%	105,204	0.2%	1,836,583	0.2%	0.0%	0.0%
Local Prepn for Anal & Rectal Disorders	3,336	0.1%	73,185	0.1%	1,510,324	0.1%	0.0%	0.0%
Drugs Affecting Intestinal Secretions	2,235	0.1%	45,537	0.1%	762,320	0.1%	0.0%	0.0%
Stoma Care	0	0.0%	16	0.0%	5,169	0.0%	0.0%	0.0%
Total	**280,868**	**9.7%**	**5,552,522**	**9.7%**	**98,374,185**	**9.0%**		

Source: NHS Digital

8.3. Bowel Cancer Screening

The NHS programme is routinely offered every 2 years to men and women aged 60 to 74 for them to complete a home testing kit. Anyone with an abnormal screening result should be offered a colonoscopy, which is an investigation that looks directly at the lining of the large bowel. A bowel scope screening test is also being rolled out to those aged 55 and over[198].

Figure 63: Bowel cancer screening coverage trend in Halton



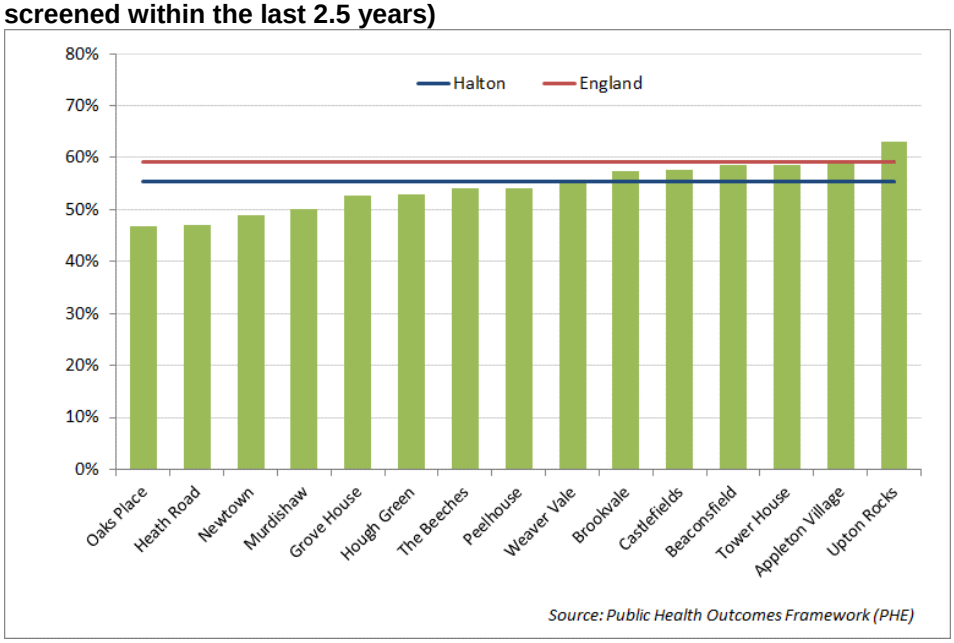
Recent trend:

Period		Count	Value	Lower CI	Upper CI	Cheshire and Merseyside	England
2009/10		7,834	43.6	42.9	44.4	44.2*	35.0
2010/11		8,288	45.0	44.2	45.7	45.9*	45.9
2011/12		9,334	49.4	48.7	50.1	50.4*	52.4
2012/13		10,101	52.5	51.8	53.2	53.3*	54.7
2013/14		10,248	52.1	51.4	52.8	54.3*	56.0
2014/15		10,337	52.1	51.5	52.8	55.7*	57.2
2015/16		10,888	53.2	52.5	53.9	57.0*	58.5
2016/17		11,568	55.4	54.8	56.1	58.1*	59.1

Source: Data was extracted from the Bowel Cancer Screening System (BCSS) via the Open Exeter system. Data was collected by the NHS Cancer Screening Programme.

Halton's screening coverage has generally increased each year, but has been significantly below the England average since 2011/12. Within Halton coverage ranges by GP surgery between 46.7% and 63.1% in 2016/17. Only 2 surgeries (Appleton Village and Upton Rocks) had a higher coverage than the England average.

Figure 64: Bowel cancer screening coverage, persons aged 60-74 (% of eligible people screened within the last 2.5 years)



8.4 Diagnostic procedures

Most patients access gastroenterology services via an outpatient department for rapid diagnosis and treatment. Many units prioritise appointments according to the 'red flag' criteria (specified in the 2-week referral rule for suspected cancer pathways), urgent and routine pathways. There is increasing demand for patients with mild symptoms to exclude serious disease such as cancer and IBD. Often these patients are only seen once in the outpatient department and are discharged back to GP care after endoscopic and radiological investigation has proved negative for serious disease. Patients with chronic gastrointestinal disease such as IBD, chronic liver disease, complex dyspepsia or gastrointestinal motility disorders are managed in the outpatient department with repeated follow-up consultations. Some gastroenterology departments provide a telephone follow-up service for patients with chronic disease in remission.

There is an increasing trend for patients to be referred by their GP directly for endoscopic investigation without a prior outpatient consultation (open access endoscopy) according to locally agreed care pathways. Such care pathways facilitate easier patient access to secondary care services and investigation and also enable greater efficiency.[199] Endoscopy can be performed on the upper GI tract or colon.

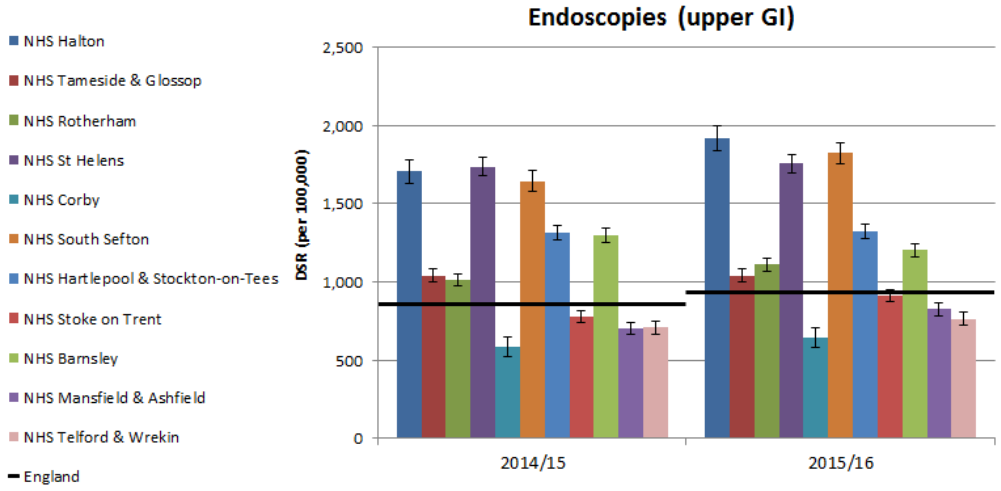
Gastroscopy is an investigation of the upper GI tract – oesophagus, stomach and duodenum (first part of the small intestine) – using a flexible endoscope. Diagnostic gastroscopy is used in any person presenting with:

- new onset dyspepsia if they are aged 55 years or over
- new onset dyspepsia with 'alarm' symptoms, such as dysphagia, weight loss, upper GI bleeding, vomiting and/or anaemia

- 'alarm' symptoms for upper GI cancer, such as dysphagia, weight loss, anaemia, upper GI bleeding and/or persistent vomiting
- dyspepsia who has not responded to standard medical treatment

Approximately three-quarters of a million gastroscopies are performed in the NHS in England every year. Much of the demand for gastroscopy comes through referrals made by primary care. If national guidelines for dyspepsia and reflux are being followed appropriately, the percentage of people undergoing gastroscopy procedures who are aged under 55 years should be relatively low.

Figure 65: Gastroscopy of the upper GI



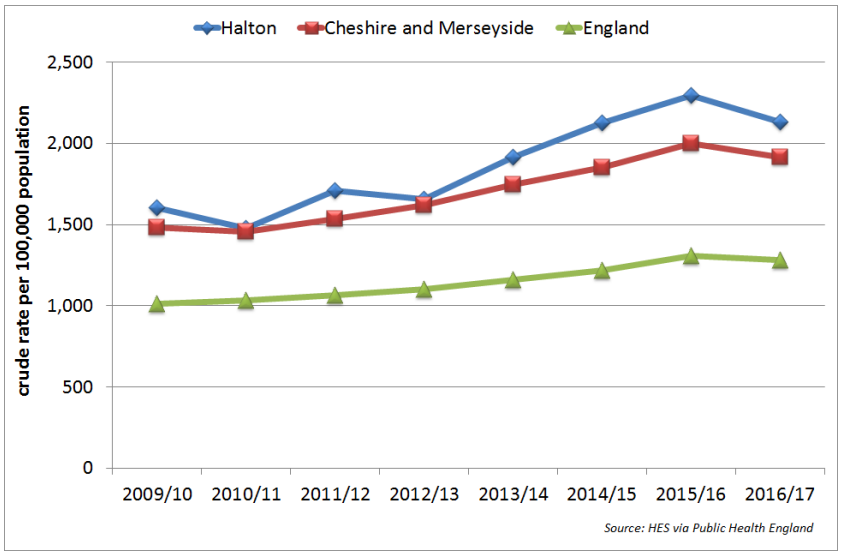
	2014/15				2015/16			
	Count	DSR	LCI	UCI	Count	DSR	LCI	UCI
NHS Halton	2,079	1,704.7	1,631.5	1,780.4	2,354	1,915.7	1,838.2	1,995.6
NHS Tameside & Glossop	2,358	1,039.0	997.1	1,082.1	2,393	1,037.0	995.6	1,079.7
NHS Rotherham	2,530	1,010.1	971.0	1,050.4	2,806	1,110.7	1,069.9	1,152.7
NHS St Helens	3,382	1,733.0	1,674.9	1,792.6	3,445	1,756.6	1,698.3	1,816.5
NHS Corby	374	583.5	525.0	646.8	405	641.6	579.6	708.4
NHS South Sefton	2,520	1,643.7	1,579.8	1,709.5	2,807	1,823.9	1,756.7	1,893.0
NHS Hartlepool & Stockton-on-Tees	3,666	1,313.1	1,270.7	1,356.6	3,714	1,322.2	1,279.8	1,365.7
NHS Stoke on Trent	2,019	776.6	742.9	811.4	2,379	908.3	872.0	945.7
NHS Barnsley	3,200	1,294.6	1,250.0	1,340.5	2,998	1,201.9	1,159.1	1,245.9
NHS Mansfield & Ashfield	1,282	698.0	660.2	737.4	1,518	823.4	782.4	866.0
NHS Telford & Wrekin	1,136	707.2	666.3	749.9	1,249	761.0	719.0	804.7
England	**453,029**	**859.6**	**857.1**	**862.2**	**498,488**	**933.4**	**930.8**	**936.0**

Source: Public Health England, Atlas of Variation

The rate of endoscopies (upper GI) in NHS Halton in 2015/16 was 1,915.7 per 100,000 population, this is significantly higher than the England value. Between the 10 similar CCGs in 2015/16, the rate of endoscopies (upper GI) ranged from 641.6 to 1,915.7 per 100,000 population, which is a 3-fold difference. Halton saw an increase from 2014/15 and in 2015/16 had the highest rate of endoscopies (upper GI) within its peer group.

Data on longer term trends is only available as a crude rate per 100,000 population. It includes both procedures performed as an inpatient and outpatient. It shows that over the time period, Halton's rates of upper GI endoscopy has been consistently significantly higher than England's.

Figure 66: Trend on upper GI endoscopy



There are several methods available for imaging the large bowel (colon), particularly in the diagnosis of cancer of the colon, including:

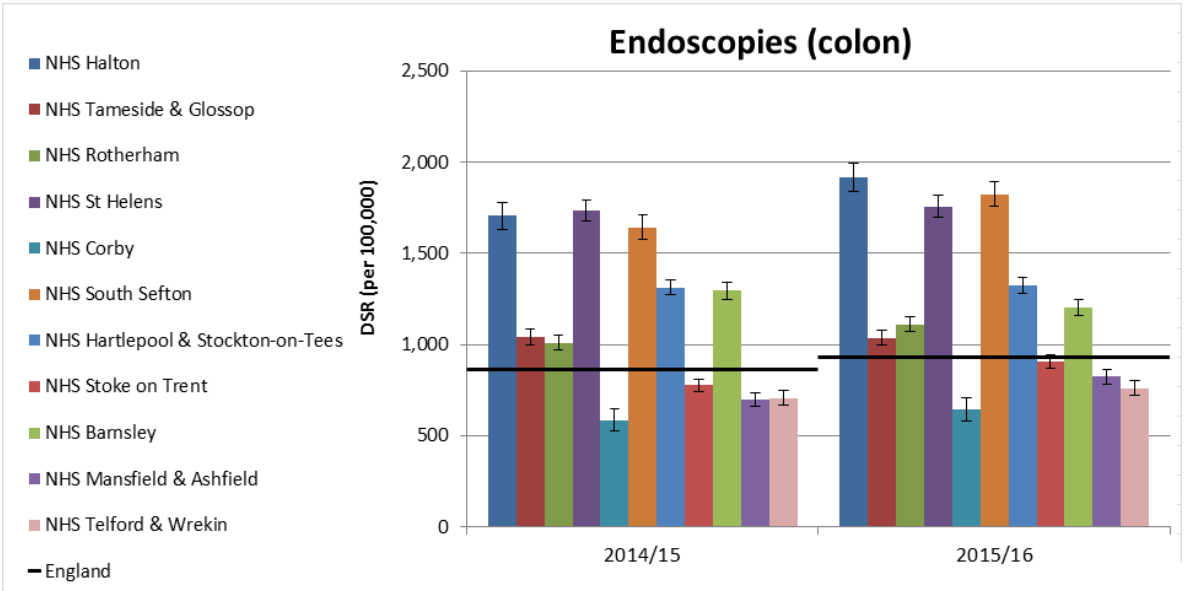
- colonoscopy
- flexible sigmoidoscopy
- CT colonography
- barium enema

Although not all colonic investigations are done because of the suspicion of cancer, ruling out colorectal cancer is considered the most important reason for such an investigation, particularly because early diagnosis of colorectal cancer is vital in order to improve outcomes.

In colonoscopy an endoscope is used to investigate the lining of the colon (entire large bowel). In flexible sigmoidoscopy only the sigmoid colon (last part of the large bowel) and rectum is examined using a flexible endoscope.

As well as being used to diagnose or exclude cancer of the colon or to look for pre-cancerous polyps, flexible sigmoidoscopy and colonoscopy can also be used in the diagnosis of, and monitoring of treatment for, IBD. About 60-70% of these procedures are performed for the diagnosis of cancer, 15-20% for the diagnosis of, and monitoring of treatment for, IBD, and 10% for other reasons. Flexible sigmoidoscopy is the preferred procedure in some clinical situations because sedation is not required, and it is quicker and carries less risk.

Figure 67: Endoscopy procedures of the colon

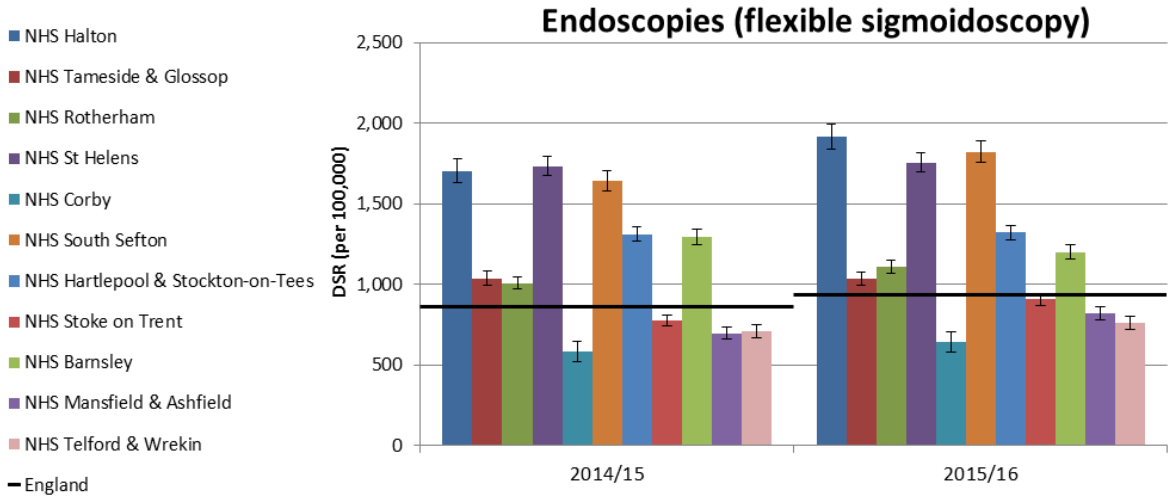


	2014/15				2015/16			
	Count	DSR	LCI	UCI	Count	DSR	LCI	UCI
NHS Halton	1,470	1,197.6	1,136.6	1,261.0	1,563	1,263.7	1,201.2	1,328.6
NHS Tameside & Glossop	3,497	1,557.4	1,505.8	1,610.3	3,668	1,611.6	1,559.5	1,665.0
NHS Rotherham	3,286	1,318.8	1,273.9	1,364.8	3,506	1,396.0	1,350.1	1,443.2
NHS St Helens	1,801	922.1	879.9	965.8	1,929	978.4	935.0	1,023.2
NHS Corby	353	571.5	512.6	635.3	411	646.5	584.6	713.1
NHS South Sefton	2,078	1,355.0	1,297.1	1,414.8	2,378	1,547.7	1,485.8	1,611.5
NHS Hartlepool & Stockton-on-Tees	4,479	1,608.9	1,561.9	1,657.0	4,636	1,653.3	1,605.7	1,701.9
NHS Stoke on Trent	2,055	785.6	751.8	820.5	2,351	895.2	859.2	932.3
NHS Barnsley	3,554	1,442.4	1,395.2	1,490.8	3,510	1,408.2	1,361.8	1,455.7
NHS Mansfield & Ashfield	2,062	1,127.8	1,079.5	1,177.7	2,248	1,217.4	1,167.5	1,268.9
NHS Telford & Wrekin	1,631	1,015.8	966.8	1,066.7	1,540	933.5	887.2	981.6
England	**548,223**	**1,048.8**	**1,046.0**	**1,051.6**	**591,617**	**1,117.3**	**1,114.4**	**1,120.2**

Source: Public Health England, Atlas of Variation

The rate of endoscopies (colon) in NHS Halton in 2015/16 was 1,263.7 per 100,000 population, which is significantly higher than the England average. Between the 10 similar CCGs in 2015/16, the rate of endoscopies (colon) ranged from 646.5 to 1,653.3 per 100,000 population, which is a 2.6-fold difference. In 2015/16, compared to NHS Halton, 5 of the 10 similar CCGs had a significantly higher rate of endoscopies (colon) and 4 CCGs had a significantly lower rate. The rate of endoscopies (colon) in NHS Halton increased between 2014/15 and 2015/16; this trend was also seen in England and most of the CCG's peer group.

Figure 68: Flexible sigmoidoscopy procedures



	2014/15				2015/16			
	Count	DSR	LCI	UCI	Count	DSR	LCI	UCI
NHS Halton	1,035	849.7	798.1	903.7	1,181	961.0	906.4	1,018.0
NHS Tameside & Glossop	1,303	573.3	542.4	605.6	1,397	608.3	576.6	641.4
NHS Rotherham	868	349.7	326.7	373.9	802	319.2	297.4	342.1
NHS St Helens	2,292	1,181.1	1,133.1	1,230.7	2,559	1,312.3	1,261.8	1,364.3
NHS Corby	949	1,471.3	1,378.0	1,569.3	1,155	1,733.5	1,633.6	1,837.9
NHS South Sefton	1,130	704.8	664.2	747.2	2,103	1,303.6	1,248.2	1,360.8
NHS Hartlepool & Stockton-on-Tees	1,044	373.1	350.7	396.6	727	260.4	241.7	280.2
NHS Stoke on Trent	980	373.9	350.7	398.2	917	348.6	326.3	372.0
NHS Barnsley	1,024	413.7	388.6	439.9	1,053	423.0	397.7	449.4
NHS Mansfield & Ashfield	691	379.5	351.6	409.0	741	402.2	373.7	432.3
NHS Telford & Wrekin	667	410.2	379.4	442.9	639	387.5	357.8	419.1
England	**250,928**	**472.8**	**470.9**	**474.7**	**282,696**	**526.1**	**524.2**	**528.1**

Source: Public Health England, Atlas of Variation

The rate of endoscopies (flexible sigmoidoscopy) in NHS Halton in 2015/16 was 961.0 per 100,000 population, which is significantly higher than the England value. Between the 10 similar CCGs in 2015/16, the rate of endoscopies (flexible sigmoidoscopy) ranged from 260.4 to 1,733.5 per 100,000 population, which is a 6.7-fold difference. In 2015/16, compared to NHS Halton, 3 of the 10 similar CCGs had a significantly higher rate of endoscopies (flexible sigmoidoscopy) and 7 CCGs had a significantly lower rate. The rate of endoscopies (flexible sigmoidoscopy) in NHS Halton in 2015/16 was higher than the rate in 2014/15. Again this was the same for England and all but NHS Rotherham and NHS Hartlepool & Stockon-on-Tees amongst the CCG's peer group.

Further analysis of different diagnostic procedures and possible explanations for warranted and unwarranted variations can be found in the 2017 Atlas of Variation. However, apart from 2015/16 data on barium enemas, this data is only available up to 2014/15.
Interactive tool: http://tools.england.nhs.uk/images/atlas17/atlas.html
2017 2nd Atlas of Variation in NHS diagnostic services in England
https://fingertips.phe.org.uk/profile/atlas-of-variation

Again data for a longer time period is only available as a crude rate and so is not directly comparable with the data above. It shows that for sigmoidscopy Halon's rate has been statistically higher for the time period but similar to the England rate for colonoscopy.

Figure 69: Trend on sigmoidoscopy

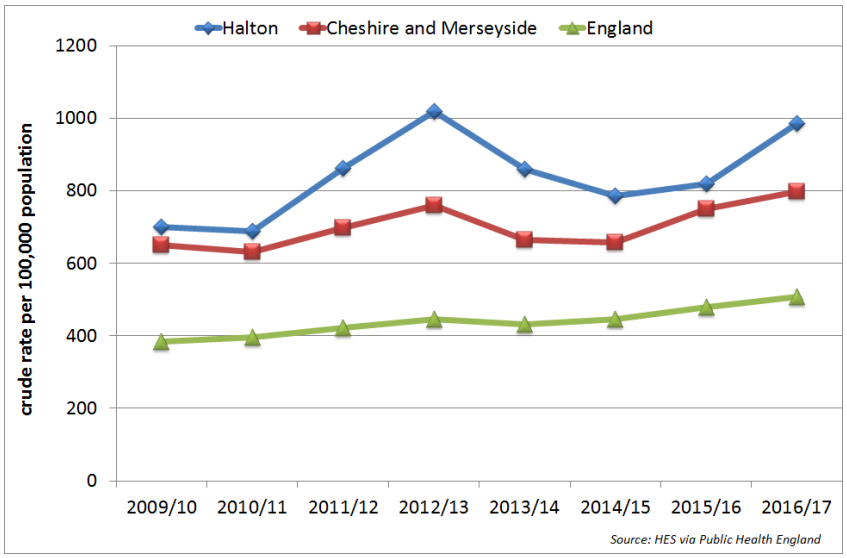
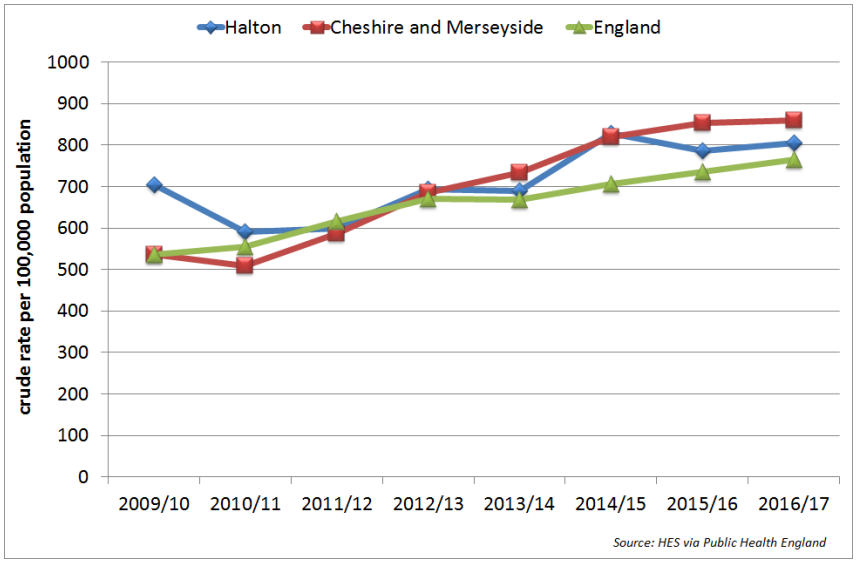


Figure 70: Trend in colonoscopy



8.5. Secondary Care

Patients with gastroenterological emergencies such as acute gastrointestinal bleeding, severe diarrhoea, jaundice, liver failure or acute severe abdominal pain present directly to the accident and emergency department and are initially managed as inpatients before outpatient follow-up.
Other hospital specialties, e.g. geriatric medicine, general medical and surgery, frequently refer patients to both inpatient and outpatient gastroenterology services.

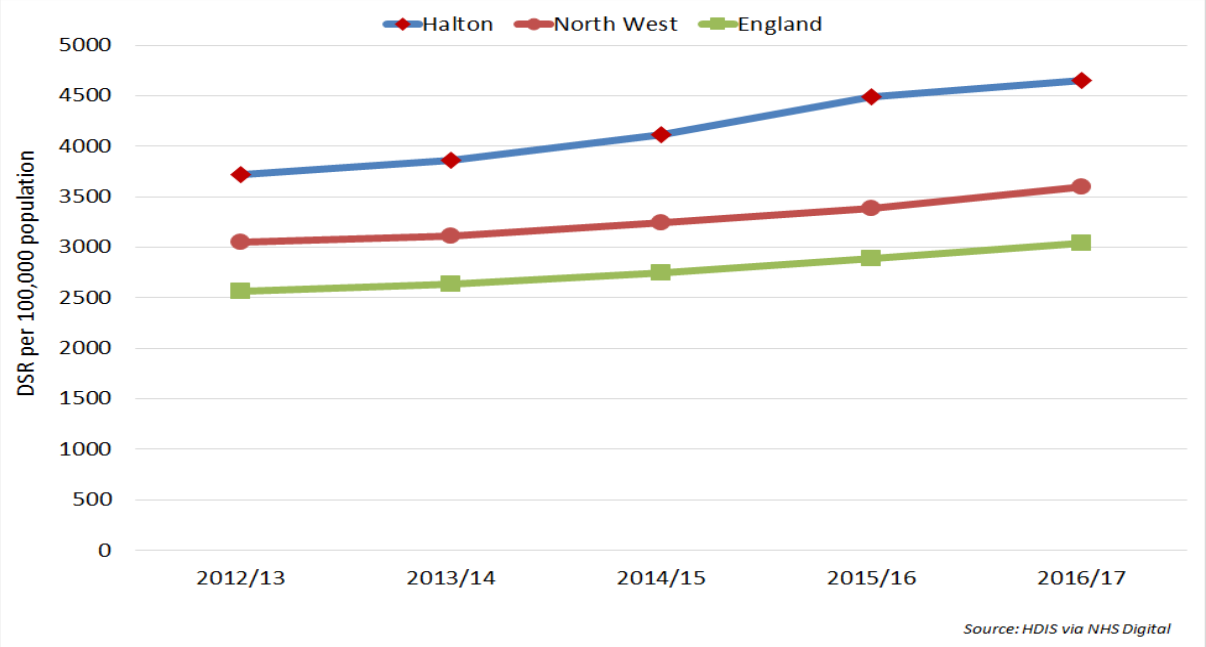
8.5.1. Overall admissions

Admissions of the digestive system make up 15.3% of all admissions. This is joint highest with the "symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified" category of admissions. This makes it the highest cause of any known condition.

8.5.2. Elective (planned) admissions

There has been a steady increease in the rate of elective admissions for GI conditions, both locally as well as regionally and nationally. Halton's rates have been consistently statistically higher than the England rates (as depicted by the red marker) for the entire period 2012/13 to 2016/17.

Figure 71: Trend in elective admission for diseases of the digestive system (K00-K93), directly age standardised rate (DSR) per 100,000 population, 2012/13 to 2016/17



Of GI elective admissions, those concerning the oesophagus, stomach and duodenum account for the highest single number.

Table 24: Elective admissions for diseases of the digestive system, 2012/13 to 2016/17

Subchapter	2012/13	2013/14	2014/15	2015/16	2016/17	Total	Trend	Direction of change
Diseases of oesophagus, stomach and duodenum	1121	1315	1552	1497	1420	6905		↑
Diseases of oral cavity, salivary glands and jaws	1049	1063	1115	1115	1205	5547		↑
Other diseases of intestines	964	866	915	1100	1508	5353		↑
Hernia	454	494	477	831	614	2870		↓
Noninfective enteritis and colitis	324	323	379	369	372	1767		↑
Disorders of gallbladder, biliary tract and pancreas	301	330	355	326	342	1654		↑
Other diseases of the digestive system	235	237	205	165	168	1010		↓
Diseases of liver	25	17	22	81	80	225		↑
Diseases of peritoneum	*6*	*6*	*5*	*9*	*6*	*32*		↓
Total	**4482**	**4653**	**5029**	**5493**	**5715**	**25372**		↑

Source: HES via HDIS

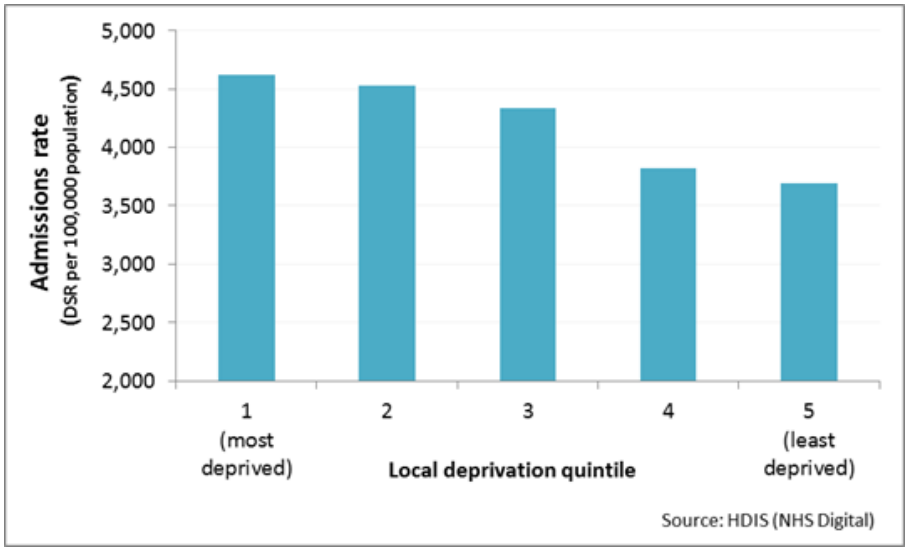
Table 25: Percentage of all diseases of the digestive system admissions by sub-category of diagnosis, 2012/13- 2014/15 to 2014/15-2016/17

Subchapter	2012/13	2013/14	2014/15	2015/16	2016/17	Trend	Direction of change
Diseases of oesophagus, stomach and duodenum	25.0%	28.3%	30.9%	27.3%	24.8%		↓
Diseases of oral cavity, salivary glands and jaws	23.4%	22.8%	22.2%	20.3%	21.1%		↓
Other diseases of intestines	21.5%	18.6%	18.2%	20.0%	26.4%		↑
Hernia	10.1%	10.6%	9.5%	15.1%	10.7%		→
Noninfective enteritis and colitis	7.2%	6.9%	7.5%	6.7%	6.5%		→
Disorders of gallbladder, biliary tract and pancreas	6.7%	7.1%	7.1%	5.9%	6.0%		→
Other diseases of the digestive system	5.2%	5.1%	4.1%	3.0%	2.9%		↓
Diseases of liver	0.6%	0.4%	0.4%	1.5%	1.4%		↑
Diseases of peritoneum	0.1%	0.1%	0.1%	0.2%	0.1%		→
Total	4482	4653	5029	5493	5715		→

Source: HES via HDIS

There are clear internal (within Halton) inequalities in the rate of admissions. Comparing the DSRs by Lower Super Output Area (LSOA) with the IMD score for that LSOA a stepped change can be seen with admissions highest in the most deprived quintile and lowest in the least deprived quintile.

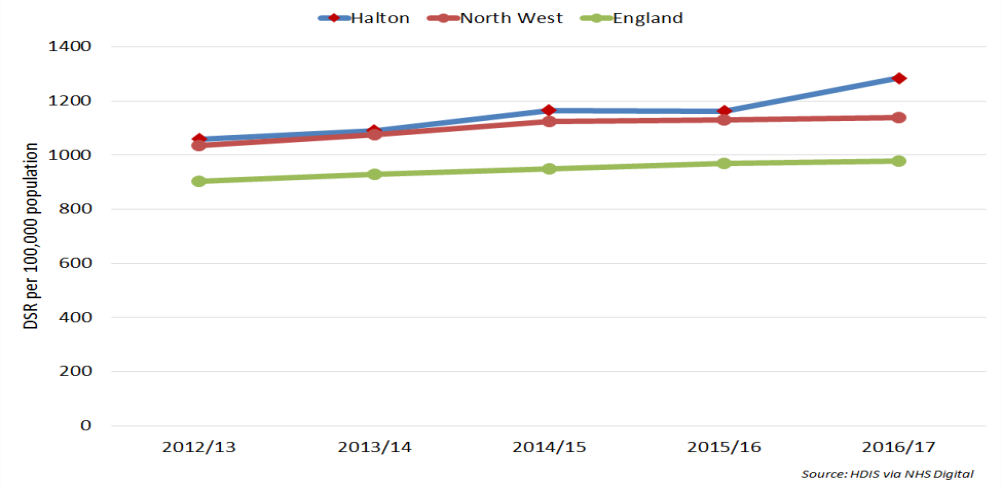
Figure 72: Relationship between elective admissions for digestive diseases (K00-93), DSR per 100,000 population and deprivation (local quintiles based on IMD score per LSOA), 2012/13 to 2016/17.



8.5.3. Emergency admissions

As with elective admissions, the rates of emergency admissions has also increased, although numbers and therefore rates are lower. The differences btween Halton and both comparators appear to be not as marked. Despite this, Halton emenrgency admission rates were statistically higher than England for all years. In 2012/13 Halton was significantly lower than the North West but in 2016/17 was significantly higher than the North West.

Figure 73: Trend in emergency admission for diseases of the digestive system (K00-K93), directly age standardised rate (DSR) per 100,000 population, 2012/13 to 2016/17



Admissions of the digestive system make up 7.3% of all emergency admissions. This is the fifth highest group of admissions. Other diseases of the intestines together with those due to gallbladder, biliary tract and pancreas account for nearly half of all GI emergency admissions.

Table 26: Emergency admissions for diseases of the digestive system, 2012/13 to 2016/17

Diagnosis	2012-13	2013-14	2014-15	2015-16	2016-17	Cumulative Total	Trend	Direction of change
Diseases of appendix	107	81	88	86	88	450		→
Diseases of liver	29	45	58	87	79	298		↑
Diseases of oesophagus, stomach and duodenum	165	193	199	203	188	948		↑
Diseases of oral cavity, salivary glands and jaws	51	47	42	57	48	245		↓
Diseases of peritoneum	8	12	13	16	22	71		↑
Disorders of gallbladder, biliary tract and pancreas	205	272	302	261	328	1368		↑
Hernia	48	48	59	58	63	276		↑
Noninfective enteritis and colitis	48	39	54	43	47	231		→
Other diseases of intestines	398	373	389	384	434	1978		↑
Other diseases of the digestive system	213	180	182	194	254	1023		↑
Total	**1272**	**1290**	**1386**	**1389**	**1551**	**6888**		↑

Source: HES via HDIS

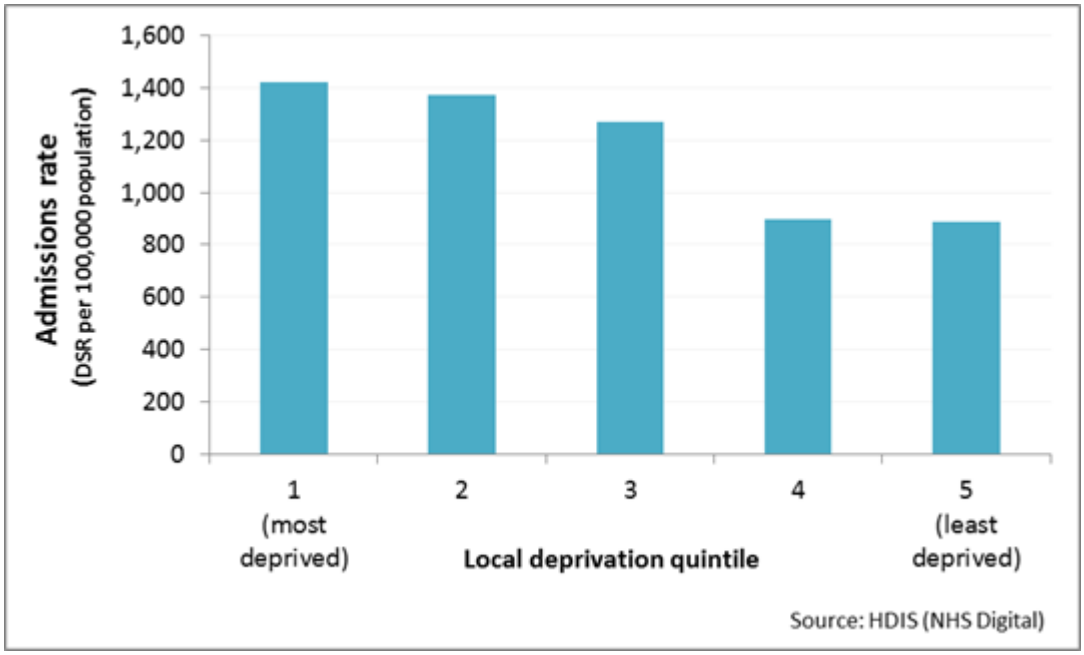
Table 27: Percentage of all diseases of the digestive system emergency admissions by sub-category of diagnosis, 2012/13- 2014/15 to 2014/15-2016/17

Diagnosis	2012/13 to 2014/15	2013/14 to 2015/16	2014/15 to 2016/17	Relative proportion change
Other diseases of intestines	29.4%	28.2%	27.9%	↓
Disorders of gallbladder, biliary tract and pancreas	19.7%	20.5%	20.6%	↑
Other diseases of the digestive system	14.6%	13.7%	14.6%	→
Diseases of oesophagus, stomach and duodenum	14.1%	14.6%	13.6%	↓
Diseases of appendix	7.0%	6.3%	6.1%	↓
Diseases of liver	3.3%	4.7%	5.2%	↑
Hernia	3.9%	4.1%	4.2%	→
Diseases of oral cavity, salivary glands and jaws	3.5%	3.6%	3.4%	→
Noninfective enteritis and colitis	3.6%	3.3%	3.3%	→
Diseases of peritoneum	0.8%	1.0%	1.2%	↑
Total number of admissions	**3948**	**4065**	**4326**	↑

Source: HES via HDIS

As with elective admissions there is a clear relationship between emergency admission rates and deprivation. Although the step change is less clear cut, the overall pattern is one of higher admssions amongst those from the most deprived areas and lowest admssion rates amongst those living in the least deprivied areas.

Figure 74: Relationship between emergency admissions for digestive diseases (K00-93), DSR per 100,000 population and deprivation (local quintiles based on IMD score per LSOA), 2012/13 to 2016/17.



8.5.4. Outpatient appointments

Table 28: Average outpatient attendances for Gastroenterology per patient, by age group, 2016/17

Age Group	Number	% of total	Attendances per patient
0 to 9	97	1.6%	1.6
10 to 19	243	4.1%	2.2
20 to 29	471	7.9%	1.9
30 to 39	686	11.5%	2.0
40 to 49	905	15.1%	2.0
50 to 59	1113	18.6%	1.8
60 to 69	1233	20.6%	1.8
70 to 79	843	14.1%	1.8
80+	400	6.7%	1.6
Total	**5991**		**1.9**

Source: HES data via HDIS2

The 50-69 age group made up nearly 40% of the outpatient attendances by Halton residents during 2016/17. However the highest average number of attendances was seen in the 10-19 age group.

Ward level outpatient attendance rates show that the majority of wards in Halton (15 out of 21) had a significantly higher rate than the England average during 2016/17.

Figure 75: Rate of outpatient attendances for Gastroenterology by ward, 2016/17

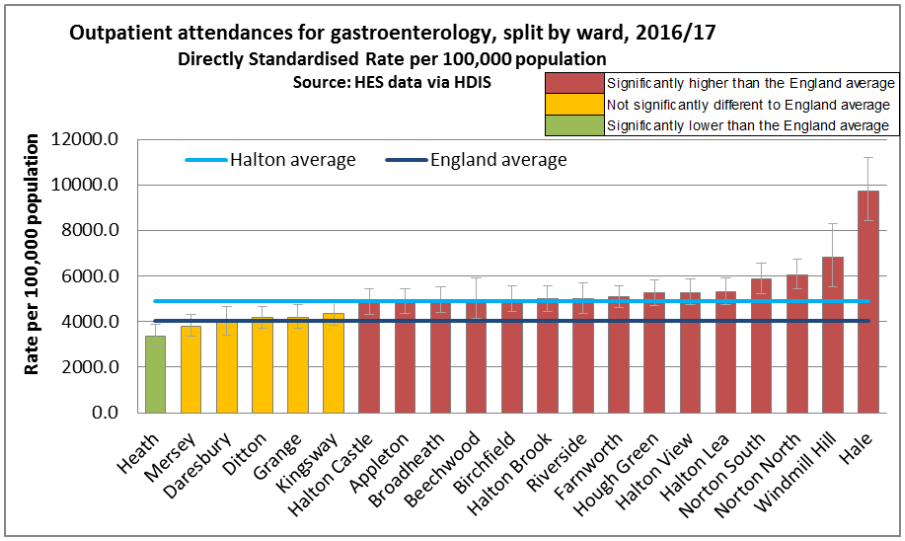
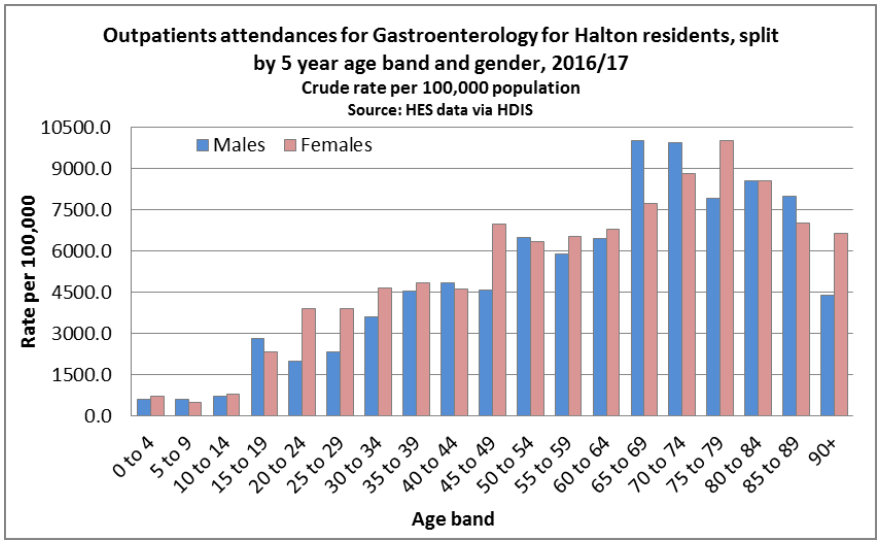


Figure 76: Rate of outpatient attendances for Gastroenterology by sex and 5 year age band, 2016/17



The rate of Gastroenterology attendances increase with age until around 79 years, but then decrease slightly in the over 80 population. The rates are highest in the 65-74 male and 75-79 female age groups.

8.6. Social care

Social care commission and provide care for those with long-term conditions, including chronic digestic diseases. However the focus is on client groups, levels of disability and need rather than on medical diagnosis.

Many of the services accessed by those with chronic digestic diseases will be generic services. Data submitted as part of annual returns is divided in to two broad age categories, 18-64 and 65+. Data on long-term support is also split into primary support needs, including physical needs. Although those with chronic digestic diseases will only constitute a small proportion of those receiving social care for this reason, the data nevertheless demonstrates a high level of need in Halton, compared to the North West and England, particularly for access and mobility physical support.

Table 29: Adult Social Care clients accessing long term support, by age band and primary support reason being physical support, 2016/17, crude rate per 100,000 population

		18-64	65+
Physical support combined	England	218.91	2919.30
	North West	247.54	3327.24
	Halton	281.78	3570.79
Physical support: access and Mobility	England	49.14	434.09
	North West	60.37	529.14
	Halton	117.95	1616.96
Physical support: personal care support	England	169.78	2485.22
	North West	187.17	2798.10
	Halton	163.82	1953.83

Source: NHS Digital

Services provided need to be adaptable to meet individual need and respond effectively to changes in patients' condition. Links with self-care associated with this group of patients is vital to improving self-management of their disease.

8.7. Third sector services

There are a range of charities and other third sector organisations that support people with digestive diseases.

Core was established by the Council of the British Society of Gastroenterology in the 1970s. Core is committed to fighting all digestive diseases. It is the only charity in the UK committed to fighting all digestive disorders. It does this in 3 key ways:

- Funding vital research that develops new treatments and saves lives
- Providing expert information for people affected, their families and their carers
- Promote awareness and discussion about digestive health

In addition to Core, there are a range of charities concerned with particular types of digestive conditons. Below is a list of registered charities supporting both professionals and the public in dealing with various GI conditions:

Cancers
Cancer Research UK https://www.cancerresearchuk.org/
Ochre - promotes awareness of oesophageal cancer http://www.ochrecharity.org.uk/
Pancreatic cancer https://www.pancreaticcancer.org.uk/ and https://pancreaticcanceraction.org/
Bowel cancer https://www.beatingbowelcancer.org/

Coeliac Disease
https://www.coeliac.org.uk/home/
Crohns and Colitis
https://www.crohnsandcolitis.org.uk
CICRA: the charity for children with Crohns and colitis http://www.cicra.org
Gastro oesophegael reflux disorder
Supporting Families with Children with Gastro-oesophageal Reflux and Reflux Disease
http://www.livingwithreflux.org/
Campaign Against Reflux Disease (CARD) http://www.cardcharity.co.uk/index.html
IBS
https://www.theibsnetwork.org/: nearest support groups are in Frodsham or St Helens
http://ww5.theguttrust.org/
Incontinence and other bowel conditions https://www.bladderandbowel.org/
Liver Disease
http://www.liver4life.org.uk
https://www.britishlivertrust.org.uk/
Pancreatitis http://www.pancreatitis.org.uk/
Charity for people living with a stoma. http://www.colostomyuk.org/

9. Impacts of gastrointestinal diseases and conditions

9.1. Spend and Outcomes

Gastrointestinal and liver disorders are common conditions, together accounting for nearly 14% of the total inpatient NHS budget. It is estimated that gastrointestinal symptoms result in:

- 10% of GP consultations (representing a cost of £136 million in the UK in 2001)
- 10% of hospital-specialist workload
- 14% of the drug budget

Programme Budgeting

Spend per programme area is collated by NHS England. The latest available year is currently 2013/14. It shows that proportionately a larger amount is spent on prescribing and on non-elective care within the neurological conditions category than the overall budget for NHS Halton CCG.

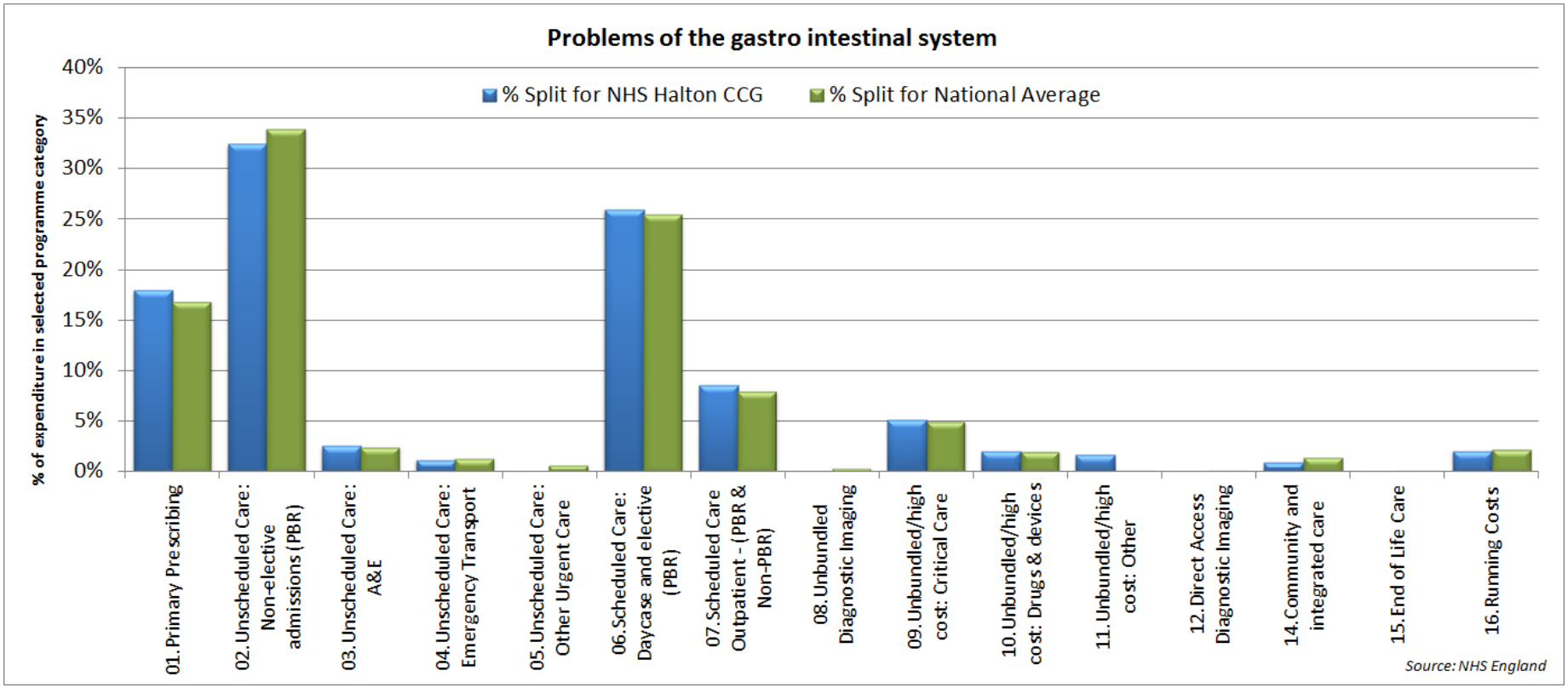
Compared to England the CCG spends a higher proportion of its gastro intestinal system budget on prescribing and scheduled care than nationally, but less on unscheduled care. The pattern is similar for upper GI and lower GI conditions, albeit, the difference for the percentage spent on unscheduled care is more marked. The difference is minimal for hepatobiliary problems and other GI conditions.

Table 30: Programme Budgeting: NHS Halton CCG expenditure for gastro intestinal conditions, £ per 100,000 population and as a percentage per care setting, total programme and subcategories, 2013/14

Programme Budgeting category	13.Problems of the gastro intestinal system		13a.Upper gastro intestinal system problems		13b.Lower gastro intestinal system problems		13c.Hepatobiliary problems		13x.Problems of the gastro intestinal system (Other)		02b.Upper gastro intestinal cancers		02c.Lower gastro intestinal cancers		Total Expenditure	
	spend per 100,00 population (£)	% per care setting	spend per 100,00 population (£)	% per care setting	spend per 100,00 population (£)	% per care setting	spend per 100,00 population (£)	% per care setting	spend per 100,00 population (£)	% per care setting	spend per 100,00 population (£)	% per care setting	spend per 100,00 population (£)	% per care setting	spend per 100,00 population (£)	% per care setting
Primary Prescribing	1,348,468	18.0%	354,440	20.7%	473,677	26.0%	37,857	3.2%	482,494	17.4%	-	0.0%	-	0.0%	15,506,330	13.4%
Unscheduled Care: Non-elective admissions (PBR)	2,430,616	32.4%	507,678	29.7%	479,207	26.3%	633,312	53.2%	810,419	29.3%	99,707	40.1%	150,072	28.8%	19,250,433	16.7%
Unscheduled Care: A&E	186,514	2.5%	-	0.0%	-	0.0%	-	0.0%	186,514	6.7%	-	0.0%	-	0.0%	3,122,021	2.7%
Unscheduled Care: Emergency Transport	85,793	1.1%	-	0.0%	-	0.0%	-	0.0%	85,793	3.1%	-	0.0%	-	0.0%	2,946,498	2.6%
Unscheduled Care: Other Urgent Care	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	999,041	0.9%
Scheduled Care: Daycase and elective (PBR)	1,943,152	25.9%	537,138	31.4%	562,070	30.8%	341,196	28.7%	502,748	18.2%	117,431	47.3%	262,993	50.5%	13,048,185	11.3%
Scheduled Care Outpatient - (PBR & Non-PBR)	638,233	8.5%	156,927	9.2%	40,217	2.2%	14,414	1.2%	426,675	15.4%	-	0.0%	-	0.0%	10,693,411	9.3%
Unbundled Diagnostic Imaging	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	1,157,773	1.0%
Unbundled/high cost: Critical Care	380,324	5.1%	69,545	4.1%	74,637	4.1%	97,004	8.2%	139,138	5.0%	21,551	8.7%	81,605	15.7%	2,546,256	2.2%
Unbundled/high cost: Drugs & devices	147,233	2.0%	-	0.0%	125,417	6.9%	7,897	0.7%	13,920	0.5%	-	0.0%	-	0.0%	2,204,334	1.9%
Unbundled/high cost: Other	120,667	1.6%	34,535	2.0%	19,801	1.1%	19,897	1.7%	46,435	1.7%	2,820	1.1%	8,686	1.7%	1,497,500	1.3%
Direct Access Diagnostic Imaging	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	771,327	0.7%
Community and integrated care	65,781	0.9%	16,722	1.0%	13,350	0.7%	14,124	1.2%	21,586	0.8%	1,961	0.8%	6,526	1.3%	39,487,949	34.2%
End of Life Care	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	323,064	0.3%
Running Costs	149,775	2.0%	34,518	2.0%	36,811	2.0%	23,994	2.0%	54,453	2.0%	5,011	2.0%	10,495	2.0%	1,923,436	1.7%
Total	7,496,557	100%	1,711,503	100%	1,825,186	100%	1,189,694	100%	2,770,174	100%	248,480	100%	520,377	100%	115,477,559	100%

Source: NHS England

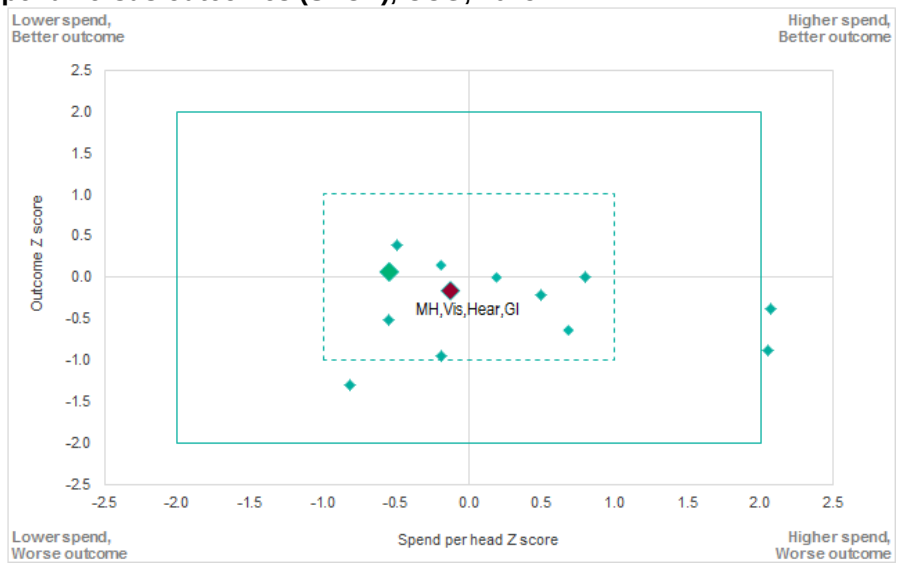
Figure 77: Expenditure percentage splits across care settings, NHS Halton CCG compared to England, 2013/14



Spend and Outcomes Tool (SPOT)

In terms of spend on GI compared to outcomes, the Spend & Outcomes Tool (SPOT) shows Halton CCG in the lower spend, worse outcomes quadrant for GI. Its spend was similar to the national average but slightly lower than other comparators. Of the outcome measures used, under 75 mortality from liver disease was worse than comparators but emergency admissions due to alcohol related liver disease was lower than the CCGs comparators apart from England.

Figure 78: Spend versus outcomes (SPOT), CCG, 2015



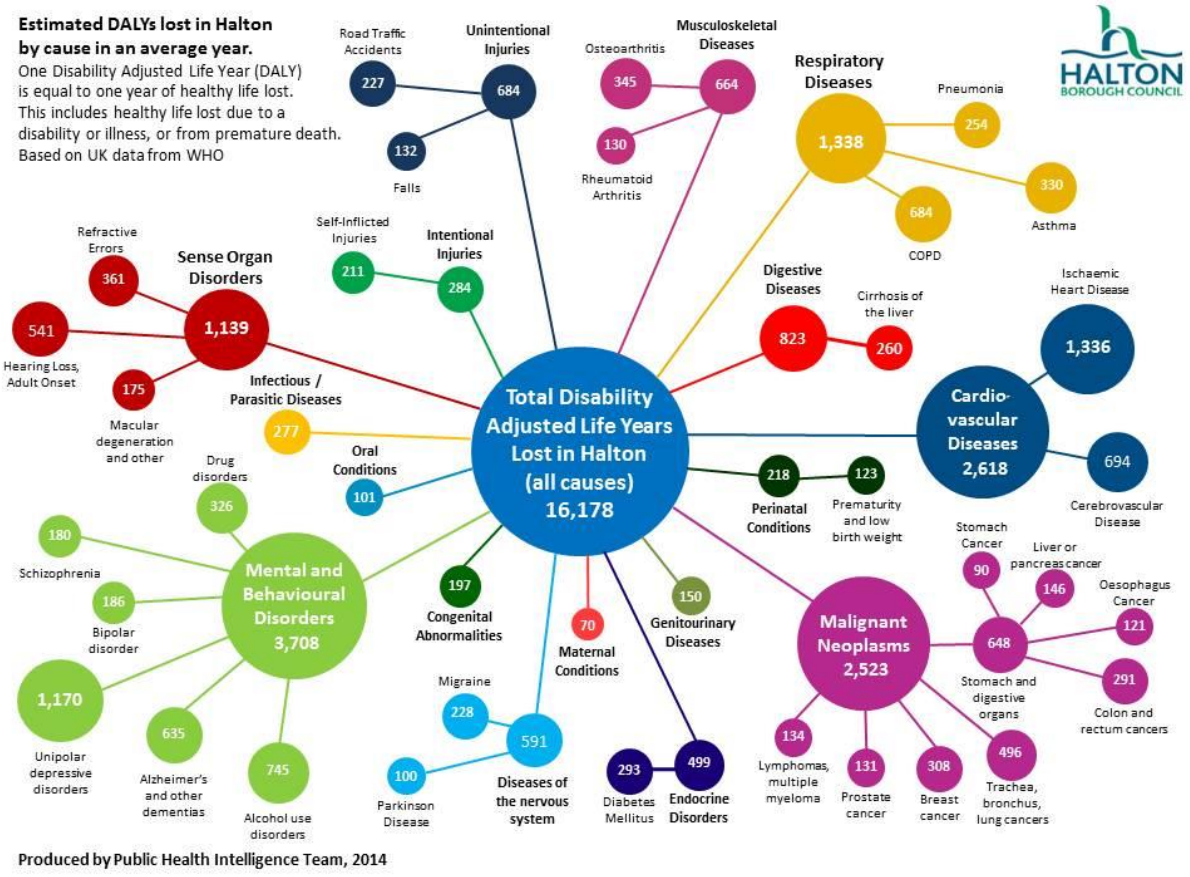
Selected measures for Halton	Local value	Z score -3 -2 -1 0 1 2 3	National	Deprivation decile	NHSE cluster	Commissioning Region
Gastro Intestinal						
Problems of Gastro Intestinal System	£75		£75	£77	£77	£79
Mortality from liver disease, <75yr, DSR, persons	22		16	19	20	20
Emergency admission rate for alcohol related liver disease	31		25	35	35	36

Source: Public Health England

9.2. Disability Adjusted Life years (DALYs)

The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death. It was developed as part of the World Health Organisations Global Burden of Disease Study for 1990 and in subsequent WHO updates for 2000 to 2004, as a way of comparing the overall health and life expectancy of different countries.[200] Although digestive diseases are not in the top 5 causes of DALYs lost, they represent the 6th highest cause, higher than musculoskeletal, diseases of the nervous system, endocrine (including diabetes) and unintenital injuries.

Figure 79: Disability Adjusted Life years (DALYs) in Halton



9.3. Employment and benefits

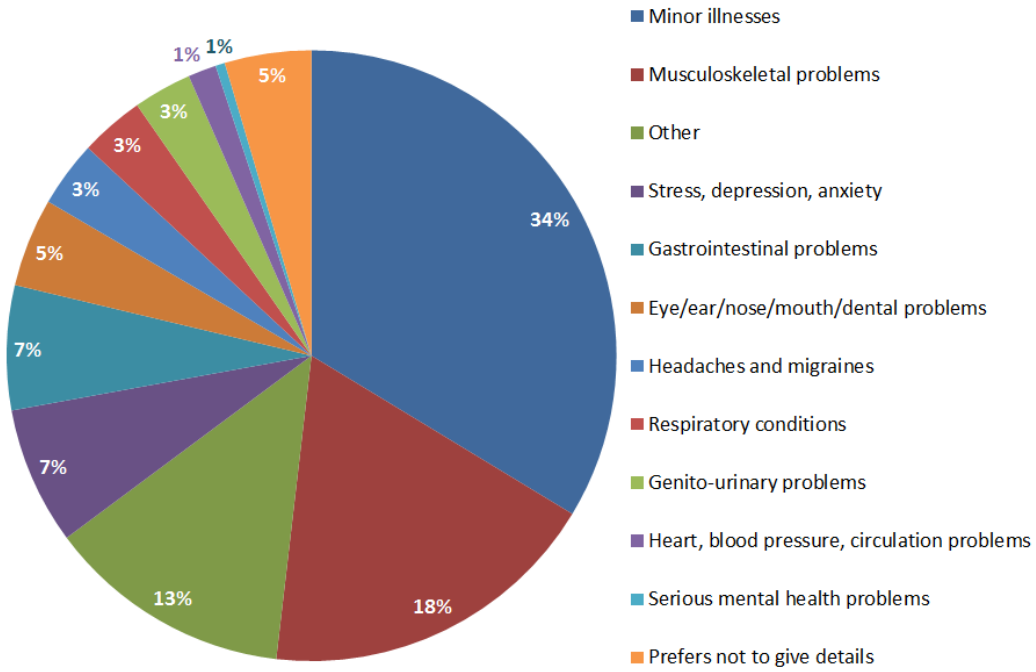
Chronic GI conditions can affect quality of life, including limiting educational and employment opportunities. Many conditions have flare ups which can affect sickness absence and productivity of those in work. Young people with IBD can face challenges completing their education and transitioning into employment, with concerns regarding managing symptoms in the workplace, self-confidence and whether they would be able to undertake their duties effectively. The timing and the age of onset of IBD, happening at this transition to adulthood can also have implications about individual career decisions, especially if they have little practical help available to help with these decisions. Evidence suggests that those with IBD were more likely to be out of the labour force, had increased sickness absence and fewer opportunities for career progression and reaching their full employment potential.

IBD has also been reported to have an impact upon an individual's retirement age, with the median age of retirement for those with IBD being 55 years.[201]

Statistics from the Labour Force Survey 2016[202] show that workers who report having a long-term health condition (lasting 12 months or more) have the highest sickness absence rate across all groups. In 2016, the sickness absence rate for those with a long-term health condition was 4.4% compared with 1.2% for those without.

However, workers with long-term health conditions have experienced a notable reduction in their sickness absence rate over the past 2 decades. Since the series began in 1997, the rate has fallen by 2.6 percentage points from 7.0% to 4.4% in 2016.

Figure 80: Reasons given for sickness absence, UK, 2016



Source: Office for National Statistics

Some people of working age are unable to work because of their health condition and are eligible to claim benefits. The numbers due to GI conditions is relatively small percentage of all Disability Living Allowance (DLA) or Personal Independence Payment (PIP) claims in payment (1% and 1.25% respectively for latest time period).

Table 31: Number of DLA and PIPs claimants in payment, by age

Age	DLA August 2017 (IBS, Bowel & Stomach)	PIP January 2018 (GI, liver, gallbladder, biliary tract)
total (all ages)	70	67
Aged under 16	20	n/a
Aged 16-24	~	~
Aged 25-49	10	34
Aged 50-64	20	27
Aged 65 and over	10	6

Stat-Xplore, Department for Work and Pensions

9.4. Impacts on families, carers, to the individual e.g. social isolation and reduced life opportunities

The impact of these conditions on persons affected is enormous and there is a huge societal cost as well. GI illness keeps people from enjoying their daily life and from living to the fullest. Although gastrointestinal conditions have a considerable impact on the economy and healthcare workload, they do not receive the necessary recognition.

The non-NHS economic impact of gastrointestinal disease is even costlier for the British economy:[203]

- 147,400 person-years were lost due to people aged 20-65 years dying because of gastrointestinal diseases (based on data from 1980 to 1994)[204]
- the cost of early death from gastrointestinal conditions was estimated to be £3.23 billion in 2004
- 46,680 person-years of productivity were lost due to long-term sickness absence from work (based on data from 1980 to 1994), with an estimated cost of £1.05 billion in 2004

In the British Society of Gastroenterology's 2006 strategy on care of patients with gastrointestinal disorders, it was reported that:[205]

- one-fifth of all short-term sickness was due to gastrointestinal disease, with an estimated annual cost of £2.9 billion
- the total non-NHS cost to the British economy of gastrointestinal disease was £7.2 billion annually.

Quality of life (IBS):

- QoL for a person with IBS is significantly lower than in healthy persons, comparable to those with clinical depression, and lower than in those with type 2 diabetes or who have experienced a heart attack
- More than 40% of IBS patients report avoidance of some activities, including work, travelling, and socializing
- Persons with IBS often suffer in silence due to their reluctance to discuss their bowel habits
- Only about 10% of people with IBS symptoms seek help from a doctor
- Reports from gastroenterology clinics reveal that IBS is the most frequently encountered diagnosis
- 25% of IBS patients have severe symptoms that require management by a gastroenterologist

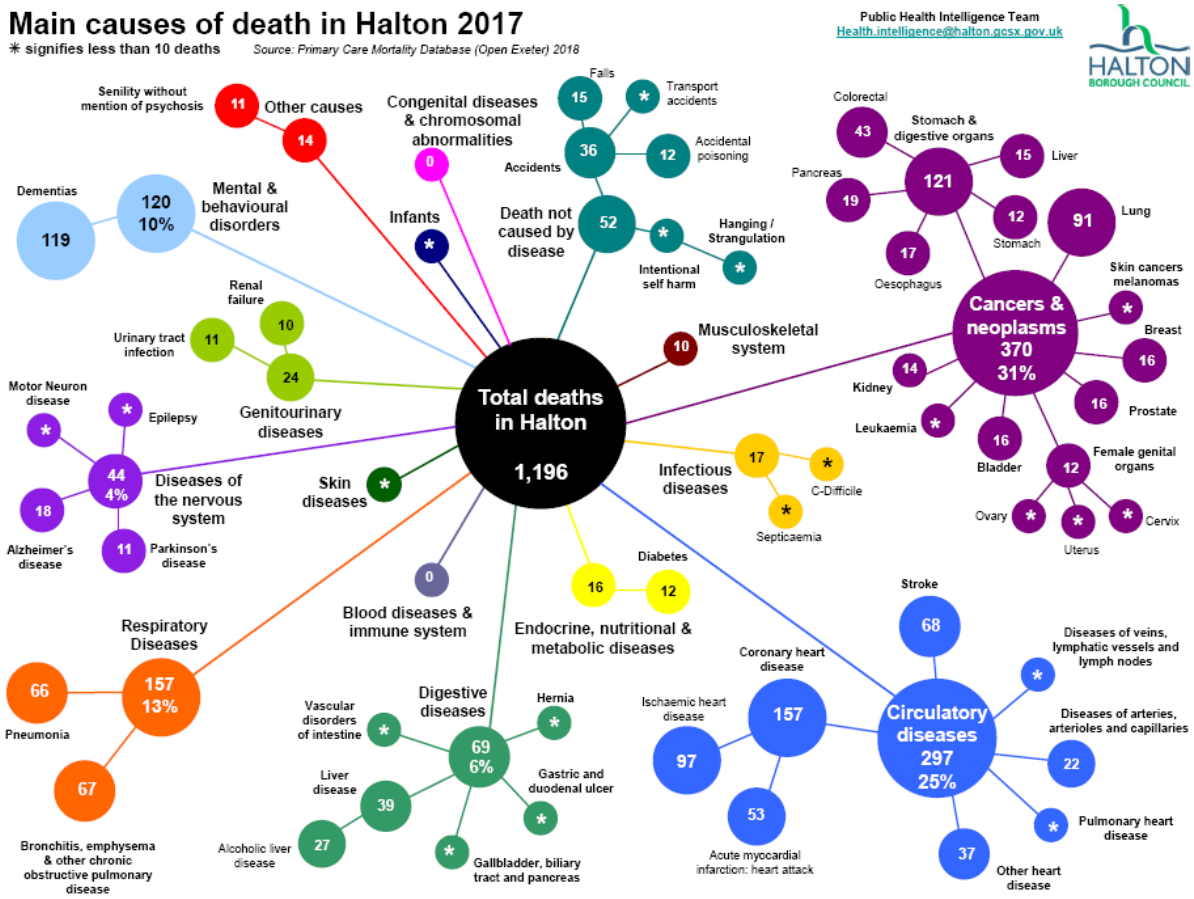
9.5. Mortality

Deaths from digestive diseases are rare compared to other causes of death. In 2017, there were 69 deaths from conditions of the digestive system. This accounted for just 5.8% of the total number of deaths that year amongst Halton residents.

Just over half of the Halton deaths due to GI disease were due to liver disease. Of the 39 deaths due to liver disease, 27 were alcoholic liver disease.

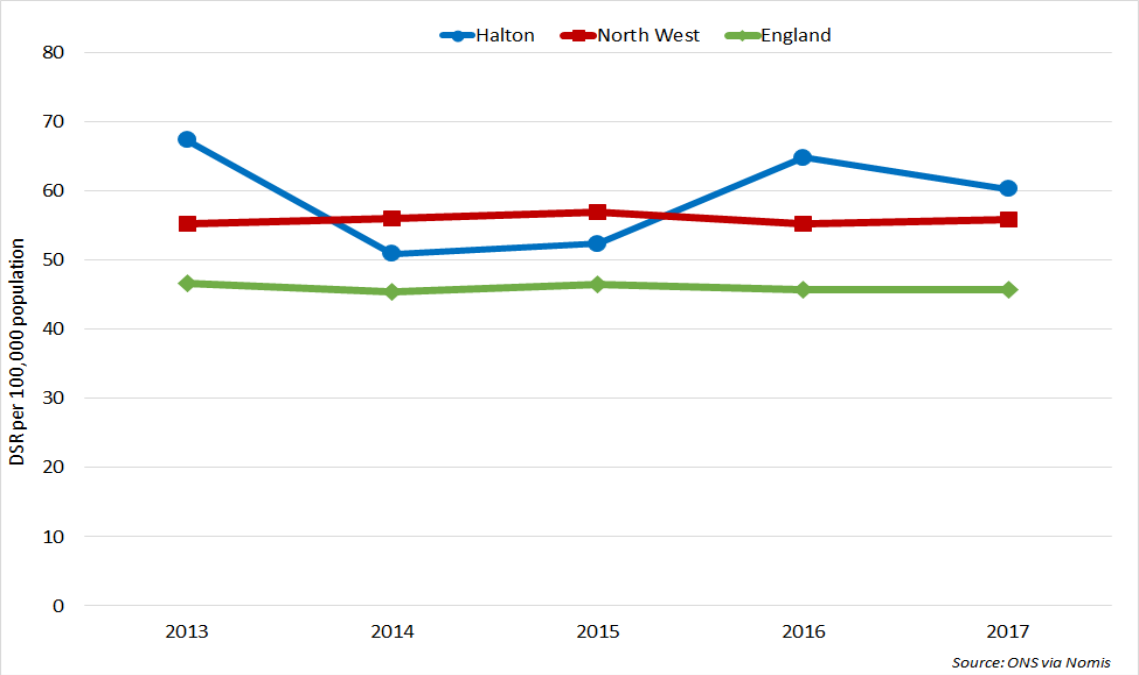
Colorectal cancer was the second most common type of cancer death (after lung), accounting for 43 deaths in Halton in 2017.

Figure 81: Causes of death amongst Halton residents, 2017



Compared to England and the North West this was a slightly higher percentage of deaths due to GI diseases (England 4.8% and North West 5.3%). As a directly age standardised rate per 100,000 population Halton has higher rates each year 2013 to 2017.

Figure 82: Death rate due to GI diseases, directly age standardised rate per 100,000 population, 2013 to 2017



A deeper analysis can be examined using a 5-year aggregarion of the data. It confirms the dominant cause of GI deaths being liver disease (with 4 out of every 10 deaths from GI disease due to liver disease). The orthewr significant cause was other diseases of the intestines accounting for 25%.

Table 32: Deaths due to GI diseases, primary cause of death, 2012-2016

Cause of death	Deaths	Percentage
Diseases of liver	**135**	**39.6%**
Alcoholic liver disease	*84*	*24.6%*
Fibrosis and cirrhosis of liver	*23*	*6.7%*
Other diseases of liver	*16*	*4.7%*
Hepatic failure	*7*	*2.1%*
Other inflammatory liver diseases	*5*	*1.5%*
Other diseases of intestines	**86**	**25.2%**
Vascular disorders of intestine	*42*	*12.3%*
Paralytic ileus and intestinal obstruction without hernia	*18*	*5.3%*
Diverticular disease of intestine	*16*	*4.7%*
Perforation of intestine (nontraumatic)	*9*	*2.6%*
Disorders of gallbladder, biliary tract and pancreas	**33**	**9.7%**
Cholecystitis	*9*	*2.6%*
Cholelithiasis	*8*	*2.3%*
Acute pancreatitis	*7*	*2.1%*
Other diseases of biliary tract	*7*	*2.1%*
Diseases of oesophagus, stomach and duodenum	**31**	**9.1%**
Ulcers (Duodenal and Gastric)	*21*	*6.2%*
Other diseases of the digestive system	**15**	**4.4%**
Gastrointestinal haemorrhage	*14*	*4.1%*
Total	**341**	

Source: PCMD

GI diseases are also implicated in deaths where there is another primary/main cause of death identified. In addition to the 341 deaths were GI was identified as the primary cause of death, another 220 deaths had it recorded as a secondary cause.

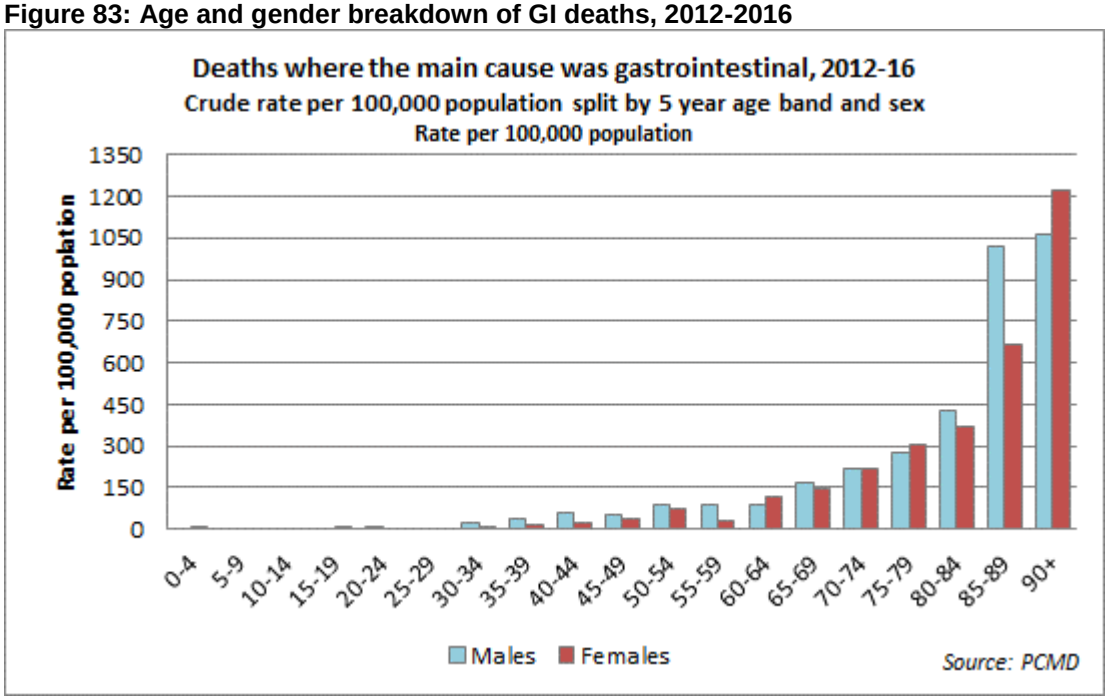
Table 33: Deaths due to GI diseases, primary and secondary cause of death, 2012-2016

Sub chapter	Primary	Secondary	Total	% Primary	% Secondary	% Total
Diseases of liver	135	71	206	*39.6%*	*32.3%*	*36.7%*
Other diseases of intestines	86	44	130	*25.2%*	*20.0%*	*23.1%*
Disorders of gallbladder, biliary tract and pancreas	33	19	52	*9.7%*	*8.6%*	*9.3%*
Diseases of oesophagus, stomach and duodenum	31	17	48	*9.1%*	*7.7%*	*8.5%*
Other diseases of the digestive system	15	31	46	*4.4%*	*14.1%*	*8.2%*
Intestinal infectious diseases	13	7	21	*3.8%*	*3.2%*	*3.7%*
Diseases of peritoneum	10	6	16	*2.9%*	*2.7%*	*2.8%*
Hernia	11	4	15	*3.2%*	*1.8%*	*2.7%*
Symptoms and signs involving the digestive system and abdomen	0	14	14	*0.0%*	*6.4%*	*2.5%*
Noninfective enteritis and colitis	5	6	11	*1.5%*	*2.7%*	*2.0%*
Diseases of appendix	2	1	3	*0.6%*	*0.5%*	*0.5%*
Total	**341**	**220**	**562**	***60.7%***	***39.1%***	

Source: PCMD

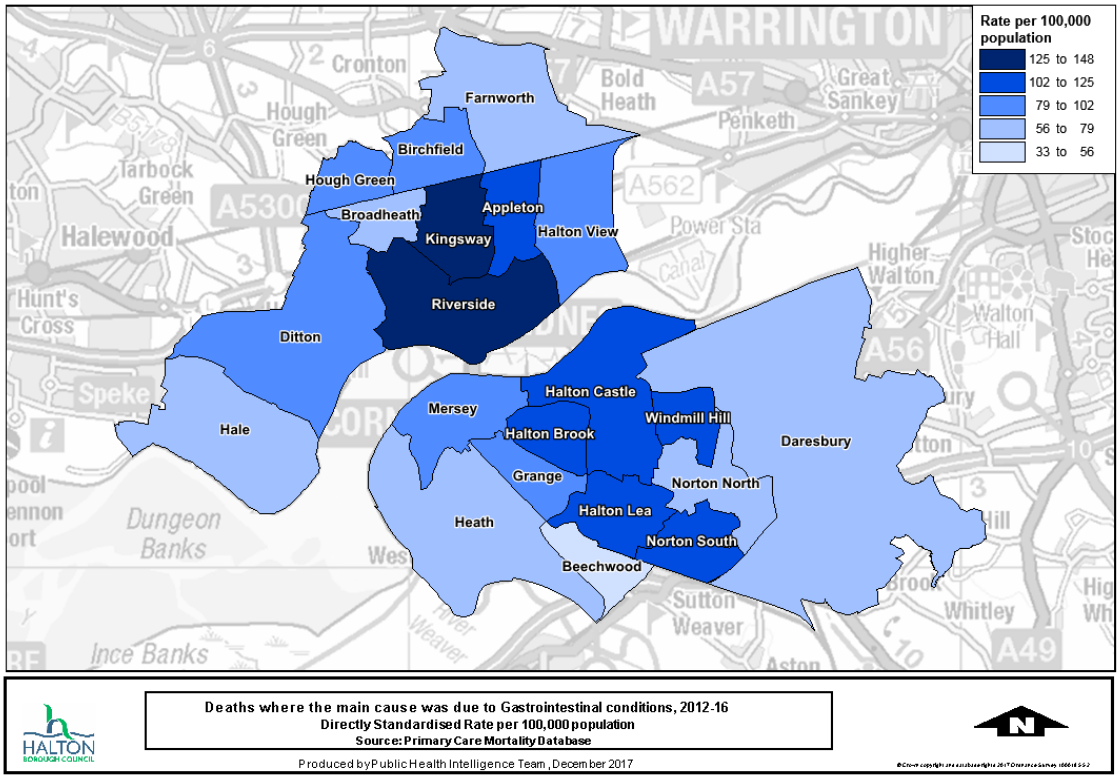
The vast majority of deaths due to GI were in the oldest age groups for bith males and females, with death rates generally being higher in males than females, apart from 90+ age group. Predominantly this is due to the impact of higher rates of liver disease in men.

Figure 83: Age and gender breakdown of GI deaths, 2012-2016



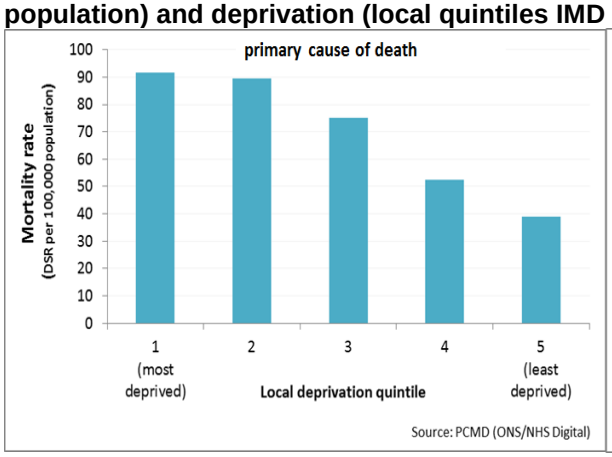
There are also geographical variations with rates being highest in Riverside and Kingsway wards.

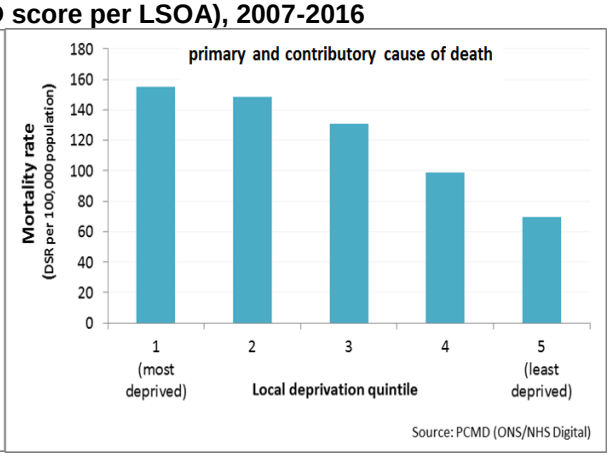
Figure 84: Geographical variation in deaths rates due to GI



This geographical distribution manifests as a clear relationship between death rates and deprivation levels locally. This is especially so when examining deaths in which GI diseease was a contributory as well as primary cause of death. Here the relationship can be said to be strong with 38% of the variation being accounted for by deprivation.

Figure 85: Relationship between mortality rates (Directly age standardised rate per 100,000 population) and deprivation (local quintiles IMD score per LSOA), 2007-2016





primary cause	Correlation (r)	0.54		Moderate association
	Regression (r^2)	0.29		30% of variation in underlying cause gastrointestinal deaths can be accounted for by deprivation
primary and contributory cause	Correlation (r)	0.62		Strong association
	Regression (r^2)	0.38		38% of variation in underlying cause gastrointestinal deaths can be accounted for by deprivation

10. Projected levels of need

Halton has a relatively young population but one that is ageing at a faster rate than nationally. This is likely to have an impact on the demands placed upon primary care, hospital admissions and social care as many GI conditions are more prevalent in older age.

The total population of the borough is very likely to continue to rise, by 2.5% between 2016 and 2041. However, this rise is not equal across all age group. There will be no change in the 10-19 year old population, with the working age adult population reducing and a substantial rise in the proportion of the population who will be 65+.

Table 34: Population projections by key age bands, 2016 to 2041

	2016	2041	% change
10 to 19	14,800	14,800	0.0%
20 to 24	7,300	6,900	-5.5%
25 to 49	41,100	38,100	-7.3%
50 to 64	25,600	23,600	-7.8%
65+	22,400	32,800	46.4%

Source 2016 to 2041 projections: ONS, 2016

The 2016-based projections suggested that Halton's population aged 65 and over was estimated to increase by 46%. This would equate to an additional 4,800 males and 5,600 females (total 10,400) aged 65 and over living in Halton. The rate of Halton's ageing population is slightly higher than the North West (41.5%) but lower than England (51.7%). Halton's 85+ population is predicted to more than double during the same period from 2,300 to 5,700.

According to the 2011 Census, the borough's black and minority ethnic (BME) population is much smaller than that of the North West and England and changed little from the 2001 Census. Therefore whilst services need to be able to meet the needs of all its users the static BME population means it will have minimal impact of the capacity and nature of the borough's overall need for GI services.

11. Best practice interventions

Nice Guidance for digestive tract conditions

- Cholelithiasis and cholecystitis
- Coeliac disease
- Colorectal cancer
- Constipation
- Diarrhoea and vomiting
- Digestive tract conditions: general and other
- Diverticular disease
- Faecal incontinence
- Gastro-oesophageal reflux, including Barrett's oesophagus
- Haemorrhoids and other anal conditions
- Hernia
- Inflammatory bowel disease
- Irritable bowel syndrome
- Lower gastrointestinal lesions
- Oesophageal cancer
- Pancreatic cancer
- Pancreatitis
- Stomach cancer
- Upper gastrointestinal bleeding

Lifestyle factors

https://www.nice.org.uk/guidance/lifestyle-and-wellbeing/alcohol#pathways
https://www.nice.org.uk/guidance/lifestyle-and-wellbeing/diet--nutrition-and-obesity
https://www.nice.org.uk/guidance/lifestyle-and-wellbeing/smoking-and-tobacco

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