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Acute Gastroenteritis in Ireland, North and South:

A Study of General Practitioners

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Acute Gastroenteritis in Ireland, North and South: A Survey of General Practitioners

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iii. Foreword

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I am very pleased to present this report on the survey of general practitioners and their management of acute gastroenteritis. This report is the result of the collaboration of general practice, surveillance, public health, food safety and academic public health organisations in Ireland, North and South. It follows the population study of gastroenteritis, which was published in 2003.

Many infections of importance to public health are seen almost exclusively in primary care (e.g. childhood infections, respiratory and diarrhoeal illness). Acute gastroenteritis is a common illness in the community affecting several thousand patients every day with significant morbidity and economic loss, in both Northern Ireland and the Republic of Ireland. However, routine information sources from primary care do not measure the true burden of disease. While clinical notifications from GPs and laboratory reports give some indication of the frequency of the disease, these are known to greatly underestimate the condition. Also, under-reporting of infectious diseases in general practice has been documented.

There are other factors in the GP management of patients with acute gastroenteritis, which were not well understood. These include exposure history, stool checks, treatment and advice, health education, high-risk groups, notification and reporting to public health.

GPs have an important role to play in the management of this condition, and this report highlights the need for further work in developing professional guidance, curriculum support and patient information.

I would like to thank all the members of the Steering Committee, who provided expert guidance for this study, and to mention in particular Dr Elaine Scallan, the Project Co-ordinator, whose tireless efforts ensured that this study was carried out efficiently and smoothly.

*Dr Margaret Fitzgerald
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v. Acknowledgements

The Steering Committee would like to acknowledge the support and help of the following:

safefood—The Food Safety Promotion Board who commissioned and funded this study, with special thanks to Dr Thomas Quigley for encouragement to develop the project, Grainne O' Sullivan and Gillian Deegan for administrative support.

General Practitioners, North and South, who participated in this study, those who took part in one-to-one semi-structured interviews, those who attended focus group briefings and those who responded to postal questionnaires.

The Irish College of General Practitioners, the Central Services Agency and each of Northern Ireland's Health and Social Services Boards for providing information and support to the project.

vi. Executive summary

Infectious gastroenteritis causes substantial morbidity and economic loss on the island of Ireland. A population study published in 2003 showed there were 3.2 million episodes of acute gastroenteritis (GE), or 8,080 new cases per day. With an average duration of illness of four days, this means that 35,000 people are ill each day, mostly children and younger adults. Twenty-nine percent of ill people sought medical care, corresponding to a total of 3,100 General Practitioner consultations per day in Ireland. However, these are rarely translated into routine statistics, as in 2002 there were just fewer than 6,000 clinical notifications of infectious gastroenteritis or foodborne diseases.

Objectives of the study

The principal aim was to describe general practitioners' management of patients with acute infectious gastroenteritis. As the GP is the main health provider and first point of contact for patients, we decided to examine in more detail the burden of disease presenting to GPs and the responses of GPs to the problem. As in other countries, information in Ireland regarding GP management of this essentially self-limiting illness has been limited. From the population study we know that only a fraction of those with acute GE are reported through the statutory notification system or through laboratory-based surveillance systems. We also wished to ascertain the outcome of patients who visit their doctor with acute gastroenteritis and their subsequent management. In particular, we wanted to understand what prompts general practitioners to request stool samples and to notify public health.

The specific objectives of the study were to:

- Better understand the burden of acute gastroenteritis in general practice
- Describe GPs' attitudes and practices relating to the clinical management of patients with acute gastroenteritis
- Describe GPs' attitudes toward their role in providing advice to patients with acute gastroenteritis, particularly to those working in high-risk occupations
- Describe GPs' views on the surveillance and notification of certain cases of acute gastroenteritis
- Describe GPs' views on the role of public health in acute gastroenteritis.

Methods

This study employed both quantitative and qualitative research methods, and comprised three phases. In the first phase we conducted focus groups and semi-structured interviews with GPs. In phase two we performed a postal survey of GPs. In the third phase semi-structured interviews with GPs were conducted. The study duration was 18 months. A total of 1,204 GPs in both jurisdictions were surveyed using self-administered postal questionnaires with an overall response rate of 57%.

GPs were asked about the number of consultations of gastroenteritis they had conducted in the previous seven days, how often they requested stool samples, how relevant the samples were to patient care, and how transport of clinical specimens was arranged. We also asked how often they reported or notified cases to public health authorities, their treatment practices, and what advice on prevention they gave, especially to high-risk groups.

The postal survey was conducted in the autumn of 2002. Ethical approval was granted by the Research Ethics Committee of Queen's University, Belfast.

Key findings

The practice profile of GPs North and South differed, with 90% of those in the North in a group practice compared with 63.5% in the South. GPs in the North were more likely to be computerised than their colleagues in the South.

We found that GPs had on average seven consultations for acute gastroenteritis per week accounting for 4.5% of all consultations. This means that a GP could have one or two GE related consultations each day, making acute gastroenteritis one of the commonest conditions seen in general practice. Patient telephone consultations were, however, more frequent in the North, accounting for over one-third of all acute gastroenteritis consultations.

GPs observed that children and younger adults are most commonly affected, with toddlers consulting more frequently than infants. GPs considered parental experience to be an important factor in determining whether or not children with acute gastroenteritis consulted them. Work, employer requirements and family support were also seen as important reasons for adults seeking medical care.

GPs were almost unanimous in their approach to treatment, with 93% saying they would advise patients to take extra fluids along with continued feeding. GPs said that educating parents about fluid intake was central to the consultation.

There was no consensus about the use of anti-diarrhoeal agents. GPs said that some patients put pressure on them to prescribe them. GPs in the North were less likely to prescribe anti-diarrhoeals than their colleagues in the South. Doctors aged less than 45 years were significantly less likely to use them (28%) compared with older colleagues (44%), and young female doctors (20%) were less likely to use them than young male doctors (46%).

Antibiotics were not usually prescribed for gastroenteritis. Over 90% of doctors prescribe antibiotics for about one-tenth of all patients presenting with acute GE (mostly after consulting with the consultant microbiologist). In view of the high prevalence of GE, this still means that significant amounts of antibiotics are being prescribed for what remains a self-limiting illness.

In relation to potential exposures, GPs asked about unsafe foods, recent foreign travel, and contact with other ill persons but were unlikely to ask whether the patient/carer was a food handler or healthcare worker. GPs felt that many patient reports of food poisoning or illness, as a result of contaminated food, were unfounded.

GPs were selective about when they requested a stool sample and patient history was crucial in informing their decision. Being able to rule out serious conditions was also a factor. Criteria used by GPs when requesting patients to submit a stool sample were similar to those reported in other studies and recommended in practice guidelines. These criteria included the duration of illness, the severity of illness, a suspicion of food poisoning, and recent foreign travel. Only a small number of GPs said they would request a stool sample if the patient was working in a high-risk area, such as in the catering or food manufacturing/processing industry.

Most GPs said that patient information on how to provide a stool sample was hard to find, and as a result, specimen containers used by patients were not always appropriate.

In general, GPs agreed that microbiological investigation was unnecessary for most patients presenting with acute gastroenteritis and did not rely on routine stool testing as a rule. GPs did not feel that laboratory results from stool samples greatly affected their clinical management and this was especially so among GPs based in the South. One reason for this was the relatively few positive results. Another was that the patient had usually recovered by the time the result was back. However, if the symptoms were prolonged, having the diagnosis confirmed was a benefit.

Overall, however, when stool samples were taken, 51% of GPs in the North agreed that test results made a difference to their management compared to 65% in the South.

Lack of a clinical specimen collection service resulted in significant difficulties for doctors in getting stool samples to the laboratory. This was a problem confined to the South, as there were dedicated laboratory collection services in the North. Transport was the biggest factor, with two in five (40%) GPs in the South significantly more likely to face difficulty compared with one in six (16.7%) GPs in the North. Rural doctors were especially affected. These doctors were significantly more likely to deliver samples to the laboratory themselves or by means of their patient or practice nurse. In the South, 14% of GPs reported sending stool samples to the laboratory by post compared to 0.03% in the North.

A large proportion of potentially foodborne infections are not notified by GPs to their local public health department. This was more obvious in the South where 16.9% of GPs said they rarely or never notified Salmonella compared to 11.3% of those in the North, and 40% of GPs in the South rarely or never notified Campylobacter compared to 19.6% of their colleagues in the North. Doctors were reluctant to notify food poisoning without a laboratory diagnosis. The fact that food poisoning was not clearly defined, and that it is hard to determine the mode of transmission means that GPs are more likely to leave these notifications to the laboratories. Doctors were also not clear about the pathways of notification to the Medical Officer of Health or local public health departments. The importance of GP notifications and how their purpose differs from laboratory reports needs to be properly communicated to GPs if they are to be encouraged to notify.

GPs did not see notification as having any favourable impact on themselves, their patients, or the wider community. GPs valued receiving feedback from public health doctors on notified cases or outbreaks in their area and looked for more feedback.

GPs were concerned about the impact of notification on patient confidentiality. The majority said they would prefer to be informed first if there was follow up of a case or action by public health doctors.

Summary of Recommendations

- There is a need for a working group facilitated by **safefood** to establish clear guidelines for the use of anti-diarrhoeal agents and antibiotics in the management of acute gastroenteritis in Ireland, North and South.
- Collection services for stool samples and other clinical specimens need to be established in the South as a matter of priority.
- Laboratories should be encouraged to ensure that GPs are aware of the range of diagnostic services they provide for suspected gastrointestinal infection and how to access these services.
- Patient information leaflets on 'what to do when asked to provide a stool specimen' should be developed. This could be an initiative between **safefood** and Irish College of General Practitioners (ICGP)/ Public Health.
- There is a need for improved two-way communication between local public health authorities and GPs in order to discuss reporting channels, confidentiality and public health action.
- Feedback to GPs on notifications and laboratory reports should be encouraged and should highlight local public health initiatives.
- As part of the local feedback, public health authorities should address GP information needs and concerns about the process of notification, and their concerns about patient confidentiality.
- As undergraduate training evolves, there is a danger that specific areas such as infectious disease are covered less intensively. This can be overcome, and standards even improved, by good co-ordination between modules in clinical areas (primary and secondary care), laboratory sciences, and public health. Apart from the established skills of history taking and examination, knowledge of patient risk profiles, occupations, and exposures to relevant factors should enhance appropriate investigation and optimum management.
- A postgraduate GP training module on the clinical management of acute gastroenteritis should be developed. This module could be used in the Vocational Training Scheme (a three-year rotation for GP training) and Continued Medical Education for trained GPs.
- A resource person should be designated to work with ICGP/Royal College of General Practitioners (RCGP) to develop and implement the curriculum/module.
- Appropriate training material should be developed. The Centre for Disease Control and Prevention (CDC) primer for physicians may serve as one model for the development of training materials.
- Suggested topics for postgraduate training could include updates on infectious intestinal disease in general practice, food safety and foodborne disease, appropriate use of antibiotics in the treatment of acute gastroenteritis infections, prevention of acute gastroenteritis, evidence-based advice on hygiene, hand washing and safe food preparation.

1. Background

Acute gastroenteritis is an important cause of illness in the community, resulting in an estimated 0.60 episodes per person per year in Ireland, North and South.¹ Of those who fell ill only 29% consulted a GP, and only a minority visited an accident and emergency department or were admitted to hospital. As GPs are the main point of contact for those seeking medical care, it is important to understand the approach to acute gastroenteritis in general practice and the factors that influence GPs' management practices.

From a GP's perspective there are a number of issues involved in the management of patients with acute gastroenteritis. When a patient presents with symptoms of acute gastroenteritis, the GP will ask about the patient's history and consider the need for investigations before providing advice on treatment and preventing the spread of infection. The public health impact must also be considered, and this may lead to the case being notified under the statutory notification system.

While a number of guidelines on the management of acute gastroenteritis have been published internationally, there is no information on GPs' management of acute gastroenteritis in Ireland, North or South.²⁻⁹ There is uncertainty about what GPs consider to be best practice. GPs stool sampling practices are not well understood, and no study has addressed possible barriers to stool sampling, such as access to laboratories. As laboratories test patient stool samples only at the request of a GP or other medical practitioner, it is important to gauge how often and under what circumstances GPs order these tests.

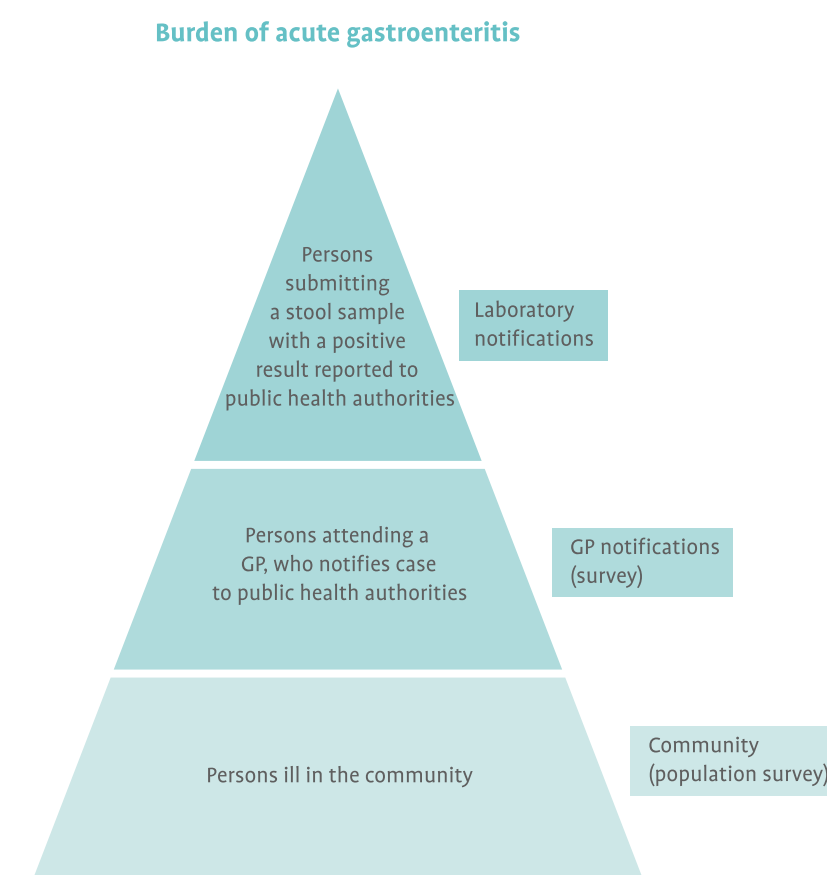
GPs are in a powerful position to affect patient behaviour because they are the point of contact for patients, especially for parents of young children. They are well placed to provide simple, appropriate, and timely advice to patients about risks and ways to minimise the spread of infection, such as advice on hygiene. Advice on preventing the spread of infection can have an important public health impact, especially if the patient's occupation involves food handling or caring for vulnerable groups, such as children or older people.

Infectious disease notifications are one of the main sources of routine surveillance data underpinning public health action. Under this system, medical practitioners, North and South, are required to inform the relevant public health authorities if they become aware of, or suspect that a patient is suffering from, a notifiable disease. Notification can be made on receipt of a laboratory-confirmed diagnosis or simply on the basis of clinical suspicion. Cases are investigated to ascertain possible sources and routes of infection, so that control measures can be put in place to control the spread of infection. When centrally collated, notifications also provide very important information on disease trends and the impact of prevention activities, while also evaluating the effectiveness of control measures.

A number of gastrointestinal infection are notifiable under infectious disease legislation (see Appendix A). All cases of food poisoning and gastroenteritis in children under two years of age are notifiable in both the North and South. Diseases notified under the heading 'food poisoning' include *Campylobacter*, *E. coli*, *Cryptosporidium*, and *Listeria*. In the North, cases of *Salmonella* are also notified as food poisoning, while in the South cases are notified in their own right under the heading 'Salmonellosis (other than typhoid or paratyphoid)'. Other notifiable diseases which may cause gastrointestinal symptoms include bacillary dysentery (shigellosis), typhoid, paratyphoid, cholera, and viral Hepatitis (type A).

Statutory notifications underestimate the extent of illness in the community because not all cases are notified. The main reason for non-notification is that most episodes of acute gastroenteritis are mild and self-limiting and do not require medical attention. Even if a patient does seek medical care with food poisoning or other notifiable disease, it is still possible for their case to go un-notified. In some cases this is because the illness is attributed to some other cause. However, many diagnosed cases are simply not reported.

In Ireland, little is known about what factors influence GPs to notify cases of food poisoning or gastroenteritis in children under two years of age. Understanding the circumstances in which GPs notify, and the issues involved, will lead to more accurate interpretation of data. Also, these findings could be used to inform the further development of the notification system.¹⁰



2. Methods

2.1 Aim and objectives

The aim of this study was to describe the knowledge, attitude and practices of GPs relating to the management and prevention of acute gastroenteritis. The results of this survey will also identify the need to develop good practice guidance.

The specific objectives were:

1. to better understand the burden of acute gastroenteritis in general practice
2. to examine GPs' attitudes and practices relating to the clinical management of patients with acute gastroenteritis
3. to describe GPs' attitudes towards their role in providing advice to patients with acute gastroenteritis, particularly to those working in high-risk occupations
4. to describe GPs' views on the surveillance and notification of certain cases of acute gastroenteritis.

2.2 Research methods

This study employed both quantitative and qualitative research methods, and comprised three phases:

Phase 1: Focus groups and semi-structured interviews with GPs

Phase 2: A postal survey of GPs

Phase 3: Semi-structured interviews with GPs

2.2.1 Phase 1: Focus groups and semi-structured interviews

Focus groups and semi-structured interviews were conducted at the beginning of the study to identify the main issues affecting GPs' management of patients with acute gastroenteritis. This information aided the development of the postal questionnaire used during the second phase of the study.

A literature review was conducted, and from this, topic guidelines were developed (see Appendix B). These were used in both the focus groups and the semi-structured interviews. Discussions were not however, restricted to these topics: GPs were encouraged to talk about any issues they considered relevant to the research topic. An information sheet explaining the purpose of the study and outlining the benefits of participation was disseminated to GPs prior to the focus group or interview (see Appendices C and D).

The topic guidelines addressed the following issues:

- the number of people consulting GPs with symptoms of acute gastroenteritis
- information sought on potential exposures
- the use of anti-diarrhoeals and antibiotics
- the frequency of requesting stool samples

- prevention and health promotion advice given to patients
- training received in the management of acute gastroenteritis
- the importance of notifying certain cases of acute gastroenteritis to public health authorities

Purposeful sampling was used to select GPs with the type of experience and information that would contribute to this in-depth phase of the study. This was achieved mainly through snowball sampling with some additional opportunistic sampling.

2.2.2 Phase 2: Postal survey

In the second phase of the study, a sample of 1,204 GPs was surveyed using a self-administered postal questionnaire by 604 GPs in the North and 600 GPs in the South.

There are approximately 1,100 practicing GPs in the North and 2,400 in the South (Personal communication, Central Services Agency and Irish College of General Practitioners). In the North, each of the four Health and Social Services Boards provided a list of GPs known to be practicing in their area, and GPs were randomly sampled from this list. In the South, the ICGP provided a random sample of 600 of its members. Approximately 95% of GPs in the South are members of the ICGP (Personal communication, ICGP). Although not giving a complete listing, this sampling frame was the most practical and comprehensive available.

A questionnaire was developed specifically for the purpose of this study based primarily on the findings of qualitative research conducted during the first phase (see Appendix E). GPs were advised that, in this study, gastroenteritis was defined as symptoms of acute diarrhoea or vomiting.

The questionnaire collected information on:

- **The burden of acute gastroenteritis in general practice:** GPs were asked to document the number of consultations (total and acute gastroenteritis) they had in the last seven days (in the surgery, over the telephone, in the patients' homes).
- **Stool sampling and laboratories:** GPs were asked how often they requested patients to submit stool samples, the distance between their practice and their local laboratory, how stool samples were transported to the laboratory, and what they thought was the local laboratory policy regarding pathogen detection on routinely submitted faecal specimens. GPs were also asked if stool sample results had an impact on the management of patients, if they experienced difficulties in transporting stool samples to the laboratory, if patient information was available on how to collect stool samples, and if patients complied with stool sample requests.
- **Notification and public health:** GPs were asked how often they notified specific cases of acute gastroenteritis to public health authorities, if they thought GPs should inform patients before notifying their case, and if public health authorities should inform GPs before contacting a patient. GPs were also asked about the benefits of notification and their satisfaction with the level of feedback received from public health authorities.

- **Patient management and advice:** GPs were asked how often they prescribed extra fluids, antibiotics, and anti-diarrhoeal agents to patients with acute gastroenteritis. Questions were also asked about advice given on washing hands and specific advice given to food workers and care workers.
- **Demographic information:** GPs were asked to specify their age and sex and whether their practice was in an urban or rural area. GPs were also asked if the practice was a single or group practice, computerised, a training practice, or employed a practice nurse.

The questionnaire was sent to GPs on 2nd September 2002. It was accompanied by a cover letter and an information sheet explaining the purpose of the study and outlining the benefits of participation (see Appendices F and G). In the South, this letter of introduction came from the Chairperson of the ICGPs' Research Committee. In the North, the letter came from the relevant Consultant in Communicable Disease Control.

GPs were offered an incentive to participate. On returning a completed questionnaire, they were included in a prize draw for four weekend breaks for two people in a five-star hotel in Co. Galway (Appendix H). Two freepost envelopes were provided: one for returning the questionnaire and the other for returning the prize draw entry form. A reminder (and another copy of the questionnaire) was sent out to non-responders four weeks after the initial contact (Appendix I).

2.2.3 Phase 3: Semi-structured interviews

Semi-structured interviews were conducted in the third and final phase of the study. These interviews allowed GPs to comment on some of the main findings of the study and elaborate on specific areas.

Topic guidelines were developed based on the findings of the postal survey. Separate guidelines were drawn up for GPs in the North and the South, as some findings differed between the two jurisdictions (Appendix J).

The main topics addressed were:

- the value of stool sampling in the management of patients with diarrhoea
- information on diagnostic facilities available locally
- the benefit of notifying certain cases of acute gastroenteritis to public health authorities
- satisfaction with the notification system
- patient confidentiality
- feedback and information from public health authorities
- advice to food workers.

Methods identical to those used in the first phase of the study were used to sample GPs during this phase. GPs with information that would contribute to the research topic were purposefully selected using snowball sampling.

2.2.4 Ethical approval

Ethical approval for the study was obtained from the Research Ethics Committee, Queen's University, Belfast.

2.2.5 Analysis

Focus groups and semi-structured interviews were audio taped with the interviewees' consent. Notes were taken if a GP preferred not to be audio taped. All tapes were fully transcribed, and data were analysed according to themes of interest to the study.

Data from the postal survey were analysed using SPSS (Statistical Package for the Social Sciences) version 11.0. Comparisons between groups were statistically tested using the chi-square test and the t-test. For statistically significant results, the level of significance or p-value is specified as $p < 0.05$ or $p < 0.01$. Non-significant results, those with a p-value > 0.05 , are denoted by the letters NS. For various reasons, respondents did not complete every question included in the postal questionnaire. Therefore, most variables have a small number of missing values; these have been excluded from the analysis.

3. Results

Data from the focus groups, semi-structured interviews, and postal survey are presented simultaneously under the relevant themes of the study. Where appropriate, results are presented separately for GPs in the North and the South. Because of the different health care systems in the North and the South, the structure of GP care differs between the two jurisdictions, and in some instances direct comparisons were not appropriate.

3.1 Participation and response rates

Between May and July 2002, two focus groups and 15 semi-structured interviews were conducted with GPs as part of the first phase of the study. One focus group was carried out with a group of five Dublin-based GPs, the second was carried out with five GPs based in Co. Westmeath and Co. Offaly. Of the 15 semi-structured interviews conducted, four took place in Co. Dublin, three in Co. Mayo, two in Co. Galway, and two in Co. Derry. The remaining four interviews took place in Co. Antrim, Co. Down, Co. Kildare, and Co. Tyrone. Thus, 11 semi-structured interviews were undertaken in the South and four in the North.

Of the 1,204 GPs surveyed by post, as part of the second phase of the study, 14 replied stating they were not currently in general practice and were therefore excluded. Of the remaining 1,190 GPs, 679 returned a completed questionnaire giving a response rate of 57.1%. The response rate was similar North (55.0%; 331/602) and South (59.2%; 348/588).

In the third phase of the study, carried out between May and August 2003, 14 semi-structured interviews were conducted. Of these, three interviews were conducted in Co. Cork, two in Co. Derry, two in Co. Longford, two in Co. Tyrone, and two in Co. Wexford. The remaining three interviews were conducted in Co. Armagh, Co. Galway, and Co. Westmeath. Thus, during this phase of the study nine interviews were conducted in the South and five in the North.

Table 1 describes the socio-demographic and practice characteristics of GPs participating in the postal survey. There were significant differences between GPs in the North and the South. Some differences were expected given the different health care systems in place. These characteristics were used to explore differences in GPs' practices.

Most GPs were male, both North and South. GPs in the North were, however, slightly younger than those in the South. Over 90% of GPs in the North worked in a group practice compared to 63.5% in the South. Group practices in the North were significantly larger both in terms of the number of GPs and the practice list size. In the North, there was an average of 3.8 GPs in each group practice compared to 3.1 in the South ($p < 0.01$). The median number of GPs in group practices was three in both jurisdictions. Two-thirds of group practices in the North had a practice list size of 5,000 or more. Only one-third of practices in the South had a list size of 5,000 plus. GPs in the South were more likely to be working in an urban practice.

Almost all GPs in the North said their practice was computerised, compared to 71.4% of respondents in the South. GPs in the North were more likely to be working in a training practice or a practice employing a practice nurse.

The percentage of male GPs surveyed was similar to that reported in an ICGP survey of GPs in the South (67% versus 70%).¹¹ Younger GPs appear to be under-represented as only 43% of those surveyed were under 45 years of age, while in the ICGP survey 54% of GPs were 45 years of age or under. However, this survey was conducted in 1997, so differences may reflect actual changes in the age composition of GPs. The ICGP also reported that 51% of GPs in the South worked in single-handed practices. However, only 36.1% of GPs in the postal survey said their practice was single-handed.

Table 1: Socio-demographic and practice characteristics of GPs participating in the postal survey

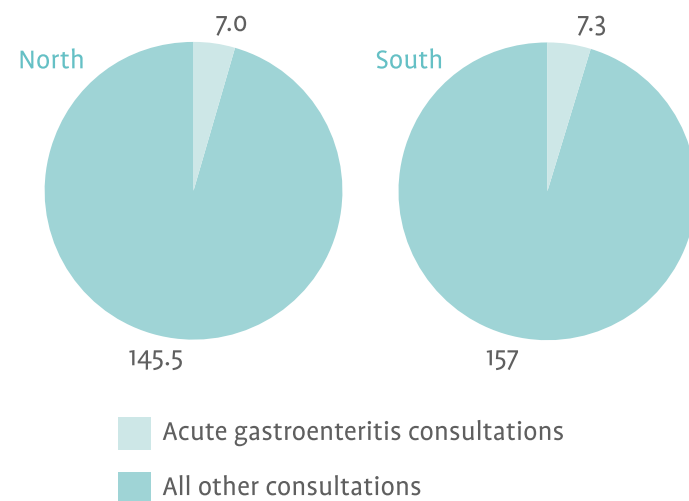
Characteristic	North (N=331) %	South (N=348) %
Sex of GP		
Male	65.8	67.1
Female	34.2	32.9
Age of GP (years)†		
25-34	11.6	10.6
35-44	41.9	32.5
45-54	35.3	39.7
55+	11.2	17.2
Practice type‡		
Single	8.2	36.1
Group	91.8	63.9
Single practice list size		
<2,500	85.1	74.8
2,500-4,999	14.8	23.5
5,000+	-	1.7
Group practice list size‡		
<2,500	2.7	31.8
2,500-4,999	32.0	34.6
5,000-7,499	32.3	22.0
7,500+	33.0	11.7
Practice location‡		
Urban	32.2	45.3
Rural	38.3	29.9
Mixed	29.5	24.7
Computerised‡	99.4	71.4
Practice nurse‡	94.8	66.6
Training practice‡	34.0	20.9
†P-value <0.05		
‡P-value <0.01		

In the North, the percentage of male GPs in the survey (66%) was identical to that in the general GP population (Personal communication, Central Services Agency (CSA)). Younger GPs in the North were slightly over-represented. The CSA report 46% of GPs being under 45 years of age, while in the survey 53% were under 45 years. Only 6% of GPs are known to be working in single-handed practices, and only 8% of those surveyed described their practice as single-handed.

3.2 Acute gastroenteritis consultations

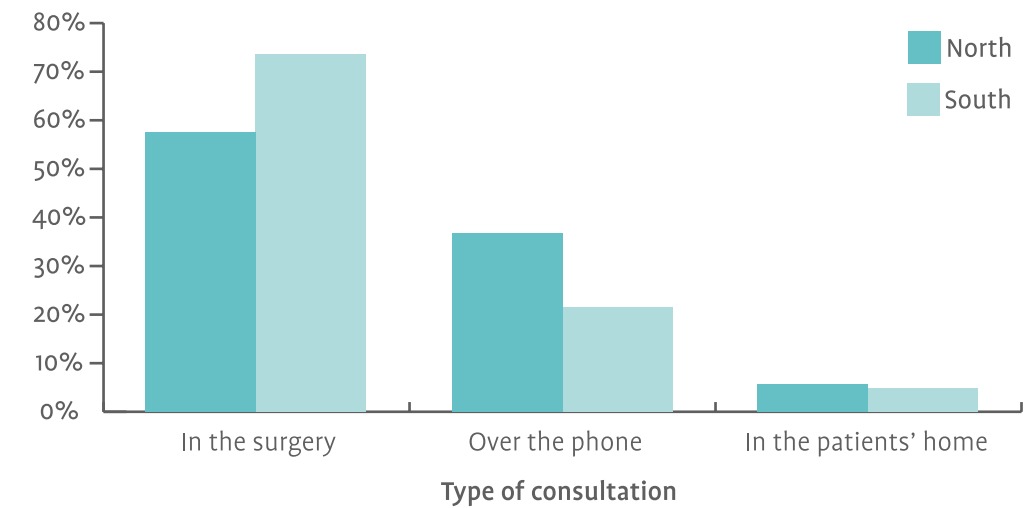
GPs reported an average of 158 consultations in the 7 days prior to completing the postal questionnaire. (GPs were asked to provide a rough estimate of the number of consultations). On average, 7 of these were acute gastroenteritis consultations, accounting for 4.5% of all consultations (Figure 1). The median number of acute gastroenteritis consultations was five (inter-quartile range: three to nine).

Figure 1: Average number of consultations in the seven days prior to completing the questionnaire, North and South



Most acute gastroenteritis consultations took place in the surgery (Figure 2). Acute gastroenteritis consultations accounted for 3.6% of all surgery consultations. The average number of surgery consultations for acute gastroenteritis was significantly higher in the South (5.2) than in the North (4.0). In the North, a greater number of consultations took place over the telephone, 2.5 compared to 1.7. When taking into account this jurisdictional difference, no other socio-demographic or practice characteristic was significantly associated with the distribution of consultations in each category.

Figure 2: Percentage of acute gastroenteritis consultations in the surgery, over the telephone, and in the patient's home, North and South



In the focus groups and semi-structured interviews, GPs said that the greatest proportion of acute gastroenteritis consultations were with children and younger adults. Toddlers (over the age of one) consulted frequently, while infants were seen less often.

“Gastroenteritis is one of the things we get asked about a lot, especially in kids.”

“Gastroenteritis is common in young children. It’s an important paediatric problem.”

3.2.1 Factors seen as influencing the decision to consult a GP

Parental experience was seen as an important factor in determining whether or not children with acute gastroenteritis consulted a GP. This was often regarded as more important than severity of illness in influencing the decision to consult a GP. As one GP commented:

“More experienced parents hold off bringing them in. They would only bring them in if they thought the child was dehydrated.”

Work and employer requirements were seen as an important reason for adults seeking medical care.

“Adults come in fairly quickly if they’re working.”

“It’s often employer driven. If they’re allowed to self-certify, they wouldn’t come in, and justifiably so.”

GPs also cited education and social support as factors influencing the decision to consult:

“Some people are better educated than others and know how to deal with things.”

3.2.2 Seasonal variation in the number of consultations

GPs did not report any discernable seasonal trends. Small community outbreaks of acute gastroenteritis were seen as common, but they did not always occur at the same times each year:

“You may see a lot of people over a number of weeks and then very little for a while but you don’t see more at the same time every year. There doesn’t seem to be any real pattern.”

A number of GPs commented on a recent increase in acute gastroenteritis consultations. They attributed this to the increased prevalence of Norovirus—also referred to as the winter vomiting bug:

“This winter vomiting virus, there’s been a lot of it about. We’re now in May and it’s still the winter vomiting virus we’re seeing.”

3.3 Fluids and rehydration

As expected, the mainstay of treatment was fluid replacement. In the postal survey, 94.2% (629/668) of GPs said they would advise the vast majority of patients with symptoms of acute gastroenteritis to take extra fluids.

While extra fluids were generally advised, oral rehydration solutions were only prescribed if symptoms were severe, and if the patient was considered to be at risk of, or suffering from, dehydration. The majority of GPs recommended the continued feeding of children during illness.

Educating parents about fluid intake was central to any paediatric consultation. Parental experience was taken into account when giving advice:

“If an inexperienced parent comes in, the first piece of advice is really about the importance of rehydration. I reassure them that solids are really not the most important thing at the moment, and I explain the signs of dehydration to look out for.”

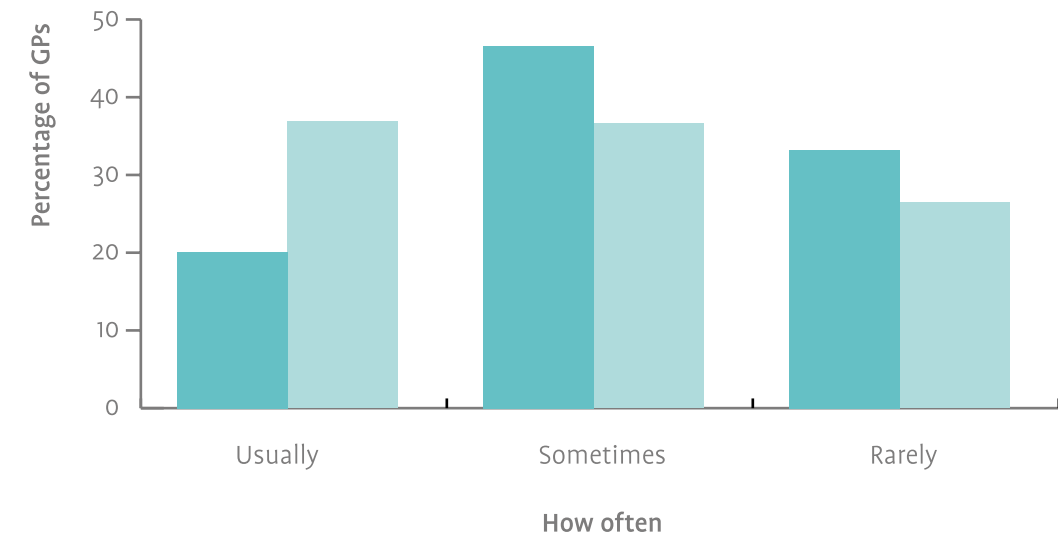
“More experienced parents know the general principles of fluids and other things like that. They also have a much better idea of what signs to look out for as signs of dehydration. I might give them more ideas for how to keep fluids down.”

3.4 Anti-diarrhoeal agents

The advice GPs gave to patients about the use of anti-diarrhoeal agents varied considerably from GP to GP (Figure 3). Overall, GPs in the North prescribed anti-diarrhoeals to patients less often than GPs in the South.

In the South, younger GPs (those <45 years) were significantly less likely than those 45 years and over to report that they usually prescribed anti-diarrhoeals to patients [28.0% (42/150), compared to 43.8% (85/194), $p < 0.01$]. Among GPs under 45 years, females were less likely than males to usually prescribe anti-diarrhoeals [20.3% (15/74) compared to 46.1% (35/76), $p < 0.05$]. Similar age trends were observed in the North, however age and sex differences were not significant. No other socio-demographic or practice characteristics were associated with prescribing anti-diarrhoeals.

Figure 3: How often GPs prescribed anti-diarrhoeals to adult patients presenting with acute diarrhoea, north and South



Anti-diarrhoeal agents were more likely to be prescribed if the episode of diarrhoea was prolonged, or if the patient was distressed:

“In the older age groups, I will be tempted to give them something to help ease the cramps and the diarrhoea.”

“If someone is distressed I may give an injection to stop the pain and vomiting, and prescribe anti-diarrhoeal tablets.”

GPs said that some patients put pressure on them to prescribe anti-diarrhoeals:

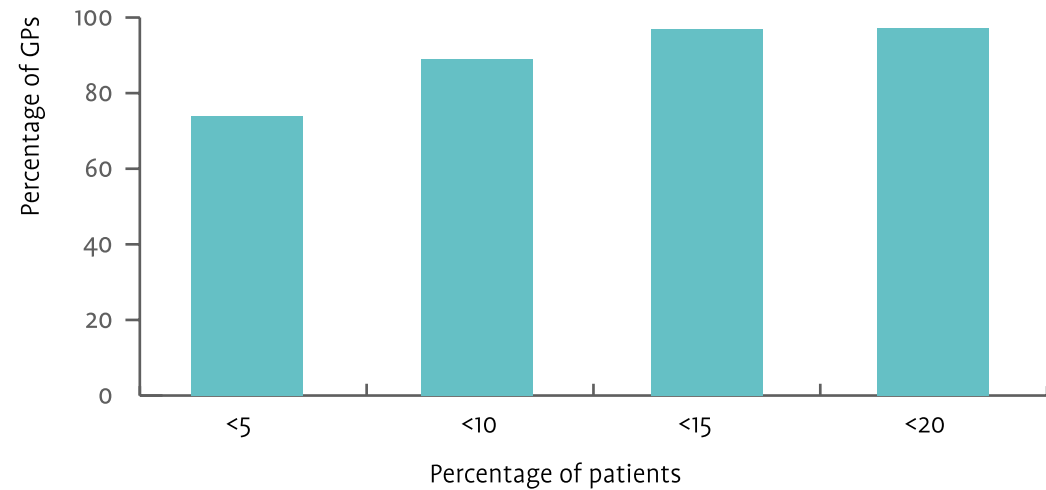
“There are some who won’t accept the message that it needs to take its course.”

“We do have people asking for anti-diarrhoea medications. And we do sometimes have to prescribe them.”

3.5 Antibiotics

Antibiotics were not usually prescribed for acute gastroenteritis. Over 70% of GPs said they prescribed antibiotics to less than 5% of patients presenting with symptoms of acute gastroenteritis (Figure 4). Almost 90% of GPs prescribed antibiotics for less than 10% of patients. Antibiotic prescribing practices were not associated with any socio-demographic or practice characteristics.

Figure 4: Percentage of acute gastroenteritis patients prescribed antibiotics by GPs



In most instances, GPs said they only prescribed antibiotics if a specific bacterial infection had been confirmed by microbiological testing. Moreover, a microbiologist was often consulted before making the prescription:

“Antibiotics, I don’t use them at all. If a bacterial infection is confirmed. I might consider giving an antibiotic but not usually.”

“99.9% never. Only rarely if someone has something that is very persistent and you get a culture back that shows something.”

Even when a bacterial infection was confirmed, antibiotics were not always prescribed. Quite often the patient had recovered and was not in need of further treatment:

“If it comes back positive I may treat with antibiotics but at that stage people are starting to feel better and don’t need any antibiotics.”

3.6 Potential exposures

GPs frequently asked acute gastroenteritis patients about the consumption of unsafe foods, recent foreign travel, and contact with other ill persons:

“In adults, it’s important to find out if they’ve been abroad, and to ask about close contacts. I would also ask if they’ve eaten anything funny or unusual or different.”

“You have to ask them what they ate over the last 24 or 48 hours. Did they eat anything strange or different from everyone else in the family? Did they cook anything that was a bit suspect?”

GPs felt that most patient reports of food poisoning were unfounded:

“People come claiming they have food poisoning and comment on the fact that everyone ate the same meal and I was the only one who got sick, and then you explain that it might not be food poisoning.”

“When a patient comes in I have to tell them that they are more likely to have picked it up from someone else. Mostly it’s not genuine food poisoning.”

Food poisoning was given more credence if symptoms had commenced rapidly after eating the ‘suspect’ meal. GPs viewed certain foods more suspiciously, for example, seafood or food cooked on a barbecue:

“You’d be more aware of certain foods like shellfish, for example. Time has also got a lot to do with it. If they get sick within a few hours of eating a specific food, that would lend a lot more credit to the fact that it may be food poisoning— that’s my understanding of it anyway.”

“I think genuine food poisoning is illness onset within a few hours of eating. I don’t give very much credit to “I think it tasted a bit funny”. I would take more notice if someone had meat off a barbecue, and they knew it might have been a bit undercooked.”

“If it was something like seafood chowder and they were sick within a half an hour then you would be more sure that it was food poisoning.”

GPs noted that patients often assumed food poisoning was something acquired only from food consumed outside the home:

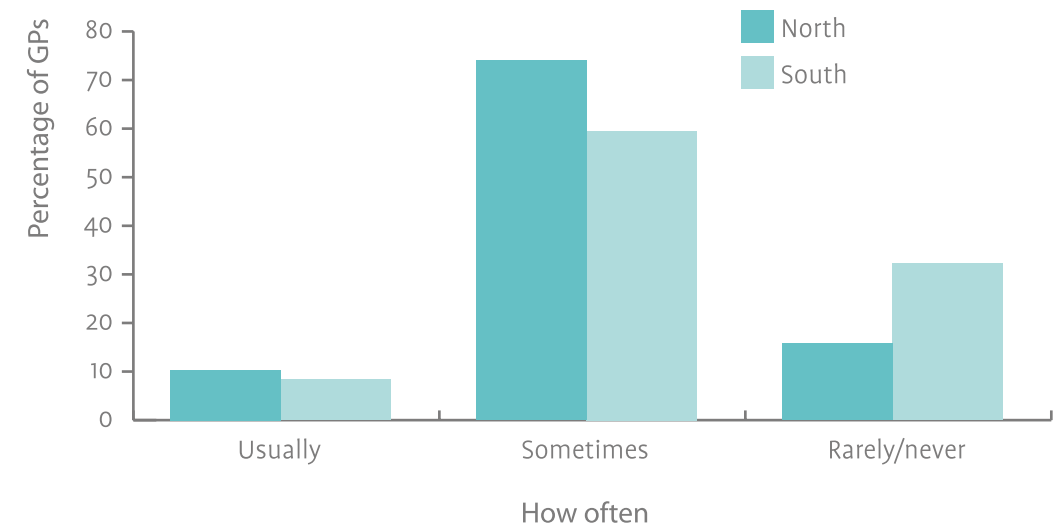
“Not quite understanding where they could have got food poisoning from they would say, “I haven’t been out anywhere in the past few days”; not realising that they probably got it at home.”

“They don’t think of their own food handling, their own fridge, or their own handling of food.”

3.7 Stool sampling practices

In the postal survey, only 10.3% of GPs in the North and 8.3% of GPs in the South said they would usually ask acute gastroenteritis patients to submit a stool sample (Figure 5). GPs in the North were significantly more likely to usually or sometimes ask patients to submit a sample.

Figure 5: How often GPs asked patients with symptoms of acute gastroenteritis to submit a sample, North and South



Both North and South, female GPs were significantly more likely than male GPs to usually or sometimes ask patients to submit a stool sample [North: 92.0% (104/113) compared to 80.6% (175/217) $p < 0.01$ and South: 77.2% (88/114) compared to 63.1% (147/233) $p < 0.01$]. In the South, age was also significantly associated with usually or sometimes asking patients to submit a stool sample with younger GPs (<45 years) being more likely to do so [74.0% (111/150) compared to 63.1% (125/198), $p < 0.05$]. No other socio-demographic or practice characteristics were associated with stool sampling practices.

GPs agreed that microbiological investigation was unnecessary for most patients presenting with acute gastroenteritis:

“We don’t do stools on everybody who comes in with vomiting and has a bit of diarrhoea. I don’t think we possibly could.”

“The vast majority who come in with gastro are small kids and we know that 90 something percent is a virus, so what’s the point.”

3.7.1 Criteria for requesting a stool sample

GPs said they were selective about when they requested a stool sample. Patient history was crucial in informing this decision:

“You’re going to hopefully only send samples to the lab if you feel maybe it’s liable to yield something.”

“You’re very selective about what you’re sending. You’ll have a strong suspicion that it’s not just a 24-hour bug.”

“History is everything. You take a history of the patient and you’ve a good idea whether they need a stool sample test or not.”

GPs often requested stool samples so that ‘important’ pathogens, with serious implications for the patient and public health, could be ruled out:

“One of the main things is to make sure that there isn’t something there that’s going to create a public health problem.”

A number of factors influenced the decision to request a stool sample including:

- prolonged or persistent symptoms
- frequent or severe symptoms
- recurrent symptoms
- recent foreign travel
- suspected food poisoning

Most episodes of acute gastroenteritis were expected to last 48 to 72 hours. If a patient was ill for more than three days, GPs said they were more likely to consider requesting that a stool sample be submitted:

“If it persists, if you saw someone on a Monday and they were back on Friday and they were still having symptoms, then yes you would send samples off.”

“My sort of system on this would be if it is going on more than three days.”

The frequency or severity of symptoms was an important factor, regardless of the duration of symptoms:

“It depends if they have frequent diarrhoea. If you are having four or five attacks a day, then no I wouldn’t send off a stool sample. But if you were having 10 bouts a day or there was blood in the diarrhoea, then yes you would send samples off regardless.”

“If a patient was very ill, and when I say very ill I mean having significant illness. The degree of illness will determine whether to send a stool or not.”

GPs said they would be much more likely to consider submitting a sample if the patient reported recent foreign travel:

“I suppose I am more concerned and more likely to send off a stool sample if they’d come back from abroad.”

Most GPs said they would always request a stool sample to be submitted if they had a strong suspicion that their patient’s illness was due to food poisoning:

“[If they say] ‘I was at a wedding and three out of five of us got sick in the next 24 hours,’ and then you discover that they all had the Pavlova, I’d definitely ask for a sample.”

The potential for legal action sometimes played a role in this decision.

“I would always ask them to submit stools if they were suspicious about how they became ill. Asking people who are suspicious in some way is important for medico-legal reasons— if they want to take a case against someone.”

“If they come in and say ‘listen I was at the [...] on the weekend and I’ve a terrible dose and I’m going to sue them’, so then your ears prick up and you sort of say ‘Well OK we better do the stools’, which of course is for the wrong reasons.”

Only a small number of GPs said they would request a stool sample if the patient was working in a high risk area, such as the food industry:

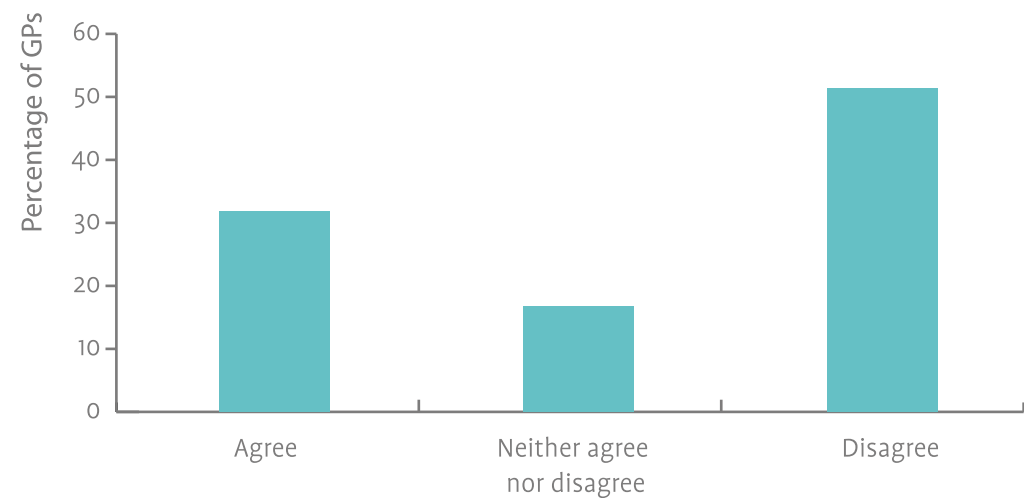
“If a patient is working in the food industry, it’s important to send in a stool or if the child is attending a crèche or the mother is ill and has children in a crèche.”

3.7.2 Getting patients to submit stool samples

Approximately one-third of GPs agreed with the statement that ‘Getting patients to submit a stool sample is difficult’ (Figure 6).

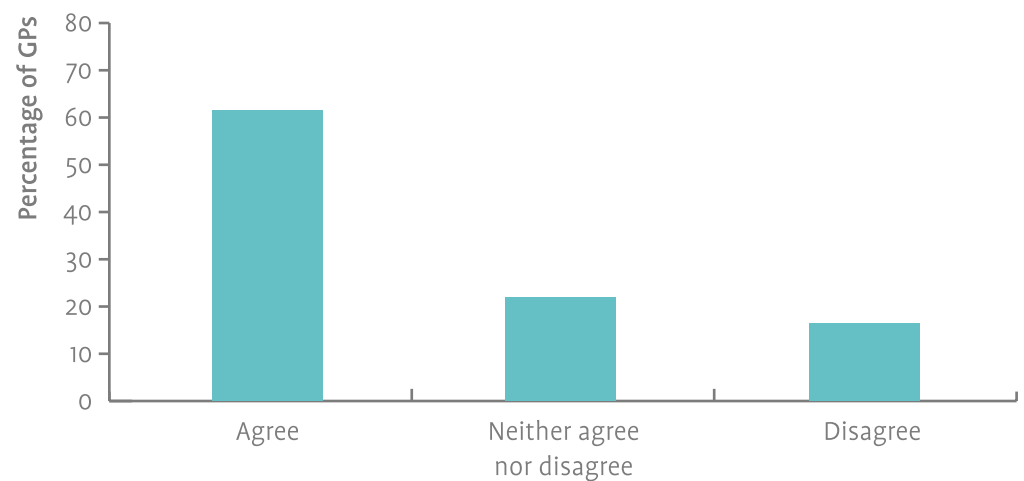
In the South, GPs who rarely or never asked patients to submit a stool sample were significantly more likely to agree with this statement, 45.9% (51/111) compared to 28.9% (67/232), $p < 0.01$. In the North, GPs under 45 years of age were significantly more likely to agree with this statement, 37.0% (64/173) compared to 20.1% (30/149), $p < 0.01$. No other socio-demographic or practice characteristics were associated with agreeing with this statement.

Figure 6: ‘Getting patients to submit a stool sample is difficult’



The majority of GPs agreed that ‘Appropriate advice on how patients should collect stool samples is hard to find’ (Table 7). This view was shared by most GPs, regardless of how often they asked patients to submit stool samples. Agreement with this statement was significantly associated with age, with younger GPs being more likely to agree, 69.3% (223/322) compared to 54.4% (187/344), $p < 0.05$.

Figure 7: ‘Appropriate advice on how patients should collect stool samples is hard to find’



GPs said it was essential to provide patients with simple advice on how to submit a stool sample. This included advice on how to provide the sample, how much was needed, and how the sample should be stored:

“You’ve got to take time or the nurse has got to take time to explain that this is what we want.”

“Samples can arrive in an entirely unsuitable variety of containers . . . you’ll get them in jam jars, you’ll get them in empty milk cartons, you’ll get them in margarine boxes.”

Inevitably, some patients left samples in the surgery at unsuitable times, for example on Friday afternoons. This caused storage and transportation problems for GPs:

“It may suit the patients to leave it in at four on a Friday afternoon but that’s no good to the lab.”

GPs said some patients were reluctant about submitting a stool sample.

“You can give them all the bottles in the world and spatulas in the world and all the instructions in the world but very often they just don’t want to do it.”

“The practicalities of actually getting a stool sample if you’re feeling sick with diarrhoea, in the patient’s eyes the bother of doing it, it may not be worth it.”

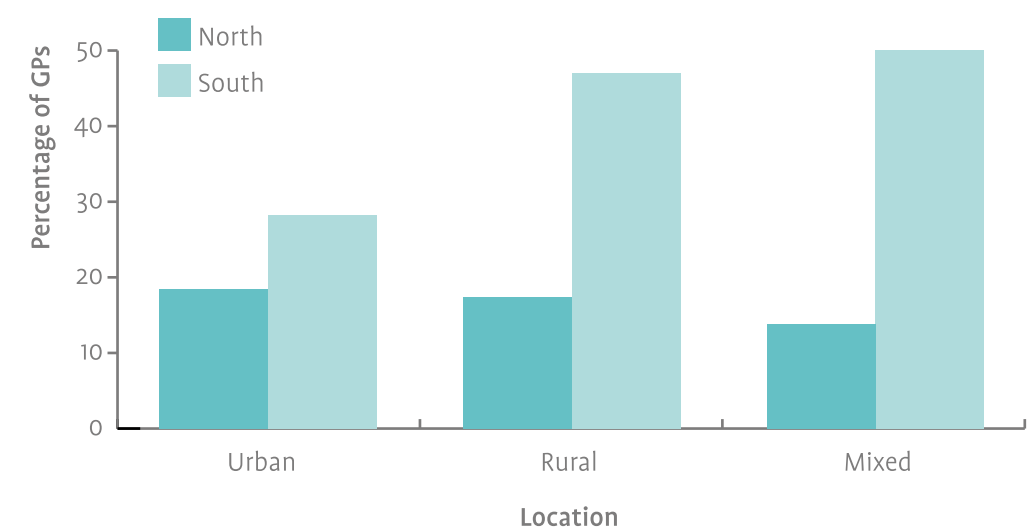
GPs said that patients were more likely to submit a sample the more ill or more worried they were.

3.7.3 Transporting stool samples to the laboratory

Overall, 38.7% (134/346) of GPs in the South agreed with the statement that ‘Getting stool samples to the lab is a difficulty for me and/or my patients’. This compares to only 16.9% (55/325) of GPs in the North ($p < 0.01$).

The percentage of GPs agreeing with this statement was similar for all GPs in the North regardless of the location of their practice. In the South, GPs located in a rural or mixed urban/rural area were significantly more likely to agree with this statement than those in an urban area ($p < 0.01$) (Figure 8).

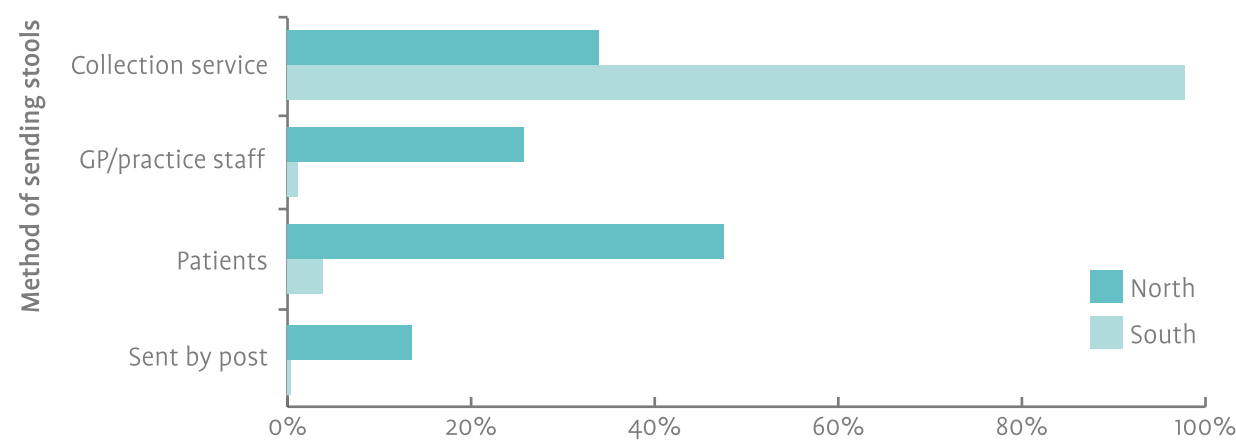
Figure 8: Percentage of GPs in urban, rural, and mixed practices who agreed with the statement that ‘Getting stool samples to the lab is a difficulty for me and/or my patients’, North and South



Both North and South, GPs were more likely to agree with this statement if they rarely or never asked patients to submit stool samples compared to those who usually or sometimes asked patients, 31.4% (16/51) compared to 14.2% (39/274) in the North, $p < 0.01$ and 50.0% (56/112) compared to 33.3% (78/234) in the South, $p < 0.01$.

The vast majority of GPs in the North said a collection service delivered stool samples from their practice to the laboratory. In the South, GPs were significantly more likely to deliver samples to the laboratory themselves or have the patient or someone else working in the practice (e.g. a practice nurse) deliver them (Figure 9). In the South, 13.6% of GPs reported sending stool samples to the laboratory by post compared to just one GP in the North.

Figure 9: How GPs sent samples to the laboratory, North and South



*Only GPs who usually or sometimes asked patients to submit a stool sample were included, and some GPs had more than one method of getting stool samples to the laboratory.

The location of the practice (urban or rural) and the distance from the laboratory to the practice were both significantly associated with the method used to transport samples.

In the South, only 23.9% (16/67) of GPs located twenty miles or more away from the laboratory asked patients to deliver the sample themselves compared to 56.5% (65/115) of GPs located less than five miles away, 56.5% (13/23) located between five and nine miles away, and 58.6% (17/29) located between 10 and 19 miles from the laboratory ($p < 0.01$).

In the South, sending stool samples to the laboratory by post was significantly associated with both the degree of urbanisation and the distance between the practice and the laboratory. GPs based in rural (28.0%; 21/75) or mixed urban/rural practices (16.4%; 9/55) were significantly more likely than those in urban practices (2.0%; 2/102) to send stool samples by post ($p < 0.01$). Eighty-one percent (80.6%; 25/31) of those sending stool samples by post were based in practices located twenty miles or more from the laboratory they used ($p < 0.01$).

There was no significant association between the degree of urbanisation or the distance from the laboratory and the use of a collection service or samples being delivered by the GP or other practice staff.

Collection services in the North called to general practices once or twice daily, and GPs found this service satisfactory. GPs in the South said that the lack of collection service resulted in difficulties in getting stool samples to the laboratory:

“There isn’t any collection service so I would usually bring them into the lab myself or someone else in the practice will bring them in. There is usually someone out of here going in that direction.”

“I was working in a family practice with four GPs and invariably one person would be going into [...] once a day and that’s how samples got to [...]”

“The family bring it into the hospital, there’s no point them dropping a sample into me.”

The practice of asking patients to deliver samples themselves raised some concerns among GPs:

“I wouldn’t encourage patients to bring them in themselves. I have an issue with patients bringing clinical samples in the front seat of the car. What if children got a hold of them? Children like messing with things. If the bottle was opened or if the bottle broke?”

“The traffic and the parking. You can’t get in or out of the place. It’s so difficult for parents to bring [a stool sample] in especially if they have a sick child.”

These ad hoc ways of getting samples to the laboratory did lead to concerns about the correct storage of samples and delays in getting samples to the laboratory:

“Sometimes if a patient drops a sample in on a Friday and nobody is going in the direction of the lab then it’s there for the weekend.”

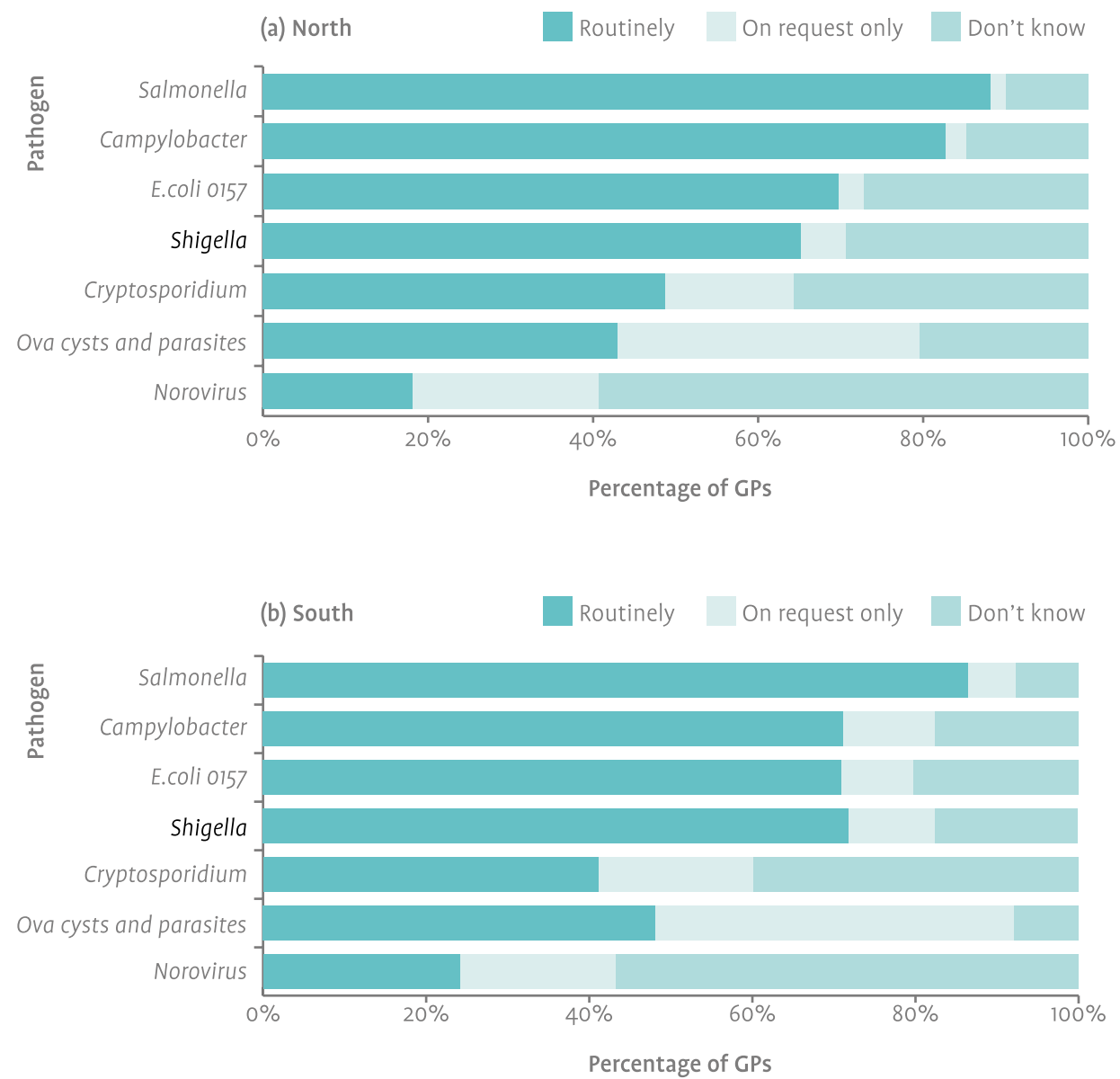
“I’m not sure of the actual bacteriology of stool samples, whether they last over night under refrigeration.”

“We don’t have a lab nearby so stools from here have to be sent to [...] for testing. They go at the end of each day and I would have serious doubts over the sensitivity of the test it takes them so long to get there and to get tested.”

3.7.4 Laboratory testing of stool sample

The majority of GPs thought *Salmonella*, *Campylobacter*, and *E. coli* O157 were tested for routinely when a stool sample was submitted to their local laboratory (Figure 10). In the North, 42.9% of GPs thought ova cysts and parasites were routinely analysed; the corresponding figure in the South was 48.1%. A large proportion of GPs did not know if faecal specimens were routinely examined for SRSVs (or Norovirus).

Figure 10: Whether GPs thought certain pathogens were tested for routinely or on request only when submitted to their local laboratory, North and South*



Some GPs were unclear about what tests were routinely performed when samples were submitted to their local laboratory.

“I only heard recently that our laboratory in [...] hospital have said that they won’t test for parasites on any stool sample unless the request clearly indicates that the person has engaged in foreign travel.”

“I was fascinated to hear that requests for viral tests on stool samples had gone rocketing upwards and apparently it was due to the winter vomiting bugs in the hospitals. I didn’t even know we could actually ask them to do viral testing.”

GPs did find laboratories to be very helpful, with most contacting them by telephone if a significant pathogen had been identified.

“They will always notify by phone if it’s something like Salmonella or E. coli or if it’s a child who is unwell.”

“Once the samples go off the results are usually back in about two or three days, usually two days. If something shows up like Salmonella to be honest the lab is very good at contacting us.”

“If I get a positive he normally rings me and he’d even ring me if he thinks it’s going to be a positive.”

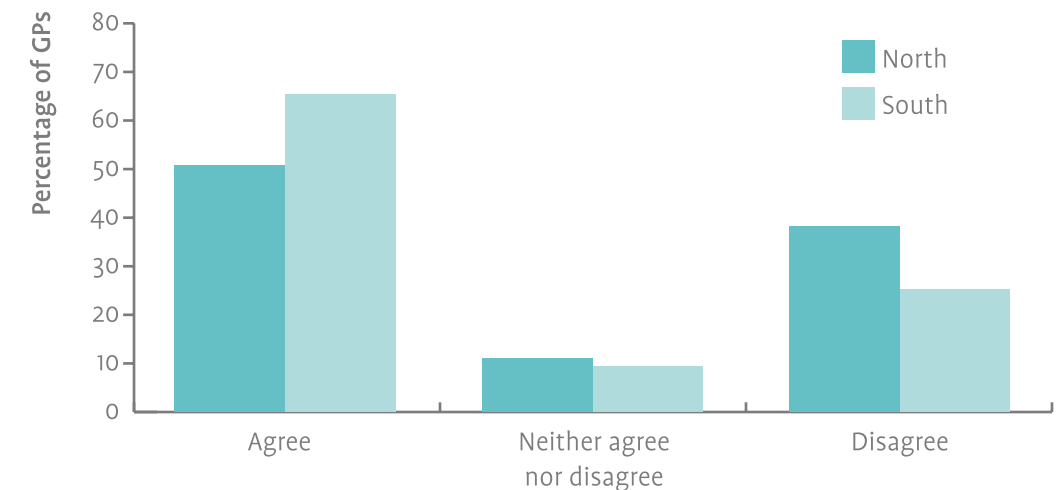
“Three to four days in general, I would sometimes get a phone call if something was very nasty, very positive.”

3.7.5 Stool samples and patient management

Most GPs, North (50.8%) and South (65.3%), agreed with the statement that ‘stool sample results seldom impact on my management of patients’ (Figure 11). GPs in the South were significantly more likely to agree with this statement.

GPs who rarely or never asked patients to submit a stool sample were significantly more likely to agree, 86.3% (44/51) compared to 44.2%; (121/274) in the North, $p < 0.01$ and 84.7% (94/111) compared to 56.0% (130/232) in the South, $p < 0.01$.

Figure 11: ‘Stool sample results seldom impact on the clinical management of patients,’ North and South



Commenting on the role of stool sampling in patient management, one GP said:

“From an epidemiological point of view, there will be information coming from the cultures that might be of interest. But for the actual clinical day-to-day management, it’s not going to be a major part.”

The main reason why stool sampling seldom impacted on patient management was that most samples did not detect a pathogen:

“If you get a positive stool back, it can be important in informing the course of action, but most stools come back negative.”

Even when a positive result was obtained, the patient had often recovered by the time the result was received:

“Culturing I do very seldom. Most of the time, by the time the results come back, the person has recovered.”

“People are often getting better by the time the sample comes back showing that they have Salmonella.”

A positive stool sample was more likely to assist in the management of a patient if the patient was quite ill and had been ill for a prolonged duration of time:

“In some cases, it can be important for the management of patients, especially if it’s going on for a while.”

“It contributes little to the clinical management of the patient. Only a handful do something when it identifies something important like E. coli or Salmonella.”

“Most stools don’t have a positive result but the serious ones come back positive and they are the important ones.”

However, even if a patient was very ill, many of the important management decisions had often already been made in the absence of any laboratory results:

“If they are that sick with Salmonella, you usually suspect it. They are usually quite sick and then the decision is usually can this person be managed at home or do they need to go to hospital. That is a clinical decision rather than the one made as the result of a sample.”

“You can wait five, six, seven days for a result and you can’t wait a week before you treat somebody.”

“In the end of the day you treat the patient, not the lab result. So if you’ve got a sick person you treat the sick person.”

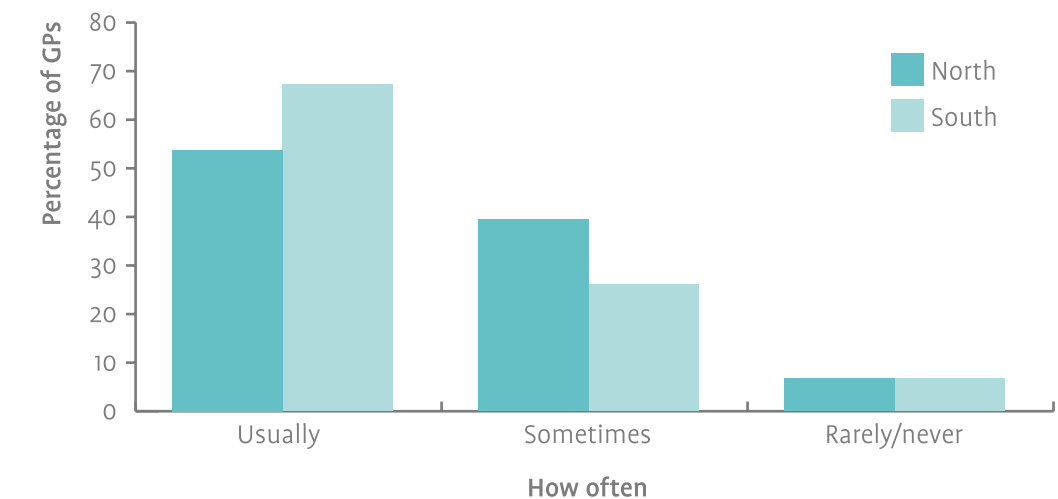
One of the main reasons for requesting a stool sample was the potential public health impact:

“If somebody tells me, “Oh I definitely think this is food poisoning from the local restaurant last Thursday”, I tend to do a stool sample, in case there’s a public health issue and that’s all that’s for. To me that’s not going to improve their treatment.”

3.8 Advice to patients with acute gastroenteritis

In the postal survey, most GPs said they usually gave advice on hand washing and hygiene to patients presenting with acute gastroenteritis (Figure 12). GPs in the South were significantly more likely than GPs in the North to report giving this advice. In the North, GPs not employing a practice nurse reported giving advice on washing hands significantly more often. However, only 17 GPs in the North were without a practice nurse.

Figure 12: How often GPs gave advice on hand washing and hygiene to patients presenting with acute gastroenteritis, North and South



The main reason given for not providing advice on hand washing was that the importance of washing hands was assumed to be common knowledge and that patients would be offended if given this type of advice:

“I don’t really advise about hand washing. I would assume that patients are aware of the importance of that.”

“Some people might think you’re assuming that they’re not doing it already.”

GPs were generally careful about how they communicated this advice:

“Yes it’s important to tell patients it’s important to wash their hands, especially in deprived areas. But it depends on the way you say it. I tell them to keep on doing what you’re doing and just to be extra careful with the hand washing.”

GPs gave advice on hand washing more frequently in paediatric cases.

“I would give patients advice on washing hands, particularly in young children. I tell them to make sure they wash their hands after using the toilet and before handling food.”

While GPs recognised the importance of safe food practices, only a few had ever given advice on food safety to their patients.

GPs explained that the amount of time available for each consultation was limited and this restricted the amount of advice and information that GPs could give:

“Here we have only 10 minutes for a consultation. Maybe it should be 15 minutes but that’s the way it is and that’s not very much time and there is only so much you can do in that time.”

GPs’ opinions differed about the usefulness of patient information leaflets. Only a small number of GPs had any leaflet relating to acute gastroenteritis at present. Leaflets offering practical advice were preferred. For example, GPs suggested the need for leaflets offering advice about how to manage symptoms or on fluid replacement:

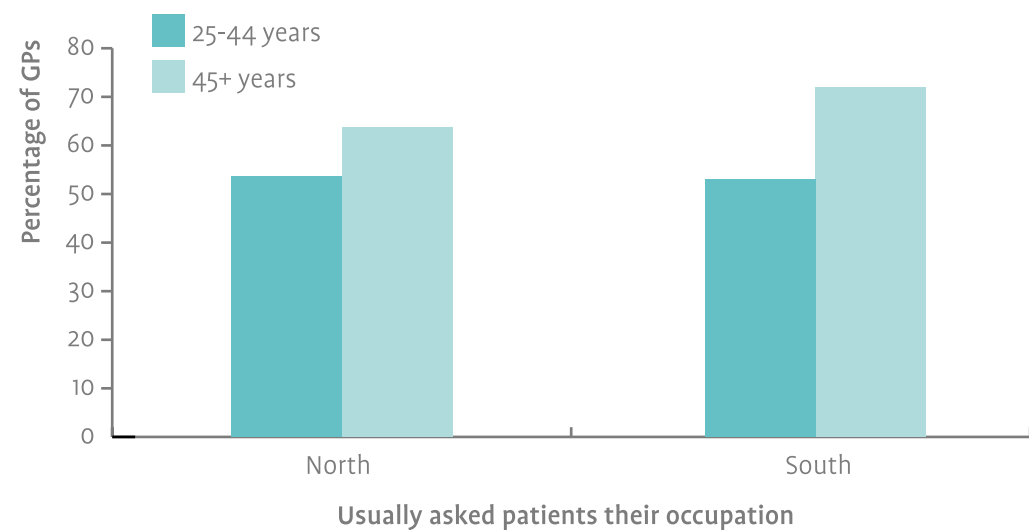
“A leaflet on fluid replacement would be useful to give to patients. Very often when parents come in they have an upset, crying child with them and it’s hard to listen to everything that I say. A leaflet advising on fluid replacement would be useful to give to them.”

Only a small number of GP thought leaflets on food safety would be appropriate to distribute in the surgery.

3.9 Advice to patients working in high-risk occupations

In the postal survey, most GPs (61.1%; 412/674) said they usually asked patients presenting with acute gastroenteritis to specify their occupation. In the South, routinely asking patients their occupation was significantly associated with age, and GPs 45 years of age and over were significantly more likely to do so (Figure 13). The proportion of GPs asking patients their occupation was higher among older GPs in the North. This, however, was not statistically significant. No other socio-demographic or practice characteristics were associated with asking a patients’ occupation.

Figure 13: Percentage of GPs North and South who usually asked patients presenting with acute gastroenteritis their occupation, by age of GP



Often a patient’s occupation was documented in their notes. However, GPs acknowledged that this may not be updated:

“We do sometimes ask and for new patients we do ask them. Trouble is, the record we have of a patient’s occupation is from when they registered and 30 years later the same occupation is still on their record. It’s not updated.”

“We know their occupation, which is useful as well but people can change occupations without letting us know so you hope you ask do you work with food.”

“I would be relying on patients themselves to mention it to me if they are working in the food industry.”

GPs commented that food workers were often aware of the risk they could pose to others if they continued to work while suffering from acute gastroenteritis. Patients often told GPs if they were working in the food sector:

“Occupation is recorded on the patient’s charts here but patients usually mention it if they are working with food.”

“Food handlers don’t work when they have gastroenteritis and both workers and employers are very OK with that. Chefs are very well trained they know more about gastroenteritis than you do.”

GPs recognised that people working with food may not always classify themselves as a ‘food worker’.

‘There are others who are you say work in an ESSO station or they help out at the bar, do snacks and sandwiches and they don’t regard themselves as a food worker.’

The majority of GPs in both the North and the South said they usually gave specific advice to food workers presenting with symptoms of acute gastroenteritis (Figure 14). A smaller proportion of GPs said they usually gave specific advice to those working with children or the elderly (Figure 15). In the South, the proportion of GPs who usually gave specific advice to food workers or care workers was significantly associated with age, with older GPs being more likely to report doing so.

Figure 14: Percentage of GPs North and South who usually gave specific advice to food workers presenting with acute gastroenteritis, by age of GP

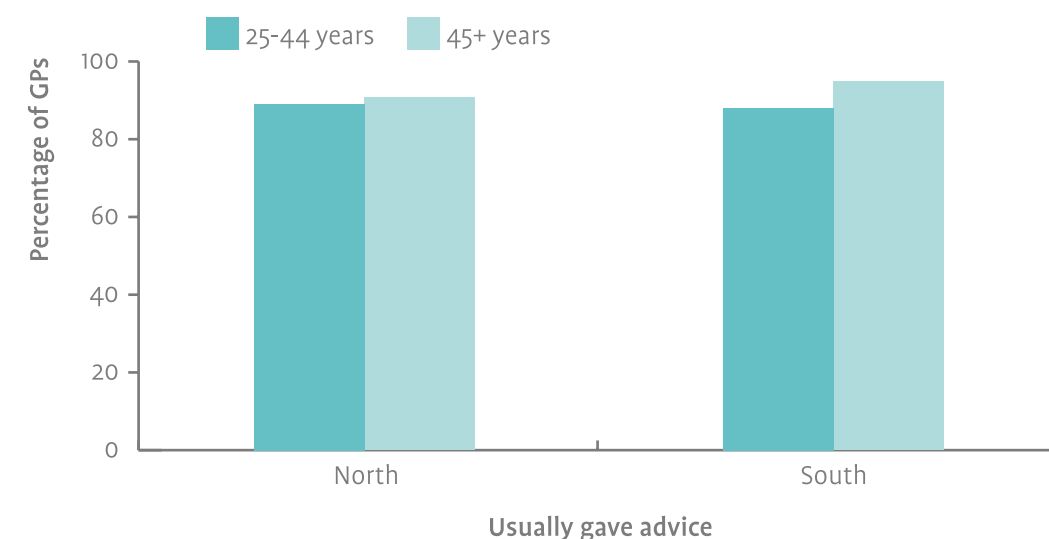
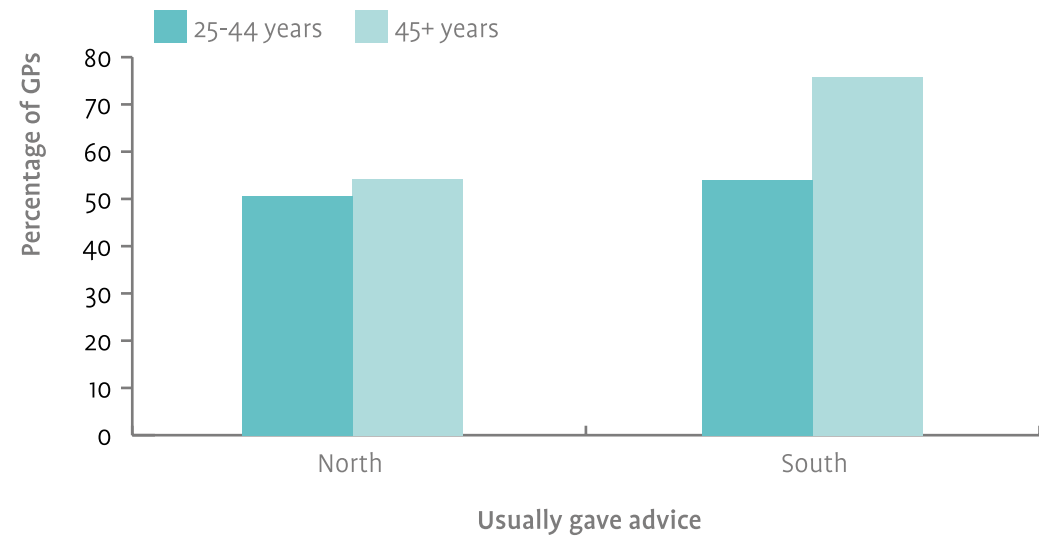


Figure 15: Percentage of GPs North and South who usually gave specific advice to care workers presenting with acute gastroenteritis, by age of GP



Most advice focused on hand washing and general hygiene:

“I explain to them about keeping their hands clean and things like that and avoiding any contact with food in particular.”

However, GPs said in most cases they were only consulted if the food worker was looking for a certificate to state that they had been ill or that they were now fit to return to work:

“They’ve made an appointment because they were off sick for two days last week and... they’re not allowed back to work until they get a certificate saying that they haven’t got diarrhoea. Now how am I going to test that? Ask the patient “when did the diarrhoea stop?” “It stopped last Tuesday doctor”, and unless they walk in covered in it it’s highly unlikely that I’m going to be able to say that it hasn’t stopped.”

A number of GPs were unsure about when to advise patients working in high-risk occupations to stay off work and for how long:

“There’s a lot of people in this area working with the elderly and I’m often asked when they should return to work after illness but I’m unsure of the guidelines or if there are any guidelines on when people working with the elderly should return to work after their illness.”

“Don’t know how necessary it would be to take time off work or whether food workers should just exercise extra precautions.”

Some GPs said they had heard of a recommendation that food workers diagnosed with *Salmonella* should remain out of work until three clear stool samples were obtained.

“It is very difficult to get people to bring in a stool sample for three days in a row. Any time we tried that you might get the first one in but it tails off fairly dramatically then, unless you really force it.”

3.10 Statutory notifications

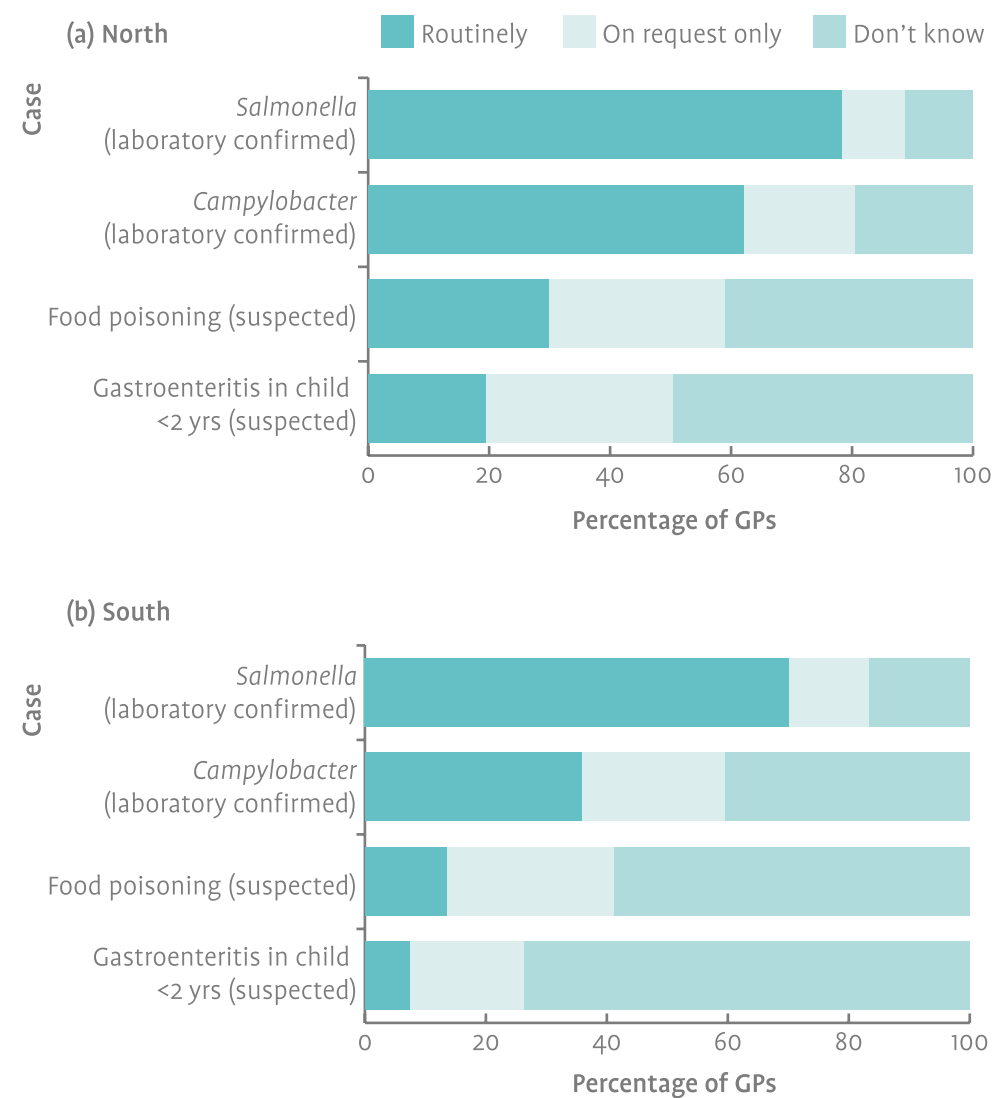
3.10.1 Laboratory confirmed and suspect cases

In the postal survey, GPs were asked if they usually notified cases of *Salmonella* and *Campylobacter* (Figure 16). While the majority of GPs said they would usually notify laboratory confirmed cases of *Salmonella*, 11.3% of GPs in the North and 16.9% in the South said they would rarely or never do so. The percentage of GPs rarely or never notifying laboratory confirmed cases of *Campylobacter* was even greater: 19.6% of GPs in the North and 40.4% of GPs in the South.

Cases of food poisoning can also be notified on the basis of clinical suspicion (without laboratory confirmation). However, less than one-third of GPs in the North and only 13.5% in the South said they would usually notify a suspect case of food poisoning (Table 5.1). Only 19.5% of GPs in the North and 7.4% of GPs in the South said they usually notified a clinically suspicious case of gastroenteritis in a child less than two years of age (Figure 5.1).

For each case specified in Figure 5.1, the percentage of GPs usually notifying was significantly higher in the North compared to the South ($p < 0.05$). In the South, GPs located in rural or mixed practices were significantly more likely than those in urban practices to usually notify a suspect case of food poisoning [4.5% (7/154) compared to 18.1% (39/215), $p < 0.01$]. No other socio-demographic or practice characteristics were associated with usually notifying cases.

Figure 16: How often GPs notified specific cases of Salmonella, Campylobacter, food poisoning (suspect), and gastroenteritis in children under two years (suspect), North and South



GPs were aware that they were not notifying as many cases as they were obliged to under current legislation:

"I felt all noble for notifying [that one case] I've probably notified one other gastroenteritis this year... but I'm probably obliged to be notifying far more."

While most cases were notified following a laboratory diagnosis, GPs were reluctant to notify cases solely on the basis of clinical suspicion:

"I suspect that we're not notifying the numbers of patients that we see, certainly anything that is identified by the lab is notified."

"I think it's important and I do notify all the time but only culture-confirmed cases."

"I do notify if it's a definite diagnosis, the only problem is I've only ever had one lab-confirmed case so the only one I've ever notified was Shigella."

GPs often had only vague circumstantial evidence on which to base a suspicion of food poisoning, and many did not consider this to be sufficient grounds for notification in the absence of laboratory tests.

"How do you tell the difference between simple gastroenteritis and food poisoning, how do you distinguish the two?"

"With food poisoning, unless we have positive samples back, it's not that simple to say if the infection's due to food."

3.10.2 Potential public health risks

GPs notified cases of food poisoning or gastroenteritis in a child under two if they considered there to be a potential public health risk:

"I suppose it's in my mind to notify things that I think might be significant for public health."

GPs said they would take notice if, for example, two or more patients presenting with a similar illness had attended the same function, or if a patient said family members or other close contacts were also ill, or if the patient's illness could be linked to a particular food or food premises:

"If a couple of people have had the same meal and the whole lot of them end up with gastroenteritis then that would be fairly straightforward I would notify them as food poisoning."

Severity of illness was also an important factor, and GPs said they would be more inclined to notify patients with severe symptoms.

3.10.3 Laboratory reporting

GPs questioned why it was necessary for both GPs and laboratories to report on the same gastrointestinal infections. Some GPs felt this 'dual notification system' was unnecessary, and for this reason, decided not to notify cases identified by the laboratory:

"Salmonella is automatically notified by the lab, we would only notify occasionally because the lab does it automatically so it's a bit of duplication."

"At the minute, I have been leaving the notifying to the labs I don't report any samples directly, I think the labs do that."

"Anything that's of significance would be picked up by the lab and again I think that's the way it should be."

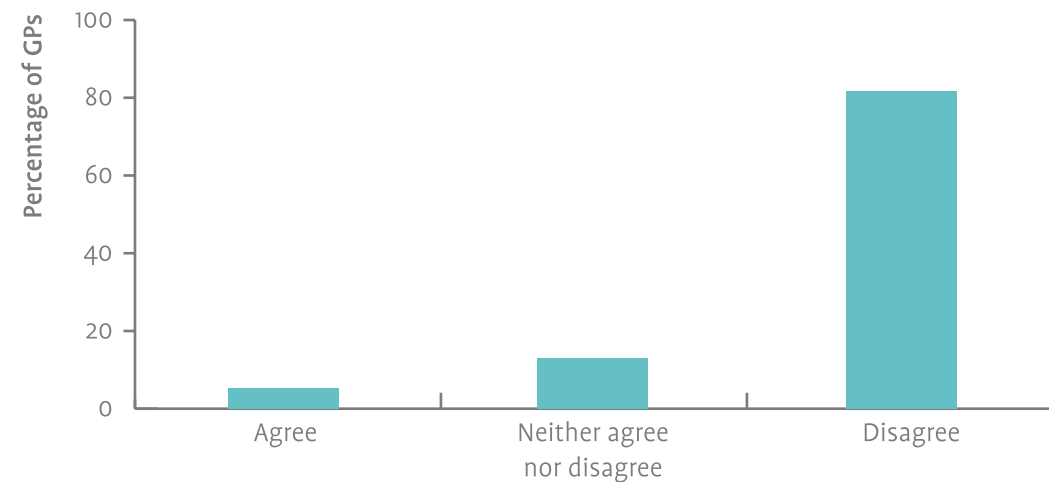
One GP commented that asking GPs to notify laboratory-confirmed cases simply added an extra and unnecessary link to the reporting chain:

"They will notify public health directly from the lab if they isolate a significant organism, and I think that is the most reliable way because if they are to notify me to say someone has got Salmonella and then it's up to me to notify public health, that's another link in the chain which is totally unnecessary and is very liable to result in breaks in that chain."

3.10.4 Perceived benefits from notification

Few GPs agreed with the statement that ‘I don’t see any real benefits to notifying infectious diseases to public health’ (Table 17).

Figure 17: ‘I don’t see any real benefits to notifying infectious diseases to public health’



However, GPs did not see any benefit in notifying all cases of food poisoning or gastroenteritis in children under two:

“If you notify mild gastroenteritis what are they going to do about it? Is it going to change anything? I doubt if it would.”

“Notifying all cases is not beneficial, maybe you get some nice statistics out of it but it’s not of any real benefit.”

“Others don’t notify so why should I, what difference is my one patient going to make if no one else is notifying?”

Consulting a GP was not seen as a reliable proxy measure for severity of illness. GPs did not, therefore, consider it necessary or appropriate to notify patients solely because they had sought medical care. One GP asked:

“Why notify the one that comes in because they’re worried and not the other ten that stay at home because someone told them not to worry?”

When commenting on the notification of gastroenteritis in children under two, GPs said that mild episodes of diarrhoea and vomiting were common in young children, and it was difficult therefore to define infectious gastroenteritis in small children:

“You get kids with vomiting and diarrhoea for 12 hours is that gastroenteritis? If they’re vomiting for 6 hours is that gastroenteritis? If there’s vomiting for 18 hours is that gastroenteritis?”

3.10.5 Concerns about patient confidentiality

Most GPs agreed with the statement that ‘GPs should inform a patient if their case is being notified to a public health doctor or department’. GPs in the South were significantly more likely than those in the North to agree with this statement (Figure 18). In the North, female GPs were significantly more likely than male GPs to agree to with this statement [77.7% (87/112) compared to 64.3% (135/210), $p < 0.05$].

The majority of GPs also agreed with the statement that ‘I feel public health doctors and departments should inform me before contacting one of my patients’. Again, GPs in the South were significantly more likely than those in the North agree with this statement (Figure 19). Female GPs in the North were significantly more likely than male GPs to agree to with this statement [66.1% (74/112) compared to 50.9% (108/212), $p < 0.01$]. Also, in the South, GPs located in rural or mixed practices were more likely to agree with this statement compared to those in urban practices [86.0% (159/185) compared to 68.6% (105/153), $p < 0.01$].

Figure 18: ‘GPs should inform a patient if their case is being notified to a public health doctor/department’, North and South

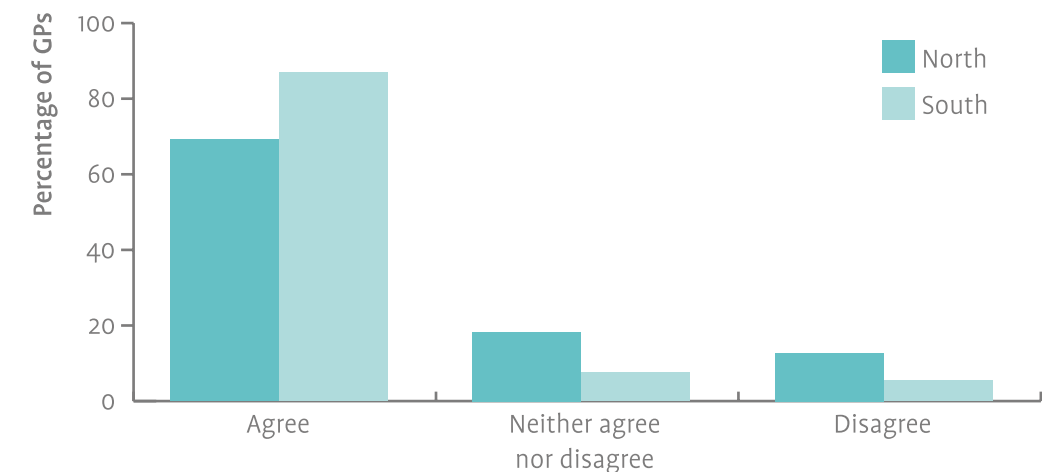
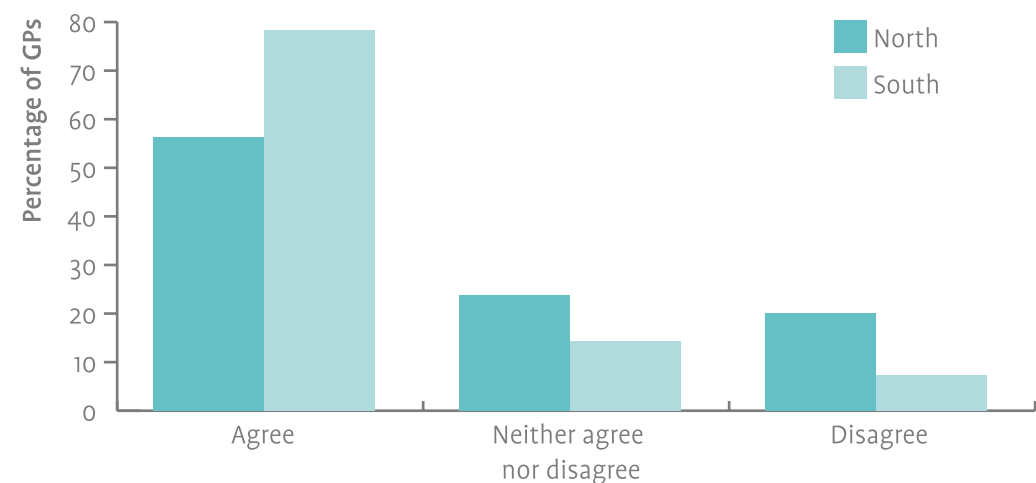


Figure 19: 'I feel public health doctors and departments should inform me before contacting one of my patients,' North and South



Some GPs were unhappy about giving patient information to a third party:

"I certainly would not automatically give people's information, where they ate, what their name is, what their job is, what their work telephone number is, routinely to an anonymous body out there just because they have gastro. I don't think a patient would appreciate it."

"When the day comes when it's electronic there may be a case for saying I saw 5 cases of gastro or 10 and I think we would be happy enough to do that but not to nominate people and give personal information."

Many GPs felt it was important to let patients know if their case was going to be notified:

"Patients don't always want public health to follow it up and that would be a big concern of mine. I would never notify without telling a patient first. I don't think that's right."

However, GPs said that most patients did not have a problem with their case being notified once they'd been properly informed about the reason for notification:

"I'd explain the role of public health and do so in a very user friendly way, say this is very important to trace [the infection] back to where it came from."

A number of GPs also felt strongly that public health doctors should not contact a patient without first contacting the GP who notified their case:

"I have notified and public health has followed it up without getting back to me and the families get very worried. I don't think they should investigate without notifying the GP beforehand."

3.10.6 Time and resources

Busy schedules and a lack of resources were commonly given as reasons for not notifying. Completing notification forms took time, and in a busy practice it was impractical to notify all cases of food poisoning or gastroenteritis in children under two.

"In general practice you have 24 things to do in 24 minutes and I don't know how realistic it is to expect people to notify everything."

"I generally would notify if it was something like Salmonella or whatever but I wouldn't be notifying every case of food poisoning."

Forgetfulness was frequently reported as a reason for not notifying:

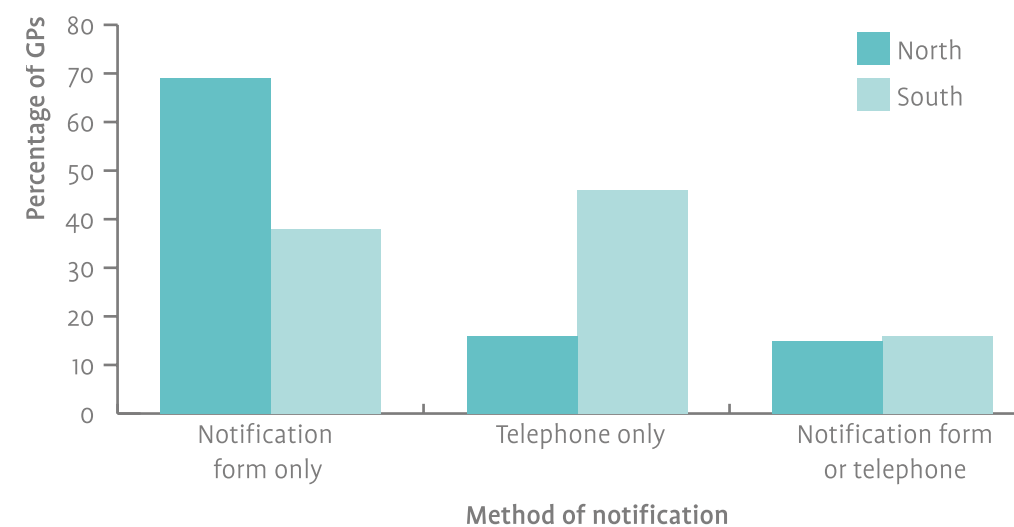
"I do think notifying is important and I think I notify now more than I ever did but it's easy to forget."

"I'll jot it down on a piece of paper and I'm going to do it after the consultation finishes... then the nurse comes in and says I'm wanted next door... then I meet [someone] out in the corridor who wants a prescription... now I'm under pressure, I'm running late, I've another patient to see and the piece of paper is lying on the floor and I forget to do it."

3.10.7 Satisfaction with the notification system

GPs are asked to give written notification of any cases they identify. Of the GPs who usually or sometimes notified, 68.6% in the North and 37.9% in the South only notified using this form, while an additional 14.5% of GPs in the North and 15.8% of GPs in the South notified using the notification form and/or the telephone (Table 20). Notifying by phone was more common in the South. Within the South, GPs, located in rural or mixed urban/rural practices were more likely to notify by phone compared to GPs in urban practices, 66.3% (114/172) compared to 52.8% (75/142), $p < 0.05$.

Figure 20: How GPs notify cases to public health authorities, North and South



In general, GPs said the current notification forms were satisfactory:

“No problems filling out the form, it isn’t a big deal. There’s quite a handy thing in the booklet that you can put into your notes to remind you that you have notified.”

However, some GPs expressed a preference for notifying by phone:

“I just generally lift the phone, I don’t bother with forms; it takes too long.”

One GP did suggest that freepost envelopes should be provided with the notification forms.

The introduction of an electronic system for notifying was encouraged:

“It would be great if you could send a copy of the notification by e-mail but I know that there are confidentiality issues surrounding that.”

One GP was dissatisfied with follow-up queries they had received following the notification of suspect cases:

“You fill in the forms, then they ring and ask have you confirmed it and you say no. What you end up getting is a series of phone calls but you haven’t done anything else about it. You haven’t sent off a sample and the patient hasn’t come back. To fill up one of those yellow forms for routine diarrhoea is inviting trouble on your head.”

Some GPs commented that the purpose of the notification system was not adequately explained:

“The system of notifying does not work, it’s a good idea but it doesn’t work on the ground. It doesn’t get promoted, there’s no explanation about what should be done and why.”

One GP said he was confused about who was responsible for notifying if the patient was admitted to hospital:

“If you send a patient to hospital, who should notify, you or the hospital, I don’t know. If you both notify are you not duplicating everything?”

Another GP queried whether phone consultations should be notified:

“Do you notify someone that calls by phone for advice?”

There was also some uncertainty about what happens after a case has been notified:

“I have no problem notifying, you just fill in a form and send it off. What happens after that? I am afraid you know more about that than I do.”

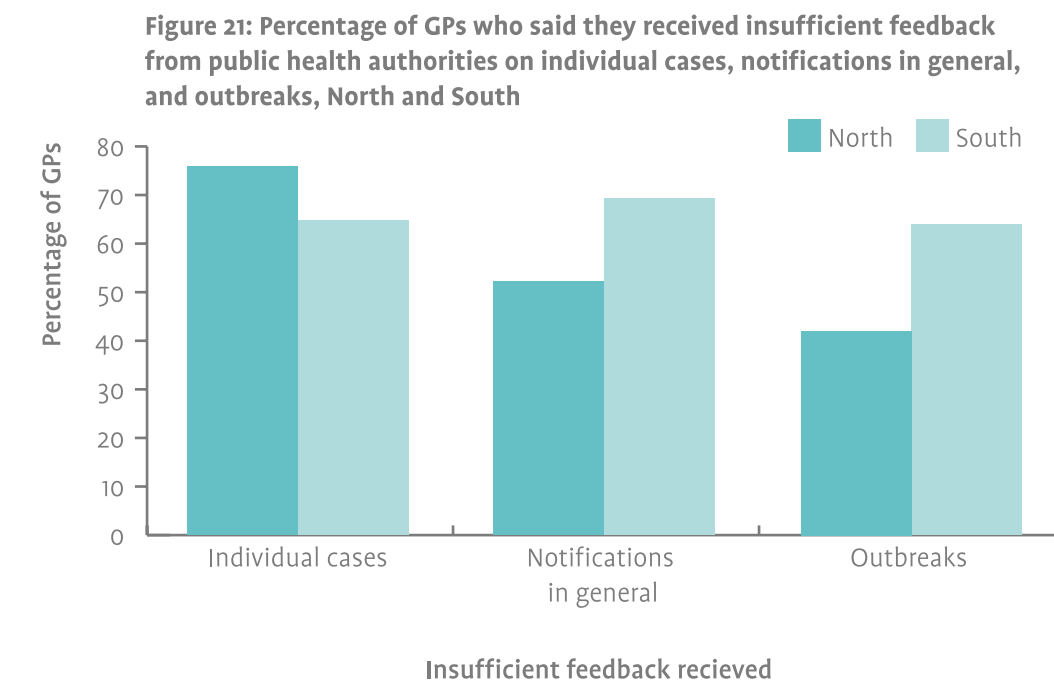
GPs, both North and South, are paid for each case they notify. The amount of money offered was, however, considered too small to be any real incentive:

“I sometimes notify gastro in children under two and I would notify Salmonella but the real barrier to notifying is the money really, it’s not an incentive to notify really.”

In the postal survey, the majority of GPs in the North (83.6%; 240/287) said they received payment for notifying infectious diseases, 12.9% (37/287) said they had not received payment, while 3.5% (10/287) said they did not know if they had been paid. In the South, 24.1% (71/294) said they received payment, 67.4% (198/294) said they did not, while 8.5% (25/294) did not know. GPs in the North were significantly more likely to report receiving payment ($p < 0.01$).

3.10.8 Feedback from public health authorities

Of those who usually or sometimes notified, most GPs said they did not receive sufficient feedback from public health authorities on individual cases they had notified (Figure 21). More than half of GPs in the North and 69.3% of GPs in the South said they did not receive sufficient feedback on notifications in general (Figure 5.5). When asked about feedback on acute gastroenteritis outbreaks in their local area, 42.0% of GPs in the North and 64.0% of GPs in the South said they did not receive sufficient feedback.



In the North, younger GPs were significantly more likely to report receiving insufficient feedback on notifications in general (Table 2). Younger GPs, both North and South, were significantly more likely to think they did not receive sufficient feedback on outbreaks in their local area. Age was not significantly associated with feedback on individual cases. No other socio-demographic or practice characteristics were associated with satisfaction with feedback.

In the focus groups and interviews, several GPs said they were not kept up to date on cases being investigated by public health authorities, nor were they asked to participate in these investigations:

“I had a Salmonella family in the practice and the public health people were involved and I’ve heard nothing since.”

“Once they [the public health doctors] heard Salmonella they more or less said OK you can opt out now you’ve done your bit.”

4. Discussion and Recommendations

Table 2: Number of GPs who said they received insufficient feedback on individual cases, notifications in general, and outbreaks, by age

	Insufficient feedback					
	Individual cases*		Notifications in general†		Outbreaks in local area†	
North	N	%	N	%	N	%
Age group (years)						
25-34	26/30	86.7	27/36	75.0	23/35	65.7
35-44	91/119	76.5	69/135	51.1	57/136	41.9
45-54	75/100	75.0	53/112	47.3	39/112	34.8
55+	19/30	63.3	15/33	45.5	13/34	38.2
South						
Age group (years)						
25-34	24/34	70.6	29/35	82.9	10/35	71.4
35-44	60/91	65.9	77/107	72.0	80/107	74.8
45-54	71/118	60.2	89/135	65.9	81/136	59.6
55+	32/46	69.6	35/55	63.6	27/55	49.1

† P-value <0.05

* Only includes GPs who usually or sometimes notified.

“You really don’t get any feedback from public health, what’s the point in notifying if you get no feedback? We got some of the feedback recently from the health board, the first bit of feedback we’ve ever got back and it gives you a good idea of what’s around.”

“I never got any feedback when I did notify and I used to notify all the time.”

“It would be nice to get more feedback. It would be great if the notifications were a bit more user friendly.”

When asked what type of feedback they would like, most GPs said a short newsletter or bulletin was the most appropriate way of disseminating information. Some health and social services boards in the North and health boards in the South, do distribute newsletter ‘updates’, and GPs who received copies found them helpful:

“Public health produce a little newsletter about all the gastroenteritis cases, all the meningitis cases and it’s good... I would always have a quick skim through that because it does refocus your mind on the subject.”

“If there’s been an outbreak, you could say it [in the newsletter] that in [...] there was an outbreak of Salmonella and it was traced to a particular place and what steps have now been taken...anonymising a little bit.”

This study examined GPs’ management of patients with acute gastroenteritis. A major strength of the study was the use of both quantitative and qualitative research methods. The qualitative research generated considerable in-depth information, and these findings were complemented by a quantitative postal survey, which allowed results to be generalised to the entire GP population, North and South.

Combining research techniques also allowed information derived from one method to be compared to the other, thus increasing the overall validity of the findings. Moreover, results from the postal survey could be explained in more detail by quotes from the qualitative research.

The postal survey response rate was 57.1%. This was high, particularly given that GPs are frequently surveyed on a variety of topics, and obtaining a high response rate can be challenging. The use of focus groups and semi-structured interviews at the beginning of the study aided the development of a short, precise, and focused questionnaire. This and other factors are likely to have contributed to the high level of participation.^{12,13}

The health care service, and consequently the structure of GP care, differs between the North and the South. These differences were reflected in the practice profiles of those participating in the postal survey. Socio-demographic and practice characteristics were, however, broadly representative of the GP population in each jurisdiction.¹¹

Infections are known to represent a significant workload for GPs.^{14,15} In this study, acute gastroenteritis was a common problem, accounting for almost 1 in every 20 consultations or an average of 7 consultations weekly (approximately 360 annually). GPs in the study were asked only to provide a rough estimate of the number of consultations in the last seven days. However, the number of reported consultations was almost identical to the number documented in an ICGP survey of general practice in the South.¹¹ Also, this estimate is not far removed from the 420 consultations a year suggested by the community-based telephone survey discussed in Section 3.

The average number of acute gastroenteritis consultations per GP was similar in the North and South, despite differences in the structure of, and access to, GP care. Patient telephone consultations were, however, more frequent in the North, accounting for over one-third of all acute gastroenteritis consultations. In contrast, one in every five consultations in the South was conducted by telephone. This reflects the structure of GP care on the island. Telephone consultations are well established under the NHS in the North. In the South, it is only with the recent emergence of GP co-ops, such as WestDoc and SouthDoc, that telephone consultations are becoming more common.^{16,17}

GPs were in general agreement about rehydration practices and these were in line with recent guidelines.^{8,9} Most GPs also agreed about the limited role for antibiotics in the treatment of acute gastroenteritis. There was, however, a minority of GPs who reported prescribing them more frequently. There is evidence that restricted prescribing of antibiotics in primary care leads to fewer problems with antimicrobial resistance.¹⁸ Given this and the potential for adverse health affects,¹⁹⁻²¹ any overuse of antibiotics is of concern, and needs to be addressed.

Studies have found that GPs see antimicrobial resistance as a community problem and are more concerned about their individual patients.²² Therefore, education and training initiatives should also focus on the risk to individual patients from the inappropriate use of antibiotics. Prescribing practices were not associated with any GP socio-demographic characteristics or practice profiles, which could be used to target such initiatives.

There was no consensus on the role of anti-diarrhoeal agents in the treatment of patients with diarrhoea, and practices varied widely. This may reflect changes in training and education, as younger GPs were less likely to prescribe such medications. It does, however, suggest that GPs would benefit from guidance on the appropriate use of anti-diarrhoeals.

An assessment of potential exposures is central to informing clinical management decisions. Recording a possible cause of acute gastroenteritis on the laboratory request form can help focus the microbiological examination. For example, a stool examination for parasites may be specifically recommended for patients with a history of recent foreign travel. Also, in an outbreak situation, GPs are often the first point of contact for those ill, and therefore have a unique opportunity to make an early and prompt diagnosis, and to obtain exposure details while events are still fresh in the patient's mind. This would ultimately assist public health authorities in investigating outbreaks and identifying the source of contamination.

In this survey, GPs said they routinely asked patients presenting with acute gastroenteritis about recent foreign travel, the consumption of unsafe food and water, and contact with ill persons. Other potential risk factors that should be considered include crèche or day-care centre attendance, and visiting a farm or petting zoo or other animal contacts.⁹ Because of the nature of their work, food handlers and health care workers have the potential to spread infection to large numbers of people.²³⁻²⁵ GPs should, therefore, consider asking patients if they are employed as food workers or care givers and advise accordingly.

There were some misconceptions about foodborne illnesses, and many GPs thought that gastrointestinal symptoms always commenced shortly after the consumption of contaminated food. This is true in some situations particularly in those involving chemically induced food poisoning but many foodborne pathogens causing gastrointestinal symptoms have long incubation periods. For example, the incubation period for *Campylobacter jejuni* ranges between 2 to 5 days, for *E. coli* O157 it is between 1 and 8 days, while the incubation period for *Cryptosporidium parvum* ranges from 2 to 28 days.²⁶ In the United States, the CDC has developed a primer for physicians aimed at providing concise practical information on foodborne disease.²⁶ The results of the present study suggest that there is a need for something similar to be developed and distributed to GPs in Ireland, North and South.

Stool sampling is not required for the clinical management of every patient with diarrhoea who seeks medical care. In this study, GPs were found to be selective about the patients they asked to submit a stool sample. The criteria they used were similar to those reported in other studies and recommended in practice guidelines. These included the duration of illness,^{10, 27-29} the severity of illness,²⁷⁻²⁹ a suspicion of food poisoning,¹⁰ and recent foreign travel.^{10, 28-29}

Overall, GPs did not rely on routine stool testing for diagnosis and some commented that in their experience microbiological findings did not always impact on clinical management decisions. In most cases, the patient had responded to standard fluid replacement therapy so that the result of the test had little impact on patient management. Stool sampling can however have significant public health importance and there may be public health reasons for requesting a specimen. For example, in some circumstances a stool sample is recommended if a food worker or care worker has symptoms of acute gastroenteritis, as preventing the spread of infection by such high-risk groups is a public health priority.⁹ In this study, only a minority of GPs gave this as one of the criteria used for requesting a specimen.

Laboratory-confirmed cases are also an important form of surveillance, contributing to the understanding of disease trends and helping to identify outbreaks. With widespread air travel and

the globalisation of the food market, there is a potential for widespread outbreaks, crossing not only local but international borders.³⁰ Laboratory surveillance can recognise low-level widespread outbreaks that might otherwise go unnoticed as they lack the temporal and geographical clustering seen in point-source outbreaks.³¹⁻³⁴

Most GPs said that patient information on how to provide a stool sample was hard to find, and as a result, storage conditions used by patients were not always appropriate. Some GPs expressed concerns about the temperature at which samples were kept and the containers in which they were collected. Younger GPs, in particular, found it more difficult to get patients to give samples. The reason for this was not immediately obvious and a patient information leaflet with simple advice could be of help.

The transportation of stool samples to the laboratory was identified as a difficulty for GPs in the South. Compared to their colleagues in the North, GPs in the South were significantly less likely to request patients to submit stool samples. The lack of routine collection services was a major contributor to this disparity. Many GPs were inconvenienced by having to personally deliver samples to the laboratory, while others sent samples to the laboratory by post or asked patients to deliver them. The packaging of pathological specimens for transportation to a laboratory is subject to specific regulatory requirements and it is unlikely that these are complied with in the absence of an organised system for specimen collection.

There was some uncertainty about laboratory protocols for the microbiology testing of stool samples. Most GPs thought that *Salmonella*, *Campylobacter*, and *E. coli* were tested for routinely. However, many were unclear about the testing criteria for other pathogens such as *Cryptosporidium*, *Shigella*, and ova, cysts and parasites. This uncertainty does not assist, and in some instances may hinder, the recovery of causative organisms. GPs need to be aware of routine testing procedures and the circumstances and procedures for making special test requests. As protocols vary between laboratories, laboratories need to make GPs aware of the practice in their local laboratory. Generally, there was good communication between laboratories and GPs when positive faecal specimens were identified.

GPs are in a good position to give advice on lifestyle issues. Basic hygiene practices, such as hand washing, are central to preventing the spread of gastrointestinal infections. Some GPs thought that this type of advice was so simple and basic that it was unnecessary or might offend patients. While it may be simple, studies have shown that people do not wash their hands often enough,³⁵⁻³⁸ and GPs therefore should be encouraged to give advice on hygiene and hand washing.

GPs are the best source of patient information on the management and prevention of acute gastroenteritis. Initiatives should therefore focus on continued education and training for GPs. GPs can then pass this information on to patients. Food workers and care workers suffering from acute gastroenteritis can pose a serious public health risk. There are numerous examples of infected food workers causing outbreaks.²³⁻²⁵ Transmission of acute gastroenteritis is most likely during the infective and symptomatic phase, and GPs need to be able to provide appropriate advice. NDSC draft guidelines for food handlers are likely to provide clarity in this area.³⁹

Statutory clinical notifications by GPs and other medical practitioners have in the past formed the basis of infectious disease surveillance and are used routinely to monitor trends, to establish priorities, and to evaluate prevention and control measures. Under-ascertainment, is however, a feature of routine notification,^{10, 40} and in this survey GPs were found to under-notify cases of food poisoning and gastroenteritis in children under two.

While this study did not audit GP notifications and laboratory reports, responses indicate that a large proportion of potentially foodborne infections are not notified by GPs. *Salmonella* and *Campylobacter* infections are largely foodborne.^{41,42} However, one in ten GPs in the North said they rarely or never notified confirmed cases of *Salmonella*, and one in five GPs rarely or never notified cases of *Campylobacter*. One in six GPs in the South said they rarely or never notified salmonella and 40.4% rarely or never notified *Campylobacter*.

Studies conducted in England and Wales also report cases being under-notified. By checking all potentially notifiable bacterial infections diagnosed in faecal samples against notifications, Barrett and Lau⁴³ found that 53% of *Campylobacter* and *Salmonella* infections were not notified. Wall et al.⁴⁴ reported that 40% of all laboratory confirmed cases of food poisoning went un-notified. More recently, a study of infectious intestinal disease in England reported an under-ascertainment rate of 36%.⁴⁵

Notification is a requirement for clinical suspicion of an infectious disease. This is especially important for life threatening diseases such as meningitis. In infectious gastroenteritis however, the cause of illness is often unclear prior to laboratory investigation and a clinical suspicion of infection is sufficient grounds for notification. Most GPs did not, however, routinely notify cases of food poisoning solely on clinical grounds. The reluctance of doctors to notify food poisoning without a laboratory diagnosis has been widely reported.^{43,46-48} Schramm et al.⁴⁶ found that for enteric diseases the majority of initial reports came from laboratories rather than the attending physician.

The main reason given for not notifying non-linked or single cases of suspected food poisoning was a lack of evidence. Often patients could only offer circumstantial or anecdotal evidence – ‘the chicken might have been a little undercooked’ or ‘the take-away meal smelled a bit funny’ – and in some cases GPs did not consider this to be sufficient grounds for notification in the absence of a laboratory diagnosis. This highlights two problems. First, food poisoning is not clearly defined, and second food poisoning itself is not a disease or symptom but a mode of transmission, which must be proven or inferred.⁴⁹⁻⁵²

GPs in the North were significantly more likely than GPs in the South to say that they ‘usually or sometimes’ notify cases of food poisoning. This is a possible explanation for the higher rates of food poisoning notifications in the North compared to the South.⁵³⁻⁵⁴

Although gastroenteritis in children under two has been a notifiable disease, few GPs in this study routinely notified these cases. Because short episodes of diarrhoea or vomiting were common in young children, GPs sometimes found it difficult to differentiate between infectious and non-infectious causes, particularly in mild cases. In addition, GPs did not think notification was warranted in the absence of laboratory confirmation of infection, and in most instances tests were not requested.

In addition to infectious disease surveillance, notifications can also help identify outbreaks and in doing so act as an early warning system for public health authorities.⁵⁵ Timeliness of notification is therefore important. In this study, GPs confirmed that they promptly notified cases they considered to be of public health importance, particularly if they became aware of several ill patients that had eaten a common food or attended the same social function.

In many instances however, individual GPs would not be alerted to an outbreak, as he/she would only see one or maybe two cases. In these situations, the timeliness of an already slow paper-based notification system is subjected to further delays caused by a GP waiting for a laboratory diagnosis

before notifying.^{47,56} This, in turn, delays any potential investigations and diminishes the effectiveness of interventions.^{44,57} Delays and under-notification, along with other factors, have led to questions about the usefulness of notifications in identifying foodborne outbreaks.⁵⁰

This study identified a number of barriers or disincentives to notification. One reason given by GPs for not notifying was that microbiologically confirmed cases were routinely reported by laboratories, and therefore their notification was an unnecessary duplication of effort. This was also given as a reason for London GPs not notifying laboratory confirmed cases of food poisoning,⁴³ and has been cited in other studies.^{10,43,46,47,58} Laboratory reporting does provide important surveillance data, but statutory notifications have the additional function of ensuring prompt investigation and action by local public health departments.⁵⁹ GPs need to understand the value of prompt notifications in the early detection and rapid response to outbreaks and in instituting control measures for individual cases in order to protect public health. How the purpose of GP notification differs from laboratory reports needs to be properly communicated to GPs if they are to be encouraged to notify.

An important disincentive was also a perceived lack of benefit from notification. Findings were similar to other studies,^{10,58,60,61} and GPs believed that most of the benefits from notification were accrued by public health authorities. Notification was not seen as having any favourable impact on GPs, their patients, or the wider community. GPs valued receiving feedback from public health doctors on notified cases or outbreaks in their area, and some cited local newsletters produced by public health departments. Feedback should be encouraged and should emphasise public health actions resulting from GP notifications.⁴⁷

Patient confidentiality was an important issue, and GPs in this study, as in other studies, expressed some concerns about the impact of notification on the patient’s right to privacy.^{46,47} Most GPs also said they would prefer to be informed if public health doctors intended approaching a patient whom they had reported through the notification system. Communication between public health doctors and GPs is important for surveillance and control of communicable disease and for local initiatives. GPs, however, described a lack of clarity about roles and responsibilities in relation to notification and surveillance of infections, suggesting that reporting arrangements and communication pathways need to be clarified locally.

Studies elsewhere have reported that GPs were unaware of which diseases were notifiable and this was one reason for non-notification.^{40,58,62} There was no evidence in this study that GPs were unaware of their obligation to report cases of food poisoning or gastroenteritis in children under two. Some GPs did say they sometimes forgot to notify; this too has been reported elsewhere.¹⁰ Notifications are only a small part of a GP’s workload, yet they can be time consuming. The amount of money paid to GPs for each notification was not regarded as an incentive, but studies elsewhere have found little effect from increasing the fee paid for notification.⁶³

Recommendations

Management

- There is a need for a working group to establish clear guidelines for use of anti-diarrhoeal agents and antibiotics in the management of acute gastroenteritis in Ireland, North and South.

Laboratories and stool sampling

- Collection services for stool samples and other clinical specimens need to be established in the South as a matter of priority.
- Laboratories should be encouraged to ensure that GPs are aware of the range of diagnostic services they provide for suspected gastrointestinal infection and how to access these services.
- Patient information leaflets on 'what to do when asked to provide a stool specimen' should be developed.

GP-public health interface

- There is a need for improved two-way communication between local public health authorities and GPs.
 - Feedback on notifications and laboratory reports should be encouraged and should highlight local public health initiatives.
 - As part of the local feedback, public health authorities should address GP information needs about the process of notification, and their concerns about patient confidentiality.

GP education and training

- Undergraduate training needs to incorporate additional teaching in infectious diseases. There should be co-ordination between modules in clinical areas (primary and secondary care), laboratory sciences, and public health. Apart from the established skills of history-taking and examination, knowledge of patient risk profiles, occupations, and exposures to relevant factors should enhance appropriate investigation and optimum management.
- A postgraduate GP training module on the clinical management of acute gastroenteritis should be developed. This module could be used in both the Vocational Training Scheme (a three-year rotation for GP training) and Continued Medical Education for trained GPs.
 - A resource person should be designated to work with ICGP/RCGP to develop and implement the curriculum/module.
 - Appropriate training material should be developed. The CDC's primer for physicians may serve as one model for the development of training materials.²⁶
 - Suggested topics for postgraduate training:
 - _ Updates on infectious intestinal disease in general practice including issues relevant to patient history, risky behaviours and exposures
 - _ Food safety and foodborne disease
 - _ Appropriate use of antibiotics in the treatment of acute gastroenteritis infections
 - _ Prevention of acute gastroenteritis: evidence-based advice on hygiene, hand washing, safe food preparation

Appendix A - Notifiable diseases

Human diseases currently notifiable in the North under the 1967 Public Health Act

Acute Encephalitis / Meningitis: Bacterial

Acute Encephalitis / Meningitis: Viral

Anthrax

Chickenpox

Cholera

Diphtheria

Dysentery

Food Poisoning

Gastroenteritis (persons under 2)

Hepatitis A

Hepatitis B

Hepatitis Unspecified:Viral

Legionnaires' Disease

Leptospirosis

Malaria

Measles

Meningococcal Septicaemia

Mumps

Paratyphoid Fever

Plague

Polio (paralytic)

Polio (acute)

Rabies

Relapsing Fever

Rubella

Scarlet Fever

Smallpox

Tetanus

Tuberculosis (Pulmonary)

Tuberculosis (Non Pulmonary)

Typhoid

Typhus

Viral Haemorrhagic Fever

Whooping Cough

Yellow Fever

Human diseases currently notifiable in the South under the 1947 Health Act and 1981 Infectious Disease Regulations (revised in 1985, 1988 and 1996 and 2003)

Acute anterior poliomyelitis (Polio virus)

Acute infectious gastroenteritis

Anogenital warts

***Bacillus cereus* food-borne infection / intoxication**

Bacterial meningitis (not otherwise specified)

Botulism

Brucellosis

***Campylobacter* infection**

Chancroid

Chlamydia trachomatis infection (genital)

Cholera

***Clostridium perfringens* (type A) foodborne diseases**

Creutzfeldt Jakob disease

nvCreutzfeldt Jakob disease

Cryptosporidiosis

Diphtheria

Echinococcosis

Enterococcal bacteraemia

Enterohaemorrhagic *Escherichia coli*

Escherichia coli infections (invasive)

Giardiasis

Herpes simplex (genital)

Gonorrhoea

Granuloma Inguinale

Haemophilus influenzae disease (invasive)

Hepatitis A (acute) (Hepatitis A virus)

Hepatitis B (acute and chronic)

Hepatitis C

Influenza

Legionellosis

Leptospirosis

Listeriosis

Lymphogranuloma venereum

Malaria

Measles

Meningococcal disease

Mumps

Noroviral infection

Non-specific urethritis

Paratyphoid

Pertussis

Plague

Q Fever

Rabies

Rubella

Salmonellosis

Severe Acute Respiratory Syndrome (SARS)

Shigellosis

Smallpox

Staphylococcal food poisoning

Staphylococcus aureus bacteraemia

Streptococcus group A infection (invasive)

Streptococcus pneumoniae infection (invasive)

Syphilis

Tetanus

Trichinosis

Trichomoniasis

Toxoplasmosis

Tuberculosis

Tularemia

Typhoid

Typhus

Viral encephalitis

Viral Meningitis

Viral haemorrhagic fevers

Yellow Fever

Yersiniosis

Note: Some diseases previously scheduled such as gastroenteritis in children under two and bacterial food poisoning (other than *Salmonella*) were removed in December 2003 and others such as invasive *E. Coli* noroviral infection and *Campylobacter* were added. Acute infectious gastroenteritis is now notifiable for all age groups.

Appendix B - Topic guidelines: Focus groups and semi-structured interviews (Phase 1)

Topic guidelines

1. Is gastroenteritis a common problem presenting to your practice?
2. What type of things do you feel are important to ask patients who present with gastroenteritis?
3. What kinds of treatments are prescribed?
4. Do you routinely request patients to submit a stool sample for testing?
5. What kind of advice is given about secondary spread and prevention?
6. How do you feel about the training you've received in the management of gastroenteritis and infectious disease?
7. Is notifying health boards something GPs do, do you feel it's important to notify?

Appendix C - Semi-structured interviews with GPs: Information sheet

INFORMATION SHEET

(Interviews)

YOU ARE BEING ASKED TO TAKE PART IN A STUDY CALLED 'GASTROINTESTINAL SYMPTOMS IN IRELAND – A SURVEY OF GENERAL PRACTITIONERS'

Thank you for taking the time to read this document.

What is the purpose of this study?

Gastroenteritis is an important public health problem but statistics based on laboratory surveillance and notifications provide an incomplete picture of the burden of this disease. General Practitioners (GPs) have a central role to play in the surveillance, identification, management and prevention of this illness in the community. In Ireland, little is known about GPs' knowledge of and attitudes towards the management of gastroenteritis or what is considered by GPs to be best practice. In addition no study has addressed possible barriers to the diagnosis and management of this disease such as access to laboratories. Although not routinely considered as having a role in providing advice on food safety, GPs are often the first point of contact for patients and are therefore in a powerful position to give health promotion and prevention messages and thus impact on patient behaviour. The purpose of this study is to better understand the burden of gastroenteritis in primary care.

What will this study actually look at?

This study will look at:

- The knowledge, attitudes and practices of GPs in the clinical and public health management of gastroenteritis in their patients.
- GPs attitudes toward their role in providing health promotion and prevention messages.
- The incidence of gastrointestinal symptoms presenting to GPs and the burden of disease.

Who is involved in this study?

A number of organisations are involved in carrying out this study. The group overseeing the study has representatives from the Communicable Disease Surveillance Centre (NI), the Department of General Practice Queen's University Belfast, the Department of Public Health Medicine and Epidemiology University College Dublin, the Food Safety Authority of Ireland, the Food Standards Agency (NI), the Irish College of General Practitioners, the National Disease Surveillance Centre, the Northern Health and Social Services Board, the Southern Health Board and the Southern Health and Social Services Board. The project is being funded by the Food Safety Promotion Board.

How will this study be conducted?

This study will be carried out using a postal survey, focus groups and in-depth interviews with GPs.

Appendix D - Focus groups with GP: Information sheet

What will I have to do if I agree to take part in this study?

You have been asked to take part in a semi-structured interview. You will be asked to meet a trained researcher at a time and venue that is convenient to you. The meeting will not last more than 45 minutes.

The topics to be discussed during the meeting will address various aspects of management of gastroenteritis in primary care. The meeting will be taped to ensure that all information is included in the analysis. This tape will be only be used for this study and once transcribed will be destroyed. All results from the meeting will be anonymised and you will not be identified.

What are the benefits of participating in this study?

This study will help to identify information and resource needs for GPs to help them in managing gastroenteritis in primary care. Participation in this study will also help to identify the need to develop information leaflets for patients.

It is widely acknowledged that the role of stool sampling in the management of gastroenteritis unknown. This study will also help in understanding more about this issue.

A report on the knowledge, attitudes and practices of GPs on the Island of Ireland regarding the management and prevention of gastroenteritis and any notable comparisons therein will be prepared and disseminated widely with every GP in Ireland receiving a copy.

How long will this study be carried out for?

It commenced in March 2002 and will run over 15 months.

Do I have to participate?

Your participation is completely voluntary. Even if you decide to participate, you can stop at any time you wish or skip any question you choose.

Who can provide additional information if you need it?

Should you have any queries please feel free to call Ms. Elaine Scallan who is co-ordinating this study on +353-1-8171385 or e-mail escallan@fsai.ie

INFORMATION SHEET

(Focus group)

YOU ARE BEING ASKED TO TAKE PART IN A STUDY CALLED 'GASTROINTESTINAL SYMPTOMS IN IRELAND – A SURVEY OF GENERAL PRACTITIONERS'

Thank you for taking the time to read this document.

What is the purpose of this study?

Gastroenteritis is an important public health problem but statistics based on laboratory surveillance and notifications provide an incomplete picture of the burden of this disease. General Practitioners (GPs) have a central role to play in the surveillance, identification, management and prevention of this illness in the community. In Ireland, little is known about GPs' knowledge of and attitudes towards the management of gastroenteritis or what is considered by GPs to be best practice. In addition no study has addressed possible barriers to the diagnosis and management of this disease such as access to laboratories. Although not routinely considered as having a role in providing advice on food safety, GPs are often the first point of contact for patients and are therefore in a powerful position to give health promotion and prevention messages and thus impact on patient behaviour. The purpose of this study is to better understand the burden of gastroenteritis in primary care.

What will this study actually look at?

This study will look at:

- The knowledge, attitudes and practices of GPs in the clinical and public health management of gastroenteritis in their patients.
- GPs' attitudes toward their role in providing health promotion and prevention messages.
- The incidence of gastrointestinal symptoms presenting to GPs and the burden of disease.

Who is involved in this study?

A number of organisations are involved in carrying out this study. The group overseeing the study has representatives from the Communicable Disease Surveillance Centre (NI), the Department of General Practice Queen's University Belfast, the Department of Public Health Medicine and Epidemiology University College Dublin, the Food Safety Authority of Ireland, the Food Standards Agency (NI), the Irish College of General Practitioners, the National Disease Surveillance Centre, the Northern Health and Social Services Board, the Southern Health Board and the Southern Health and Social Services Board. The project is being funded by the Food Safety Promotion Board.

How will this study be conducted?

This study will be carried out using a postal survey, focus groups and in-depth interviews with GPs.

Appendix E - GP postal survey questionnaire

What will I have to do if I agree to take part in this study?

You have been asked to participate in a focus group. You will be asked to attend a meeting lasting no more than one and a half hours. This meeting will take place at a venue that is convenient to you. The group will comprise of five to seven GPs and will be facilitated by a trained researcher.

The topics to be discussed in the focus group will address various aspects of the management of gastroenteritis in primary care. The meeting will be taped for the purposes of documenting everyone's views and to ensure that all information is included in the analysis. This tape will be only be used for this study and once transcribed will be destroyed. All results from the meetings will be anonymised and no individual will be identified.

What are the benefits of participating in this study?

This study will help to identify information and resource needs for GPs to help them in managing gastroenteritis in primary care. Participation in this study will also help to identify the need to develop information leaflets for patients.

It is widely acknowledged that the role of stool sampling in the management of gastroenteritis unknown. This study will also help in understanding more about this issue.

A report on the knowledge, attitudes and practices of GPs on the Island of Ireland regarding the management and prevention of gastroenteritis and any notable comparisons therein will be prepared and disseminated widely with every GP in Ireland receiving a copy.

How long will this study be carried out for?

It commenced in March 2002 and will run over 15 months.

Do I have to participate?

Your participation is completely voluntary. Even if you decide to participate, you can stop at any time you wish or skip any question you choose.

Who can provide additional information if you need it?

Should you have any queries please feel free to call Ms. Elaine Scallan who is co-ordinating this study on +353-1-8171385 or e-mail escallan@fsai.ie.

Gastroenteritis in Ireland, North and South - General Practitioner Questionnaire

In this study gastroenteritis is defined as symptoms of acute diarrhoea or vomiting.

Section 1: The burden of gastroenteritis in general practice

1. In the last seven days, approximately how many consultations have you had IN TOTAL? (Please give a rough estimate of the number of consultations)

- a. In the surgery
- b. Over the phone
- c. In a patients' home

2. In the last seven days, approximately how many consultations have you personally had with patients complaining of symptoms of GASTROENTERITIS? Please give a rough estimate of the number of consultations)

- a. In the surgery
- b. Over the phone
- c. In a patient's home

Section 2: Laboratories and stool samples

4. When a patient presents with symptoms of gastroenteritis how often would you ask them to submit a stool sample for testing? (Please tick one)

- Usually
- Sometimes
- Rarely/Never

5. What is the distance from your practice to the lab where you send stools for testing? (Please tick one)

- < 5 miles
- 5-9 miles
- 10-19 miles
- 20-29 miles
- 30-39 miles
- 40+ miles

6. How do you send stool samples to the lab? (Please tick one or more as appropriate)

- A collection service delivers stool samples to the lab
- You or someone else in the practice brings stool samples to the lab
- Patients bring the stool sample to the lab themselves
- Stool samples are sent to the lab by post
- I never send stools to the lab

7. What pathogens are tested for when specimens are submitted to your local lab? (Please tick as appropriate)

	Routinely	On request only	Don't know
Salmonella:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small round structured virus (SRSV):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Campylobacter:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. coli O157:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shigella:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cryptosporidium:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ova cysts and parasites:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Do you agree or disagree with the following statements? (Please circle as appropriate)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Getting stool samples to the lab is a difficulty for me and/or my patients:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stool sample results seldom impact on my management of patients:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Appropriate advice on how patients should collect stool samples is hard to find:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Getting patients to submit a stool sample is difficult:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3: Notifications and public health

9. When dealing with each of the following cases how often would you notify them to your local public health doctor or department? (Please circle as appropriate)

	Usually	Sometimes	Rarely/Never
Suspect food poisoning:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lab confirmed case of Salmonella:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gastroenteritis in a child under 2 years:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confirmed food poisoning:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suspect viral gastroenteritis:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Suspect case of Salmonella:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lab confirmed case of Campylobacter:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Do you agree or disagree with the following statements? (Please circle as appropriate)

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
GPs should inform a patient if their case is being notified to a public health doctor/dept:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel public health doctors/depts. should inform me before contacting one of my patients:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't see any real benefits to notifying infectious diseases to public health:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. How do you usually notify? (Please tick one or more as appropriate)

E-mail:	<input type="checkbox"/>
Phone:	<input type="checkbox"/>
Notification form:	<input type="checkbox"/>
Have never notified:	<input type="checkbox"/>

12. Do you receive payment for notifying infectious diseases?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Have never notified	<input type="checkbox"/>
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13. Do you usually get sufficient feedback from public health department or doctors about each of the following?

	Yes	No	Not applicable
Individual cases you have notified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gastro-related notifications in general:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outbreaks of gastroenteritis in your area:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no to any of the above, what type of feedback would you like?

14. Have you ever been involved in a health board gastroenteritis outbreak investigation?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
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If yes, was this a food poisoning outbreak? Yes No

Section 4: Patient management and advice

15. Of the patients presenting with symptoms of gastroenteritis what percentage would be prescribed the following? (Please give a rough estimate)

Extra fluids _____ %

Antibiotics _____ %

Anti-diarrhoeal agents (adults only) _____ % (% of adults presenting)

16. Do you routinely give advice on hand washing and hygiene to patients presenting with gastroenteritis? (Please tick one)

Usually | | Sometimes | | Rarely/Never | |

17. If a patient presents with symptoms of gastroenteritis do you routinely ask them what their occupation is? (Please tick one)

Usually | | Sometimes | | Rarely/Never | |

18. If you know that a patient presenting with symptoms of gastroenteritis is a food worker do you provide them with specific advice?

Usually | | Sometimes | | Rarely/Never | |

If yes, please specify the type of advice

19. If you know that a patient presenting with symptoms of gastroenteritis is working with children or the elderly do you provide them with specific advice?

Usually | | Sometimes | | Rarely/Never | |

If yes, please specify the type of advice

Comment

Section 5: Demographic information

20. Are you in a single or group practice?

Single | |

Group | |

If group practice, please specify the number of GPs | |

21. Approximately what is your practice list size?

(Please give a rough estimate of the number of patients)

Total | |

22. Is your practice a training practice?

Yes | | No | |

23. Is your practice computerised?

Yes | | No | |

24. Do you have a practice nurse?

Yes | | No | |

25. What county is your practice in?

26. Is your practice in an urban or rural area?

Urban | | Rural | | Mixed | |

27. Are you male or female?

Male | | Female | |

27. What age are you?

25-34 yrs | | 55-64 yrs | |

35-44 yrs | | 65+ yrs | |

45-54 yrs | |

Thank you for taking the time to complete this questionnaire. Please remember to return the blue prize draw entry form to be included in the prize draw

WIN ONE OF FOUR WEEKEND BREAKS FOR TWO IN THE FIVE STAR GLENLO ABBEY HOTEL CO. GALWAY

Two FREEPOST envelopes have been provided. Please return the questionnaire and blue prize draw entry form separately to ensure confidentiality

Appendix F - GP postal survey: Cover letter

2 September 2002

Dear Doctor,

An all-island study is being conducted to look at the burden of gastroenteritis in general practice, North and South. As part of this study we are conducting a postal survey of GPs and you have been randomly selected to receive this questionnaire. I enclose an information sheet describing in detail the purpose of this study.

The questionnaire should take you approximately five minutes to complete. It will request information on different aspects of the management of gastroenteritis. As you will see, your name or that of your practice is not requested on the questionnaire and any information given is anonymous.

On completing the questionnaire we would ask you to return the blue form for entry into a prize draw with a chance of winning one of four weekend breaks for two in the five star Glenlo Abbey Hotel Co. Galway. Two FREEPOST envelopes have been provided for your convenience. One should be used to return the questionnaire and the other to return the blue prize draw entry form.

Should you have any queries please feel free to call Ms. Elaine Scallan, in the Food Safety Authority of Ireland who is co-ordinating this study. Her direct line is +353 – 1 – 8171385 or you can e-mail her at escallan@fsai.ie.

Yours sincerely,

*The steering committee set up to oversee this study has representatives from the Communicable Disease Surveillance Centre (NI), the Department of General Practice Queen's University Belfast, the Department of Public Health Medicine and Epidemiology University College Dublin, the Food Safety Authority of Ireland, the Food Standards Agency (NI), the Irish College of General Practitioners, the National Disease Surveillance Centre, the Northern Health and Social Services Board, the Southern Health Board and the Southern Health and Social Services Board. The project is being funded by **safefood**, the Food Safety Promotion Board.*

Appendix G - GP postal survey: Information sheet

INFORMATION SHEET

(Questionnaire)

YOU ARE BEING ASKED TO TAKE PART IN A STUDY CALLED 'GASTROINTESTINAL SYMPTOMS IN IRELAND – A SURVEY OF GENERAL PRACTITIONERS'

Thank you for taking the time to read this document.

What is the purpose of this study?

Gastroenteritis is an important public health problem but statistics based on laboratory surveillance and notifications provide an incomplete picture of the burden of this disease. General Practitioners (GPs) have a central role to play in the surveillance, identification, management and prevention of this illness in the community. In Ireland, little is known about GPs' knowledge of and attitudes towards the management of gastroenteritis or what is considered by GPs to be best practice. In addition no study has addressed possible barriers to the diagnosis and management of this disease such as access to laboratories. Although not routinely considered as having a role in providing advice on food safety, GPs are often the first point of contact for patients and are therefore in a powerful position to give health promotion and prevention messages and thus impact on patient behaviour. The purpose of this study is to better understand the burden of gastroenteritis in primary care.

What will this study actually look at?

This study will look at:

- The knowledge, attitudes and practices of GPs in the clinical and public health management of gastroenteritis in their patients.
- GPs attitudes toward their role in providing health promotion and prevention messages.
- The incidence of gastrointestinal symptoms presenting to GPs and the burden of disease.

Who is involved in this study?

A number of organisations are involved in carrying out this study. The group overseeing the study has representatives from the Communicable Disease Surveillance Centre (NI), the Department of General Practice Queen's University Belfast, the Department of Public Health Medicine and Epidemiology University College Dublin, the Food Safety Authority of Ireland, the Food Standards Agency (NI), the Irish College of General Practitioners, the National Disease Surveillance Centre, the Northern Health and Social Services Board, the Southern Health Board and the Southern Health and Social Services Board. The project is being funded by the Food Safety Promotion Board.

How will this study be conducted?

This study will be carried out using a postal survey, focus groups and in-depth interviews with GPs.

Appendix I - GP postal survey: Cover letter (reminder)

1st October 2002

REMINDER: Gastroenteritis in General Practice – General Practitioner Questionnaire

Dear Doctor,

You recently received a letter from Dr. Velma Harkins, Chairperson of the Irish College of General Practitioners' Research Committee, asking you to complete a questionnaire looking at the burden of gastroenteritis in general practice.

We wish to capture as many views as possible on the subject before any recommendations are made and would be very grateful if you could return the completed questionnaire. A FREEPOST envelope has been provided and we would ask that you return the questionnaire by 31st October 2002.

On completing the questionnaire please return the blue form for entry into a prize draw with a chance of winning one of four weekend breaks for two in the five star Glenlo Abbey Hotel Co. Galway. Should you have any queries please feel free to contact me at 01 – 8171385 or escallan@fsai.ie.

Regards,

Elaine Scallan
Project Leader

*The steering committee set up to oversee this study has representatives from the Communicable Disease Surveillance Centre (NI), the Department of General Practice Queen's University Belfast, the Department of Public Health Medicine and Epidemiology University College Dublin, the Food Safety Authority of Ireland, the Food Standards Agency (NI), the Irish College of General Practitioners, the National Disease Surveillance Centre, the Northern Health and Social Services Board, the Southern Health Board and the Southern Health and Social Services Board. The project is being funded by **safefood**, the Food Safety Promotion Board.*

Appendix J - Topic guidelines: Semi-structured interviews (Phase 3)

Topic Guidelines (North)

Stool sampling

50% said that stool sample results seldom impact on patient management

- What is the value in stool sampling if there's no impact on patient management?

GPs were unsure about whether laboratories routinely tested for shigella, cryptosporidium, or SRSVs

- Is it clear what pathogens are routinely tested for and which are performed on request only?

Notifications

Only 4% said they didn't really see any benefit in notifying

- What is the benefit in notifying?
- In your experience, what happens when you notify a case to public health?

70% of GPs said that GPs should tell their patient if they're notifying their case to public health.

- Do GPs tell patients that someone may contact them if you notify their case? If so, why?
- Should you also inform a patient that their case maybe notified when you ask them to submit a stool?

30% of GPs said they notified cases by phone

- In what way could the system of notification be improved?

68% of GPs said they would usually notify a confirmed case of food poisoning; however, less than half of these would notify a suspect case.

- In what circumstances would you notify a suspect case of food poisoning or gastro under two years of age?

Most GPs said they didn't get sufficient feedback on individual cases notified (76%), notifications in general (52%), or outbreaks in their local area (42%)

- What type of feedback would you like?

Food workers

90% of GPs said they provided specific advice to food worker s.

- What kind of advice would you give to food worker s?
- Would you differentiate between different types of food worker?
- What role should GPs have in providing advice to patients working in high risk areas?

Topic Guidelines (South)

Stool sampling practices

65% of GPs said that stool sample results seldom impact on patient management.

- What is the value in stool sampling if there's no impact on patient management?

40% of GPs said that getting stool samples to the lab was a difficulty for them.

- Collection services: are they a priority for GPs?

Some GPs were unsure about whether pathogens such as shigella, cryptosporidium, ova and parasites, SRSVs were routinely tested for.

- Is it clear what pathogens are routinely tested for and which are performed on request only?

Notifications

Only 6% said they didn't really see any benefit in notifying.

- What is the benefit in notifying?

90% of GPs said that GPs should tell their patient if they're notifying their case to public health.

- Do GPs tell patients that someone may contact them if you notify their case? If so why?

78% of GPs said that public health should inform GPs before contacting one of their patients.

- Is this feasible?
- How should GPs be informed?

Just over half of GPs said they notified cases using the notification form

- In what way could the system of notification be improved?

48% of GPs said they would usually notify a confirmed case of food poisoning; only 14% would notify a suspect case.

- In what circumstances would you notify a suspect case of food poisoning or gastro under two years of age?

Most GPs said they did not get sufficient feedback on individual cases notified (65%), notifications in general (70%), or outbreaks in their local area (64%).

- What type of feedback would you like?

Food workers

Over 90% of GPs said they provided specific advice to food workers.

- What kind of advice would you give to food workers?
- Would you differentiate between different types of food workers?
- What role should GPs have in providing advice to patients working in high-risk areas?

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