

# Health Protection Surveillance Centre



## **Surveillance of STIs**

A report by the Sexually Transmitted Infections subcommittee  
for the Scientific Advisory Committee of the Health Protection Surveillance Centre

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December 2005



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# Foreword

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Increasing international travel and migration in today's interconnected global world, together with changes in cultural norms and values and increasing rates of high risk sexual behaviour are key factors in the increases in reported rates of STIs in Ireland and Europe over the past decade. Acknowledging the huge health and economic burden presented by sexually transmitted infections (STIs) and HIV/AIDS worldwide and in Europe, the Director General of the new European Centre for Disease Prevention and Control (ECDC) has designated HIV/AIDS and STIs as a priority area for development at the centre.

Surveillance systems help to identify disease trends and characterise outbreaks in terms of populations affected, risk factors and geography. Good surveillance systems should also provide information for early detection of potential outbreaks and provide information for planning and resource allocation for preventive programmes and for evaluating preventive programmes and control measures. In common with many European countries, STI surveillance systems in Ireland are underdeveloped and this report provides a blueprint for the development of STI surveillance in Ireland into the future. I very much hope that this report will feed into a national Sexual Health Strategy which would provide a framework for the development of sexual health services, including surveillance, prevention and treatment services for sexually transmitted infections in Ireland.

I would like to take this opportunity to thank all the members of the committee for their valuable time and expertise in contributing to this report. I would like to thank the members of the GP subgroup and in particular Dr Helena Murray, who co-ordinated the research in general practice. Many thanks to all those GPs who participated in the focus groups and to those who responded to the survey of GPs. In particular, I would like to acknowledge the support and work of the laboratory subgroup. A special word of thanks to Ms Sarah Jackson for her assistance with the GP research project and the survey of diagnostic laboratories and for providing administrative assistance to the committee. Thanks to Dr Lisa Domegan, to Dr Kate O'Donnell for her work in bringing the final report together and also to Dr Piaras O'Lorcain for his assistance in finalising the report. A special word of thanks to Dr Lelia Thornton for her support. The assistance of all involved is acknowledged with much gratitude.

**Mary C. Cronin**

Chairperson of the Sexually Transmitted Infections Subcommittee  
December 2005

# Summary of recommendations

## General

A national Sexual Health Strategy should be developed as a *priority*, in order to provide a framework for the development of STI prevention, diagnostic and treatment services, both STI clinic services and primary care services, including general practice, student health services and family planning clinics.

## Diseases

Incident case reports from clinicians, collected on a person or case-based basis, to include demographic, clinical and risk factor information should provide the basis for STI surveillance in addition to laboratory notifications of individual STIs.

Priority should be given to collecting timely disaggregate, person-based data on the major bacterial infections, syphilis, gonorrhoea and genital chlamydia and also in relation to infectious hepatitis B.

## Datasets

Pending the development of a unique patient identifier in Ireland, the committee considered that patient forename and surname initials and date of birth, should be used as a patient identifier for notification of STIs. Infectious hepatitis B should be reported to the MOH on an individual, named patient basis, to ensure that follow up advice and vaccination is provided for the patient and their family contacts as appropriate. Proposed datasets for notification of STIs by diagnosing clinicians and for notification of STIs by laboratory directors are appended (Appendix 1). The enhanced surveillance form for notification of infectious hepatitis B is also appended (Appendix 2).

Pending the development of a national postcode system, the committee considered that the variable 'County of Residence' should be used for notification of STIs and in addition, for Dublin addresses, current postcode numbers should be provided.

The committee considered that EU case definitions should be adopted as the classification system for STIs in Ireland.

## Sources of information

The committee noted that there is no STI clinic service currently in place in the HSE-Midland region or in the HSE-North Eastern Region. The committee recommends that this inequity in access to STI clinical services be addressed as a matter of priority.

Incident case reports and laboratory notifications of STIs are the mainstay of STI routine surveillance. In addition annual STI surveillance reports should include the following:

- Data from the antenatal screening programme for syphilis
- Data from screening of blood donations for syphilis
- HIPE morbidity data in relation to the medium to long-term outcomes of STIs such as ectopic pregnancy, tubal factor infertility and pelvic inflammatory disease

There will also be a need for regular prevalence assessment and serological surveys to accurately monitor rates of infection with HPV and HSV, which are usually asymptomatic, undiagnosed and widely distributed in the population.

## The Notification Process

Standard forms for clinical and laboratory notification of STIs should be used (see Appendix 1)

Notification forms for clinical and laboratory notifications of STIs should be available in 'hardcopy', 'tear out' booklet format. Pending the 'roll out' and further development of the CIDR system, provision may be made for notification data to be transmitted to the Medical Officer of Health in encrypted electronic format by e-mail, 'disc in the post' or by courier.

Notifiers should be provided with easily accessible information, both in electronic and paper format, outlining the steps to be taken in the notification process for STIs.

Notifiers should be adequately reimbursed for notification of infectious diseases to Departments of Public Health.

## Partner notification

Brief Guidelines for Contact Tracing, adapted from the Sexual Health Advisors Manual published by the Society for Sexual Health Advisors in the UK (full document available at [www.SSHA.info](http://www.SSHA.info)) should be printed on the reverse of the clinical notification form (see Appendix 1)

The notifying clinician should indicate on the notification form (see Appendix 1):

- Whether partner notification (PN) has been carried out within the STI clinic or general practice, Family Planning Clinic or Student Health Service where the diagnosis was made
- Whether the patient is attending or has been referred to an STI clinic
- If the patient is not attending or has not been referred to an STI clinic, the notifying clinician should indicate on the form whether the issue of contact tracing has been discussed with the patient. If the clinician indicates on the notification form (Appendix 1) that contact tracing has not been discussed with the patient, it will be incumbent on the MOH or person acting on his or her behalf, to arrange for discussion with the patient's clinician with a view to obtaining further information to arrange appropriate follow up for that patient.

#### *Note*

The form should state that prior to making contact with the patient, the MOH (or person on his/her behalf) will contact the notifier to discuss and obtain patient details.

If the patient opts for 'patient referral' i.e. self-referral, verification of attendance by the contact at an STI clinic or GP should be sought by the notifier, where possible.

#### *Notification process in Clinics*

Additional ICT resources and dedicated personnel in STI clinics should be provided for the purpose of collecting disaggregate, patient based data.

It is envisaged that the CIDR system will be developed to allow the following:

- extraction of data for uploading to CIDR from 'in-house' clinic ACCESS databases (or other clinic databases)
- extraction of data from STI clinic management systems (where these are in place) for uploading into the CIDR system in the clinic setting
- data to be securely entered manually into the CIDR system in the clinic setting.

#### *Systems in Primary Care*

With the development of ICT infrastructure in general practice, as envisaged in the Primary Care Strategy and with expansion of the government VPN, work should proceed on the further development of the CIDR system as soon as capacity and funding will allow, in order to enable the extraction of STI notification data from GP practice management systems in the practice setting, for uploading into the CIDR system. Similar arrangements could apply to Student Health Services and Family Planning Clinics.

Pending the 'roll out' and further development of the CIDR system, local arrangements should be put in place by Departments of Public Health to facilitate electronic notification of STIs and other notifiable infectious diseases from GPs (particularly from large general practices), Student Health Services and Family Planning Clinics, using e-mail or a 'disc in the post' arrangements with data encryption.

#### *Systems in laboratories*

The CIDR system should be used by clinical microbiology laboratories to upload files, which have been exported from LIMS, using standard browser software. Smaller laboratories, with less throughput will be able to input data manually directly into the CIDR system.

#### *Systems in Public Health*

It is envisaged that the CIDR system will be used in Departments of Public Health for collection of laboratory and clinical data, for collation of data and for generating reports in relation to STIs.

Additional staffing for Departments of Public Health will be needed for data processing and for CIDR 'event' creation, in the context of the anticipated increase in workload resulting from the increase in numbers of person-based STI reports which will be received from clinicians and laboratory directors.

### **Infectious Hepatitis B**

Infectious hepatitis B should be reported to the MOH on an individual, named patient basis using the enhanced surveillance system for Hepatitis B to capture data on cases of acute and chronic hepatitis B infection. The enhanced surveillance form for Hepatitis B is attached (Appendix 2).

In this regard the committee endorses the recommendation in the report prepared for the Directors of Public Health *Hepatitis B – The Public Health Perspective. May 2004* that all STI clinics attendees should be offered hepatitis B vaccine if non-immune and the STI clinics should be adequately resourced for the provision of this service. In addition, all individuals who change sexual partners frequently should be offered hepatitis B vaccine if non immune, in particular, sex workers and men who have sex with men (MSM).

The committee further endorses the recommendation of the report that a GP-delivered hepatitis B immunisation service should also be available free to all at risk individuals, regardless of GMS eligibility and that GPs should be advised of local arrangements relating to vaccine availability and fee entitlement. The committee also endorses recommendation of the report that systems for recording immunisation uptake, by risk category, of those immunised by GPs should be developed.

### **Primary and Reference Laboratory Facilities**

Additional and sufficient funding should be made available to permit appropriate laboratories to introduce improved technology including NAAT for diagnosis of infection with *N. gonorrhoea* and *C. trachomatis*.

Wider availability of local and/or regional referral centres for treponemal serology should be made available. More widespread use of treponemal screening locally, by use of enzyme immunoassay (EIA) in appropriate laboratories with a large number of specimens for treponemal serology should be strongly considered.

The establishment of a Gonococcal Reference Laboratory and a Treponemal Reference Laboratory should be prioritised. These laboratories could be combined in one facility or could exist as separate centres where the following tasks would be undertaken:

- Phenotyping and genotyping of strains of *N. gonorrhoea*, and the use of molecular techniques to identify resistant strains of *N. gonorrhoea* and *T. pallidum*, which may be associated with treatment failures and/or outbreaks.
- Provision of specialist expertise and advice to other laboratories and to clinicians with regard to advances in diagnosis and treatment of these infections.
- Act as a specialised resource and ensure that the latest information in relation to approved methodology is circulated to diagnostic laboratories. Use of standardised methodology endorsed by such reference facilities could also address the differences in reporting times between laboratories.
- Undertake specialist testing which is not performed in routine diagnostic laboratories for example there may be additional technically demanding and cumbersome treponemal serological testing required, in a difficult-to-interpret case.
- At a time when syphilis remains at endemic levels in this country, a treponemal reference laboratory could also make available molecular techniques for identification of resistant strains, in order to inform optimal antibiotic prescribing protocols. Molecular testing at a US laboratory identified an antibiotic-resistant strain of *T. pallidum* following the recent syphilis outbreak in Dublin.<sup>1</sup> In addition, identification of resistant strains of *T. pallidum*, using molecular techniques may also be important in selecting appropriate treatment in the individual patient with drug allergies.
- Assist in appropriate training of laboratory personnel in established and new technologies in the diagnosis of the individual STIs.
- Undertake research and development work.

In light of the recent recognition of cases of LGV amongst MSM in several cities worldwide,<sup>2</sup> there is a clear need for a designated *C. trachomatis* referral centre for confirmation of diagnosis of this condition. Rectal swabs from patients with proctitis who are positive for *C. trachomatis* by NAAT, and/or urethral swabs from patients with inguinal adenopathy who are positive for *C. trachomatis* by NAAT, (and specimens from contacts of these patient groups) should be referred to such a centre for additional molecular investigations to determine whether the infecting organism belongs to an LGV-associated serotype.

### **Use of surveillance information to inform policy and prevention strategies for sexual health**

Data should be presented in a variety of formats, providing user access using the latest technology.

Special consideration should be given to local and national feedback to providers of data in order to allow comparison of local and national epidemiology.

Regular surveillance reports should be provided to the DoHC, members of NASC and the Director of Population Health of the HSE.



There should be guidelines for surveillance reports in relation to sensitive data. Data should be presented in a format that a patient(s) could not be recognised from reports/publications.

### **STIs in General Practice**

Although not strictly part of the terms of reference of the subcommittee, in the course of investigating the current burden of STIs in GP, the committee also made the following recommendations in relation to clinical STI services in GP:

- Clinical STI services, including assessment, management, treatment and counselling, should be provided free of charge to patients at the point of access whether the service is provided in primary care or in an STI clinic with remuneration for general practitioners who provide this service, accordingly.
- Development of STI services should recognise the patient's right to choose where they receive treatment and in addition, the right of GPs to choose whether to be involved in this specialised area should be respected.
- Protocols and guidelines for diagnosis, management and notification of STIs should be developed between local Consultants in Infectious Diseases / Genitourinary Medicine, GPs and local Departments of Public Health. These should address appropriate, investigation, referral, notification of the Medical Officer of Health, partner notification and treatment, including antibiotic prescribing in general practice.
- STI clinic services should be adequately resourced in order to allow patients referred from GPs to avail of timely appropriate services, to provide timely partner notification/contact tracing services and to allow for the development of joint protocols and guidelines for diagnosis and management of STIs with GPs.
- Guidelines for STIs should be in line with the Strategy for the Control of Antimicrobial Resistance in Ireland (SARI) Community Treatment Guidelines, which are currently being developed.
- A range of training options for GPs in relation to diagnosis and management of STIs should be developed by the Irish College of General Practitioners.
- Suitable materials for promotion of sexual health in the community should be developed with input from Health Promotion professionals, ICGP, Consultants in Infectious Diseases / Genitourinary Medicine and Public Health Specialists.
- Concerns expressed by GPs in relation to documentation of matters relating to STI investigation and treatment in a patient's file and the implications for subsequent reports to insurance companies, should be addressed, in order to establish correct factual information and to dispel myths in this regard. Clarification on this matter should be sought from the Irish Insurance Federation (IIF).

# Introduction

In 2001, the Scientific Advisory Committee (SAC) of the Health Protection Surveillance Centre (HPSC), formerly known as the National Disease Surveillance Centre (NDSC), established an STI subcommittee.

The **terms of reference of the STI subcommittee** were as follows:

**1. To review the current system of notification of STIs and make recommendations regarding:**

- the diseases under surveillance and the data items required for effective surveillance;
- the process of notification and systems/structures required to facilitate easy communication of information between notifiers and public health;
- ensuring patient confidentiality;
- the use of surveillance information to inform policy and prevention strategies for sexual health.

**2. To identify the need for primary and reference laboratory facilities and to make appropriate recommendations.**

**3. To investigate the need for screening for chlamydia in Ireland.**

**Membership of the STI subcommittee** was as follows:

Dr Anthony Breslin	Regional AIDS coordinator HSE – North Western Area (Replaced Dr Wilson in June 2004)
Dr Mary Cronin (Chair)	Specialist in Public Health Medicine Health Protection Surveillance Centre
Professor Mary Cafferkey	Consultant Clinical Microbiologist Rotunda Hospital, Dublin
Dr Lisa Domegan	Surveillance Scientist Health Protection Surveillance Centre (Leave Sept 2004 to May 2005)
Dr Margaret Fitzgerald	Specialist in Public Health Medicine HSE – Eastern Area
Dr Clíodhna Foley-Nolan	Specialist in Public Health Medicine HSE – Southern Area (Resigned September 2004)
Dr Derek Freedman	GenitoUrinary Medicine Physician Irish College of General Practitioners
Ms Eleanor Kehoe	Infection Control Nurse Specialist St James's Hospital (Resigned November 2004)
Dr Anne Moloney	Consultant Clinical Microbiologist HSE – South Eastern Area
Dr Fiona Mulcahy	Consultant in GenitoUrinary Medicine St James's Hospital, Dublin
Dr Maire O'Connor	Specialist in Public Health Medicine HSE – South Eastern Area (Resigned 2003)
Dr Nuala O'Connor	General Practitioner Irish College of General Practitioners
Dr Kate O'Donnell	Surveillance Scientist Health Protection Surveillance Centre (Replaced Dr Domegan in Sept 2004)

Dr Mary O'Mahony	Specialist in Public Health Medicine HSE - Southern Area (Resigned 2003)
Dr Lelia Thornton	Specialist in Public Health Medicine Health Protection Surveillance Centre (Replaced Dr Foley-Nolan in Sept 2004)
Dr Therese Wilson	Regional AIDS coordinator HSE - South Eastern Region (Retired in June 2004)

In order to deal with different aspects of the terms of reference, four subgroups of the committee were formed with additional membership of people with interest and expertise in the particular area. Membership of each subgroup are detailed below.

One of the terms of reference of the STI subcommittee, *The Need for Chlamydia Screening in Ireland*, is the subject of a separate report prepared by the committee and considered by the Scientific Advisory Committee of the HPSC in March 2005. The report was distributed widely to key stakeholders for consultation and has been published as a separate document.

### **Chlamydia Screening Group**

Prof. Mary Cafferkey, Consultant Clinical Microbiologist, Rotunda Hospital, Dublin  
 Dr Suzie Coughlan, Senior Scientist, National Virus Reference Laboratory  
 Dr Mary Cronin, SPHM, HPSC  
 Dr Lisa Domegan, Surveillance Scientist, HPSC  
 Dr Margaret Fitzgerald, SPHM, HSE - Eastern Region  
 Dr Cliodhna Foley-Nolan, SPHM, HSE - Southern Area (Resigned in Sept 04)  
 Dr Sheila Jones, Medical Director, Irish Family Planning Association  
 Dr Fiona Lyons, SpR in GUM, St James's Hospital  
 Dr Fiona Mulcahy, Consultant in GUM, St James's Hospital  
 Dr Sandra Tighe, Medical Director, Student Health Services, UCD

### **GP Steering group**

Dr Claire Collins, Social and Clinical Research Consultants,  
 Dr Mary Cronin, SPHM, HPSC  
 Dr Lisa Domegan, Surveillance Scientist, HPSC  
 Dr Mary Favier, GP, Cork ICGP  
 Dr Emer McHale, STI Services Galway  
 Dr Helena Murray, Medical Officer, HPSC  
 Dr Nuala O'Connor, GP, Cork ICGP  
 Dr Ailis O'Riain, GP, ICGP

### **STI Laboratory subgroup**

Prof. Mary Cafferkey, Consultant Clinical Microbiologist, Rotunda Hospital, Dublin  
 Dr Mary Cronin, SPHM, HPSC  
 Dr Lisa Domegan, Surveillance Scientist, HPSC (Maternity leave, Sept 2004)  
 Ms Mary Kelleher, Surveillance Scientist, St James's Hospital  
 Dr Anne Moloney, Consultant Clinical Microbiologist, HSE - South Eastern Area  
 Dr Kate O'Donnell, Surveillance Scientist, HPSC (Replaced Dr Domegan)

### **STI clinical data items subgroup**

Dr Mary Cronin, SPHM, HPSC  
 Dr Lisa Domegan, Surveillance Scientist, HPSC  
 Dr Margaret Fitzgerald, SPHM, HSE - Eastern Region  
 Dr Cliodhna Foley-Nolan, SPHM, HSE - Southern region (Resigned in Sept 04)  
 Dr Fiona Mulcahy, Consultant in GUM, St James's Hospital  
 Dr Therese Wilson, Regional AIDS Co-ordinator, HSE South Eastern Region (Retired in June 2004).

# 1. Background

## 1.1 Background

Sexually transmitted infections (STIs) present a major public health problem and are a major cause of acute illness, infertility, long-term disability and death worldwide.<sup>3</sup> In 1993, the World Bank estimated that for women aged 15-44, STIs, excluding HIV, were the second commonest cause of healthy life lost after maternal morbidity and mortality.<sup>4</sup> In addition, infection with STIs facilitates the transmission and acquisition of HIV.<sup>5</sup>

## 1.2 Surveillance of STIs

Surveillance of STIs provides information for public health action and is an essential component of effective control programmes for STIs.<sup>6</sup> Systematically collected, timely, accurate, detailed, representative STI surveillance data are needed:

- to estimate the population burden of disease;
- to develop STI prevention programmes;
- to monitor effectiveness of STI prevention programmes;
- to evaluate healthcare access;
- to assess determinants of transmission;
- as a basis for statistical projections or mathematical modelling.

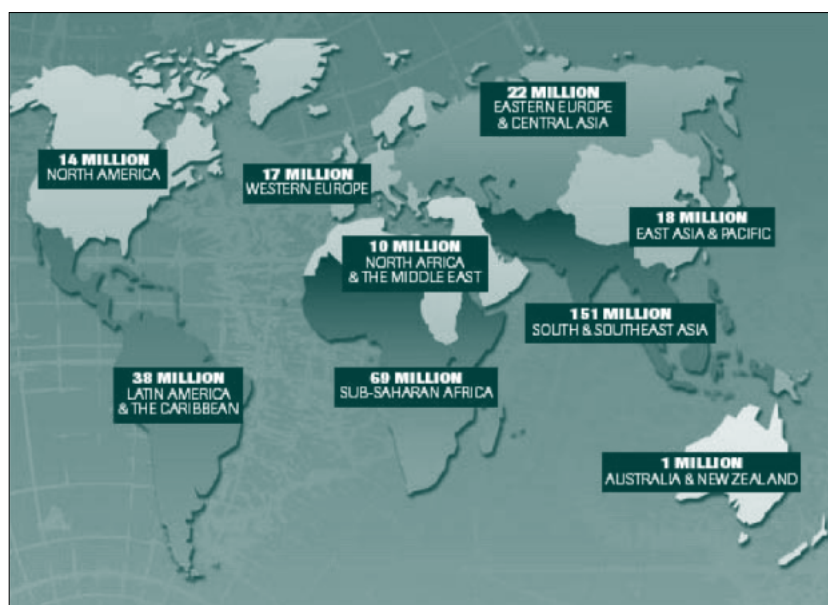
## 1.3 Epidemiology of STIs

### 1.3.1 Global Epidemiology of STIs

The exact magnitude of the global STI burden is unknown. Although surveillance systems exist in some countries, the data are not always reliable or complete. This is due to a number of factors including the fact that STIs are often asymptomatic and that appropriate diagnostic tools are often not available. In addition, underreporting is a major problem in assessing the total burden of STIs in both developing and industrialised countries.<sup>3</sup>

The World Health Organisation (WHO) has estimated that approximately 340 million new cases of the four main curable STIs (syphilis, gonorrhoea, chlamydial infections and trichomoniasis) occurred throughout the world in 1999 in adults aged 15-49 years.<sup>3</sup> It is estimated that the largest number of new infections occurred in the region of South and Southeast Asia (44.4%), followed by sub-Saharan Africa (20.3%) and Latin America and the Caribbean (11.2%).<sup>3</sup> However, the highest rate of new cases per 1000 population occurred in sub-Saharan Africa.<sup>3</sup> Of the 340 million cases, it is estimated that there were 12 million cases of syphilis, 62 million cases of gonorrhoea, 92 million cases of chlamydial infections and 174 million cases of trichomoniasis.<sup>3</sup> Figure 1.1 shows a map of the world with the estimated new cases of STIs among adults in 1999. Estimates from the WHO are affected by the quantity and quality of prevalence and incidence data from the different regions.

Data from surveys show that within countries and between countries in the same region, the prevalence and incidence of STIs may vary widely.<sup>1</sup> In general, the prevalence of STIs tends to be higher in urban residents, in unmarried individuals and in young adults.<sup>1</sup> Of the estimated 340 million new STIs that occur every year, at least one third occur in young people under the age of 25. On average, women become infected with STIs at an earlier age than men.<sup>1</sup>



**Figure 1.1: Estimated new cases of STIs among adults, 1999. Global total 340 million. (Source: WHO)**

### 1.3.2 Epidemiology of STIs in other European countries

There is currently no single, comprehensive source of information on the incidence of STIs in the EU. There is considerable variation between countries as to the timeliness of reporting, the amount and quality of the data reported, and the coverage, specificity and representativeness of the

surveillance systems in place. In order to gain a better understanding of the epidemiology of STIs in Europe, the European Surveillance of STIs (ESSTI) network recently carried out a review of the recent trends of the major acute STIs in the EU and Norway, their key determinants, and opportunities for enhancing STI prevention interventions in the region.<sup>7</sup>

Throughout the 1980s and early 1990s, there was a dramatic reduction in the incidence of many acute STIs in the European Union (EU).<sup>8,7</sup> These decreases coincided with the emergence of the global HIV/AIDS pandemic and have been attributed to wide-scale behavioural modification. However, since the mid-1990s, the EU has experienced significant and sustained increases in the incidence of STIs.<sup>8,9</sup> This is especially the case for the acute bacterial STIs: gonorrhoea, syphilis and genital chlamydial infection. The increases have been concentrated in young people, ethnic minorities and men who have sex with men (MSM).

Clinical case notification of genital chlamydial infection is not mandatory in the majority of EU countries and therefore there is limited information available from national surveillance sources. In the countries collecting this information, genital chlamydial infection is now among the most commonly diagnosed bacterial STI and broadly increasing trends in diagnoses have been observed since the mid-1990s.<sup>8</sup>

A decline in gonorrhoea rates was noted in most western EU countries starting in the 1970s with rates of decline increasing during the second half of the 1980s.<sup>8</sup> Much of this decline continued into the early 1990s.<sup>10</sup> By 1995, gonorrhoea rates reached their lowest point in many EU states. Since the late 1990s, increases in diagnoses and rates of gonorrhoea have been observed in many European countries. However, recent data from the United Kingdom (UK) show a slight decrease (- 4%) in diagnoses of gonorrhoea during 2003.<sup>11</sup>

By the early 1990s, numbers and rates of infectious syphilis fell to their lowest levels in many EU countries.<sup>8</sup> The decreases were accompanied by marked reductions in the incidence of congenital syphilis and tertiary disease. However, since 1996, syphilis has been on the increase in many northern and western EU states.<sup>8</sup> Over the past seven years, a number of outbreaks of infectious syphilis have occurred in cities throughout northern and western Europe.<sup>8</sup> Many of the outbreaks have been seen in men who have sex with men, a high proportion of whom had co-infections with HIV.<sup>8</sup>

In general, viral STIs are not notifiable in most EU countries and relatively few surveillance data are available on viral STIs in the EU. Where available, increasing trends, albeit at lower rates compared to bacterial STIs, have been described.<sup>8</sup> Herpes Simplex Virus (HSV) infection is the most common ulcerative STI in the UK. Between 1971 and 2003, the number of genital HSV diagnoses made at genitourinary medicine (GUM) clinics increased 5 and 20 fold in males and females, respectively. Genital warts are the most commonly identified manifestations of genital Human Papillomavirus (HPV) infection. However, few EU countries routinely collect surveillance data on genital warts infections.<sup>8</sup> In the UK, genital warts (including new, recurrent and re-registered cases) are the most prevalent viral STI.

### 1.3.3 Epidemiology of STIs in Ireland

When reviewing the epidemiology of STIs in Ireland, it is important to note that surveillance of STIs in Ireland is based on an aggregate system of STI data collection. The data are provided to Departments of Public Health by the total number of cases in a particular agegroup or gender for a particular region and not by individual patient notification. Individual patient notification or person-based notification would allow for cross tabulation of the data and more powerful analysis, for example the number of cases between certain ages, of a certain infection in a small area could be determined. Aggregate data provide only limited demographic information and allow only limited analysis of data provided. The system does not provide data on risk factors or area of residence. Further information on the surveillance systems in place in Ireland is described in Chapter 2 of this report.

In January 2004, the list of notifiable STIs in Ireland was revised.

List of Notifiable STIs (as of January 2004)	
Ano-genital warts	Chancroid
Genital chlamydia infection	Genital herpes simplex
Gonorrhoea	<i>Granuloma inguinale</i>
Infectious hepatitis B	<i>Lymphogranuloma venereum</i> (LGV)
Non-specific urethritis (NSU)	Syphilis
Trichomoniasis.	

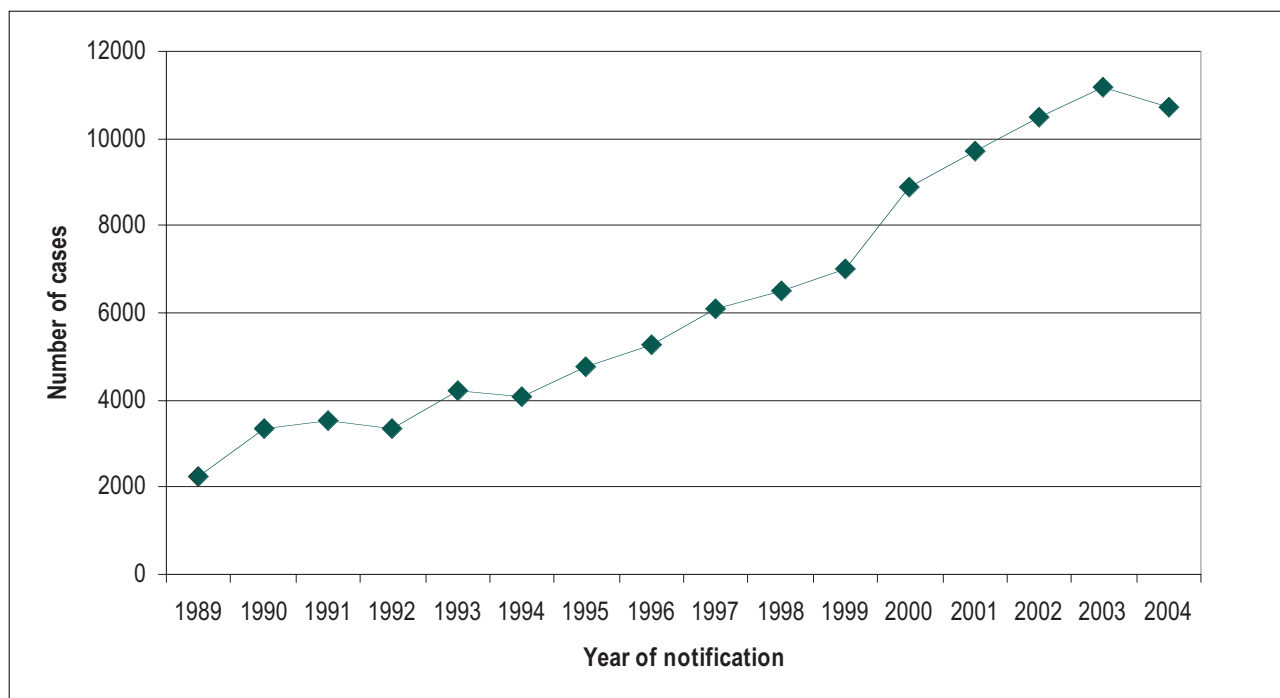
Notified STIs in Ireland have been increasing steadily each year since 1994.<sup>12</sup> Table 1.1 and Figure 1.2 show the number of STIs notified each year in Ireland from 1989 to 2004. During 2004, 10,695 STIs were notified compared to 11,153 in

**Table 1.1: Notified STIs in Ireland from 1989 to 2004\***

\*Note on 1st January 2004, revised infectious disease regulations came into operation. S.I. No. 707 of 2003 established a revised list of notifiable diseases in which candidiasis, molluscum contagiosum and pediculosis pubis were no longer notifiable STIs and is indicated by 'N/A' in the table below.

Sexually Transmitted Infection (Year)	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Ano-Genital Warts	505	917	1089	1066	1432	1532	1972	2286	2514	2886	3049	3735	3993	3932	3981	4174
Candidiasis	688	1056	1257	1157	1400	1360	1271	1321	1521	1277	1105	1095	1150	1351	1370	N/A
Chancroid	2	0	0	2	0	2	3	1	1	0	1	16	1	1	0	1
Genital Chlamydia Infection	174	215	164	192	315	133	245	364	462	646	869	1343	1649	1922	2258	2803
Genital Herpes Simplex	78	123	109	125	124	173	198	181	211	243	275	269	331	358	375	411
Gonorrhoea	27	90	73	51	24	98	91	83	98	125	175	290	349	214	186	270
Granuloma Inguinale	0	0	0	0	6	0	0	1	1	0	1	0	0	0	0	1
Infectious Hepatitis B	0	0	0	0	0	0	4	2	0	0	2	15	39	57	112	85
Lymphogranuloma Venereum	0	0	0	0	0	0	0	0	5	1	2	0	0	1	0	0
Molluscum Contagiosum	31	39	43	44	34	56	59	34	74	84	83	118	111	150	169	N/A
Non-Specific Urethritis	600	738	549	585	756	610	781	823	1034	1083	1265	1726	1634	2025	2332	2746
Pediculosis Pubis	60	70	72	70	77	69	86	79	81	105	113	138	103	84	76	N/A
Syphilis	12	19	20	20	8	11	11	17	16	15	6	46	279	303	235	144
Trichomoniasis	51	86	163	41	57	29	60	71	94	38	47	78	64	73	59	60
<b>Total</b>	<b>2228</b>	<b>3353</b>	<b>3539</b>	<b>3353</b>	<b>4233</b>	<b>4073</b>	<b>4781</b>	<b>5263</b>	<b>6112</b>	<b>6503</b>	<b>6993</b>	<b>8869</b>	<b>9703</b>	<b>10,471</b>	<b>11,153</b>	<b>10,695</b>

2003, a decrease of 4.1%. However, candidiasis, molluscum contagiosum and pediculosis pubis were no longer notifiable diseases during 2004. The three most frequently notified STIs in 2004 were ano-genital warts (4,174 cases), non-specific urethritis (2,746 cases) and *C. trachomatis* (2,803 cases), the highest numbers reported for these diseases in any year on record.

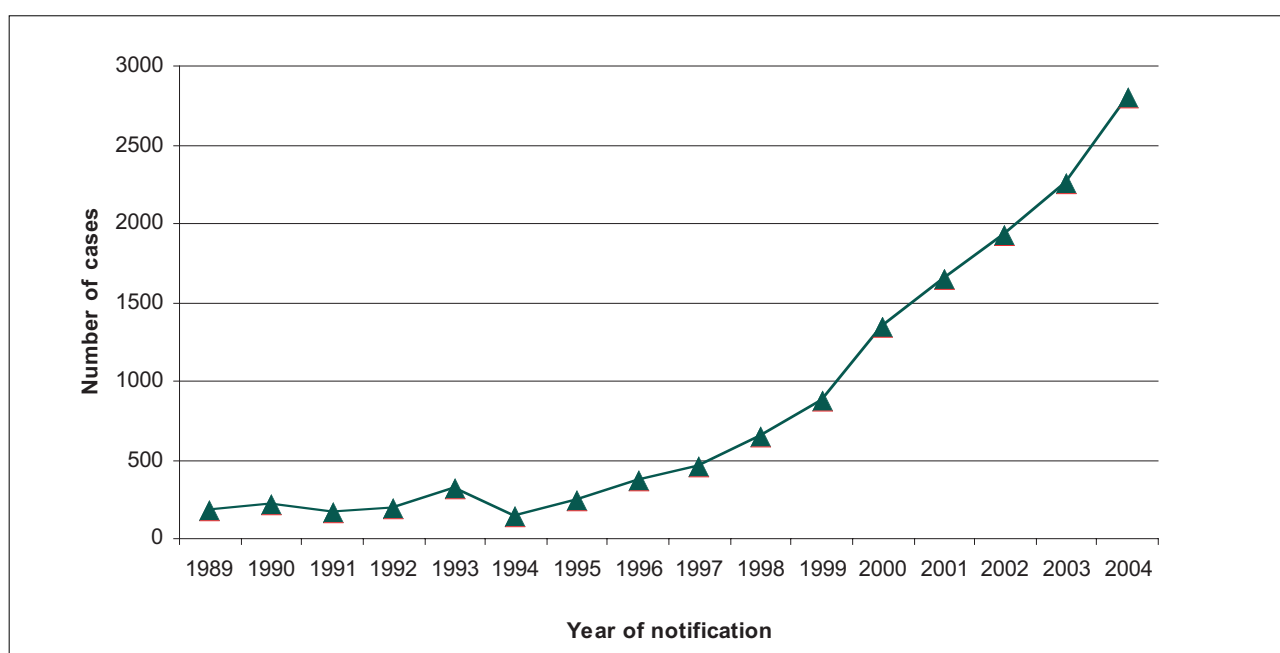


**Figure 1.2: Notified STIs in Ireland from 1989 to 2004\***

\*Note on 1st January 2004, revised infectious disease regulations came into operation. S.I. No. 707 of 2003 established a revised list of notifiable diseases in which candidiasis, molluscum contagiosum and pediculosis pubis were no longer notifiable STIs.

#### *Chlamydia trachomatis*

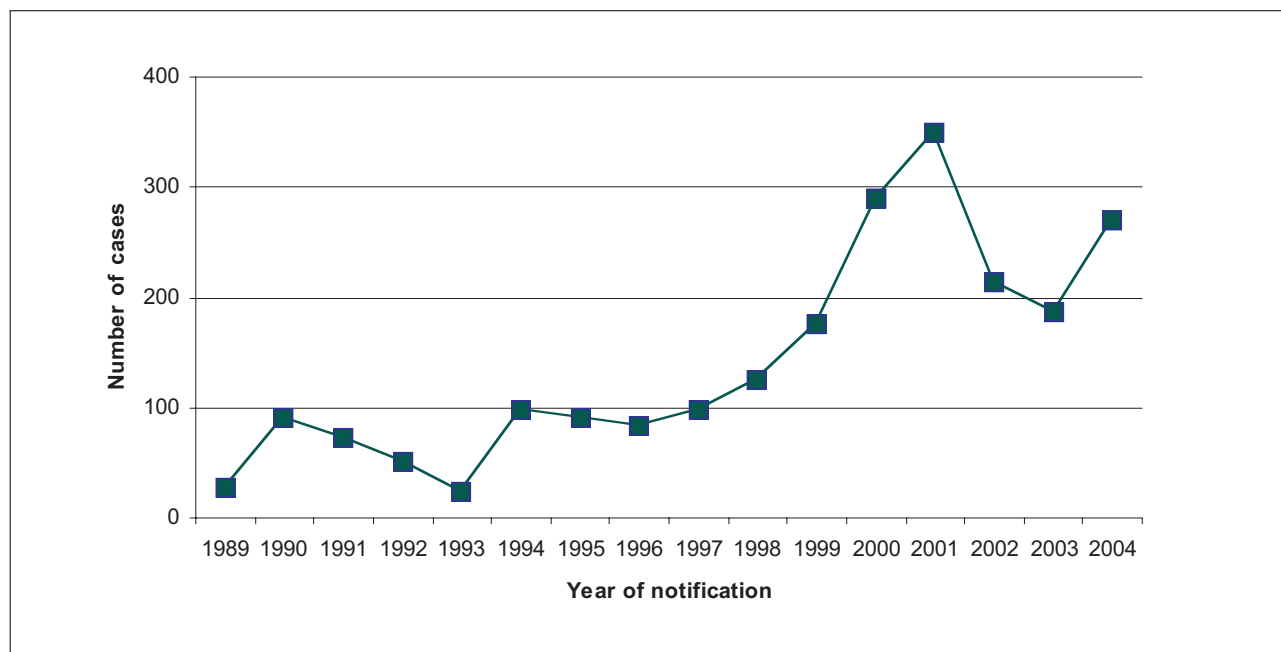
In the early 1990s, the number of notified cases of *C. trachomatis* infection generally remained stable, fluctuating around a mean of 205 cases per year. From 1994 onwards, there was an increase in the number of cases, reaching 2,803 cases notified in 2004. This represents a rate of 71.6 per 100,000 population. During 2004, *C. trachomatis* was the second most commonly notified STI after ano-genital warts and non-specific urethritis and represented 26.2% of all STI notifications. However, the numbers reported are likely to represent a substantial underestimate of the true number of



**Figure 1.3: Notifications of *C. trachomatis* by year, 1989 to 2004**

cases as chlamydia is asymptomatic in at least 70% of women and 50% of men.<sup>13</sup> Men and women treated at STI clinics are currently screened for chlamydia regardless of their symptoms so a proportion of these notifications may have been identified as a result of the person presenting with symptoms of another STI or attending for a routine screening.

Figure 1.3 shows the number of cases of *C. trachomatis* notified between 1989 and 2004.



**Figure 1.4: Notifications of gonorrhoea by year, 1989 to 2004**

#### Gonorrhoea

Gonorrhoea notifications increased consistently between 1996 (83 cases) and 2001 (349 cases). Since 2001, numbers have declined, with notifications decreasing by 38.7% in 2002 (compared to 2001) and 13.1% in 2003 (compared to 2002). In 2004 the numbers increased by 45.2% compared to 2003. Two hundred and seventy cases of gonorrhoea (6.9 per 100,000 population) were notified in 2004. The peak in gonorrhoea notifications observed in 2001 coincided with the outbreak of syphilis amongst MSM. Gonococcal infections tend to be concentrated in core risk groups, such as MSM, and this is reflected in 2004 notifications with 86.7% of notifications among males. The decreases seen in 2002 and 2003 may have resulted from the interventions put in place to control the syphilis outbreak. The fact that the numbers of cases have risen in 2004 underlines the need for continuous vigilance.

Figure 1.4 shows the number of cases of gonorrhoea notified between 1989 and 2004.

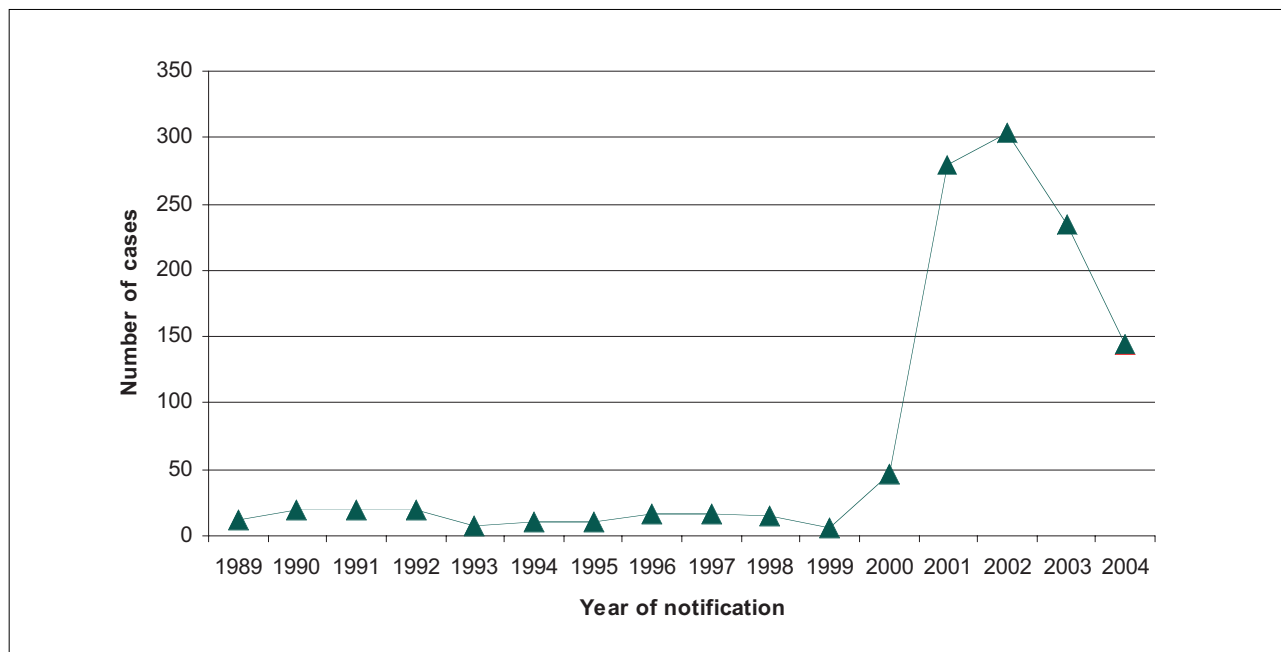
#### Syphilis

There was a low incidence of syphilis in Ireland throughout the 1990s, which reached its lowest level in 1999 with 6 cases reported. Between 2000 and 2002, there was a dramatic increase in syphilis amongst men who have sex with men (MSM) in Dublin. Similar increases were seen in the UK, several other European countries and the US.<sup>6</sup> In response to this increase the Director of Public Health in the Eastern Regional Health Authority (ERHA) established an outbreak control team in October 2000. Intervention measures included the provision of additional resources for clinical services, contact tracing, onsite testing in MSM venues and information campaigns targeted at the MSM community.<sup>14</sup> These interventions may have had an impact as the outbreak amongst MSM in Dublin peaked in 2002 and syphilis notifications decreased by 22.4% in 2003 and again by 38.7% in 2004. However, notifications have not returned to their previous levels and syphilis remains endemic in Ireland.

Figure 1.5 shows the number of notifications of syphilis from 1989 to 2004.

<sup>1</sup>Sources of data: 1989 to June 2000, Department of Health and Children (DOHC); from July 2000, HPSC.





**Figure 1.5: Notifications of Syphilis by year, 1989 to 2004**

### Other STIs

#### Ano-genital warts

In 2004, 4,174 cases of ano-genital warts were notified, which is very similar to the number of notifications in 2003 (3,981 cases) and 2002 (3,932 cases). Ano-genital warts were the most commonly notified STI in Ireland between 1993 and 2004 and accounted for 39% of all notifiable STIs in 2004. However, it has been estimated that ano-genital warts only represent approximately ten percent of overall sexually-transmitted HPV infections as infections caused by most types of HPV, including the types that have been linked to cervical cancer, do not usually cause ano-genital warts.<sup>15</sup>

#### Genital herpes simplex

Notifications of genital herpes simplex have been increasing gradually since 1989, with 78 cases notified in 1989 and 411 cases in 2004. This represents an increase of 426.9%.

#### Infectious Hepatitis B

Hepatitis B is known to affect certain subgroups of the population, namely intravenous drug users (IDUs), prisoners and chronically infected immigrants from endemic areas such as sub-Saharan Africa, most of Asia and parts of Eastern and Central Europe.<sup>16</sup> Overall Hepatitis B infections notified through the weekly infectious disease notification system have increased by 326.2% between 2000 and 2004. Voluntary health screening, which includes screening for Hepatitis B markers is offered to asylum seekers in Ireland and the uptake of screening is in excess of 70%.<sup>17</sup> However, asylum seekers make up a relatively small proportion of the total influx of people to Ireland each year and the number of applications for asylum is reducing each year. In 2002 there were 11,634 applications for asylum received by the Department of Justice Equality and Law Reform, in 2003 the figure was 7,900 and just 4,766 applications for asylum were received in 2004. In the last five years over 100,000 persons from outside the European Economic Area have been admitted to the State for employment purposes. This is in addition to the substantial numbers of nationals of the European Union or other European Economic Area Member States who have also come to Ireland to work. In addition, migration for study purposes has also been at a significant and increasing level.<sup>18</sup> A report prepared for the Directors of Public Health<sup>19</sup> stated that '*although Ireland now has a multicultural society, it appears that little is done to encourage immigrants from countries where hepatitis B is endemic to either be screened for, or vaccinated against, hepatitis B virus (unless identified as asylum seekers)*'.

#### Hepatitis B reported through the STI Surveillance System

Between 1989 and 1999, the annual number of infectious hepatitis B cases reported through the STI surveillance system ranged from zero to four cases. Since 1999, there has also been a large increase in the number of notifications of infectious hepatitis B and in 2003, 112 cases were notified. In 2004, only 85 cases were reported. It is likely that the Hepatitis B notifications reported through the STI surveillance system in recent years is mostly attributable to immigrants from areas of the world where Hepatitis B infection is endemic who are presenting at STI clinics and in whom chronic hepatitis B co-infection is being identified.

**Key points**

- The WHO has estimated that approximately 340 million new cases of the four main curable STIs in adults occurred throughout the world in 1999.
- Throughout the 1980s and early 1990s, there was a dramatic reduction in the incidence of many acute STIs in the EU. These decreases coincided with the emergence of the global HIV/AIDS pandemic and have been attributed to wide-scale behavioural modification. However, since the mid-1990s, the EU has experienced significant and sustained increases in the incidence of STIs.
- During 2004, 10,695 STIs were notified compared to 11,153 in 2003, a decrease of 4.1%, but this is because candidiasis, *Molluscum contagiosum* and *Pediculosis pubis* were no longer notifiable diseases during 2004.
- Between 1994 and 2004, the number of cases of genital chlamydial infection notified in Ireland has increased from 133 to 2,803.
- Gonorrhoea notifications increased consistently between 1996 and 2001. Since 2001, numbers have declined. The peak in gonorrhoea notifications observed in 2001 coincided with the outbreak of syphilis amongst MSM.
- There was a low incidence of syphilis in Ireland throughout the 1990s. Between 2000 and 2002, there was a dramatic increase in syphilis amongst MSM in Dublin. The outbreak amongst MSM in Dublin peaked in 2002 and syphilis notifications decreased in 2003 and again in 2004. However, notifications have not returned to their previous levels and syphilis remains endemic in Ireland.
- Since 1999, there has been a large increase in the number of notifications of infectious hepatitis B. It is likely that the large increase in notifications in recent years is mostly attributable to immigrants from endemic areas of the world being tested in STI clinics for other infections, with chronic hepatitis B co-infections being identified.

## 2. Surveillance of STIs

### 2.1 Current surveillance of STIs in Ireland

#### 2.1.1 Legislative framework

Statutory notification of infectious diseases was introduced in Ireland in 1947. The principal current regulations regarding notification of infectious diseases are contained in the Infectious Diseases Regulations 1981 (S.I. No. 390 of 1981). The list of notifiable infectious diseases in Ireland was revised recently by the Infectious Diseases (Amendment) (No. 3) Regulations 2003 (S.I. No. 707 of 2003), which came into force in January 2004.

Prior to January 2004, fourteen STIs were notifiable, namely: ano-genital warts, candidiasis, chancroid, genital chlamydia infection, genital herpes simplex, gonorrhoea, granuloma inguinale, infectious hepatitis B, lymphogranuloma venereum (LGV), molluscum contagiosum, non-specific urethritis (NSU), pediculosis pubis, syphilis and trichomoniasis. The recent amendment established a revised list of notifiable diseases and introduced a requirement for laboratory directors to report infectious diseases to the Medical Officer of Health (MOH). The amendment made revisions to the list of notifiable STIs and three were removed from the existing list (candidiasis, molluscum contagiosum and pediculosis pubis). The amendment introduced, for the first time in Ireland, a set of case definitions for notifiable infectious diseases. These case definitions have been drawn up in line with standardised European case definitions.

The changes to the legislation in 2004 were based on recommendations of the SAC of the HPSC. A subgroup of the SAC carried out a review at the request of the Department of Health and Children (DoHC). The review involved extensive consultation with key parties. The final report, *A Review of Notifiable Diseases and the Process of Notification* (February 2001)<sup>20</sup> contained a range of recommendations and proposed amendments to the list of notifiable diseases. The committee also recommended that HIV should be made statutorily notifiable. However, HIV was not included in the 2003 amendment to the regulations.

#### 2.1.2 Notification of STIs

Unlike other notifiable infectious diseases, which are reported on an individual case basis by clinicians to the MOHs as they occur, it has been custom and practice for STI clinics to notify STIs in aggregate format to the MOH. For each notifiable STI, the total number of cases by age group and the total number of cases by gender, are reported to the MOH on a quarterly basis. Some data are also received from general practitioners (GPs) and other clinicians. However, the majority of STIs are notified from STI clinics, without patient identifiers (or patient name), in aggregate format.

The data are collated for each Health Service Executive (HSE) region by Departments of Public Health and an aggregate report is forwarded to the HPSC each quarter. Data are validated and analysed at HPSC and quarterly and annual reports are produced which are posted on the HPSC website ([www.hpsc.ie](http://www.hpsc.ie)). There can be a significant delay, sometimes over a year, between the end of a quarter and receipt of the data at the HPSC. Unlike other notifiable infectious diseases, data on STIs are not included in the Weekly Infectious Disease Reports produced by the HPSC.

The amended Regulations state that '*a standard form for the purpose of returning infectious disease shall be compiled by the National Disease Surveillance Centre and circulated by the centre*'. In accordance with the Regulations, a standard form has been developed and circulated by HPSC in respect of notifiable infections, other than those which are primarily sexually transmitted. When the amended Infectious Disease Regulations came into effect in January 2004, it was decided, pending the recommendation of this report, to continue with the current practice of aggregate reporting of STIs, on an interim basis. The recommendations of this report are also awaited in relation to the development of a standard form for notification of STIs.

#### 2.1.3 Enhanced surveillance of syphilis

In addition to aggregate reporting of STIs, an enhanced surveillance system for syphilis was established in late 2000 to capture data on all syphilis cases diagnosed in Ireland from January 2000 in response to increased numbers of cases being reported among MSM.<sup>14</sup> This was against a low background rate of reported syphilis cases throughout the 1990s, which in 1999 reached its lowest level in 10 years (six cases, 0.2/100,000). A data collection form was designed in consultation with STI clinicians and the Departments of Public Health. Data collected includes: core demographic details (including age, gender, country of birth and HSE area of diagnosing clinic), sexual orientation, socioeconomic status, drug use, clinical details, data on previous and concurrent infections, recent and previous sexual history including the number of sexual contacts and relevant social venues, networks, commercial sex activity (purchaser or provider) and whether protection (oral/anal/vaginal) was used. Forms are completed by clinicians and forwarded to the MOH and thence to the HPSC, where the data are collated and regular reports produced.

### 2.1.4 HIV/AIDS surveillance

HIV/AIDS is not statutorily notifiable in Ireland. The matter of notifiability of HIV/AIDS is currently under consideration by the National AIDS Strategy Committee (NASC) and the DoHC. A description of the operation of the voluntary HIV Case Based Reporting System is included here for completeness.

#### *HIV Case Based Reporting*

In late 2000, the HPSC assumed responsibility for HIV and AIDS surveillance from the DoHC. In July 2001, the HIV case based reporting system, a voluntary system using anonymised data, was introduced. Briefly, the system operates as follows. When a new HIV positive test is confirmed by the laboratory, a HIV/AIDS surveillance report form (using a Soundex code of the patient's surname as the patient identifier) is sent to the clinician who requested the test, together with the test result, for completion. The clinician returns the completed form to the local MOH and it is then forwarded to the HPSC. The data are validated and analysed at HPSC and reports are produced every six months and posted on to the HPSC website ([www.hpsc.ie](http://www.hpsc.ie)). Data are also reported to the European Centre for the Epidemiological Monitoring of AIDS (EuroHIV).

### 2.1.5 European Surveillance of STIs

Ireland is a member of the ESSTI network ([www.essti.org](http://www.essti.org)). The ESSTI network was established in 2001. Funding is provided from the European Commission's Health and Consumer Protection Directorate-General (DG Sanco). The ESSTI network is a working collaboration between STI surveillance heads and STI reference microbiologists of 25 countries (22 EU member states and Iceland, Norway and Turkey). The network aims to: improve collaboration (multi-disciplinary, inter-network and multi-agency), build capacity, and facilitate robust dissemination of information on STIs to inform public health policy and planning across EU partners. ESSTI activities currently focus primarily on gonorrhoea, genital chlamydia infection and syphilis. These three diseases, together with HIV, are designated diseases to be progressively covered by the community network (Decision no.2000/96/EC under Decision no. 2119/98/EC of the European Council and of the Parliament).

In April 2003, ESSTI set up ESSTI ALERT, an early warning and response system, to monitor unexpected and adverse STI transmission events. Ireland participates in this early warning system and participation is coordinated by the HPSC. Data on STI incidents and outbreaks are disseminated by ESSTI to collaborators and are also collated in a quarterly feedback report. This allows dissemination of information that may otherwise have remained at country-level.

#### **Key Points**

- There are currently 11 notifiable STIs in Ireland.
- Unlike other notifiable infectious diseases, which are notified as they occur, it has been custom and practice for clinicians to notify STIs on an aggregate basis, quarterly.
- The majority of STI notifications relate to cases diagnosed at STI clinics.
- An enhanced surveillance system for syphilis has been in operation since 2000.
- HIV/AIDS is not statutorily notifiable. A voluntary anonymous HIV case based reporting system has been in operation since July 2001.

## 2.2 Critical review of current STI surveillance systems

### 2.2.1 Visits to STI clinics

In 2002, members of the STI subcommittee visited the major STI clinics in the country to meet clinical staff and local public health specialists. At this point it was noted by the group that there were no specialist STI services provided in the Midland Health Board or in the North Eastern Health Board areas of the country (from January 2005 the Health Service Executive Midland Area and Health Service Executive North Eastern Area, respectively). The information gleaned on the visits has subsequently been updated to reflect current practice in the STI clinics. The purpose of the visits was to discuss and review with clinic staff, the notification system in operation at each site. The STI clinics visited were at the Mater Hospital, Dublin; the Genito-Urinary Medicine and Infectious Diseases (G.U.I.D.E.) clinic, St James's Hospital, Dublin; Waterford Regional Hospital; the Victoria Hospital, Cork; Limerick Regional Hospital; University College Hospital, Galway; and Sligo General Hospital.

Clinicians, nursing and administrative staff in each of the STI clinics visited generally agreed that the current surveillance system for STIs was unsatisfactory. There was uniform agreement in relation to the need to move from collection of aggregate data to the collection of disaggregate STI data. In addition, there was agreement on the need to improve reporting of STI surveillance data and the feedback to STI clinics, in the form of regular timely reports. At the time of the visits, personnel in each clinic felt that there were some major obstacles to their capacity to transmit timely, disaggregate data to Departments of Public Health. They were as follows:

- **Staffing**

At that time, none of the STI clinics had a member of staff in place who had protected time (or expertise in certain clinics) to compile regular disaggregate data reports, either paper based or in electronic format, for transmission to local Departments of Public Health. (A database manager has been employed in the GUIDE clinic in St James's Hospital since these visits were carried out). Personnel in the larger clinics felt that there should be one person dedicated to data management/entry and reporting of STI disaggregate data to the relevant Departments of Public Health. In smaller clinics this dedicated person might only be needed on a 0.5 Whole Time Equivalent (WTE) basis, whereas in larger clinics it was felt that more than one person would be needed. It was felt that this dedicated person would need to be of sufficient seniority to be able to deal with highly sensitive data. High staff turnover at lower grades has proved problematic for many clinics. It was also suggested that the data manager/processor should ideally have a nursing/medical/scientific background.

- **Patient confidentiality**

There were concerns expressed in relation to patient confidentiality in the context of collection of disaggregate, patient based, data on STIs. Many clinicians felt that it would be inappropriate to use patient names for notification due to the sensitivity of the data and that provision of patient names to Departments of Public Health might deter patients from presenting at STI clinics. Some felt that patients may provide false names and that the doctor/patient relationship may be compromised. Concerns were also expressed in relation to patient anonymity in published data/reports. It was felt that, in areas with smaller populations, it is vital that patients can never be identified from the anonymous demographics presented in reports and that guidelines for reporting of data would be essential to ensure that a patient(s) would never be recognised from reports/publications.

**Table 2.1: Information Communications Technology systems in STI clinics**

STI CLINIC	SYSTEM	COMMENTS
SJH	Patient Administration System (PAS) for patient appointments and Registration. Manual compilation of statistics.	Discussions have taken place in relation to a new clinic management system which will also provide for extraction of surveillance data for transmission to MOH
Mater	Paper based system in use with manual compilation of data	There are plans for a locally designed electronic database.
Waterford	'SHIP' System Installed and in use	Allows prompt return of aggregate quarterly reports
Cork	A locally designed ACCESS database in use	Allows prompt return of aggregate quarterly reports
Limerick	EXCEL database in use. There is one laptop available which is not 'networked'	Returns are compiled manually by the clinician. Reports are compiled when time allows
Galway	Locally designed ACCESS database in use	Allows prompt return of aggregate quarterly reports
Sligo	ACCESS database in use. One laptop in use, which is not 'networked'	Allows prompt return of aggregate quarterly reports.

### • Information Communication Technology (ICT) Systems

The systems in use in the STI clinics visited are set out in Table 2.1. At the time of writing the report, the only clinic management system in use in any of the STI clinics was the SHIP system ([www.caradata.com](http://www.caradata.com)) which was installed in the Waterford STI clinic. This is a commercial computerised relational database, which uses Microsoft ACCESS software. This software was developed in Australia specifically for use in STI clinics. Support for the system is provided by personnel from the company in Australia, who visit Ireland approximately twice a year. Patient data are entered onto the system by clinic administrative staff and the system produces regular reports for public health and hospital management. The system is not flexible, as development of new reports or any change to the format of reports must be carried out by SHIP personnel and entails additional costs.

### 2.2.2 STI surveillance in Departments of Public Health

In July 2004, the Directors of Public Health established a review group to document the current practices in each Department of Public Health in relation to surveillance and public health management of STIs and to recommend to the Directors of Public Health the best practice options for surveillance and public health management of STIs in Ireland. This report is entitled *Report on Surveillance and Control of Sexually Transmitted Infections (STI) in Health Boards* (unpublished).

In order to inform the report, a questionnaire survey of each Department of Public Health was undertaken. The survey revealed general agreement that current STI surveillance is sub-optimal and that there is a need for a standardised mechanism for the enhanced surveillance of STIs at national level in Ireland. Key issues for STI surveillance identified were a need for an agreed national dataset and timely and complete reporting of data. At the time of the survey, none of the Departments of Public Health had developed local guidelines on STI surveillance and control.

The main recommendations of the report were as follows:

- Development of an agreed minimum data set with case definitions for all STIs
- Weekly laboratory reporting of all STIs
- Where follow-up of individual STI cases in the community by public health is required, named patient or patient identifiable notifications will be necessary.
- A national standard protocol for appropriate public health follow-up of STI cases is required.
- The roles and responsibilities of those involved in follow-up of diagnosed STIs i.e. Departments of Public Health, Primary Care and STI clinical services, should be agreed.
- The mechanisms for Public Health follow-up of STI cases should be set in the context of a National Sexual Health Strategy.

### 2.2.3 Current STI surveillance in General Practice

A study, described in Chapter 3 of this report, which looked at the management of STIs in Irish general practice, found that most GPs do not notify STIs to their local Department of Public Health. In fact, they rarely report any notifiable infectious disease except gastroenteritis, measles or meningitis, occasionally. The study found that GPs who do notify are more likely to notify HIV, syphilis, infectious hepatitis B and gonorrhoea than genital chlamydia infection, anogenital warts or genital herpes simplex.

Most incident case reports come from GPs who have a special interest and expertise in STIs and who see significant numbers of cases. Currently, case reports notified to the MOH by GPs are included in the quarterly data sent by Departments of Public Health to the HPSC.

### 2.2.4 Performance of the current STI surveillance system

The performance of the STI surveillance system was assessed by looking at its usefulness and describing each system attribute in terms of simplicity, flexibility, acceptability, sensitivity, positive predictive value, representativeness and timeliness.

#### Usefulness of the current system

In 2001 the Centers for Disease Control and Prevention (CDC) in the United States (US) published updated guidelines for evaluating public health surveillance systems.<sup>21</sup> The guidelines state that an indication of the level of usefulness of a surveillance system is the public health actions taken as a result of the analysis and interpretation of the data from the system. The critical test is whether data helps clinicians and health board managers to make decisions on prevention and treatment services. The current, aggregate system of STI data collection provides only limited demographic information (age group and gender) and allows only limited analysis of data provided. The system does not provide data on risk factors, which could be used to identify the groups at greatest risk and to target STI control and prevention programmes

appropriately. Also, information on area of residence is not collected. Clients may travel from their area of residence to clinics elsewhere and the data do not necessarily reflect numbers of infections diagnosed among residents of a particular health board.

However, there is usually significant media interest in the published STI reports, which serves to raise awareness of the increasing incidence of STIs and of the importance of the safe sex message. In addition, some regions have responded to the increases in reported STIs and attendances at STI clinics with increased preventative efforts and provision of additional resources for STI clinic services.

### Attributes of the current system

- **Simplicity**

The current system, while simple in terms of data requirements (aggregate data for each notifiable infection by age and by gender), is not simple or streamlined in terms of the process of extraction of data for compilation of returns. In many clinics data are extracted manually from patient charts in batches and because of the high numbers of patients attending the clinics, this is a resource intensive and inefficient exercise.

- **Flexibility**

A flexible public health surveillance system can adapt to changing information needs or operating conditions with little additional time, personnel, or allocated funds. Flexible systems can accommodate, for example, new health-related events, changes in case definitions or technology, and variations in funding or reporting sources.<sup>21</sup> The principal current regulations regarding notification of infectious diseases are contained in the 1981 Infectious Disease Regulations. The flexibility of the system was demonstrated in 2003 in the context of the global epidemic of SARS. The first global alert in relation to Severe Acute Respiratory Syndrome (SARS) was issued by the WHO on 12 March 2003 and an amendment to the Infectious Diseases legislation (S.I. No. 180 of 2003) was signed into law on 2 May 2003 adding SARS to the list of notifiable diseases.

- **Acceptability**

Generally the system is acceptable to those working in STI clinics as part of custom and practice in the clinics. However, anecdotally, clinicians working in other diagnostic settings e.g. general practice, family planning clinics, with some exceptions, do not generally make returns to Departments of Public Health in relation to STIs.

- **Sensitivity**

Sensitivity depends not only on the coverage (that is, the proportion of all cases diagnosed which are reported) of the system but also on the proportion of cases occurring that are detected. In respect of the former, in early 2003 the HPSC carried out a survey of STI diagnostic laboratories in Ireland in order to obtain information on the diagnostic and reporting practices for STIs in clinical laboratories in Ireland. The survey (described in Chapter 4 of this report) demonstrated that significant numbers of specimens originate from outside STI clinics and given that most notifications come from STI clinics, the number of infections reported to Departments of Public Health and published in national surveillance reports are an under-representation of the actual number of STIs diagnosed in Ireland each year.

- **Positive predictive value**

It is not possible to calculate the positive predictive value of the system, as prevalence of STIs in the population is unknown.

- **Representativeness**

Most of the STI data collected through the current system are clinic-based and do not reflect the number of STIs presenting in general practice, Family Planning Clinics, Student Health Services or other hospital specialities. The committee noted that there is no STI clinic service currently in place in the HSE-Midland region or in the HSE-North East Region. Notwithstanding that, anecdotally, it is known that patients often travel to outside their own area of residence to avail of STI clinic services and that infections diagnosed in general practice are not usually notified to Departments of Public Health, the numbers of STIs reported from these regions in 2004 was 13.3 per 100,000 population and 22.2 per 100,000 population respectively notified for the North East and Midland regions, compared to a mean of 300.6 per 100,000 reported from each of the other 6 regions of the country reflects the absence of an STI clinical service in these regions.

A survey described elsewhere in this report, which looked at the management of STIs in Irish general practice found that less than 50% of GPs refer genital chlamydia infection, trichomoniasis or genital herpes simplex infection to an STI clinic and only 50.5 % reported that they refer ano-genital warts to an STI clinic. Therefore, these infections are unlikely to be captured in the current STI surveillance reports which are based on incident case reports originating mainly from STI clinics, resulting in an under-representation of the true numbers of infections diagnosed in the population. There is also the problem of duplication arising from the separate reporting of aggregate numbers of STIs by providers within each health board and between health boards.



- **Timeliness**

The current STI surveillance system is not timely. The time lag between a case being diagnosed and data reaching the HPSC can be up to 2 years.

### Key points

There is uniform agreement that the current surveillance system is of limited usefulness for the following reasons:

- it is not sensitive as there is very little notification of STIs from GPs, Family Planning Clinics or other primary care settings such as Student Health Services:
- it is not representative, as most of the STI data collected through the current system is STI clinic-based and not area of residence of the patient. This is of note particularly for areas with no specialist STI clinic service
- it is not flexible as the system has not adapted to reflect the changes in STI epidemiology over the past 20 years
- reports are not timely. The time lag between a case being diagnosed and data reaching the HPSC can be up to 2 years

There is uniform agreement on the need to move from collection of aggregate data to the collection of disaggregate, person-based data. Collection of disaggregate data will require additional ICT resources and dedicated personnel in STI clinics.

However, reports from the current surveillance system serve to raise awareness of the problem of STIs and of the importance of the safe sex message.

## 2.3 Issues to be considered in development of STI surveillance

### 2.3.1 Case for disaggregate data

Demographic, clinical and risk factor information collected on a case basis is vital to allow for planning and evaluation of prevention and treatment services. For example, inclusion of information on area of residence for each case notified would allow attribution of population denominators to cases and thus estimation of incidence rates at local area level, allowing targeting of resources. Locally relevant data are needed to allow STIs to be monitored by area of residence and to allow planning of prevention and treatment services targeted to local needs.

The epidemiology of STIs is unique in its closeness of association with specific human behaviours and there is a need for enhanced data on the demographic and behavioural characteristics of patients if trend and distribution data are to be interpreted (risk factors for infection, geographic spread, characteristics of those repeatedly acquiring STIs or those who present with more than one STI at any point in time—those typically at highest risk). In England, GUM clinics have a statutory requirement to make quarterly aggregate returns in respect of STIs seen at clinics (KC60 returns), providing core data for STI surveillance. Commenting on the KC60 system, Lau and Catchpole<sup>22</sup> observe that the system makes it difficult to define or characterize the 'at risk' population, as it is not possible to distinguish individual patients, each attending with a single episode of a specific genital infection from patients presenting with multiple infections or the same patients re-attending with the same condition. Furthermore, they say that data on sexual behaviour that would be central in understanding the epidemiology of STIs is conspicuous by its absence.

### Key points

- Demographic (area of residence of patient, age or date of birth, gender, country of birth and ethnicity), clinical and risk factor information, collected on a person or case-based basis, is vital to allow for planning and evaluation of interventions.

### 2.3.2 Sources of data

#### Incident case reports

Surveillance systems in most countries have inevitably been shaped by the infrastructure of clinical services for STIs in those countries.<sup>23</sup> A cross sectional survey of STI surveillance systems in 14 member states of the EU and Norway carried out by ESSTI in 2002/2003 confirmed the heterogeneity of EU STI surveillance systems, reflecting different healthcare



systems, resources and needs and identified common priorities for improving surveillance systems.<sup>8</sup> Many EU countries have poorly developed STI surveillance systems. The mainstay of European STI surveillance systems for acute bacterial STIs is case reporting from clinicians and/or laboratories.<sup>7</sup> The survey showed that in the 14 countries surveyed, specialised confidential STI clinics exist in most large towns and cities, where the majority of STI cases occur. Such services are frequently attached to hospitals as open access outpatient clinics and STI care is usually free, or largely free, at the point of care.

Under-reporting of STIs has been recognised as a long-term problem in many countries,<sup>24</sup> as has failure to detect cases seen outside specialist clinics.<sup>25</sup> Catchpole observed that notification of STIs by physicians tends to reflect only the 'contact surface' between STI clinics and their attenders, which may be restricted to rather limited social groups or strata of the population.<sup>23</sup> The numbers of reported STIs reflect a mix of case finding and partner notification practices, performance characteristics of diagnostic tests used, as well as coverage and representativeness of reporting. Viral STIs such as HPV and HSV, which are largely asymptomatic and widely distributed in the population, pose special challenges to surveillance systems which are based on reporting of STI incident cases from STI clinics.

#### Laboratory reporting

Discussing the survey of EU STI surveillance systems, the authors comment that automated electronic data transfer through laboratory reporting is particularly feasible for STIs. Universal or sentinel laboratory reporting of STIs, with denominator data, can to some extent circumvent problems of coverage and representativeness of clinical case reporting, particularly from primary healthcare settings<sup>8</sup>. Since 1 Jan 2004, clinical laboratory directors in Ireland are obliged to report information on all microbiological diagnoses of STIs, from whichever clinical setting the specimen originates and surveillance is no longer limited to STI clinics. However, the usefulness of laboratory data may be limited by insufficient accompanying information for meaningful epidemiological interpretation.<sup>26</sup>

#### Other available sources of information

- Data from antenatal screening programmes

Linked antenatal HIV screening has been in place in Ireland since 1999. The HPSC collect data on the linked antenatal programme from Maternity Units/Hospitals. Data for 2002 to 2004 are available in respect of a total of 145,434 women who were offered the antenatal HIV test. Of these 145,434 women, 140,549 availed of the test (an uptake rate of 96.6%). Of the 140,549 women tested, 405 were identified as HIV positive (0.29%). Of these 405 women, 247 were new diagnoses, that is, they had not been previously aware of their HIV status.

Maternal syphilis is detectable through screening and entirely treatable, preventing vertical transmission of infection from mother to foetus. In Ireland, serological screening for maternal syphilis in pregnancy is routine and similar to the reporting of data from the linked HIV antenatal screening programme and it is feasible to collect data and produce routine reports using data from the syphilis antenatal screening programme with minimal additional resources.

- Morbidity data

The H.I.P.E. (Hospital In-Patient Enquiry) Scheme is a computer-based health information system designed to collect clinical and administrative data regarding discharges and deaths in acute public hospitals.<sup>27</sup> Historical HIPE data have limitations, as data from maternity hospitals were not required until 1999, although some data have been submitted since 1994. Also, each HIPE discharge record represents one episode of care and patients may have been admitted to hospital(s) more than once with the same or different diagnoses. The records thus facilitate analyses of hospital activity rather than 'incidence' of disease. As set out in the HPSC report *The Need for Chlamydia Screening in Ireland*, during the five years 1999 to 2003, there was a 27% increase in the number of hospital discharges with a diagnosis of Pelvic Inflammatory Disease (PID) and a 56% increase in the number of discharges with a diagnosis of tubal (ectopic) pregnancy. Over the same time period, there was a 21% decrease in the number of hospital discharges with a diagnosis of tubal-factor infertility. However, these data relate to hospital inpatient episodes and not incidence of these conditions, therefore one cannot conclude that complication rates from *C. trachomatis* infection are on the increase. Other factors may have had an impact on the HIPE data, such as a change in the practice of admitting patients to hospital for investigation of infertility or because of symptoms of PID. However, systematic collection of hospital discharge data on a prospective basis would be valuable as an additional tool in monitoring trends in the morbidity resulting from genital chlamydia infection.

- Blood donations data

Blood donations are screened for markers of syphilis infection. This data which should be reported upon routinely, will provide valuable information on prevalence of past and present syphilis infection in the blood donor population.

- Prevalence surveys

While control of STIs continues to be focused on diagnosis, treatment and partner notification within STI clinics, over the last 20 years viral agents such as HPV and HSV have emerged as major causes of mortality and morbidity

worldwide. Prevalence assessment and monitoring systems will be necessary to accurately monitor rates of infection with these STIs, which may be asymptomatic and widely distributed in the population. Cowan *et al* have shown that antibody to HSV type 2 may be suitable for use as an objective serological marker of patterns of sexual behaviour in different populations and may be used to monitor patterns of risky sexual behaviour in subpopulations.<sup>28</sup>

There is also an upcoming challenge for STI surveillance particularly in relation to the development of vaccines for viral STIs, particularly HPV, where clinical trials have shown high short-term efficacy in the prevention of genital HPV infection and the development of cervical intraepithelial neoplasia.<sup>29,30</sup> Vaccine development for HSV, while as yet less successful, is also underway.<sup>31</sup> Prevalence monitoring will be necessary to assess infection rates and determine target populations for vaccination as well as being an essential component of evaluation of the coverage and efficacy of vaccination programmes.

#### • Behavioural surveillance

Surveillance systems should provide data that will inform health education and identify target groups for primary prevention messages. In the UK, the second National Survey of Sexual Attitudes and Lifestyles (NATSAL 2000) was a population-based study of reported population experience of STI infection and the prevalence of *C. trachomatis*.<sup>32</sup> In Ireland, data collection is at present underway nationally, as part of a telephone survey of knowledge, attitudes and behaviour, of a large sample of young Irish people in relation to their reproductive health, including STIs. The survey is being carried out by the Economic and Social Research Institute (ESRI) and is expected to provide valuable information to inform health promotion and treatment services. This type of large population-based survey of sexual behaviour provides data that help in the interpretation of the differential distribution of STIs in different populations and is the best method of assessing the epidemiology of STIs that are not generally confined to core groups, such as genital chlamydia infection.<sup>33</sup> However, the complex sampling technique used is expensive and time consuming and is not feasible for routine data collection.

#### Key points

- The mainstay of STI surveillance in Ireland and most EU countries is incident case reporting, mainly from STI clinics.
- Failure to detect cases seen outside specialist clinics is recognised as a long-term problem in many EU countries including Ireland.
- The requirement for laboratory directors to report infectious diseases will ensure that there is optimal coverage of STIs identified in all settings.
- The usefulness of laboratory data may be limited by insufficient accompanying information for meaningful epidemiological interpretation.
- In addition to incident case reports and laboratory identification of STIs, routine STI surveillance reports could include: data from the antenatal screening programmes, blood donation data, HIPE morbidity data.
- Seroprevalence surveys will be necessary to monitor the true rates of infection and to determine target populations for vaccination and to evaluate coverage and efficacy of vaccination programmes for HSV and HPV.

### 2.3.3 Diseases under surveillance

Traditional incident case reporting may be the best approach to detect and control the spread of bacterial infections such as syphilis and gonorrhoea and antimicrobial resistant (AMR) gonorrhoea, which tend to be largely confined to high-risk groups, where overall general population prevalence is low and where the majority of cases are symptomatic (at least in men).<sup>7</sup> Discussing the role of epidemiology and surveillance systems in the control of sexually transmitted diseases, Catchpole says that STIs which are largely asymptomatic and more widely distributed in the population, pose special challenges to surveillance systems which are based on reporting of incident STI cases.<sup>23</sup> This is particularly so for genital chlamydia infections but also for HSV and HPV infections which are assuming increasing epidemiological importance in Europe.<sup>8</sup> Large proportions of cases of chlamydia infection and ano-genital warts are seen in primary care settings, reflecting their distribution in the population as endemic infections which are not particularly strongly associated with high risk groups or high risk sexual behaviour.<sup>23</sup> This is borne out by the results of the survey of GPs in Ireland, described elsewhere in this report. GPs were asked to list the three most common STIs they saw in their practice

in order of frequency. The three STIs cited as most commonly seen by respondents in order of frequency mentioned were: ano-genital warts, genital chlamydia and genital herpes simplex.

In Ireland, there were 10,695 STIs notified during 2004. Of these, 4,174 were notifications of ano-genital warts, 2,803 were cases of Chlamydia, 2,746 were cases of NSU and 411 were cases of genital herpes simplex infection. Ideally, person or case-based disaggregate<sup>1</sup> data should be collected for all of the notifiable STIs. It is envisaged that with the 'roll out' of the National Health Information Strategy (NHIS), clinic and general practice management systems and automated electronic transfer of data will become the norm, facilitating the collection of disaggregate or person based data<sup>#</sup> on all notifiable STIs.<sup>34</sup> However, the committee considered that in the short term, priority should be given to collection of disaggregate data on incident cases of the major notifiable bacterial STIs: syphilis, gonorrhoea and genital chlamydia infection. This list of infections to be prioritised for surveillance will need to be kept under review and may need to be added to in the event of an unexpected increase in numbers of cases or the emergence of clusters or outbreaks of a particular infection.

### Infectious Hepatitis B

Among adults, high-risk sexual activity is one of the most frequent routes of transmission for HBV.<sup>35</sup>

Between 1989 and 1999, notified infectious hepatitis B infections reported through the STI quarterly notification system ranged from 0 to 4 cases per year. There were 15 cases reported in 2000, 39 in 2001, 57 in 2002, 112 in 2003 and 85 in 2004. There were no case definitions in operation for hepatitis B prior to January 2004 and it is not known whether these cases were acute or chronic hepatitis B. Provisional laboratory figures relating to specimens from the largest STI clinic in Dublin indicate that of the 43 cases of hepatitis B identified in 2004, serology was consistent with chronic infection in 39 cases, with acute infection in 3 cases and 1 result was equivocal. It is important to note that these data are provisional and relate to one STI clinic only.

Some of the increase in the numbers of infections reported through the current STI aggregate surveillance system may be due to an increasing number of people attending STI clinics from countries where hepatitis B infection is endemic and where there is a high carrier rate of hepatitis B infection in the population. Identification of hepatitis B infection may be an incidental finding among people presenting with STI symptoms from countries where hepatitis B is endemic and in many cases will have been acquired perinatally or in early childhood.

The committee considered that infectious hepatitis B (acute and chronic) should be reported to the MOH on an individual named patient basis, in order to ensure that follow up advice and vaccination is provided for non-immune household and sexual contacts of HBV infected patients. HBV is vaccine preventable and the spouses, sexual partners, family and household contacts of patients with infectious HBV should receive hepatitis B vaccine if non-immune.<sup>36</sup> Adequate resources must be provided for hepatitis B immunisation services in STI clinic settings and in primary care settings in order to ensure maximum uptake of immunisation among those at risk (including MSM, sex workers and non-immune household, sexual and needle sharing contacts of HBV infected patients, who may present at STI clinics). For HBV infected patients, information in relation to vaccination history should be collected, in addition to demographic, clinical and risk factor information, to ensure adequate follow up and vaccination of non-immune contacts of cases of infectious hepatitis B. GPs are entitled to a fee for the administration of vaccine to GMS patients in at-risk categories and the vaccine is also supplied free of charge for these patients. While there are local arrangements in place in some HSE regions for supply of Hepatitis B vaccines to GPs and for payment for administration of these vaccines to non GMS patients, there is no national agreed mechanism in place. The committee considers that such a mechanism should be put in place as a matter of priority.

A report prepared in 2004 for the Directors of Public Health<sup>19</sup> states that "*some Sexually Transmitted Infection (STI) clinics offer Hepatitis B screening and immunisation to clients and their contacts. However, this is not routine in all STI clinics.*" The report recommends that "*all sexually transmitted infection (STI) clinics attendees should be offered hepatitis B vaccine if non-immune and the STI clinics should be adequately resourced for the provision of this service. In addition, all individuals who change sexual partners frequently should be offered hepatitis B vaccine if non immune, in particular, sex workers and men who have sex with men (MSM).*"

The report further states "*although GPs are entitled to a fee for the administration of vaccine to GMS patients in at-risk categories it appears that many GPs are not aware of this arrangement, nor that the vaccine is also supplied free of charge for these patients. Hepatitis B vaccine is not free to non-GMS patients at risk of HBV infection, although in practice, vaccine is often provided by HSE region, if requested. However, the GP may charge for administering the vaccine to non-GMS patients. It is likely that some people for whom immunisation is recommended because of their risk status may not obtain it because of the cost associated with immunisation. It is generally considered that the current system of HB vaccine*

<sup>#</sup>Aggregate data refers to data collected and reported by organizations as a sum or total number of occurrences over a given time period or geographic area, not individual data. In contrast, disaggregate data refers to data collected and reported by organizations on individual case basis.

*procurement and reimbursement for administration of vaccine to high-risk groups is negatively impacting on the delivery of a comprehensive, equitable and efficient HB immunisation programme."*

The report recommends that *"a GP delivered hepatitis B immunisation service should be available free to all at risk individuals, regardless of GMS eligibility and that GPs should be advised of health board arrangements relating to the hepatitis B immunisation service, including fee entitlement."*

### Key points

- It is envisaged that with the 'roll out' of the NHIS and STI clinic and general practice management systems that automated electronic transfer of data will become the norm, facilitating the collection of disaggregate 'person-based' data on all notifiable STIs.
- In the short term, priority should be given to collection of disaggregate, 'person-based' data in relation to the major bacterial STIs: syphilis, gonorrhoea, and genital chlamydia infection.
- The committee considered that infectious hepatitis B should be reported to the MOH on an individual, named patient basis, to ensure that follow up advice and vaccination is provided for non-immune household contacts and sexual partners of HBV infected patients.
- Adequate resources must be provided for hepatitis B immunisation services in STI clinic settings in order to ensure maximum uptake of immunisation among those at risk.
- A national mechanism for supply of hepatitis B vaccines to GPs and for payment for administration of these vaccines to all patients (GMS and non GMS) must be put in place as a matter of priority.

### 2.3.4 Patient confidentiality

There were concerns expressed during clinic visits and also by members of the committee in relation to patient confidentiality in the context of provision of disaggregate, patient based data. This issue also arose in the context of STIs detected in general practice, in the GP study described in Chapter 3 of this report. Many clinicians dealing with STIs felt that it would be inappropriate to use patient names due to the sensitivity of the data and some felt that patients may even provide false names and that the doctor/patient relationship may be compromised. Lau and Catchpole acknowledge the fundamental concerns many clinicians have in relation to patient confidentiality in the context of providing information on disaggregate, patient based data on STIs.<sup>22</sup> It is important, however, that there is sufficient information provided on the notification form to allow the GP to identify the patient from the information supplied by him/her on the original notification form, should the Department of Public Health require further information, for example if there are a cluster of cases in a particular area which requires investigation and public health action.

### 2.3.5 Patient identifier

The NHIS states that a system for unique identification within the health sector using the Personal Public Services Number (PPSN) as a common person identifier will be introduced in Ireland.<sup>34</sup> The strategy states that *"special attention will be given to enabling the identifier to enhance the safety of personal care (such as through the use of the electronic healthcare record) and to promoting the quality of service delivery, whilst safeguarding the privacy, confidentiality and security of personal information in line with a robust information governance framework which will be provided for in legislation."*

### Patient initials

When a notifiable infection is identified, doctors would usually be expected to inform the patient that they are obliged to report the case to the MOH. The opinion was expressed at the committee that provision of patient names on notification forms to the MOH might deter patients from presenting at STI clinics or might encourage the use of false names. In the opinion of the committee, if a clinician was aware that, as a consequence of notifying the Department of Public Health of an STI using the patient's full name and address, contact was likely to be made with the patient by the MOH or a representative of the MOH (as may currently happen when for example a case of a gastroenteric illness is notified), the number of STI notifications would be likely to decrease. Similarly, the committee felt that it would not be appropriate for a doctor or nurse from the Department of Public Health to make direct contact with the patient following an STI notification from a laboratory director, without at least a discussion with the clinician (GP or hospital clinician) who made the diagnosis beforehand.

Pending the availability of a unique patient identifier as envisaged by the NHIS, a solution to concerns about the use of named patient data is for the notifier to use patient forename and surname initials and date of birth, for notification purposes. The Data Protection Commissioner has previously advised the HPSC that patient initials and date of birth would be regarded as anonymised, on the basis that the patient cannot be identified from them. It is technically possible to truncate patient forename and surname output from Laboratory Information Systems (LIMS) to first character of forename and first character of surname to produce single initials for matching with forename and surname initials from clinical notifications. Two or more patients may share the same initials. However, when used with date of birth, a high degree of accuracy is provided. In the opinion of the committee, the form for notification of STIs should specify that patient initials only are required for notification purposes. However, for reporting of infectious hepatitis B, the committee considered that reporting must be on a named patient basis in order to ensure that follow-up advice and vaccination is provided for household contacts and sexual partners of HBV infected patients.

Other patient identifier options which were considered

• Soundex code of patient surname

A theoretical option as a patient identifier is to use Soundex coding of surname and date-of-birth. The Soundex coding system which has worked well for individual coding of the relatively few, less than 400, newly diagnosed HIV infections annually in Ireland, is not a practical proposition for use with the Computerised Infectious Diseases Reporting (CIDR) system. Many laboratories have automated electronic LIMS and the capacity to maintain large amounts of data. When the CIDR system is 'rolled out' countrywide, it is envisaged that notification data will be electronically extracted from the LIMS in each laboratory and uploaded directly into the CIDR system following authorisation 'sign off' by the clinical microbiologist or laboratory director. Technically, it would not be a practical option for each surname output from LIMS to be translated into a Soundex code prior to being uploaded into the CIDR system.

• Hospital medical record number (MRN)

Where the patient attends a hospital-based STI clinic, use of the hospital medical record number (MRN) or 'clinic

**Table 2.2: Options for patient identifier**

OPTION	ADVANTAGES	DISADVANTAGES
Forename/surname/DOB	<ul style="list-style-type: none"> <li>• 'User friendly '</li> <li>• Accurate linking of multiple clinical and laboratory episodes possible within CIDR</li> <li>• Confidentiality issues addressed by CIDR Business Rules</li> <li>• Facilitates follow up of contacts</li> </ul>	<ul style="list-style-type: none"> <li>• Patient and physician confidentiality concerns</li> </ul>
Patient initials/DOB	<ul style="list-style-type: none"> <li>• 'User friendly '</li> <li>• Considered 'anonymous' by the Data Protection Commissioner</li> </ul>	<ul style="list-style-type: none"> <li>• May be some compromise on accuracy of data</li> <li>• Issues to be resolved at LIMS/CIDR interface</li> </ul>
Soundex Code of patient surname/DOB	<ul style="list-style-type: none"> <li>• Confidentiality issues addressed</li> <li>• Software to generate Soundex code readily available</li> <li>• Used successfully for HIV Case based reporting system</li> </ul>	<ul style="list-style-type: none"> <li>• Not feasible technically at LIMS /CIDR interface</li> <li>• Linkability not possible within CIDR<sup>1</sup></li> </ul>
Unique patient identification number	<ul style="list-style-type: none"> <li>• Confidentiality issues addressed</li> <li>• High degree of accurate matching possible</li> </ul>	<ul style="list-style-type: none"> <li>• Not yet available</li> </ul>
Medical Record Number (MRN)	<ul style="list-style-type: none"> <li>• Would allow clinical and laboratory records to be linked if MRN were provided by the notifier and on both laboratory and clinical notification\forms and if the number was used on all subsequent laboratory requests by clinicians</li> </ul>	<ul style="list-style-type: none"> <li>• Must accompany each test request by the clinician to the laboratory</li> <li>• Hospital assigned MRN only follows the patient if they remain within that particular hospital service</li> </ul>

allocated number', would allow clinical and laboratory records to be linked, if the MRN is provided by the clinician and the number also appears on the laboratory request form. In circumstances where the specimen relates to a patient who is not attending a hospital e.g. a specimen from a patient who is attending a general practitioner, a laboratory-assigned patient specific number could be used. However, in order to allow laboratory and clinical reports in relation to the same episode of infection in the same patient within a particular hospital/clinic to be linked, the system would require that each report from a clinician or laboratory director to the MOH, relating to a particular patient, should include the patient's MRN. The MRN would therefore need to accompany each test request by the clinician to the laboratory. The major disadvantage of such a system is that the hospital MRN only follows the patient if they remain within that particular hospital service. If the patient is diagnosed with an STI in more than one site e.g. by a GP and in a hospital STI clinic, that infection in that patient is likely to be reported to the MOH as two separate episodes of infection.

Table 2.2 sets out the advantages and disadvantages of the various patient identifier options.

#### Key points

- Many clinicians have fundamental concerns in relation to patient confidentiality in the context of collection of disaggregate, patient based, data on STIs.
- The NHIS envisages a system for unique identification within the health sector using the PPS Number as a common personal identifier.
- Initials and date of birth are considered anonymous by the Data Protection Commissioner.
- Patient initials and date of birth would allow linkage of patient-based laboratory and clinical data with minimum loss of accuracy while maintaining patient confidentiality.

#### 2.3.6 Partner notification

Partner notification (PN) is defined as 'the process by which sexual partners of an index case who has been diagnosed with an STI, are informed of their exposure to infection and invited to attend for testing and /or treatment'.<sup>37</sup> PN may be by patient referral, provider referral (instigated respectively by patient or service provider (clinician)) or by contract/conditional referral, where the provider referral is carried out conditional on the patient failing to trace partners after some time. In most countries, the index patient's confidentiality is usually paramount throughout the PN process and naming the index case is avoided.

In Ireland, when an STI is diagnosed at an STI clinic, PN and follow up is usually carried out by STI clinic. Furthermore, PN or contact tracing is routinely carried out only in respect of certain STIs. For example, because of the long incubation period for HPV infection, contact tracing is not generally carried out for ano-genital warts.

The GP study, described in Chapter 3 of this report, found that GPs in the study focus groups expressed the view that GPs do not routinely engage in PN/contact tracing in relation to STIs and considered it outside the scope of general practice. GPs expressed the view that a properly resourced STI clinic is the appropriate setting for PN/contact tracing. This finding was borne out by the findings of the questionnaire survey of GPs reported elsewhere in this report which found that, of those GPs who responded to the survey, 87% 'always' advised a patient diagnosed with an STI that their contact/partner should see a GP or attend an STI clinic.

The committee decided that brief outline *Guidelines for Contact Tracing* adapted from the Sexual Health Advisors Manual published by the Society for Sexual Health Advisors in the UK and available at [www.SSHA.info](http://www.SSHA.info), should be printed on the reverse of the clinical notification form. The report form should clearly state that it is good practice to inform the patient that there is an obligation on the diagnosing clinician to notify certain infectious diseases including syphilis, gonorrhoea, genital chlamydia and infectious hepatitis B to the MOH.

Furthermore, the committee decided that there should be a series of 'tick boxes' on the data collection form, for the notifying clinician to indicate whether PN had been carried out within the diagnosing practice/clinic or whether the patient has attended or been advised to attend, an STI clinic. The data collection form should also have a 'tick box' for the clinician to indicate whether or not assistance with contact tracing/partner referral is required. If the clinician indicates on the notification form (Appendix 1) that assistance with PN/contact tracing is required, it will be incumbent on the MOH or person acting on his or her behalf, to arrange for discussion with the patient's clinician with a view to arranging follow up for that patient.

In the majority of cases seen in GP, it is anticipated that the patient will opt for the *patient referral* option, whereby the patient informs their sexual partner(s) that they should be tested at an STI clinic or by their GP. If the patient opts for patient referral, verification of contact attendance at an STI clinic or GP should be sought by the notifier, where possible.



*Provider referral* or *contract referral* are usually carried out by a Health Advisor at an STI clinic.

### Key points

- Brief 'Guidelines for Contact Tracing' should be printed on the reverse of the clinical notification form.
- There should be a series of 'tick boxes' on the clinical data collection form for the notifying clinician to indicate whether PN had been carried out within the diagnosing practice/clinic or whether the patient has attended or been advised to attend, an STI clinic.
- When an STI is diagnosed at an STI clinic, PN/contact tracing is usually arranged by the STI clinic.

If the clinician indicates on the PN/contact tracing form that assistance with contact tracing is required, it will be incumbent on the MOH or person acting on his or her behalf, to arrange for discussion with the patient's clinician in order to arrange follow up for that patient.

In the majority of cases, it is anticipated that the patient will opt for the *patient referral* option, whereby the patient informs their sexual partner(s) that they should be tested at an STI clinic or by their GP. Where possible, verification of attendance by the contact at an STI clinic or GP should be sought by the notifier.

PN/Contact tracing through *Provider referral* or *Contract referral* are usually carried out by a Health Advisor at an STI clinic.

### 2.3.7 Geographic classification

Ireland is divided into approximately 3,440 district electoral divisions (DEDs), the smallest administrative areas for which the Central Statistics Office (CSO) publishes population statistics. It is envisaged that within 3 to 5 years major health information systems will include the geo-codes of addresses by small geographical area e.g. DED. Furthermore, modern geographical information systems and spatial analysis techniques will be used and health data will be geocoded in the client master index used for unique client identification at national level. The Commission for Communications Regulation (ComReg) is also proposing the adoption of postcodes in Ireland.<sup>38</sup>

Pending the development of the unique patient identifier and geo-coding, confidentiality concerns have been expressed in relation to use of full patient address for notification of STIs. For surveillance purposes, in order to determine rates of STI infection among particular subgroups in a geographic area (for example, agegroup, risk category, ethnic group), information on geographic area of residence is required. The options for reporting at national level considered by the committee were: health board, community care area (CCA) or county. It was agreed that county is the most practical variable to use, as allocating a patient address to CCA would be administratively cumbersome, as most STI clinic staff would not relate to CCAs. It was agreed that in Dublin, county addresses should be further sub-classified by postcode e.g. D1, D6W, South County etc.

### Key points

- Within 3 to 5 years, major health information systems will include the geo-codes of addresses by small geographical area e.g. DED.
- Pending the development of the unique patient identifier and geocoding, there are confidentiality concerns in relation to use of full patient address for notification of STIs.
- The committee considered that the variable 'County of Residence' should be used for notification of STIs and in addition, for Dublin addresses, postcode should be provided.

### 2.3.8 Case classification

Adoption of EU case definitions as the classification system for STIs in Ireland will facilitate comparison of data from Ireland with data from other EU states. A copy of the case definitions can be found in the booklet produced by the HPSC "Case definitions for Notifiable Diseases" available on the HPSC website ([www.hpsc.ie](http://www.hpsc.ie)).

### 2.3.9 Proposed datasets

Proposed datasets for notification of STIs by diagnosing clinicians and for notification of STIs by laboratory directors are appended (Appendix 1).

Brief *Guidelines for Contact Tracing* adapted from the Sexual Health Advisors Manual published by the Society for Sexual Health Advisors in the UK and available at [www.SSHA.info](http://www.SSHA.info) are also appended (Appendix 1).

## 2.4 Process of notification

### 2.4.1 The Computerised Infectious Disease Reporting System (CIDR)

Lau and Catchpole, discussing the matter of record linkage of STI case reports,<sup>39</sup> say that integration of data from separate sources enables data to be processed in a timely manner and rapid implementation of measures to both understand transmission dynamics and implement appropriate targeted responses. The development and roll out of the CIDR system<sup>40,41</sup> envisages that there will be one national database of information on infectious diseases and antimicrobial resistance in Ireland. The CIDR system combines and links clinical, epidemiological and microbiological information and provides on-line access to users, using web technology for access. CIDR is patient-based and the use of a patient identifier (such as patient forename and surname initials and date of birth) will allow linkage of all infectious disease events in respect of a particular patient within the system. Linkage of infectious disease events or episodes with a particular patient, will allow information in relation to concurrent and recurrent infections to be captured while ensuring patient confidentiality. When the system is fully operational around the country, there will be one national data repository for all notifications, including both laboratory and clinical notifications. Appropriate security and confidentiality mechanisms will be in place to protect the data and ensure it is used in an appropriate and ethical manner. Many of the issues relating to patient confidentiality and ownership of data have been addressed in the course of the development of the business rules for CIDR.

#### Key points

- The CIDR system will link clinical, epidemiological and microbiological information in one national database.
- CIDR is patient-based and events are linked to patients through the use of a patient identifier such as patient initials and date of birth.
- The CIDR system will allow linkage of STI events or episodes with a particular patient and will allow information in relation to concurrent and recurrent STIs to be captured while ensuring patient confidentiality.
- The CIDR system will ensure that strict security and confidentiality mechanisms will be in place to protect the data and ensure it is used in an appropriate and ethical manner. Issues relating to patient confidentiality and ownership of data have been addressed in the course of the development of the business rules for the CIDR system.

### 2.4.2 Systems in STI Clinics

One of the main obstacles to surveillance based on clinical reporting is the pragmatic problem of finding the time or staff resource to record and collate data recorded in the clinical setting.<sup>22</sup> It is acknowledged that investment of resources in staff in STI clinics will be required in order for surveillance systems to operate effectively.

Some of the practical issues related to the implementation of a system of collection of disaggregate, anonymised, individual patient data include: obtaining clinic buy-in and participation, confidentiality, ICT capacity and the need for timely feedback and reporting to local stakeholders<sup>42</sup>.

Lau and Catchpole<sup>22</sup> state that "*is not logistically possible to collect and collate the multidimensional data sets that it is now recognised are required for STI surveillance through paper or aggregate reporting systems.*" Due to increased awareness and education in relation to sexual health matters, the workload of STI clinics increasingly relates to the 'worried well' and many consultations do not necessarily result in a diagnosis of a notifiable infectious disease. Patient administration systems (PAS) which allow efficient management of the administration of STI clinics for example, patient appointments, GP letters and monitoring of clinic workload are in place in most clinics but these are not suitable for storage and retrieval of patient-based clinical and epidemiological data.

In the past there has been some discussion in one of the largest STI clinics in the country in relation to the commissioning of an ICT system to serve the needs of clinicians, administrators and managers. It was also envisaged that the system would facilitate the extraction of epidemiological data for transmission to Departments of Public Health locally. It was envisaged that the system would be 'paperless' and clinicians would directly input clinical data into the system. However, to date the system has not been commissioned. It is envisaged that in the future with the rollout of the NHIS, clinic ICT management systems will be commissioned and developed which will serve the needs of clinicians, administrators and managers, in addition to facilitating extraction of data for surveillance purposes.<sup>34</sup>



Simple ACCESS or EXCEL databases have been developed in some clinics in Ireland in order to facilitate collection of data for surveillance purposes. It will be possible to extract and upload data to CIDR from these 'in-house' databases or, where a clinic may only have a small number of notifications, it will be possible for data to be entered directly and securely into CIDR, provided the particular STI clinic has access to the government Virtual Private Network (VPN). The VPN is available throughout the HSE regions and on all major hospital campuses.

In the longer term, notifications from STI clinics and other settings will be facilitated by future developments to the CIDR system. It is envisaged that an additional module in CIDR will be developed which will provide restricted access to designated clinic personnel and, for notification purposes, allow a file containing an agreed dataset to be extracted from an STI clinic management system (where these are in place) and uploaded into the CIDR system in the clinic setting.

#### Key points

- Issues which need to be addressed in relation to the process of collection of person-based data from STI clinics include: confidentiality, ICT capacity, investment in human resources in terms of training and additional staff, obtaining clinic buy-in and participation, timely feedback and reporting to local stakeholders.
- It is envisaged that it will be possible to extract data for uploading to CIDR from 'in-house' clinic ACCESS databases (or other databases).
- In the longer term, it is envisaged that it will be possible to extract data from STI clinic management systems (where these are in place) for uploading into the CIDR system, in the clinic setting.
- It is also envisaged that where a clinic may only have a small number of notifications it will be possible for data to be manually and securely entered into the CIDR system in the clinic setting.

#### 2.4.3 Systems in Diagnostic Laboratories

For those laboratories where there is a LIMS in place, it is envisaged that an upload from the LIMS into the CIDR system will provide the required data in electronic format for transmission to the MOH. It is envisaged that clinical microbiology laboratories will upload files, which have been exported from their LIMS to CIDR using standard browser software. These files will be transformed and translated by the core system into the CIDR format. It is envisaged that smaller laboratories with less throughput will manually input data directly into the CIDR system.

#### Key points

- It is envisaged that clinical microbiology laboratories will upload files, which have been exported from LIMS to CIDR, using standard browser software.
- It is envisaged that smaller laboratories with less throughput will input data manually directly into the CIDR system.

#### 2.4.4 Systems in Departments of Public Health

It is envisaged that the CIDR system, when 'rolled out' countrywide, will be used in Departments of Public Health for collection of laboratory and clinical data, for collation of data and for generating reports in relation to STIs. It is envisaged that, following receipt of notification data from clinicians and from laboratories, CIDR 'event(s)' will be created in Departments of Public Health. A CIDR 'event' consists of one or more clinical notifications and/or laboratory results relating to single episode of a disease in a single patient. For comparison, Table 2.3 illustrates the numbers of selected infectious diseases notified nationally in 2004.

It can be seen that when compared to other notifiable infectious diseases, large numbers of STIs are notified. Notwithstanding that in the short term, this report recommends that priority should be given to disaggregate, person based notification of the major bacterial infections, (syphilis, gonorrhoea and genital chlamydia infection) and on acute and chronic hepatitis B, it can be anticipated that Departments of Public Health will require additional resources for data processing and CIDR 'event' creation in respect of the large amounts of laboratory and clinical STI data which will be received. It should also be noted that the survey of clinical diagnostic laboratories (described in Chapter 4 of this report) found that there has been significant under-notification of STIs to date and there are likely to be significant increases in the numbers of reports received from laboratories, particularly in relation to *C. trachomatis* infection.

**Table 2.3: Numbers of selected infectious diseases notified in 2004**

INFECTIOUS DISEASE	NUMBERS NOTIFIED IN 2004
Campylobacter infection	1711
Salmonellosis	415
Cryptosporidiosis	432
Hepatitis B Virus	797
Mumps	424
Measles	330
Meningococcal disease	199
Ano-genital warts	4174
Genital chlamydia infection	2803
Gonorrhoea	270
Syphilis	144
Non specific urethritis	2746
Genital herpes simplex	411

**Key points**

- It is envisaged that the CIDR system will be used in Departments of Public Health for collection of laboratory and clinical data, for collation of data and for generating reports in relation to STIs.
- Departments of Public Health will require additional resources for data processing and CIDR 'event' creation in respect of laboratory and clinical STI data which will be reported to Departments of Public Health.

**2.4.5 Systems in General Practice**

The matter of surveillance of STIs in general practice is discussed in Chapter 3 of this report. A study of GPs in relation to the surveillance and the management of STIs in general practice in Ireland carried out in 2003 on behalf of the committee, estimated that there is a large burden of STI seen in Irish general practice. The study found that a GP sees an average of 3.4 patients (40.8 per year) per month for STI related consultations. It should therefore be feasible for GPs to notify STIs on a weekly basis using a manual notification form.

The study found that most GPs do not notify STIs to the MOH. In addition GPs did not notify other infectious diseases with the exception of meningitis, measles and gastroenteritis. The survey identified those factors which would encourage GPs to notify STIs. More than 85% of GPs agreed that a national standardised notification form, anonymous notification, an increase in the notification fee, an information booklet on list of STIs to be notified and feedback from the Departments of Public Health, would encourage notification of STIs from general practice. Many GPs agreed that delegating notification to a practice nurse and use of electronic notification would also encourage notification. It is anticipated that implementation of the recommendations of the committee in this regard will increase the numbers of STIs notified from general practice.

In the longer term, it is envisaged that notifications from larger general practices and family planning clinics will be facilitated by the development of the CIDR system for efficient notification of STIs and other notifiable infectious diseases. It will be possible to extract data from GP practice management systems (when these are in place) for uploading into the CIDR system in the practice setting, provided the particular GP practice has access to the government VPN.

**Key points**

- Individual GPs see relatively few patients with STIs and in the short term it is considered feasible for GPs to notify the major bacterial STIs (syphilis, gonorrhoea and genital chlamydia infection) manually to the MOH on a weekly basis, using a standardised STI notification form.
- It is envisaged that in the medium term, data will be extracted from GP or Family Planning Clinic practice management systems (where these are in place) and uploaded into the CIDR system in the practice setting, provided the particular GP practice or Family Planning Clinic has access to the government VPN.

## 2.5 Informing policy and prevention strategies for sexual health

### 2.5.1 Sexual health

Sexual health is usually seen to encompass issues such as unplanned pregnancy and psychosocial aspects of reproductive health in addition to prevention and treatment of STIs and HIV. The definition of sexual health used by the WHO<sup>43</sup> is *"a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled."*

In the context of this report the discussion in relation to 'prevention strategies for sexual health' will focus on the use of surveillance information to inform policy and prevention strategies for STI prevention and control.

### 2.5.2 Uses of STI surveillance data

In a review article discussing the role of epidemiology and surveillance systems in the control of STIs, Catchpole<sup>23</sup> sets out the uses of STI surveillance data as follows:

- setting of priorities
- planning and resource allocation for services
- definition of population subgroups and risky behaviours for targeted interventions
- directing public health policy
- informing diagnostic and therapeutic practice
- evaluation of interventions
- stimulating further research

### 2.5.3 Presentation of surveillance information

Surveillance of STIs in Ireland has traditionally been limited by reporting of data at an aggregate level and also the delay in reporting. The lesson from the past is that the production of statistics, while necessary, is not sufficient to evoke action.<sup>23</sup> The challenge for those involved in surveillance is to present data in ways that will evoke effective control measures and ensure that control programmes are data driven. We need to develop new ways to present surveillance data to inform policy makers and clinical and public health practitioners. There is a need to tailor information to specific audiences. The proposed development of surveillance of STIs in Ireland will enable the production of better quality data to inform policy and service development and evaluation of interventions. As more use is made of the data it is expected that the quality of the data will improve. The following points were agreed by the committee:

- Formal surveillance reports should be published on a quarterly and annual basis and should include concise interpretation of the data.
- Regular surveillance reports should be provided to the DoHC, members of the NASC and the Director of Population Health of the HSE. Surveillance reports should be circulated widely to include senior policy makers at the HSE and international partners such as the ESSTI network.
- Reports should also be circulated widely to national and local television, radio and print media with accompanying appropriate publicity material (press releases, interviews etc).
- Special consideration should be given to local and national feedback to providers of data in order to allow comparison of local and national epidemiology.
- Data should be presented in a variety of formats, providing user access using the latest technology. Use should be made of newsletters (paper and electronic), website presentations (easily accessible with slide presentations, available for downloading) and mapping of patterns of disease to geographic area (using GIS technology).
- CIDR will facilitate the availability of real time reports, which will be accessible to those who need the information.

For example, it will be possible to identify and monitor clusters of particular infections among certain age-groups, geographic areas or behavioural groupings, so that particular prevention messages and/or clinical services can be targeted and their effectiveness measured.

- CIDR will facilitate linkage of STI data with other surveillance data in relation to notifiable infectious diseases in order to allow rational planning of service developments.
- Good quality surveillance data is likely to stimulate research and build the evidence for the aetiological factors for STIs and identification of effective preventive and treatment interventions.

#### **2.5.4 Patient anonymity**

In the course of discussions, the need to preserve patient anonymity in published data and reports was raised. In areas with small populations and particularly with infections that are less common, it is important to eliminate the possibility that patients could be identified from data presented in reports. It is important that there are guidelines for surveillance reports in relation to sensitive data e.g. if there are less than a certain number of patients with a particular infection/diagnosis from a particular ethnic subgroup in a area, data should be merged/collapsed and presented in a format that a patient(s) could not be recognised from reports/publications.

##### **Key points**

- The challenge for those involved in surveillance is to present data in ways that will evoke effective control measures and to ensure that control programmes are data driven.
- Data should be presented in a variety of formats, providing user access using the latest technology.
- Special consideration should be given to local and national feedback to providers of data in order to allow comparison of local and national epidemiology.
- Surveillance reports should be widely circulated to include senior policy makers at the HSE and international partners such as the ESSTI network.
- There should be guidelines for surveillance reports in relation to sensitive data. Data should be presented in a format that a patient(s) could not be recognised from reports/publications.

## 2.6 Recommendations

### Diseases

1. In the short term, priority should be given to collecting timely disaggregate data on the major bacterial infections, syphilis, gonorrhoea and genital chlamydia infection and also acute and chronic infectious hepatitis B.

### Sources of information

**Specialist STI clinic services should be available in all regions to provide easy access for the local population.**

2. In addition to incident case reports and laboratory notification of STIs, routine STI surveillance reports should include:

- Data from the antenatal screening programme for syphilis
- Blood donation data
- HIPE morbidity data in relation to the medium to long-term outcomes of STIs such as ectopic pregnancy, tubal factor infertility and pelvic inflammatory disease
- Regular prevalence assessment and monitoring systems should be introduced to accurately monitor rates of infection with HPV and HSV which are usually asymptomatic and widely distributed in the population.

### Datasets

3. Standard forms for clinical and laboratory notification of STIs should be used.
4. Patient forename and surname initials and date of birth should be used as a patient identifier.
5. Infectious hepatitis B should be reported to the MOH on an individual, named patient basis, to ensure that follow up advice and vaccination is provided for non-immune household contacts and sexual partners of HBV infected patients.
6. The variable 'County of Residence' should be used and in addition, for Dublin addresses, postcode should be used for notification of STIs.
7. EU case definitions should be adopted as the classification system for STIs in Ireland.

### Partner notification

8. Brief outline *Guidelines for Contact Tracing* adapted from the Sexual Health Advisors Manual published by the Society for Sexual Health Advisors in the UK and available at **www.SSHA.info**. A note to the effect that it is good practice to inform the patient that there is an obligation on the diagnosing clinician to notify certain infectious diseases to the MOH should also be printed on the reverse of the clinical notification form.
9. The notifying clinician should indicate on the data collection form whether PN has been carried out within the STI clinic or general practice, whether the patient is attending or has been referred to an STI clinic and if not, whether contact tracing has been discussed with the patient. The form should inform the notifying clinician that the MOH (or person on his/her behalf) will contact them to obtain patient details prior to contacting the patient.
10. If the patient opts for patient or self-referral, verification of contact attendance at an STI clinic or GP should be sought by the notifier, where possible.
11. If the clinician indicates on the notification form (Appendix 1) that contact tracing has not been discussed with the patient, it will be incumbent on the MOH or person acting on his or her behalf, to arrange for discussion with the patient's clinician with a view to obtaining further information with a view to arranging follow up for that patient.

### Hepatitis B immunisation services

12. Adequate resources must be provided for hepatitis B immunisation services in STI clinic settings in order to ensure maximum uptake of immunisation among those at risk.
13. A national mechanism for supply of hepatitis B vaccines to GPs and for payment for administration of these vaccines for patients followed up in general practice must be put in place as a matter of priority.

**Systems in Clinics**

14. Additional ICT resources and dedicated personnel in STI clinics should be provided for the purpose of collecting disaggregate data.
15. The CIDR system should be developed to allow:
  - extraction of data for uploading to CIDR from 'in-house' clinic ACCESS databases (or other clinic databases).
  - extraction of data from STI clinic management systems (where these are in place) for uploading into the CIDR system, in the clinic setting.
  - data to be securely entered manually into the CIDR system in the clinic setting.

**Systems in laboratories**

16. The CIDR system should be used by clinical microbiology laboratories to upload files, which have been exported from LIMS, using standard browser software. Smaller laboratories, with less throughput will be able to input data manually directly into the CIDR system.

**Systems in Public Health**

17. The CIDR system should be used in Departments of Public Health for collection of laboratory and clinical data, for collation of data and for generating reports in relation to STIs.
18. Additional staffing for Departments of Public Health should be provided for data processing and for CIDR 'event' creation in the context of the anticipated increase in workload resulting from the increase in numbers of person-based STI reports which will be received from clinicians and laboratory directors.

**Systems in General Practice**

19. GPs should notify STIs to the MOH, using a standard STI notification form.
20. GPs should receive adequate remuneration for notification of STIs.
21. In the medium to long term CIDR should be developed to allow extraction of data from GP or Family Planning Clinic practice management systems (where these are in place) for uploading into the CIDR system in the practice setting, provided the particular GP practice or Family Planning Clinic has access to the government VPN.

**Use of surveillance information to inform policy and prevention strategies for sexual health**

22. Data should be presented in a variety of formats, providing user access using the latest technology.
23. Special consideration should be given to local and national feedback to providers of data in order to allow comparison of local and national epidemiology.
24. Regular surveillance reports should be provided to the DoHC, members of NASC and the Director of Population Health of the HSE.
25. There should be guidelines for surveillance reports in relation to sensitive data. Data should be presented in a format that a patient(s) could not be recognised from reports/publications.

## 3. Surveillance of STIs in General Practice

### 3.1 Introduction

Surveillance systems should aim to provide information on all cases of STIs including those seen outside specialist clinics, if they are to support rational setting of priorities in disease control and the planning and allocation of resources for services.<sup>23</sup>

In the course of visits to the major STI clinics around Ireland in Spring 2002 by members of the STI subcommittee, and from discussions with GPs, consultant microbiologists and Departments of Public Health, it became apparent that clinic based data underestimated the numbers of STIs diagnosed in the country. A survey of clinical STI diagnostic laboratories in Ireland, carried out in 2003 and described in Chapter 4 of this report, provides evidence in support of this. In addition to the total numbers of specimens received by the laboratories for 2002, eight hospital diagnostic laboratories were able to provide a breakdown of the source of specimens received for diagnostic testing for *C. trachomatis* and for *N. gonorrhoeae*. In respect of chlamydia testing, of 20,470 specimens received by these eight laboratories, 4,643 (22.7%) were from GPs. Similarly for testing for gonorrhoea, of 30,959 specimens received, 5,935 (19.2%) were from GPs.

Having regard to the terms of reference of the subcommittee, it was decided that more information was required about the process of notification of STIs to Departments of Public Health by GPs and about the investigation and diagnosis of STIs in general practice in Ireland. A Steering Committee, with membership from the HPSC STI subcommittee and the Irish College of General Practitioners (ICGP), was set up to oversee a research project and report to the HPSC STI subcommittee.

The following were the objectives of the GP Study:

1. To estimate the burden of STIs presenting to general practice
2. To determine current procedures for the diagnosis and treatment of STIs in general practice
3. To determine additional requirements of GPs for the diagnosis and treatment of STIs
4. To ascertain whether GPs notify STIs to the Departments of Public Health and to identify the barriers to notification of STIs
5. To make recommendations on the use of STI surveillance data from general practice to inform policy and prevention strategies for sexual health.

### 3.2 Research method

A combination of qualitative research using focus groups followed by a cross-sectional postal survey of Irish GPs was employed for the purposes of this research.

Using qualitative research as a preliminary to and to complement quantitative research is considered valuable.

Qualitative methods such as focus groups are useful in describing and understanding a situation or behaviour to a different level than quantitative research alone.<sup>44</sup>

#### 3.2.1 Focus Groups

A topic guide for the focus groups was prepared using the five main objectives of the study as the major headings with expansions to give sub-headings.

The participants were selected by purposive sampling<sup>45</sup> of local ICGP Continuing Medical Education (CME) groups by CME tutors in Monaghan, Cork and Dublin.

Each focus group was conducted by a moderator with an observer taking notes and all sessions were taped. The tapes of the focus groups were fully transcribed and then analysed for themes along with the contemporaneous field notes and notes from the debriefing discussion of the moderator and observer held immediately after each focus group. The issues and views expressed at the focus groups also informed the content of the survey questionnaire.

### 3.2.2 Questionnaire Survey

Having taken advice from several sources, including the ICGP, it was decided that the best survey method was to conduct a postal survey rather than to survey GPs by telephone. Among the reasons for conducting a postal survey were cost, response rate, GP preference and the availability of personnel to conduct the survey.

The questionnaire was designed to collect data relevant to each of the study objectives and was informed by the deliberations of the focus groups. Questions in relation to demography were formulated to permit comparison of the sample with the national census of GPs carried out in 1995.<sup>46</sup> Questions relating to the frequency of STI consultations were guided by the discussions in the focus groups. Suggestions made in relation to the factors which influence notification of STIs were included as possible responses to related questions. Most questions were 'closed' and required only a tick box response. The questionnaire was piloted among a small group of GPs in December 2003 prior to commencing the full survey. A copy of the questionnaire used is appended (Appendix 3).

Advice from a statistician was obtained in relation to the GP population to be surveyed and the size of the sample, GPs over 70 years old were excluded and a random sample of 660 GPs was obtained from the ICGP active database. On validation of the survey sample, four GPs were excluded because their addresses were outside Ireland. The survey questionnaire was posted to 656 GPs, with a covering letter from the ICGP and the chairperson of the HPSC STI subcommittee, explaining the rationale for the survey together with a 'Freepost' envelope for return of the questionnaire. Anonymity was ensured by using a 'reply card' technique, whereby, all GPs included in the survey received a 'Freepost' reply card which they were asked to return separately to HPSC. Inclusion in a draw for free conference fee to the ICGP Annual General Meeting in May 2004 provided an incentive for returning this reply card. A second round of the survey questionnaire was posted to GPs who did not return a reply card. This method ensured anonymity and has been shown to improve survey response rates.<sup>47</sup> The survey was also promoted by the ICGP through its Continuing Medical Education Groups (CME) groups.

The returned questionnaires were scanned into an ACCESS database and validated. The Statistical Package for the Social Sciences (SPSS) version 12 was used for analysis.

### 3.3 GP STI focus group analysis

Focus groups were held in Monaghan, Cork and Dublin during September and November 2003. Each focus group included male and female GPs from a mixture of single-handed and group practices as detailed in Table 3.1 below.

**Table 3.1: Participants at focus groups.**

	Monaghan	Cork	Dublin
<b>Total number of GPs</b>	<b>15</b>	<b>9</b>	<b>8</b>
<i>Single-handed GP</i>	9	3	4
<i>Group practice</i>	6	6	4
<i>Female</i>	6	6	3
<i>Male</i>	9	3	5

This report presents the themes of the focus group discussion within the framework of the five aims of the study.

#### 3.3.1 Burden of STIs in general practice

On average, GPs in the focus groups reported seeing one or two cases of STIs per month. Some GPs saw less than this - one or two cases per six months.

*I would see very little maybe only once every six months, maybe twice in six months.*

**Cork GP**

GPs at the focus groups reported that they most commonly saw genital warts and chlamydia. Many GPs noted that they particularly saw genital warts, some said this was mostly in young females and others said it was mostly in males. Several GPs also reported seeing many patients with genital herpes.

*I mean I see warts all the time, but I mean they're so common now you wonder are they normal.*

**Dublin GP**

Some GPs said they rarely saw STIs, particularly mentioning gonorrhoea and syphilis. They also expressed concern that



they might be missing the diagnosis or that patients go elsewhere. GPs reported different experiences for NSU, some seeing many patients with NSU and others being unable to recall seeing any such patients.

*I have to the best of my knowledge never seen gonorrhoea in my general practice.*

**Dublin GP**

*I've had one syphilis in the outbreak last year*

**Dublin GP**

*I don't know if anybody else has seen syphilis in twenty-five years, I certainly haven't.*

**Dublin GP**

The issue of "worried well" arose spontaneously in the three focus groups and the extent of this issue was explored most fully in Cork. One GP mentioned that some people want to get checked out at the start of a new relationship. The focus groups clarified that seeing worried well patients was in addition to seeing patients with STI symptoms and was not counted when GPs were first asked about the number of patients seen. These worried well contributed significantly to the total level of consultation regarding STIs.

*I see more people coming in after unprotected intercourse and they are making sure they haven't contracted anything.*

**Monaghan GP**

*The guy in his 30's who's had a one night fling three years earlier, who is getting married, this is weighing on his mind and who wants.....they come in and they really have no reason to be, they're not at risk, they shouldn't be worried about having a disease really, the chances of catching it are relatively small but they've done something sometime and they just want to be sure.*

**Cork GP**

*...you have somebody coming in six months or a year down the road saying look I just want to be checked for HIV.*

**Dublin GP**

The level of STIs seen in general practice was generally reported to have increased in last 10 years especially for genital warts although some GPs said they hadn't seen any increase in warts. There was general agreement regarding the increase in chlamydia.

One Cork GP also reported that dealing with STIs in refugees/asylum seekers was a significant part of his practice, which he did not include in his initial figures as this involved the management and follow up of established STIs such as HIV, hepatitis and syphilis where he hadn't made the initial diagnosis.

There was discussion in the focus groups about the fact that many consultations offer an opportunity to educate patients about prevention of STIs e.g. during consultations for morning-after-pill, pill checks, during smear tests, during pregnancy consultations and consultations where there is a negative pregnancy test.

*I would see education as part of primary care.*

**Cork GP**

The issue of advising patients intending to travel abroad about protection from STIs and recommending hepatitis B vaccine if appropriate also arose. GPs reported that they would definitely explore this issue with patients. One GP talked about male patients consulting him for advice prior to going on "sex holidays". However some GPs wondered about the benefit of sex education for patients with some thinking it might encourage activity.

*I asked him what did he intend and just I ask do you think you would be socialising locally, this is a nice way of putting it.*

**Cork GP**

### 3.3.2 Diagnosis and treatment of STIs in general practice

GPs in the focus groups differed as to whether they would refer patients with STIs to the STI clinic or manage them themselves. Many GPs said that they investigated and treated patients with STIs in general practice. GPs who referred patients to STI clinics reported that their patients would have a full investigation at the clinic especially as there is often more than one STI although some GPs maintained they would investigate most patients themselves sending swabs and blood tests.

*....a certain amount that we deal with ourselves and are quite competent to deal with.*

**Cork GP**

*I think the majority of GP's would like referrals, the service of excellence.*

**Cork GP**

GPs who manage STIs reported that they would await lab results before beginning treatment unless the patient was acutely symptomatic. However, GPs also reported that sometimes they would treat empirically if patient refused referral and full investigations were not available. Some GPs also said they would prescribe for their patient's partner where they knew the partner.

*I suppose I might treat the patient myself, depends on the patient themselves whether I treat them, if I am not sure they will come back.*

**Cork GP**

None of the GPs from the focus groups engaged in active contact tracing but they would advise patients about the risks to their partner and that their partner should be informed about the STI. GPs expressed the view that contact tracing can only be done at the STI clinic and that it is inappropriate in general practice and should be the responsibility of public health. GPs in the focus groups were agreed that contact tracing was a core reason for referral. Where the partner was also the GP's patient this could create a conflict about confidentiality and highlighted the issue of personal/social aspects of GPs seeing patients from their local community.

*I don't think that should be the responsibility of the treating GP of the particular patient that should be a public health...*

**Dublin GP**

*I advise them to tell the partner if they have had unprotected sex.*

**Monaghan GP**

*I had one man came in to me and he'd had an affair and his wife was a patient of mine as well, it's tricky, - I referred him on to the STD clinic, then she comes in to me, well what can you do, she didn't know anything.*

**Cork GP**

GPs thought confidentiality was greater if patients were referred to STI clinics as there would be no record on the GP's file of an STI investigation and this would not then be a problem for insurance reports. This issue of GPs providing information regarding STI tests to insurance companies for insurance medical reports was a major concern to GPs at all the focus groups. This issue arose spontaneously in each group, GPs considered it unfair to penalise a patient for simply having a test even with negative results –they wouldn't be penalised for a normal CXR. GPs sometimes don't keep a record of STI consultation because of implications for insurance reports.

*I tell my patients that if they go there they don't send the information back to me. Because most of mine are in their 20's, they're going to be looking for insurance in 10 years time, they're going to be looking for a life policy.*

**Cork GP**

*.....and number one, actually I don't want any positive results in the chart, from the mortgage point of view anyway.*

**Dublin GP**

Free treatment for patients at the STI clinic was raised as an advantage of referral for the patient by the focus group participants. One GP referred at risk patients for free hepatitis B vaccination at the clinic. Some GPs referred patients to the STI clinic because of the counselling available there.

The fact that consultations on STIs were very time consuming was acknowledged at the focus groups. In addition there was concern about maintaining the skills required to manage clinical conditions that were rarely encountered. Some GPs were unwilling to take this on and referred all patients to the STI clinic.

The focus groups reported that some patients prefer to be managed in general practice and won't go to the clinic. Even GPs who preferred to refer all patients sometimes found they were investigating and treating because a patient refused to go to the clinic.

At the Monaghan focus group GPs said that travelling a distance to an STI clinic was not a problem for their patients, in fact being some distance from an STI clinic provided a sense of anonymity. However, GPs in the Dublin focus group reported that patients had difficulty crossing the city to attend a clinic because of traffic delays and their expectation that services would be nearby.

Male GPs in the focus groups said it was important to ensure a chaperone was present for examination of female patients and this was a role for the practice nurse. This was not an issue for female GPs.

GPs in the focus groups distinguished between symptomatic and asymptomatic patients putting a greater urgency on investigating and treating symptomatic patients or requiring an urgent referral to an STI clinic.

There was general agreement among the GPs in the focus groups that patients sometimes selected unknown GPs or specifically opted to see the practice nurse when presenting with concerns about STIs. In addition GPs noted that this also occurred for consultations for the morning-after-pill and for an unexpected pregnancy.

*But what they do is they come in to me, you've never seen them before and you never see them again.*

**Dublin GP**

### **3.3.3 Additional requirements of GPs for diagnosis and treatment of STIs**

#### Practice Issues in relation to Management of STIs

The following practice issues were raised in relation to what is required to manage STIs well in general practice:

- STI clinics

Many GPs reported difficulties in relation to access to STI clinics and were particularly upset that patients could walk-in to some clinics while GPs were unable to obtain an urgent appointment. They reported that access had deteriorated in recent years so that now waiting times of two to six weeks were not unusual. There was also a suggestion that agreed protocols would improve management of STIs.

- Laboratory services

The main difficulties around laboratory services involved transport of specimens to the laboratory and provision of swabs for GPs. Some GPs reported they had appropriate swabs and had arrangements for transport of swabs to hospital so they were confident they were providing appropriate investigations to patients. The methods used included courier service and posting samples. This situation may change with the introduction of EU legislation regarding transport of biological specimens. There was sometimes a delay in receiving reports when laboratories sent samples to other laboratories.

- STI consultation fee

GPs in the focus groups said that there should be a special consultation type General Medical Services (GMS) fee for STI consultations to acknowledge the complexity and length of time required for the consultation.

*To look after the patient we have to be properly funded and resourced, set up for the nurses, set up the clinic.*

**Dublin GP**

#### Patient issues in relation to management of STIs

The following patient issues arose concerning what is required to manage STIs well in general practice:

- Information for patients

GPs said they needed information on STIs which is suitable for patients. Some GPs found the leaflets produced free by the Health Promotion Unit (DoHC) quite useful. One GP remarked that leaflets prepared by the ICGP were too expensive.

#### GP issues in relation to management of STIs

The following GP issues arose in relation to what is required to manage STIs well in general practice:

- Clinical knowledge and skills

Some GPs suggested that they required ready access to information regarding factual aspects of STIs (e.g. how long could infection have been present when diagnosed in an asymptomatic individual?). Some GPs mentioned the value of refresher courses for practical skills. A few GPs suggested CME group discussions.

- Minimum STI service in general practice

There were mixed views as to what is the minimum any GP should do in relation to STIs as some GPs said all patients should be referred but others said the minimum any GP should do is an examination, blood tests and swabs and then see what is required. Providing advice and some counselling was also suggested as being the minimum any GP should do. It was also suggested that a dedicated GP STI practice should be established. There was also a strong view in the focus groups that dealing with STIs should be done properly or not at all, that half measures were unacceptable.

*You can't do half, it's all or nothing.*

**Cork GP**

### **3.3.4 Barriers to notification of STIs for GPs**

Most GPs in the focus groups did not notify STIs to their local Department of Public Health. They also rarely reported any other notifiable infectious disease except perhaps gastroenteritis, measles or meningitis. Some GPs considered that it was not acceptable to provide patient's name and address for STIs. There was general agreement that notifications were viewed as simply another form and it was "too much bother" to fill in the form or to even find the form in the first place.

The few GPs who did notify STIs believed in the value of notifications and also notified other infectious diseases. Many of the GPs reported that they presumed the laboratory would notify STIs and also made similar assumptions for other infectious diseases. Confidentiality was also an issue.

There was general agreement that telephone notification or notification by fax would not improve the notification rate but that electronic notifications might improve notification. There was a suggestion that delegation of notification to a practice nurse might improve matters. GPs also raised the issue of poor feedback in relation to STI notifications and that the fee for notifications was insufficient.

### **3.3.5 Policy development and prevention strategies for sexual health**

#### Protocols and guidelines

GPs in the focus groups suggested that protocols for the management of STIs in general practice would be useful. Protocols should permit the option of referral to STI clinics at various points but should encourage GPs to manage as much as possible themselves.

*I do think there is a gap in communication between what the clinic is doing and what we do and that if we had an agreed protocol we could maximise what we can do, make sure that we're doing is appropriate.*

**Cork GP**

#### Patient education

GPs participating in the focus groups identified many opportunities for educating patients about the prevention of STIs and this is covered earlier in this chapter.

### Resources

GPs were pessimistic about the prospects of resources being provided to them to permit them to offer patients the appropriate level of care for STIs. GPs expressed their reluctance for taking on additional services unless adequately resourced. GPs really wanted an adequately resourced, accessible STI clinic to manage their patients with STIs as it is a specialised area.

*But the other point is that we know for a fact there's two examples, one is the care of diabetes in general practice, it has been shown that it is cheaper and more efficient to look after diabetics in general practice. Previously it has been shown that it is better to look after Warfarin patients within general practice under certain circumstances. However, and it has been shown to be cost effective, however the department after many many years has refused to actually pay for it, despite the fact that it's cheaper, because what they want is they want a free service in an existing service where they're not prepared to put money into it, and so anything else that gets taken out of the hospitals to be put into the community as in GPs, we know it will be a good thing, but we know that it's never going to be resourced, and that's perfectly simple.*

Dublin GP

## 3.4 GP STI survey

### 3.4.1 Response rate

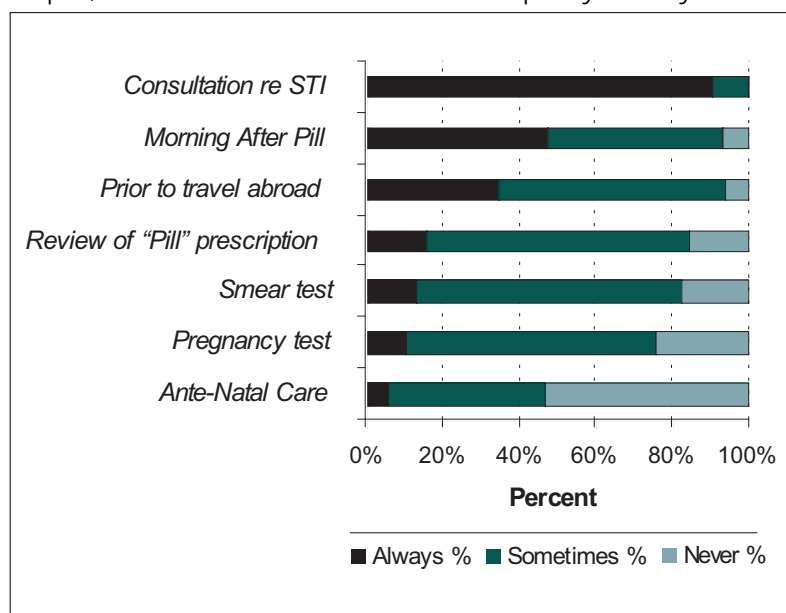
A first round of questionnaires was posted to 656 GPs and 283 GPs responded (43.1%), five responses were excluded from the survey as the GPs were not in active general practice. Following a second round of questionnaires to 459 GPs, 114 responded (24.8%). Six further GPs were excluded from the survey as they were not in active general practice. The overall response, from a valid sample of 645, was 397 (61.6%).

### 3.4.2 Demographic and practice profile of GPs

The demographic and practice profile of the GPs responding to this survey showed most of the respondents had urban or mixed practices (n = 307, 80.3%) and that the majority worked in group practices (n = 235, 59.2%). Most general practices (n = 261, 65.9%) were located less than 25 miles from an STI clinic and only 30 (7.6%) were more than fifty miles away. Most respondents also reported using computers for patient consultations (n = 304, 78.6%) and having a practice nurse (n = 284, 71.5%). Almost 60% (235/396) of respondents were male and almost 70% (256/367) of respondents reported completion of vocational training in general practice.

### 3.4.3 Trends in STI consultations over the last five years and the most common STIs seen by GPs

Most GPs reported seeing more patients presenting with STIs than five years ago (n = 266, 72.7%). In response to a question relating to the three most common STIs they see in their practices, ano-genital warts, chlamydia, genital herpes simplex, NSU and trichomoniasis were most frequently listed by GPs.



**Figure 3.1** Frequency of advice re prevention of STI during consultations

### 3.4.4 Description of GP's consultations in relation to STIs

GPs responses concerning STI consultations are given in Table 3.2. Most GPs saw less than four patients with STI symptoms per month (n = 327, 84.5%). Similarly 82.7% (n = 312) saw less than four patients per month who were worried about STIs but without symptoms.

GPs were asked about the frequency with which they would offer advice to patients about prevention of STIs during consultations. The results are set out in Figure 3.1. GPs also listed other situations where they offer advice about prevention of STIs: initial consultation to prescribe the pill (17 GPs); in consultations with adolescents (6); single patients contraceptive consultation (1); emergency contraception (1); consultation re intrauterine device (1); postnatal check (1); men's health (1) and general health review (1).

**Table 3.2: GPs' consultations in relation to STIs**

Type of consultation	n	%	Total
<b>Patients with symptoms of STIs</b>			<b>387</b>
More than 4 patients /month	60	15.5	
1-3 patients /month	163	42.1	
Less than 1 patient /month	159	41.1	
Don't see patients with STI symptoms	5	1.3	
<b>Patients worried about STIs but asymptomatic</b>			<b>377</b>
More than 4 patients /month	65	17.2	
1-3 patients /month	160	42.4	
Less than 1 patient /month	144	38.2	
Don't see patients worried about STIs	8	2.1	

### 3.4.5 Role of practice nurses in relation to STI consultations in general practice

Two hundred and eighty four GPs (71.5%) reported having a practice nurse in their practice. The role of the practice nurse in relation to STIs was reported as providing general advice (70.1%), taking bloods (67.3%), taking swabs (54.9%), providing counselling (32.7%), and treating genital warts (8.1%). However, the practice nurse was reported to have no role in relation to STIs by 19.7%, of GPs.

### 3.4.6 Notification of STIs and other infectious diseases by GPs to Departments of Public Health

GPs were asked how frequently they notified STIs to Departments of Public Health. Their responses varied with each STI as shown in Table 3.3. For each STI listed, less than 50% of GPs responded that they 'always' notified the Department of Public Health. When notification categories were combined, 45-55% of GPs 'always' or 'sometimes' notified hepatitis B, HIV, syphilis and gonorrhoea. The STI least likely to be notified was NSU (75.6% GPs said they 'never' notified it) and similarly more than 70% of GPs said they 'never' notified ano-genital warts or trichomoniasis.

Bivariate analysis of GP demographic and practice profile and reported notification behaviour, showed no significant difference between GPs who 'never' notify an STI and those GPs who either 'always' or 'sometimes' (analysed as 'ever') notify STIs, for all variables (see section 3.4.2) except 'GP age less than 36 years'. GPs less than 36 years old were significantly more likely to notify STIs than GPs aged 36 years or older ( $p < 0.011$ ). While GPs based more than 50 miles from an STI clinic had a lower notification rate for STIs than GPs practicing less 50 miles from clinics, this did not reach statistical significance.

There was no significant difference between GPs who 'never' notified STIs and those who 'always' or 'sometimes' notified STIs, in relation to the frequency of STI consultations with symptomatic patients or the frequency of consultations with asymptomatic patients.

GPs were also asked whether they notified 'other infectious diseases'. These infections were also under-notified, with 15.6% of GPs (57/384) responding that they 'always' notified, 45.4% (173/384) that they 'sometimes' notified and 40.4% (154/384) stated that they 'never' notified other infectious diseases. These responses may mask variation in disease specific notification of individual infectious diseases. Not surprisingly, GPs who reported that they 'never' notified any STIs were highly statistically significantly more likely to report that they 'never' notified other infectious diseases, when compared to GPs who reported that they 'always' or 'sometimes' notified STIs ( $p < 0.001$ ).

### 3.4.7 Barriers to notification of STIs

GPs who did not 'always' notify all STIs were asked about their reasons for not notifying STIs to Departments of Public Health. Their responses are set out in Figure 3.2 below where responses are ranked in order of the extent of agreement among GPs about the reasons why they do not 'always' notify STIs.

Additional reasons for not notifying STIs: patients referred to an STI clinic, the clinic would notify (29 GPs); forgot (15); didn't have forms (5); don't see enough STIs (3); never paid (3). Other comments from individual GPs were: no adequate system in place, not IT friendly, notified verbally to public health doctors, paper trail, public health hassles for results, prepaid envelopes would help and "sailors gone in the tide".

### 3.4.8 Factors which would encourage notification of STIs

GPs were asked to indicate what would encourage them to notify STIs. Their responses are set out in Figure 3.3 below. Responses are ranked in order of the extent of agreement among GPs in relation to those factors which would encourage them to notify STIs.

**Table 3.3: Notification of STIs to Dept of Public Health**

	Always		Sometimes		Never		Total
	n	%	n	%	n	%	
HIV*	145	45.6	24	7.5	149	46.9	318
Syphilis	132	41.0	35	10.9	155	48.1	322
Hepatitis B	131	40.2	44	13.5	151	46.3	326
Gonorrhoea	107	33.2	38	11.8	177	55.0	322
Chancroid	62	21.8	35	12.3	187	65.8	284
Granuloma inguinale	55	20.0	31	11.3	189	68.7	275
Lymphogranuloma venereum	53	19.3	36	13.1	186	67.6	275
Chlamydia	50	14.4	66	19.0	232	66.7	348
Genital Herpes	38	11.2	69	20.4	231	68.3	338
Trichomoniasis	31	9.7	60	18.8	229	71.6	320
Non Specific Urethritis	25	7.8	53	16.6	242	75.6	320
Ano-Genital Warts	18	5.0	73	20.4	267	74.6	358

\* HIV is not currently notifiable under legislation

Some GPs made additional comments: STI Clinic would notify more accurately (2); there were 'contact tracing issues' (2); notification should be delegated to the laboratory (1); an appropriate swab supply is required (1); that GPs should notify (1); regular supply of forms (1); reminder in ICGP diary (1); and there should be training for GPs (1).

### 3.4.9 Patterns of management of STIs by GPs

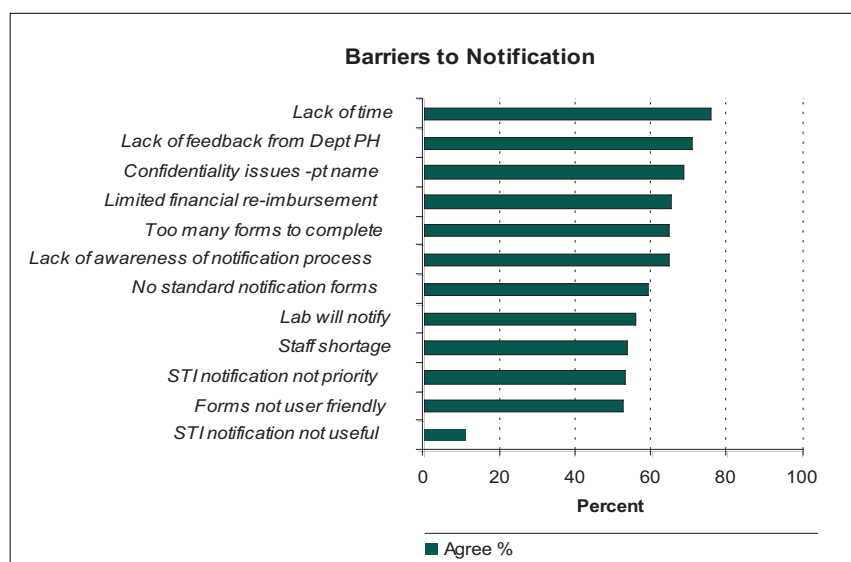
GPs were asked how they managed notifiable STIs. Management varied depending on the particular STI. Over 90% of GPs said they referred patients with chancroid, granuloma inguinale, hepatitis B, HIV and lymphogranuloma venereum without treatment. While 88.9% of GPs also referred patients with syphilis, a further 6.1% of GPs said they would 'treat and then refer' syphilis and another 5% said they would manage syphilis without referral. The STIs most frequently managed by GPs without referral were chlamydia (59.2%), NSU (52.5%) and trichomoniasis (51.8%). There was more variation in the management approach reported by GPs for ano-genital warts, genital herpes and gonorrhoea. Table 3.4 sets out responses in relation to management of STIs.

Generally, GPs who reported that they manage patients with particular STIs rather than referring them were more likely to notify that STI however, this trend was not statistically significant. The frequency of use of various referral options are displayed in Figure 3.4. In addition some GPs referred patients elsewhere: private referral (20); Genitourinary or Infectious Diseases Physician (2); Gynaecologist/Dermatologist (1).

### 3.4.10 Contact tracing

GPs were also asked about contact tracing or partner notification (fig 3.5). The most frequently reported response was to advise the patient that their contact/partner should see a GP or attend an STI clinic with 87.3% (323/370) of GPs saying they "always" advised this. In fact 41.2% (152/369) said they "always" referred their patient to an STI clinic for

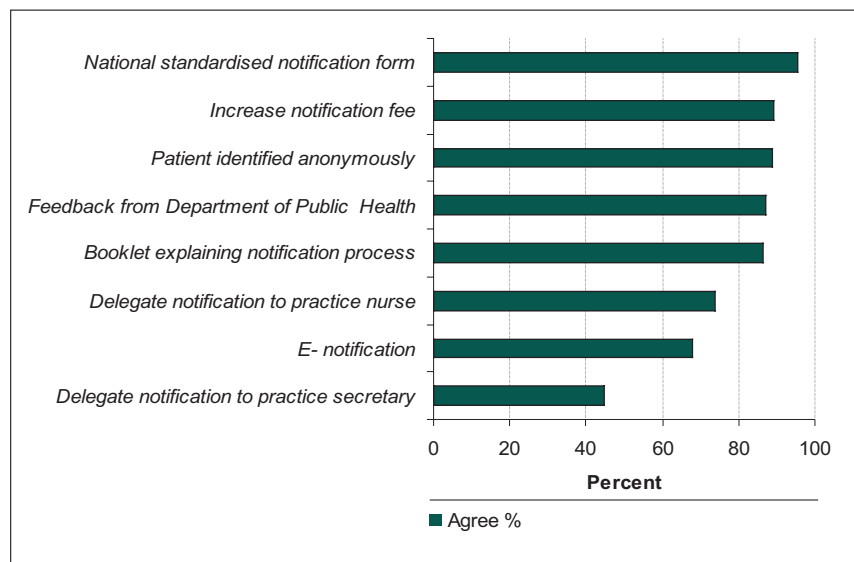
contact tracing/partner notification. Of note is that, 55.1% (177/321) of GPs indicated that they would "sometimes" manage the issue of contact tracing/partner notification by providing their patient with a prescription for their contacts/partners.

**Figure 3.2 Reasons why GPs do not notify STIs**

### 3.4.11 Swabs from local laboratories

While 154 (40.4%) GPs reported that they 'never' had problems in obtaining swabs from their local laboratory for the management of STIs, 173 (45.4%) reported that they 'sometimes' had problems and a further 54 (14.2%) reported that they 'always' had a problem in obtaining swabs from their local laboratory.





**Figure 3.3: Factors which would encourage GPs to notify STIs**

GPs were asked whether they agreed or disagreed that the factors shown in Figure 3.6 would be useful to GPs in the management of STIs and to add other useful factors.

Some GPs suggested other additional factors: feedback from STI clinic referrals (2); GPs specialising in STIs (2); training for Practice Nurses (2); BMA models of expertise (1); local services (1); Public Health drive (1); the right to advertise services (1); urine testing for chlamydia (1). There was generally agreement between GPs who 'never' notified and those who 'ever' notified STIs in relation to the importance of factors that would be helpful in management of STIs in general practice.

**Table 3.4: Management of STIs. GPs who see STIs n=394**

	Referral no treatment		Treat & Refer		Treatment no referral		Total
	n	%	n	%	n	%	
Lymphogranuloma venereum	318	96.4	7	2.1	5	1.5	330
HIV*	347	93.5	13	3.5	11	3.0	371
Chancroid	316	92.7	8	2.3	17	5.0	341
Granuloma inguinale	306	92.7	9	2.7	15	4.5	330
Hepatitis B	338	90.9	13	3.5	21	5.6	372
Syphilis	321	88.9	22	6.1	18	5.0	361
Gonorrhoea	214	59.3	25	6.9	122	33.8	361
Ano-Genital Warts	192	50.4	32	8.4	157	41.2	381
Genital Herpes	158	42.5	38	10.2	176	47.3	372
Trichomoniasis	156	43.7	16	4.5	185	51.8	357
Non Specific Urethritis	164	45.6	7	1.9	189	52.5	360
Chlamydia	127	35.3	20	5.6	213	59.2	360

\* HIV is not currently notifiable under legislation.

### 3.5 Discussion

This study of Irish GPs was conducted against the background of other studies of GP notification of STIs in Ireland and internationally. A survey of 281 Irish GPs in 1978 reported that GPs notified syphilis in 24.3% of cases, gonorrhoea in 9.8% of cases and non-specific venereal diseases in 3.1% of cases.<sup>48</sup> Another survey in 1987, of 230 GPs, reported that 7.6% of those surveyed 'did notify STIs', 7.4% 'sometimes' notified STIs and 85% of GPs 'did not' notify STIs.<sup>49</sup> In the current survey, less than 50% of GPs said they 'always' notified any particular STI. However, when notification categories were combined, 45-55% of GPs 'always' or 'sometimes' notified hepatitis B, HIV, syphilis and gonorrhoea. These figures would seem to indicate an improvement in completeness of notification over time although differences in the format of the data and collection methods do not permit direct comparison.

Surveys from other countries indicate that the issue of suboptimal notification of STIs is not unique to Ireland. STI surveillance systems for STIs vary greatly across the EU, however, case reporting from clinicians and/or laboratories continues to be the mainstay of European STI surveillance systems.<sup>50,7</sup> In the UK, many STIs, (especially chlamydia) are diagnosed by GPs, yet only GUM clinics have a statutory obligation to report STIs to the Health Protection Agency (HPA).<sup>11</sup> Under-notification of other infectious diseases by GPs in the UK is well recognised.<sup>51,52</sup> Notwithstanding that laboratory reports of STIs are submitted on a voluntary basis and provide data on STIs diagnosed in settings other than GUM clinics, lack of data from primary care is currently an issue for surveillance of STIs in the UK.<sup>53,33</sup> National surveys of

physicians in the US in 1966 and in 2002 reported under notification of STIs, although there was improvement in notification rates from less than 20% to 40-50% for the later study.<sup>54,55</sup> A review of published studies conducted in the US between 1970 and 1999 on completeness of infectious disease reporting found it differed significantly among the 21 distinct disease categories with significantly higher reporting completeness for tuberculosis, AIDS and STIs than for all other diseases.<sup>56</sup> The reasons for this difference were not clear but it was proposed that it may be related to the perceived seriousness of these diseases or to the greater financial and human resources devoted to treating and preventing TB and STIs, including contact tracing. The reasons cited in that review for under reporting of notifiable diseases included a lack of awareness of the legal requirement to report, an assumption that someone else will report, intentional failure to report to protect patient privacy and insufficient reward for reporting or penalty for not reporting. As GPs who managed patients themselves, tended to notify more than GPs who responded that they generally referred patients to a clinic, those who responded that they referred patients to STI clinics may have expected the clinic to notify the STI, although the difference between the two groups of GPs was not statistically significant.

### 3.5.1 Demographic and practice profile of sample survey

The survey sample is similar to the current ICGP membership in age and gender profile (Personal Communication, ICGP). The demographic and practice profile of GPs in this survey was similar to that in previous surveys of Irish GPs in relation to the age profile of GPs, and the mix of urban/rural and single/group practices.<sup>46,57,58</sup> However, in this survey, 72% of GPs reported that they had a practice nurse compared with previous reports of 46% in 1999 and 31% in 1997.<sup>57,58</sup> Similarly, the proportion of female (41%) and vocationally trained (70%) GPs in this survey was higher than in previous surveys where 30% of GPs were female and 40-49% were vocationally trained.<sup>46,57</sup>

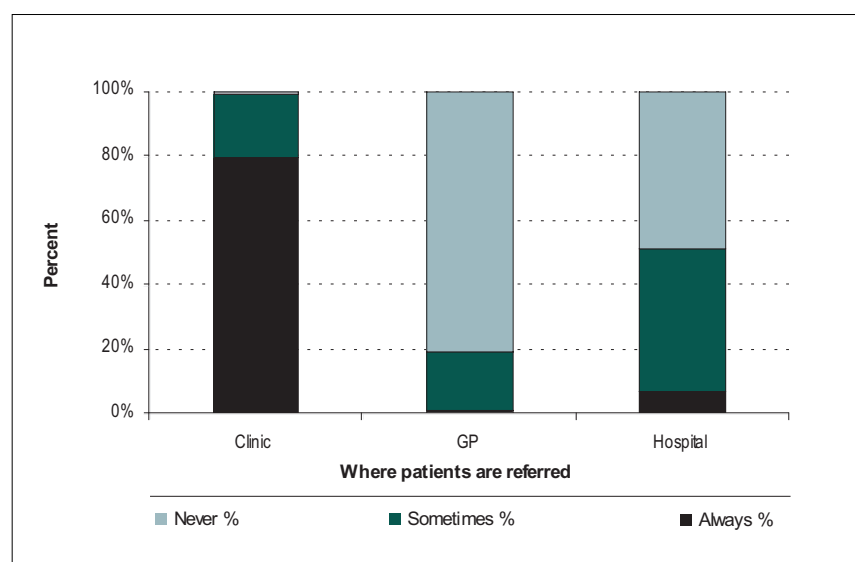


Figure 3.4 Where do GPs refer patients with STIs?

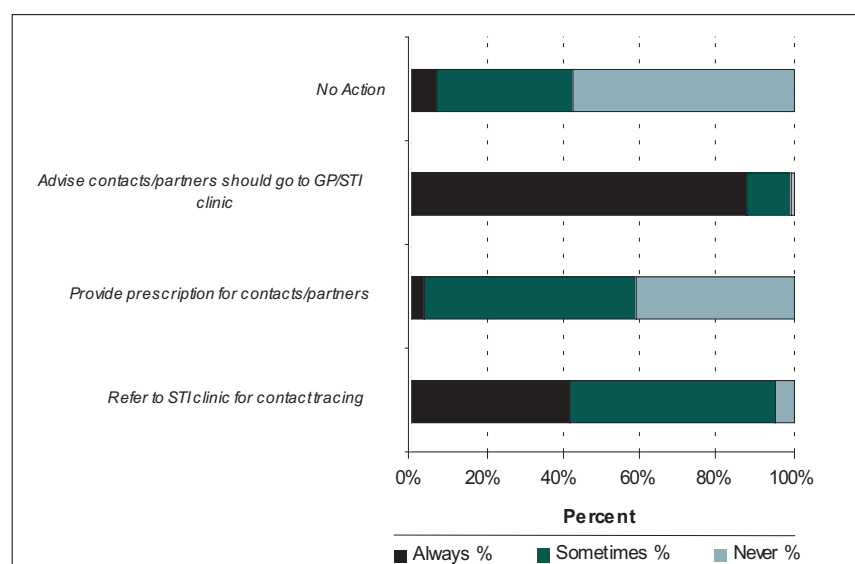
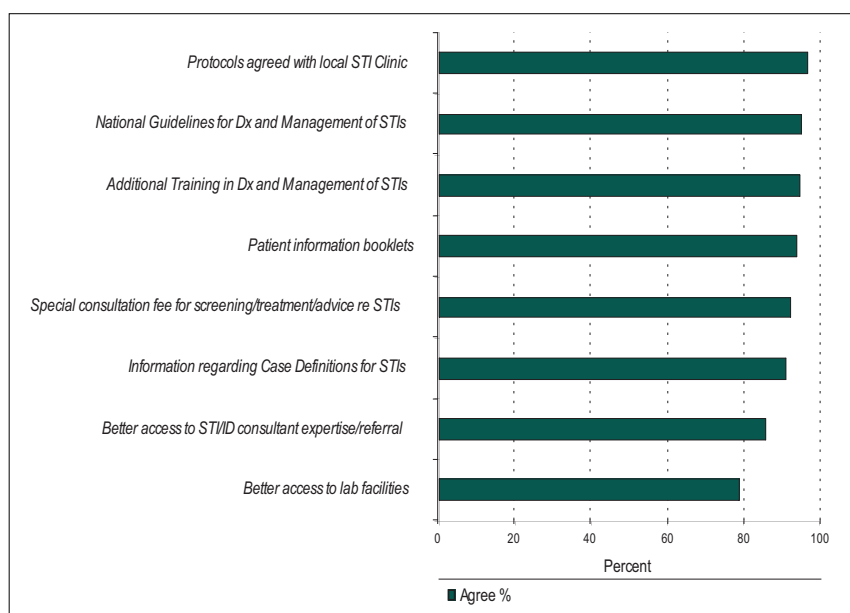


Figure 3.5 Partner notification/contact tracing in management of STIs by GPs

### 3.5.2 Burden of STIs in general practice

A survey of surveillance systems in the EU concluded that a sizeable proportion of cases of chlamydia infection and viral STIs are seen in primary care settings, reflecting their distribution in the population as endemic infections which are not particularly strongly associated with high risk groups.<sup>50</sup> This study found that GPs in Ireland see patients with symptoms of STIs infrequently (84% of GPs see less than four patients per month), however GPs see a similar number of asymptomatic patients who are concerned about STIs and in addition, GPs frequently provide advice to patients about prevention of STIs during other consultations e.g. for the "morning after pill" and prior to travel abroad.

The survey asked respondents to indicate approximately how many patients with symptoms of an STI they saw each month and, in a separate question, to indicate how many patients they saw each month who were concerned about STIs. The format of the question in relation to the numbers of patients seen per month, asked respondents to tick the 'most appropriate' box from a range of options for the 'approximate number of patients seen per month' and therefore the exact number of patients seen per month was not elicited. However, it can be estimated that on average, GPs see 1.67 patients with symptoms of STIs and



**Figure 3.6: Useful to GPs in the Management of STIs**

for diagnosis and management of STIs which, on average, individual GPs encounter infrequently. It also presents a challenge in setting up surveillance systems which capture dispersed data from primary care in a timely and useful manner.<sup>58,8</sup>

The Primary Care Strategy published in 2004 envisages that there will be considerable investment in information and communications technology infrastructure in general practice.<sup>59</sup> As discussed in Chapter 2 (section 2.4.5) of this report, it is envisaged that notifications from larger general practices and family planning clinics will be facilitated by the development of the CIDR system for efficient notification of STIs and other infectious diseases. It is envisaged that it will be possible to extract data from GP practice management systems (when these are in place) for uploading into the CIDR system in the practice setting, provided the particular GP practice has access to the government VPN, which allows secure transfer of confidential data, on-line.

### 3.5.3 Variation in notification of individual STIs

There was a marked variation in notification of STIs by GPs, depending on the infection involved, e.g. 51.9% "always" or "sometimes" notified syphilis while 75.6% "never" notified non specific urethritis. There is evidence that this phenomenon also applies to infectious diseases other than STIs. A recent gastroenteritis survey of GPs found only 7.4% of GPs (Republic of Ireland) "usually" notified a clinically suspicious case of gastroenteritis in a child under two years of age however, more than 60% "usually" notified laboratory confirmed cases of salmonella.<sup>60</sup> A review of notifications in the US, of 21 infectious diseases also found disease-specific variation in reporting infectious diseases and proposed that this phenomenon may be related to the perceived seriousness of these diseases.<sup>56</sup> The variation in notification of STIs by GPs in this study would seem to bear this out.

As discussed in Chapter 2 of this report, it is envisaged that with the 'roll out' of the NHIS and clinic and general practice management systems, automated electronic transfer of data will become the norm, facilitating the collection of disaggregate data on all notifiable STIs.<sup>34</sup> The HPSC STI subcommittee considered that priority should be given to collection of disaggregate data on incident cases of the major notifiable bacterial STIs, syphilis, gonorrhoea and genital chlamydia infections and also on infectious hepatitis B. This recommendation reflects the current pattern of notification by GPs of the more serious infections (more than 50% of respondents said they 'always' or 'sometimes' notified HIV, syphilis and infectious hepatitis B and 45% said they 'always' or 'sometimes' notified gonorrhoea). However, just one third of respondents reported that they 'always' or 'sometimes' notified chlamydia infection. Education in relation to the seriousness of this infection, the usefulness of notification and other incentives such as increasing payment for notifications will be required, to improve notification rates. In addition it is envisaged that the priority list of STIs will need to be kept under review as the list may need to be added to in the event of an unexpected increase in numbers of cases or the emergence of clusters or outbreaks of a particular infection occurring.

### 3.5.4 Barriers to notification

In relation to why they did not "always" notify STIs, most GPs in this survey agreed with the options listed (Figure 3.2) except for the statement "STI notification not useful" which is encouraging for the future development of surveillance of infectious diseases in primary care.

1.73 asymptomatic patients per month (estimated from data in Table 3.2). In total therefore, it can be estimated that each GP sees an average of 3.4 patients for STI related consultations per month (40.8 per year) and in addition GPs advise patients about prevention of STIs in the course of many other consultations. As there are approximately 2,500 GPs registered with the ICGP, it can be estimated that GPs see about 100,000 patients regarding STIs each year in Ireland. This compares with approximately 40,000 attendances at STI clinics annually (Personal Communication, STI clinics). One of the challenges with regard to the STI related workload in general practice is how to maintain the range of skills required

There was a high level of agreement (85-95%) among GPs about the highest ranking five factors which would encourage them to notify STIs: standardised notification forms, increased fee, patient anonymity, feedback and provision of a booklet explaining the notification process (Figure 3.3). Chapter 2 of this report, endorses and makes recommendations in relation to each of these factors. The findings of this research are consistent with other studies which identified lack of awareness of the notification process, an assumption that someone else will notify, intentional failure to report to protect patient privacy and insufficient payment, as reasons for non notification of infectious diseases.<sup>51,55,56</sup>

In addition, 67.9% of survey respondents agreed that electronic notification would encourage GPs to notify STIs while there was general agreement in the focus groups that telephone notification or notification by fax would not improve the notification rate. The NHIS envisages that general practice management systems and automated electronic transfer of data will become the norm and with the development of the CIDR system, this research indicates that these developments will be welcomed by GPs.

Concerns about insurance companies' loading patients for having investigations or treatment of STIs were raised spontaneously by GPs in each of the focus groups. These concerns influenced GPs in their management of STIs with regard to performing investigations or referral to STI clinics and documentation in the patients' chart and may be reflected in GPs concerns about patient confidentiality and contribute to undernotification of STIs.

### **3.5.5 Management of STIs in general practice**

The second NATSAL study of sexual behaviour in Britain found that most patients with STIs are managed in GUM clinics but 24% of men and 44% of women who ever had an STI, had not attended a GUM clinic. Attendance at a GUM clinic in the UK varied depending on the specific infection, for gonorrhoea 93% of men and women attended a GUM clinic, whereas for trichomoniasis only 38% of women attended GUM clinic.<sup>61</sup>

Our study showed that GPs varied in their management of different STIs. GPs tended to refer patients with HIV, syphilis, hepatitis B, lymphogranuloma venereum, granuloma inguinale and chancroid to an STI clinic for further investigation and treatment. The latter three STIs are rarely seen in Ireland and infection with HIV, syphilis or hepatitis B has long-term implications for a patient's health. It can be concluded that it is appropriate that these patients be referred for specialist assessment, treatment and follow up.

The STIs seen most frequently by GPs in their practices include the six STIs where GPs were almost evenly divided between managing the patients themselves and referring them to an STI clinic. GPs tended to mostly treat patients with chlamydia, NSU and trichomoniasis but also often refer some of them. GPs tended to mostly refer patients with gonorrhoea, ano-genital warts and genital herpes but also often treat them without referral.

GPs did not routinely engage in active contact tracing and considered it outside the scope of general practice. However, 87.3% of GPs 'always' advised patients to inform their contacts to see their own GP or attend an STI clinic and 94.6% would 'always' or 'sometimes' refer patients to STI clinics for contact tracing. This is similar to the findings of a recent survey in the US, which found that 80-89% of physicians 'always' advised patients to tell partner to seek care for diagnosis and treatment of gonorrhoea, chlamydia, syphilis and HIV.<sup>55</sup>

More than half of the respondents (55.1%) said they would 'sometimes' give their patient a prescription for their partner and 3.7% would "always" do so. In contrast, less than 5% of US physicians would give a patient medication for a partner for gonorrhoea, syphilis and chlamydia.<sup>55</sup> However, this form of expedited treatment of sex partners has recently been reported to be effective in reducing the rate of persistent or recurrent gonorrhoea or chlamydia infection.<sup>62</sup>

GPs expressed satisfaction with the services of the STI clinics for their patients but were dissatisfied with the delays obtaining an appointment for the clinics. Surprisingly, GPs in a focus group where there was no STI clinic in that health board said the distance from an STI clinic was not a problem for patients provided that there was public transport available. GPs recognised the importance of STI clinics in the management of STIs and that these services must be adequately resourced.

More than 90% of GPs agreed with five important developments required for the management of STIs in general practice:

- development of protocols with local STI clinics
- development of national guidelines for the diagnosis and management of STIs
- provision of additional training for GPs
- development of patient information booklets
- provision of clinical STI services, including assessment, management, treatment and counselling services, free of charge

to patients at the point of access whether in primary care or at an STI clinic, with remuneration of general practitioners who provide these services, accordingly.

The Sexual Health Strategy for England addresses many issues in relation to management of STIs in general practice such as the training and funding required to resource GPs who may provide various levels of care in relation to STIs.<sup>63</sup> Sexual health strategies have also recently been produced for Scotland and Wales and are also being developed in Norway and Sweden.<sup>64,65,66</sup> A sexual health strategy for Ireland would provide a framework for the development of STI prevention and treatment services for both STI clinic services and primary care services, including general practice, student health services and family planning clinics.

### 3.6 Conclusions

#### **Surveillance of STIs in general practice**

1. This study, of a representative sample of Irish GPs, shows that there is a significant burden of STI seen by Irish GPs. GPs see an average of 3.4 patients for STI related consultations per month (40.8 per year) and in addition GPs advise patients about prevention of STIs in the course of many other consultations. From this study, it can be estimated that GPs see about 100,000 patients regarding STIs each year in Ireland, compared to approximately 40,000 attendances at STI clinics annually.
2. One of the challenges with regard to the STI related workload in general practice is how to maintain the range of skills required for diagnosing and managing STIs which an average individual GPs encounters infrequently. There is also a challenge in setting up surveillance systems which capture dispersed data from primary care in timely and useful manner.
3. GPs displayed a marked disease specific variation in notification of STIs with 45-53% 'always' or 'sometimes' notifying HIV, syphilis, gonorrhoea and infectious hepatitis B while 25-29% 'always' or 'sometimes' notifying ano-genital warts, non specific urethritis and trichomoniasis. The HPSC STI subcommittee considered that priority should be given to collection of disaggregate data on incident cases of the major notifiable bacterial STIs, syphilis, gonorrhoea and genital chlamydia infections and also on infectious hepatitis B and this recommendation fits with the current pattern of notification by GPs of the more serious infections.
4. There was a high level of agreement (>85%) with the highest ranking five factors which respondents agreed would encourage GPs to notify STIs to public health, namely:
  - Availability of a standardised notification form
  - Provision of an increased fee for notification to public health
  - Preservation of patient anonymity
  - Provision of feedback to GPs in relation to notifications
  - Provision of a booklet explaining notification process.
5. In addition, 68% of respondents in this survey agreed that electronic notification would encourage notification of STIs. This indicates that GPs would welcome the development of general practice management systems and that the CIDR system with electronic transfer of data will facilitate the notification of STI data from general practice.

#### **Management of STIs in general practice**

6. This study showed that GPs varied in their management of STIs depending on the STI. GPs tended to refer more than 90% of patients with HIV, syphilis and hepatitis B, to an STI clinic and in contrast tended to manage patients with chlamydia, non-specific urethritis and trichomoniasis more than 50% of the time without referral.
7. Respondents indicated that they did not routinely engage in active contact tracing and considered it outside the scope of general practice. However more than 87% of GPs 'always' advised patients to inform their contacts to see their own GP or go to an STI clinic and almost 95% would 'always' or 'sometimes' refer patients to an STI clinic for contact tracing.
8. GPs expressed satisfaction with the services of STI clinics for their patients but were dissatisfied with the delays obtaining an appointment for the clinics.
9. STI clinics will continue to have an important role in the provision of services for patients with STIs and their contacts. In addition, GPs who responded to this survey acknowledged the need for provision of resources for STI clinics.

10. More than 90% of GPs agreed with five important developments required for the management of STIs in general practice:

- development of protocols with local STI clinics
- development of national guidelines for the diagnosis and management of STIs
- provision of additional training for GPs in relation to STIs
- development of patient information booklets
- provision of STI services, including assessment, management, treatment and counselling services, free of charge to patients at the point of access whether in primary care or at an STI clinic, with remuneration of general practitioners who provide these services accordingly.

### **3.7 Recommendations**

#### **General**

1. A Sexual Health Strategy should be developed as a priority in order to provide a framework for the development of STI prevention and treatment services, both STI clinic services and primary care services, including general practice, student health services and family planning clinics.

#### **Recommendations in relation to surveillance**

2. Notification forms for STIs should be provided to GPs both in 'tear out' booklet format and electronically.

3. GPs should be adequately reimbursed for notification of infectious diseases to Departments of Public Health.

4. GPs should be provided with easily accessible information in electronic and paper format, outlining the steps to be taken in the notification process for STIs.

5. GPs should be provided with timely, regular feedback in relation to notifications of STIs in various formats (paper and electronic).

6. With the development of the information and communications technology infrastructure in general practice, as envisaged in the Primary Care Strategy and with expansion of the government VPN, work should proceed on the further development of the CIDR system. This will allow extraction of STI notification data from GP practice management systems in the practice setting, for uploading into the CIDR system.

7. Pending the 'roll out' and further development of the CIDR system, where appropriate e.g. particularly from large general practices, local arrangements should be put in place by local Departments of Public Health for electronic notification of STIs and other notifiable infectious diseases, using e-mail or a 'disc in the post' arrangement with data encryption.

8. Concerns expressed by GPs in relation to documentation of matters relating to STI investigation and treatment in a patient's file and the implications for subsequent reports to insurance companies, should be addressed, in order to establish correct factual information and to dispel myths in this regard. Clarification on this matter should be sought from the Irish Insurance Federation (IIF).

#### **Clinical services**

9. Clinical STI services, including assessment, management, treatment and counselling, should be provided free of charge to patients at the point of access whether the service is provided in primary care or in an STI clinic with remuneration for general practitioners who provide this service, accordingly.

10. Development of STI services should recognise the patient's right to choose where they receive treatment. In addition the right of GPs to choose whether to be involved in this specialised area should be respected.

11. Protocols and guidelines for diagnosis and management of STIs should be developed between local Consultants in Infectious Diseases / Genitourinary Medicine, GPs and local Departments of Public Health. These should address appropriate investigations, referral, partner notification and treatment including antibiotic prescribing, in general practice.

12. STI clinic services must be adequately resourced.

13. Antibiotic prescribing guidelines for STIs should also be included in the Strategy for the control of Antimicrobial Resistance in Ireland (SARI) community treatment guidelines, which are currently being developed.

14. A range of training options for GPs in relation to diagnosis and management of STIs should be developed by the Irish College of General Practitioners.

15. Suitable materials for promotion of sexual health in the community should be developed with input from ICGP, Consultants in Infectious Diseases / Genitourinary Medicine and Public Health Specialists.



## 4. The need for primary and reference laboratory facilities for STIs in Ireland

### 4.1 Introduction

In 2002, a laboratory subgroup of the STI subcommittee was established to identify the need for primary and reference laboratory facilities as per the terms of reference of the subcommittee. The laboratory subgroup decided to carry out a survey of STI diagnostic laboratories in Ireland in order to obtain information on the diagnostic and reporting practices of clinical diagnostic microbiology laboratories.

### 4.2 Laboratory Survey

At around that time Ireland had been asked to participate in a survey of diagnostic practices of STI laboratories in Europe, planned by the ESSTI collaborative group in conjunction with Imperial College London. It was decided that the laboratory subcommittee would liaise with the ESSTI collaborative group to undertake a joint survey, which would fulfil the aims of both groups and avoid laboratory personnel receiving similar survey forms from two different sources. ESSTI had limited the European laboratory survey to *N. gonorrhoeae*, *C. trachomatis* and *T. pallidum*, the 'priority' communicable diseases to be progressively covered by the Community network, Decision no. 2000/96/EC, under Decision no. 2119/98/EC67 of the European Parliament and of the Council. Hence the decision was made that the planned Irish survey would be limited to diagnostic and reporting practices in relation to these three bacteria only. When the laboratory survey was undertaken, the 2003 amendment to the Infectious Diseases Regulations 1981 (Infectious Diseases (Amendment) (No. 3) Regulations 2003, S.I. No. 707 of 2003)<sup>68</sup> had not been finalised.

#### 4.2.1 Aims of survey

The aim of the survey was to obtain information on the diagnostic and reporting practices for STIs, specifically infection with *N. gonorrhoeae*, *C. trachomatis* and *T. pallidum*, in clinical laboratories in Ireland. In addition, the survey aimed to determine the use of referral and/or reference laboratory facilities for these sexually transmitted organisms.

#### 4.2.2 Questionnaire content and design

The ESSTI collaborative group designed an initial draft of the laboratory questionnaire. The HPSC STI laboratory subgroup reviewed the draft questionnaire and made the content more relevant to an Irish context and redesigned the format of the questionnaire, making it user-friendly (this new design was also later adopted by the ESSTI collaborative group). Members of the laboratory subgroup reviewed and agreed the final content of the questionnaire. HPSC, the ESSTI collaborative group, Imperial College London and the Irish Society of Clinical Microbiologists (ISCM) all agreed to endorse the finalised questionnaire and agreed on the inclusion of their logos on the questionnaire and also in the cover letter. A copy of the questionnaire is appended (Appendix 4).

#### 4.2.3 Responses to the survey

Questionnaires were sent to a total of fifty laboratories throughout the country. In all, 28 laboratories (56.0%) returned completed questionnaires. Laboratories that responded were geographically dispersed throughout the country, and all health boards were represented with the exception of the Mid-Western Health Board. Although the response rate was lower than expected, the number of laboratories responding in Ireland was higher than in any of the other fourteen European countries participating in the ESSTI survey.<sup>69</sup> Laboratories that responded were representative of the range of diagnostic microbiology laboratories in Ireland, including laboratories in major referral centres, regional, general and private hospitals. Respondents also included seven of the nine laboratories in hospitals with an STI Clinic on-site. Of the 22 laboratories from which questionnaires were not returned, two were in private hospitals, 19 in general hospitals and two have an on-site STI Clinic.

#### 4.2.4 Findings of the survey

The detailed report on the laboratory survey has been completed and circulated to all of the laboratories involved and other interested parties. The main findings of the survey, which was conducted in 2003, are summarised below. It is important to note that the majority of the laboratories responded to the questionnaire prior to the 2003 amendment to the Infectious Diseases Regulations 1981<sup>68</sup> becoming operational on 1 January 2004. (The amendment established a revised list of notifiable diseases and, for the first time, introduced a requirement for laboratory directors to notify specific microorganisms and infectious diseases).

##### 4.2.4.1 *Neisseria gonorrhoeae*

Of the 28 laboratories that returned a questionnaire, 26 (92.9%) carry out tests for the diagnosis of infection with *N. gonorrhoeae* including seven centres with an STI Clinic on-site.

The majority reported that a specimen Gram stain was performed looking for intracellular Gram negative diplococci; 21

of the 23 laboratories which processed urethral swabs on males performed a Gram stain and nineteen of the 23 laboratories which processed cervical swabs performed a Gram stain. A variety of specimen sites were processed for *N. gonorrhoeae*, with most laboratories testing urethral, rectal and pharyngeal swabs in men, and cervical, urethral and vaginal swabs in women. No laboratory reported conducting molecular testing for *N. gonorrhoeae*. Molecular testing is infrequently used in Europe with only fifteen of 94 European laboratories surveyed reporting use of molecular testing.<sup>69</sup>

The methods used for culture for *N. gonorrhoeae* in Ireland varied widely, with differing media, agar bases and selective antimicrobial agents used. Commercially produced culture medium was generally used. Approximately half of the laboratories used a selective medium only, and half used both selective and non-selective media. The most commonly used selective antibiotic was colistin, followed by trimethoprim, amphotericin, vancomycin, lincomycin and nystatin. The concentrations of blood supplements used varied. The seven laboratories at hospitals with an STI Clinic on-site all reported that they inoculated culture plates in the near-patient setting. An additional two laboratories reported that near-patient cultures were performed as follows: in one laboratory, culture plates were provided to a clinic or ward when requested by a clinician, and in one hospital, one GP is provided with culture plates for near-patient culture. In common, all reporting laboratories used transport media, the majority used the same incubation temperature (mean, 36.6°C) and the same method for providing CO<sub>2</sub> (CO<sub>2</sub> incubator).

Preliminary identification of *N. gonorrhoeae* from culture plates was performed in all of the 26 laboratories using Gram stain and oxidase test. All 26 laboratories performed confirmatory tests; the most common methods used were carbohydrate utilisation (eleven laboratories) and aminopeptidase (seven laboratories); other tests utilised by 25 laboratories included coagglutination, various identification kits (mainly API-NH), and immunofluorescence.

All 26 laboratories performed susceptibility testing on *all* gonococcal isolates. Thirteen (50.0%) laboratories reported using control strains with each batch of tests. Seventeen (65.4%) used a disc diffusion method only, eight (30.8%) used both disc diffusion and E-test (AB BIODISC, Sweden) and one (3.8%) used E-tests only. The disc diffusion methods used were given by nineteen of the 25 laboratories that used disc diffusion and were as follows: the National Committee for Clinical Laboratory Standards (NCCLS) method,<sup>69</sup> seven laboratories; the British Society for Antimicrobial Chemotherapy (BSAC) method,<sup>69</sup> three laboratories; a Stokes technique<sup>4</sup>, nine laboratories. Two laboratories planned to use NCCLS in the future. All of the 26 laboratories participated in external quality assurance (QA) programmes: 23 of the 26 (88.5%) used NEQAS<sup>70</sup> and three (11.5%) laboratories did not specify the scheme used. No laboratory participated in a surveillance programme for antimicrobial resistance in *N. gonorrhoeae*.

The time from receiving a specimen for investigation for *N. gonorrhoeae* to a positive report leaving the laboratory ranged from one to seven days (mean 3.4 days). The time for a negative report to leave the laboratory ranged from two to five days (mean 2.1 days). It is probable that the time of one day for a positive report (stated by one laboratory) refers to the specimen Gram stain and/or preliminary culture result, as molecular methods were not in use at any laboratory.

The HPA national standard method<sup>71</sup> for the identification of *Neisseria* species gives the following indications for referral of gonococcal isolates to a Reference Laboratory:

- Isolates from medico-legal cases
- Isolates associated with outbreaks and where epidemiologically indicated
- Isolates with unusual or unexpected resistance, or where there is a laboratory or clinical problem or anomaly that requires elucidation

Of the 26 laboratories, thirteen (50%) sent gonococcal isolates to another laboratory for various confirmatory tests; nine sent isolates for confirmation of identification, seven for antimicrobial susceptibility testing or confirmation of resistance, and three for strain typing. Only seven of the thirteen laboratories that referred specimens for confirmation named the reference/referral laboratory. Four laboratories referred gonococcal isolates to the HPA laboratory at Bristol, UK (this service has been transferred to the Sexually Transmitted Bacteria Reference Laboratory (STBRL) at Colindale, London). Two laboratories reported referring specimens to St James's Hospital Dublin and one to the Rotunda Hospital Dublin. These overall referral patterns, with 50% of laboratories referring isolates to another laboratory for confirmation of identification, seven (26.9%) for antimicrobial susceptibility testing or confirmation of resistance, and three (11.5%) for strain typing, clearly indicate the need for a Reference Laboratory for *N. gonorrhoeae* in Ireland.

#### 4.2.4.2 *Chlamydia trachomatis*

Of the 28 laboratories that returned questionnaires, nine (32.1%) laboratories reported that they provided a full or partial service for *C. trachomatis* testing. Thirteen laboratories referred all specimens for testing for *C. trachomatis* to other laboratories and six laboratories did not respond to this section. These findings highlight the urgent requirement that additional resources be made available in this area. Appropriate resources would allow laboratories in which the

technical expertise is available to undertake testing for this infection, and also to allow appropriate laboratories act as referral centres for diagnosis of the infection.

The principal specimens tested for *C. trachomatis* were urethral swabs and urine specimens in men, and cervical swabs, urethral swabs and urine specimens in women. No laboratory tested for *C. trachomatis* using self-taken swabs or vaginal tampons.

Chlamydial infections can be diagnosed using a variety of testing approaches. Of the nine laboratories that provided a full or partial *C. trachomatis* testing service, seven used molecular methods and two used enzyme-linked immunofluorescence assay (EIA). The kits used to perform EIA and molecular *C. trachomatis* diagnostic testing varied between laboratories. The seven laboratories that carried out molecular testing confirmed positive results using the same test.

The time from receiving a specimen for investigation for *C. trachomatis* to a positive report leaving the laboratory ranged from one to fourteen days (mean = 4.8 days). The time for a negative report to leave the laboratory ranged from one to ten days (mean = 3.9 days). This considerable time difference in reporting between laboratories is likely to be related to the difficulties and problems experienced with the supply of molecular biology kits for testing for *C. trachomatis* during the time in which the survey was conducted.

Thirteen of the 28 laboratories (46.4%) referred specimens to other laboratories for testing for *C. trachomatis*. Of the thirteen, nine referred these specimens to the National Virus Reference Laboratory (NVRL), one referred these specimens to Cork University Hospital and three did not specify. This again underscores the need for provision of additional resources, which would facilitate laboratories with the appropriate technology and technical expertise to act as referral centres for diagnosis of infection with *C. trachomatis*.

#### **4.2.4.3 *Treponema pallidum***

A total of twelve of the 28 laboratories reported that they provided testing for the diagnosis of treponemal infection; ten of these laboratories performed treponemal serology and three performed dark ground microscopy (DGM) on specimens. A further thirteen laboratories reported that they referred specimens to another laboratory for testing. Three laboratories did not respond to this section. These findings highlight the need for the provision of additional resources in this area and the requirement for properly resourced and equipped referral centres for treponemal serology.

Three laboratories reported that they performed DGM for the diagnosis of primary syphilis; two of these laboratories were in a hospital with an on-site STI Clinic. All three of these laboratories reported that DGM was performed in the microbiology laboratory, as opposed to near-patient testing at a clinic. In the ESSTI European survey, 42 of the 94 centres reported that they performed DGM and the majority were near-patient tests.<sup>69</sup> None of the Irish laboratories reported having access to molecular methods for the diagnosis of *T. pallidum* infection. Only five laboratories in Europe reported having access to molecular methods for the diagnosis of syphilis and only one centre in Europe had access to multiplex PCR for *T. pallidum*.<sup>69</sup> One laboratory reported screening oral fluid for treponemes.

Ten laboratories performed treponemal serology. The majority of laboratories reported using EIA (IgG/IgM) tests for screening, in contrast to other European laboratories where the majority of laboratories continued to use qualitative VDRL and TPHA tests for screening.<sup>69</sup> The kits used for treponemal serology testing varied amongst laboratories. Eight of the ten laboratories always referred positive specimens to another laboratory for additional confirmatory tests; three of these laboratories performed confirmatory testing in-house prior to referral. Of the remaining two laboratories, one sometimes sent positive specimens to another laboratory for additional testing and one did not refer any specimens to another laboratory. Four of the laboratories reported that they used "in-house controls" with each batch of tests and all ten participated in the NEQAS programme.

The mean time from receiving a specimen for investigation for syphilis to a positive report leaving the laboratory was 6.9 days (n=10 laboratories), ranging from one to 21 days. The mean time for a negative report to leave the laboratory was 4.2 days (n=10 laboratories), ranging from one to 21 days.

The fact that only ten of the 28 laboratories performed treponemal serology and that eight of these ten referred all positive specimens to another laboratory for confirmation, highlights the need for additional resources in this important area. It is now considered that in a low-prevalence area such as Ireland, the EIA is an appropriate single screening test.<sup>69</sup> Additional resources would allow those laboratories with a large volume of such tests to perform this testing in-house, with referral of positives to an outside laboratory. Referral centres for treponemal serology and also for detailed additional confirmatory serological tests, and a referral or Reference Centre for molecular diagnosis of this infection, and for detection of antimicrobial resistance, is also required.

#### 4.2.4.4 Reporting and surveillance

This survey was conducted prior to the introduction of the new infectious disease legislation, which introduced a requirement for laboratory directors to report specific infecting agents and/or infectious diseases to the MOH. Therefore the following section may not reflect the current situation with regard to reporting of surveillance data from laboratories to Departments of Public Health.

This section of the questionnaire was answered by ten of the 28 laboratories. At that time, nine laboratories reported surveillance data on STIs to a third party. Seven laboratories reported surveillance data on STIs to Departments of Public Health (seven reported *N. gonorrhoeae* data, two reported *C. trachomatis* data and three reported *T. pallidum* data). Only two of these seven laboratories reported data on all three STIs to Departments of Public Health. Only one laboratory reported electronically. The majority reported on a weekly basis.

All nine of the laboratories reported the total number of positives identified, with a smaller number of laboratories reporting anatomical site of isolation (n=6), country of acquisition (n=2) and antimicrobial susceptibility data (n=2).

#### 4.2.5 Conclusions of the Survey

Twenty-eight of 50 laboratories circulated responded to the survey. The laboratory practices reported are summarised below. (It is important to note that this data was collected in 2003 and represents practice at that time).

##### *N. gonorrhoeae*

- Twenty-six of the 28 laboratories reported testing for *N. gonorrhoea*.
- Varied methodology was in use for culture and for identification of *N. gonorrhoea*.
- Varying susceptibility testing methodology was in use. This is likely to have changed considerably with more widespread use of NCCLS or BSAC methodology, and with the changes in the referral criteria.
- National antimicrobial resistance data was not collected in the survey and therefore was not available.
- Considerable variation was reported in turn-around time from receipt of specimen to generation of the report.
- In all, thirteen of the 26 laboratories sent gonococcal isolates to another laboratory for identification, antimicrobial susceptibility testing and/or strain typing. In the case of four laboratories, isolates were referred to the HPA Laboratory at Bristol (this service has been transferred to the STBRL at Colindale, London).
- No laboratory reported using molecular methods for the diagnosis of infection with *N. gonorrhoea*.

##### *C. trachomatis*

- Only nine (32.1%) of the 28 laboratories reported that they provided a full or partial service for testing for *C. trachomatis*.
- Thirteen laboratories reported referring all specimens for *C. trachomatis* testing to other laboratories
- The methodology in use was not standardised.
- Seven laboratories used nucleic acid amplification technology (NAAT). The limited use of NAAT (7 of 28 laboratories) is likely to reflect the limitations in the availability of the appropriate technology, the expertise required, and the cost.
- Two laboratories used EIA tests for the detection of *C. trachomatis*.
- The turn-around time from receipt of specimen to positive report varied considerably.
- There is a clear need for provision of additional resources, which would facilitate laboratories with the appropriate technology and technical expertise to act as referral centres for diagnosis of infection with *C. trachomatis*.

##### *T. pallidum*

- Twelve of the 28 laboratories reported that they provided testing for treponemal infection.
- Three laboratories reported that they would perform dark ground microscopy on specimens, in the microbiology laboratory; this was not performed as near-patient testing.
- Ten of the 28 laboratories conducted treponemal serological testing. All participated in the NEQAS external QA system.
- The methodology in use for treponemal serological screening varied; eight of ten laboratories had moved to using EIA testing (single test) and two used TPHA/TPPA and VDRL/RPR tests, and one reported using TPHA/TPPA and FTA-abs tests for screening.
- Five of the ten laboratories performing treponemal serology carried out confirmatory serology "in-house"; of these laboratories, three then referred all confirmed positive specimens to another laboratory for additional testing, one sometimes referred positive specimens to another laboratory, and one did not refer any specimens. In the case of the remaining five laboratories, all specimens testing positive were referred to another laboratory for confirmatory and additional testing. Therefore eight out of ten laboratories always referred specimens to another laboratory for confirmatory tests and nine out of ten laboratories always or sometimes referred specimens to another laboratory for confirmatory tests.

- No laboratories reported using PCR for the direct detection of *T. pallidum*.
- Thirteen laboratories referred all specimens for testing for treponemal infection to another laboratory. It is now recognised that the EIA is an appropriate single treponemal screening test for use in a low-prevalence area such as Ireland. Provision of adequate additional resources would allow those laboratories with a large volume of specimens for treponemal serology to perform the initial screening using EIA, with referral of positives to another laboratory for confirmatory testing.
- There is an obvious requirement for provision of sufficient and appropriate financial, staffing and technological resources to allow some laboratories to become referral centres for treponemal serology. This was emphasised by the fact that nine of the ten laboratories in which treponemal serology was performed referred specimens for confirmation and additional testing to another laboratory (including a laboratory in the UK), in some or all circumstances.
- There is a need to make molecular techniques available at an Irish laboratory to allow it to become a Reference facility for molecular diagnosis, and for identification of antibiotic resistant strains of syphilis.

### **Reporting and surveillance**

- The majority of laboratories that reported surveillance data reported the total number of positive specimens identified, with a smaller number of laboratories reporting the anatomical site of isolation, the country of acquisition and antimicrobial susceptibility data. This survey highlights the need for the development of a minimum dataset required for laboratory STI surveillance in Ireland. This need is addressed in Chapter 2 of this report and a minimum dataset for laboratories is proposed.

## **4.3 Development of STI laboratory services in Ireland**

### **4.3.1 Standards and guidelines**

There is a complex array of technologies available for the laboratory diagnosis of STIs and diagnostic tests for STIs are continually developing. The STI laboratory survey illustrated the variation in test methodologies used by different laboratories, making comparability of surveillance data provided by the different laboratories difficult.

### **4.3.2 Antibiotic susceptibility testing for *N. gonorrhoeae***

*N. gonorrhoeae* infection can be readily treated with appropriate antimicrobials. However, the effective treatment of gonorrhoea has been complicated by the ability of *N. gonorrhoeae* to develop resistance to antimicrobial agents. Gonococcal strains may be resistant to penicillins, tetracyclines, spectinomycin and fluoroquinolones. There have been recent reports of fluoroquinolone resistance in isolates of *N. gonorrhoeae* in many EU states. Results from the Gonococcal Resistance to Antimicrobials Surveillance Programme (GRASP) in the UK show a significant increase in ciprofloxacin resistance, from 2.1% in 2000 to 9.0% in 2003 ( $p < 0.0005$ ).<sup>72</sup> One of the key objectives of ESSTI is to develop and pilot a methodology for enhanced EU-wide laboratory surveillance for *N. gonorrhoeae* infection, including antimicrobial resistance detection and monitoring. Reliable gonococcal antimicrobial resistance data is required in order to inform antibiotic prescribing protocols for Ireland.

### **4.3.3 Participation in quality assurance programmes**

Quality assurance is an essential component of good practice in the diagnostic laboratory. Quality control is needed to validate the sensitivity and specificity of assays used by individual laboratories. Both inter-laboratory and intra-laboratory control sampling should be performed.

### **4.3.4 An STI reference facility for Ireland**

Currently, there is no reference laboratory dedicated to the organisms associated with STIs in Ireland. A number of the laboratories in the survey reported they refer isolates to other laboratories in Ireland and to Reference Laboratories in the UK for confirmation and/or further testing. The findings in this survey highlight the urgent requirement for provision of additional and sufficient laboratory resources for the laboratory diagnosis and confirmation of STIs. There is a clear need for a Reference Laboratory for *N. gonorrhoeae*, referral centres for testing for *C. trachomatis* infection, and referral centres for treponemal serology and in addition a Reference Laboratory for molecular diagnosis of treponemal infection and serological testing in some circumstances, such as cases in which serological findings are unusual or difficult to interpret.

In Ireland a Gonococcal Reference Laboratory and a Treponemal Reference Laboratory could perform the following functions:

- Provision of specialist expertise and advice to other laboratories and to clinicians with regard to advances in diagnosis and treatment of these infections.

- The methodology for diagnosis of the individual STIs is a rapidly developing field. National and international guidance has changed considerably in the recent past with the advent of new technologies. A Gonococcal Reference Laboratory, and a Treponemal Reference Laboratory would act as specialised resources and ensure that the latest information and approved methodology was circulated to diagnostic laboratories. Use of standardised methodology endorsed by such reference facilities could also address the differences in reporting times between laboratories.
- In Ireland, there is no information available on the particular strains of *N. gonorrhoeae* circulating. Also there is no national data on the antimicrobial susceptibility profiles of gonococcal isolates. Submission of isolates to a Gonococcal Reference Laboratory would allow phenotypic and molecular identification and characterisation of these isolates, and detailed antimicrobial susceptibility testing. The availability of this information would enable complete epidemiological investigation of potential clusters or outbreaks of the infection.
- A Treponemal Reference Laboratory could undertake specialist testing which is not performed in routine diagnostic laboratories. This would include additional technically demanding and cumbersome treponemal serological testing when required in a difficult to interpret case. Also molecular techniques could be developed to identify resistant strains of *T. pallidum*, which are important in selecting appropriate treatment in the individual patient with drug allergies and are also of concern in the context of an outbreak of the infection. This is particularly important at this time when syphilis remains at high endemic levels in this country. Molecular testing at a US laboratory identified an antibiotic-resistant strain of *T. pallidum* following the recent syphilis outbreak in Dublin.<sup>1</sup>
- Appropriate training of laboratory personnel in established and new technologies in the diagnosis of the individual STIs would be within the remit of a Reference Laboratory.
- Research and development work are an important component of the work of a National Reference Laboratory.



#### 4.4 Recommendations

1. A minimum laboratory dataset is required, to support and facilitate laboratory compliance with the revised Infectious Diseases legislation.
2. Additional and sufficient funding is required to permit appropriate laboratories to introduce improved technology including NAAT for diagnosis of infection with *N. gonorrhoea* and *C. trachomatis*.
3. Wider availability of local and/or regional referral centres for treponemal serology is essential.
4. More widespread use of treponemal screening locally, by use of EIA, in appropriate laboratories with a large number of specimens for treponemal serology should be strongly considered. In view of the fact that the majority of specimens give negative results on screening, this strategy is likely to be cost-effective. This would also permit referral centres for confirmatory testing, and the Treponemal Reference Laboratory, to develop the requisite technical expertise to perform the more labour intensive and technically demanding confirmatory testing. In addition, such streamlining of serological testing would lead to a shorter turn-around time for results to become available.
5. The establishment of a Gonococcal Reference Laboratory, and a Treponemal Reference Laboratory should be prioritised. These laboratories could be combined in one facility or could exist as separate centres where specialist testing would be undertaken. This would include phenotyping and genotyping of strains of *N. gonorrhoea*, and molecular techniques to identify resistant strains of *N. gonorrhoea* and *T. pallidum*, which may be associated with treatment failures and/or outbreaks.
6. Other STIs were not included in the survey. In light of the recent recognition of cases of LGV amongst MSM in several cities worldwide,<sup>2</sup> there is a clear need for a *C. trachomatis* referral centre for confirmation of diagnosis of this condition. Rectal swabs from patients with proctitis who are positive for *C. trachomatis* by NAAT, and/or urethral swabs from patients with inguinal adenopathy who are positive for *C. trachomatis* by NAAT, (and specimens from contacts of these patient groups) should be referred to such a centre for additional molecular investigations to determine whether the infecting organism belongs to an LGV- associated serotype.



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## 6. Abbreviations

Term	Explanation
AMR	Antimicrobial Resistance
BSAC	British Society for Antimicrobial Chemotherapy
CCA	Community Care Area
CDC	Centre for Disease Control and Prevention
CIDR	Computerised Infectious Diseases Reporting
CME	Continuing Medical Education
CSO	Central Statistics Office
DED	District Electoral Division
DGM	Dark Ground Microscopy
DoHC	Department of Health and Children
ERHA	Eastern Regional Health Authority
ESRI	Economic Social Research Institute
ESSTI	European Surveillance of Sexually Transmitted Infections
EU	European Union
EuroHIV	European Centre for the Epidemiological Monitoring of AIDS
GIS	Geographic Information System
GMS	General Medical Scheme
GPs	General Practitioners
GRASP	Gonococcal Resistance to Antimicrobials Surveillance Programme
GUM	Genito-Urinary Medicine
HBV	Hepatitis B Virus
HIPE	Hospital In-Patient Enquiry
HPA	Health Protection Authority
HPSC	Health Protection Surveillance Centre
HPV	Human Papillomavirus
HSE	Health Service Executive
HSV	Herpes Simplex virus
ICGP	Irish College of General Practitioners
ICT	Information Communications Technology
IDU	Injecting Drug User
IIF	Irish Insurance Federation
LGV	Lymphogranuloma Venereum
LIMS	Laboratory Information Management System
MOH	Medical Officer of Health
MRN	Medical Record Number
MSM	Men who have sex with men
NAAT	Nucleic Acid Amplification Technology
NASC	National AIDS Strategy Committee
NATSAL	National Survey of Sexual Attitudes and Lifestyles
NCCLS	National Committee for Clinical Laboratory Standards
NEQAS	National External Quality Assessment Service
NHIS	National Health Information Strategy
NSU	Non Specific Urethritis
NVRL	National Virus Reference Laboratory
PAS	Patients Administration System
PID	Pelvic Inflammatory Disease
PN	Partner Notification
PPSN	Personal Public Service Number
SAC	Scientific Advisory Committee
SARI	Strategy for the Control of Antimicrobial Resistance
SPSS	Statistical Package for the Social Sciences
STBRL	Sexually Transmitted Bacterial Reference Laboratory
STI	Sexually transmitted infection
UK	United Kingdom
VPN	Virtual Private Network
WHO	World Health Organisation
WTE	Whole time equivalent



## 7. Appendices

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**Appendix 1:** Proposed clinical and laboratory datasets and guidelines for contact tracing

**Appendix 2:** Enhanced surveillance form for Hepatitis B

**Appendix 3:** GP questionnaire on STIs

**Appendix 4:** Diagnostic Laboratory Survey

# Appendix 1: Proposed clinical and laboratory datasets and guidelines for contact tracing

## Confidential Clinician report to Public Health

	Data Item	Description
Partner notification/ contact tracing	Has partner notification/contact tracing in relation to this case, been carried out within your clinic or practice? <i>See 'Guidelines for Contact Tracing' on reverse of this form</i>	Yes/No
	Is the patient attending an STI clinic or has the patient been referred to an STI clinic or other service for management of this infection?	Yes/No
	If 'No' to the above questions, please complete the next box below	
	Has contact tracing been discussed with the patient?	Yes/No <i>(Note: MOH or person on his/her behalf will contact you to obtain patient details prior to contacting the patient)</i>
Patient Details	Surname initial	
	First Name initial	
	County	County where patient usually resides (For Dublin please provide postcode also)
	Gender	M, F, NK
	DOB	Date of Birth
	Age	Patient age in years
	Country of birth	
	Ethnicity (self reported by patient)	Classification per CSO 2006 draft census form <ul style="list-style-type: none"> <li>• White <ul style="list-style-type: none"> <li>– Irish</li> <li>– Irish Traveller</li> <li>– Any other white background</li> </ul> </li> <li>• Black or Black Irish <ul style="list-style-type: none"> <li>– African</li> <li>– Any other Black background</li> </ul> </li> <li>• Asian or Asian Irish <ul style="list-style-type: none"> <li>– Chinese</li> <li>– Any other Asian background</li> </ul> </li> <li>• Other, including mixed background <ul style="list-style-type: none"> <li>– Other, write in description</li> </ul> </li> </ul>
	Patient Type	Hospital in-patient, Hospital out-patient, GP patient, Other
	Hospital/Clinic number	
Clinical information	Disease/Infection	
	Clinical details	Per EU case classification <i>(Please see booklet 'Case Definitions for Notifiable Diseases' available from Departments of Public Health and also at: <a href="http://www.hpsc.ie">http://www.hpsc.ie</a>)</i>
	Date of diagnosis	
	Presumed country of infection	
	Notification date	
Behavioral Data	How was this infection likely to have been acquired?	Heterosexually, Homosexually, unknown
Notifying clinician details	Name and address, e-mail, telephone	

Laboratory report to Public Health		
	Data Item	Description
Patient Details	Surname initial	
	Forename initial	
	County/postcode	Please provide postcode and county for Dublin addresses
	Gender	M, F, U
	DOB	Date of Birth
	Age	Age of patient
	Patient Type	In-patient, Out-patient, GP patient
	Hospital Number	Patient Hospital number
Specimen Details	Specimen Lab ID	Specimen number
	Specimen Date	Date Specimen taken
Test Details	Test	
	Test Result(s)	
	Date Reported	Date laboratory diagnosis made
Interpreted result		
Physician Details	Name and address of clinician or GP who requested diagnostic tests	
Laboratory name		



## Guidelines for Partner Notification/Contact Tracing

Note: It is good practice to inform the patient that there is an obligation on the diagnosing clinician to notify certain infectious diseases, including syphilis, gonorrhea, genital chlamydia and infectious hepatitis B, to the Medical Officer of Health.

<b>Contact tracing or partner notification (both terms convey identical meaning)</b> The process of contacting the sexual partners of an individual with a sexually transmitted infection and advising them that they have been exposed to infection. Classified as follows:		
<b>Partner referral (patient referral or self-referral)</b>	<b>Provider referral (or active referral)</b>	<b>Contract referral</b>
The index patient with the infection informs their sexual partner(s) and advises them to attend their GP or provides them with information in relation to STI clinic services  <b>Note: Verification of contact attendance at an STI clinic or GP should be sought <u>where possible</u></b>	The index patient provides information on partners to a health care worker, who then confidentially traces and notifies the partner(s) directly (usually carried out by a Health Advisor at an STI Clinic)	Where the initial patient referral is followed up by a provider referral after an agreed period of time, if the contact has not attended (usually carried out by a Health Advisor at an STI Clinic)



<b>Recommendations for partner notification <sup>1</sup></b>		
In all cases patients should be encouraged to refer sexual partners and contacts for evaluation and treatment. Provider referral should be offered.		
<b>Gonorrhea</b>	<b>Genital chlamydia infection</b>	<b>Syphilis</b>
Sexual contacts should be screened and treated for <u>both gonorrhoea and chlamydia</u> infections using the following criteria <u>applying to the index case</u> : <ul style="list-style-type: none"> <li>For a male index case with urethral symptoms, his sexual contacts in the two weeks before onset of symptoms should be screened and treated</li> <li>For a male index case without symptoms and for all female index cases, his/her sexual contacts in the twelve weeks prior to diagnosis (at urethra, cervix, rectum or throat) should be screened and treated</li> <li>If the index patient's last sexual intercourse was greater than eight weeks before the onset of symptoms or diagnosis, the patient's most recent sex partner should be screened and treated</li> </ul>	Sexual contacts should be screened and treated for chlamydia infections using the following criteria <u>applying to the index case</u> : <ul style="list-style-type: none"> <li>For a male index case, his/her sexual contacts in the 4 weeks prior to the onset of symptoms</li> <li>For all female index cases and for asymptomatic male index cases, his/her sexual contacts in the 6 months prior to the diagnosis or until the last previous sexual partner (whichever is the longer time period)</li> </ul> <b>OR</b> <ul style="list-style-type: none"> <li>His/her current partner and previous one (1 + 1)</li> </ul>	Transmission is uncommon after the first year of infection. However, persons exposed sexually to a patient who has had syphilis at any stage needs to be evaluated.  The time periods for identifying at-risk sex partners <u>applying to the index case</u> are: <ul style="list-style-type: none"> <li>for primary syphilis, 3 months plus duration of symptoms</li> <li>for secondary syphilis and early latent syphilis, 2 years</li> </ul>
<sup>1</sup> adapted from Manual for Sexual Health Advisors produced by the Society for Sexual Health Advisors (SSHA) <a href="http://www.ssha.info">www.ssha.info</a>		

**Infectious hepatitis B**

- Patient and provider referral should be offered to any sexual contact or needle sharing partner from 2 weeks prior to the onset of jaundice until blood tests are surface antigen negative
- Non immune spouses, sexual partners, family and household contacts should be immunised as per the 'Immunisation Guidelines for Ireland'<sup>2</sup>
- Screening should be arranged for infants born to infectious mothers if the child was not vaccinated at birth

<sup>2</sup> available at [http://www.dohc.ie/publications/immunisation\\_guidelines\\_for\\_ireland.html](http://www.dohc.ie/publications/immunisation_guidelines_for_ireland.html)

# Appendix 2: Enhanced surveillance form for Hepatitis B (Version 1.1, 10/06/2005)

	<h2>Enhanced Surveillance Form for Hepatitis B</h2>	 Feidhmeannacht na Seirbhíse Sláinte Health Service Executive																																										
<b>Notifier Details:</b> Source of notification to HSE Region:      Laboratory <input type="checkbox"/> Clinician <input type="checkbox"/> Completed by: <input style="width: 300px;" type="text"/> Date of Completion <input style="width: 100px;" type="text"/> SPHM Responsible: <input style="width: 300px;" type="text"/>																																												
<b>Patient Details:</b> <div style="display: flex; justify-content: space-between;"> <span>Initials <input style="width: 50px;" type="text"/></span> <span>DOB <input style="width: 50px;" type="text"/></span> <span>Age (years) <input style="width: 50px;" type="text"/></span> <span>ID Number <input style="width: 100px;" type="text"/></span> </div> Sex:    Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown <input type="checkbox"/> Occupation <input style="width: 200px;" type="text"/> HSE Region <input style="width: 100px;" type="text"/> CCA <input style="width: 100px;" type="text"/> County <input style="width: 100px;" type="text"/> Country of birth:    Ireland <input type="checkbox"/> Other <input style="width: 100px;" type="text"/> If <b>other</b> , duration of residence in Ireland (years) <input style="width: 50px;" type="text"/>																																												
<b>Clinical Details:</b> Diagnosis:    Acute <input type="checkbox"/> Chronic <input type="checkbox"/> Unknown <input type="checkbox"/> Date of Diagnosis <input style="width: 100px;" type="text"/> <small>(see case definition overleaf. Note: not all laboratory markers may be available for all cases. Please use judgement based on clinical and laboratory information to assign acute or chronic status )</small>																																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><b>If Acute:</b></td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td style="width: 10%;">Unknown</td> <td style="width: 55%;">If symptomatic, <b>Date of Onset</b> of symptoms <input style="width: 100px;" type="text"/></td> </tr> <tr> <td>Symptomatic?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td>Hospitalised?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> </table>			<b>If Acute:</b>	Yes	No	Unknown	If symptomatic, <b>Date of Onset</b> of symptoms <input style="width: 100px;" type="text"/>	Symptomatic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Hospitalised?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
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Hospitalised?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																									
Has the patient died?      Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> If <b>yes</b> , date of death <input style="width: 100px;" type="text"/> Is the patient pregnant?      Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> If <b>yes</b> , due date <input style="width: 100px;" type="text"/>																																												
<b>Reason for testing:</b> <table style="width: 100%;"> <tr> <td style="width: 20%;">Ante-natal screening <input type="checkbox"/></td> <td style="width: 20%;">Asylum seeker <input type="checkbox"/></td> <td style="width: 20%;">Symptomatic <input type="checkbox"/></td> <td style="width: 20%;">IDU <input type="checkbox"/></td> <td style="width: 20%;">Prison inmate <input type="checkbox"/></td> </tr> <tr> <td>Asymptomatic contact <input type="checkbox"/></td> <td>Blood / organ donor <input type="checkbox"/></td> <td>MSM <input type="checkbox"/></td> <td>HCW <input type="checkbox"/></td> <td>STI Screening <input type="checkbox"/></td> </tr> <tr> <td>Unknown <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> <td colspan="3">please specify <input style="width: 200px;" type="text"/></td> </tr> </table>			Ante-natal screening <input type="checkbox"/>	Asylum seeker <input type="checkbox"/>	Symptomatic <input type="checkbox"/>	IDU <input type="checkbox"/>	Prison inmate <input type="checkbox"/>	Asymptomatic contact <input type="checkbox"/>	Blood / organ donor <input type="checkbox"/>	MSM <input type="checkbox"/>	HCW <input type="checkbox"/>	STI Screening <input type="checkbox"/>	Unknown <input type="checkbox"/>	Other <input type="checkbox"/>	please specify <input style="width: 200px;" type="text"/>																													
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Unknown <input type="checkbox"/>	Other <input type="checkbox"/>	please specify <input style="width: 200px;" type="text"/>																																										
<b>Hepatitis B immunisation history:</b> Full <input type="checkbox"/> Partial <input type="checkbox"/> No vaccination <input type="checkbox"/> Unknown <input type="checkbox"/> If vaccinated, what year did vaccination commence? <input style="width: 100px;" type="text"/>																																												
<b>Laboratory Details:</b> <table style="width: 100%;"> <thead> <tr> <th style="width: 30%;">Date of test <input style="width: 100px;" type="text"/></th> <th style="width: 10%;">Test</th> <th style="width: 10%;">Positive</th> <th style="width: 10%;">Negative</th> <th style="width: 10%;">Not Tested</th> <th style="width: 10%;">Unknown</th> </tr> </thead> <tbody> <tr><td></td><td>HBsAg</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td></td><td>Anti-HBc</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td></td><td>Anti-HBcIgM</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td></td><td>HBeAg</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td></td><td>Anti-HBe</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td></td><td>PCR / nucleic acid</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>			Date of test <input style="width: 100px;" type="text"/>	Test	Positive	Negative	Not Tested	Unknown		HBsAg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Anti-HBc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Anti-HBcIgM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		HBeAg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Anti-HBe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		PCR / nucleic acid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	Anti-HBc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																							
	Anti-HBcIgM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																							
	HBeAg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																							
	Anti-HBe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																							
	PCR / nucleic acid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																							

Was this infection likely to have been acquired abroad?

Yes ☐ No ☐ Unknown ☐

If yes, please specify country

**Risk Exposure (please answer all):**

For acute cases please confine time period of exposure to 6 wks - 6 months before onset.

	Yes	No	Unknown		
Sexual contact with HBsAg +ve case	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heterosexual	<input type="checkbox"/> Sex between men <input type="checkbox"/>
Household (non sexual) contact with HBsAg +ve case	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Risk group of mother	<input type="text"/>
Baby of HBsAg +ve mother	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Injecting drug user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
MSM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sex worker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Renal dialysis patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Percutaneous/mucocutaneous blood/body fluid exposure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Tattooing/body piercing (except ear lobe)/acupuncture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Recipient of blood/blood products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Date	<input type="text"/>
				Product	<input type="text"/>
				Hospital	<input type="text"/>
Possible sexual exposure (e.g. multiple, new, or high risk partner(s))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Details:	<input type="text"/>

**If none of the above:**Please detail hospital, procedure and date of any **surgical procedures** (including endoscopy) carried out on this case in the 6 weeks to 6 months before onset (if acute hepatitis B) or ever if onset unknown: For acute cases only - please detail procedure and date of any **dental procedures** carried out in the 6 weeks to 6 months before onset: **Comments:****Case definition for hepatitis B (acute and chronic)***Clinical description* In symptomatic cases, clinical picture compatible with hepatitis, i.e. discrete onset of symptoms and/or jaundice or elevated serum aminotransferase levels. Asymptomatic cases are common.**Hepatitis B (acute)***Laboratory criteria for diagnosis*

One of the following:

- IgM antibody to hepatitis B core antigen (anti-HBc) positive
- Detection of hepatitis B virus (HBV) nucleic acid in serum

*Case classification*

Possible: N/A

Probable: A symptomatic case that is HBsAg positive and has a clinical picture compatible with an acute hepatitis

Confirmed: A case that is laboratory confirmed

**Hepatitis B (chronic)***Laboratory criteria for diagnosis*

One of the following:

- Hepatitis B surface antigen (HBsAg) positive **and** antibody to hepatitis B core antigen (anti-HBc) positive **and** IgM antibody to hepatitis B core antigen negative
- Persistence for more than 6 months of either HBsAg or HBV nucleic acid in serum.

*Case classification*



Possible: N/A

Probable: N/A

Confirmed: A case that is laboratory confirmed

**Thank you for completing this form, please return to HPSC soon as possible after notification.**

# Appendix 3: GP survey on STIs

	<h2 style="margin: 0;">Survey of Sexually Transmitted Infections (STIs) in General Practice</h2>	 <p style="font-size: small; margin: 0;">Irish College of General Practitioners</p>
<p><b>Thank you for taking the time to complete this survey.</b></p> <p style="font-size: x-small;">Please tick appropriate box to indicate your response. If there is more than 1 box to tick in reply, you will be specifically requested to do so.</p>		
<p><b>Q1. What county is your practice in?</b></p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div>		
<p><b>Q2. What is your practice location?</b></p> <div style="display: flex; justify-content: space-between;"> <div>Urban (Pop. greater than 20,000)</div> <input type="checkbox"/> </div> <div style="display: flex; justify-content: space-between;"> <div>Rural (Pop. less than 5,000)</div> <input type="checkbox"/> </div> <div style="display: flex; justify-content: space-between;"> <div>Urban / Rural Mix (Pop. 5,000 to 20,000)</div> <input type="checkbox"/> </div>		
<p><b>Q3a. What type of practice are you in?</b></p> <div style="display: flex; justify-content: space-between;"> <div>Single Handed <input type="checkbox"/></div> <div>Group Practice (More than 1 principal) <input type="checkbox"/></div> </div>		
<p><b>Q3b. If you are in a Group Practice please indicate how many doctors are in your practice (including yourself)?</b></p> <div style="display: flex; justify-content: space-around;"> <div>2 <input type="checkbox"/></div> <div>3 <input type="checkbox"/></div> <div>4 <input type="checkbox"/></div> <div>5 <input type="checkbox"/></div> <div>More than 5 <input type="checkbox"/></div> </div>		
<p><b>Q4. How far is your practice from the nearest STI clinic?</b></p> <div style="display: flex; justify-content: space-around;"> <div>Less than 25 miles <input type="checkbox"/></div> <div>25 - 50 miles <input type="checkbox"/></div> <div>More than 50 miles <input type="checkbox"/></div> </div>		
<p><b>Q5. What is your individual total patient list (Private and GMS)?</b></p> <div style="display: flex; justify-content: space-between;"> <div>Less than 500 <input type="checkbox"/></div> <div>1,001 to 1,500 <input type="checkbox"/></div> <div>2,001 to 2,500 <input type="checkbox"/></div> <div>Do not have individual list <input type="checkbox"/></div> </div> <div style="display: flex; justify-content: space-between;"> <div>501 to 1,000 <input type="checkbox"/></div> <div>1,501 to 2,000 <input type="checkbox"/></div> <div>More than 2,500 <input type="checkbox"/></div> </div>		
<p><b>Q6. What gender are you?</b></p> <div style="display: flex; justify-content: space-around;"> <div>Female <input type="checkbox"/></div> <div>Male <input type="checkbox"/></div> </div>		
<p><b>Q7. What age group are you in?</b></p> <div style="display: flex; justify-content: space-around;"> <div>Less than 36 yrs <input type="checkbox"/></div> <div>36 - 45 yrs <input type="checkbox"/></div> <div>46 - 55 yrs <input type="checkbox"/></div> <div>56 - 65 yrs <input type="checkbox"/></div> <div>More than 66 yrs <input type="checkbox"/></div> </div>		
<p><b>Q8. Did you undertake vocational training in general practice?</b></p> <div style="display: flex; justify-content: space-around;"> <div>Yes <input type="checkbox"/></div> <div>No <input type="checkbox"/></div> </div>		
<p><b>Q9a. Does your practice have a practice nurse?</b></p> <div style="display: flex; justify-content: space-around;"> <div>Yes <input type="checkbox"/></div> <div>No <input type="checkbox"/></div> </div>		
<p><b>Q9b. If YES, to Q9a, what role does your practice nurse have in relation to STIs?</b></p> <p style="font-size: x-small;">Please tick all that apply</p> <div style="display: flex; justify-content: space-between;"> <div>Practice Nurse provides general advice <input type="checkbox"/></div> <div>Practice Nurse treats genital warts <input type="checkbox"/></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Practice Nurse takes bloods <input type="checkbox"/></div> <div>Practice Nurse provides counselling <input type="checkbox"/></div> </div> <div style="display: flex; justify-content: space-between;"> <div>Practice Nurse takes swabs <input type="checkbox"/></div> <div>Practice Nurse has no role in relation to STIs <input type="checkbox"/></div> </div>		
<p><b>Q10. Does your practice use any of the following for patient consultation?</b> <i>Please tick all that apply</i></p> <div style="display: flex; justify-content: space-around;"> <div>Health One <input type="checkbox"/></div> <div>GP Clinical <input type="checkbox"/></div> <div>GP Mac <input type="checkbox"/></div> <div>None <input type="checkbox"/></div> <div>Other <input type="checkbox"/></div> </div> <p style="font-size: x-small;">If "Other", please specify:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		

<b>Q11. Approximately how many patients do you see with symptoms of a sexually transmitted infection each month?</b> <i>(a list of STIs is given in Q14)</i>			
	4 or more patients per month <input type="checkbox"/>	Less than 1 patient per month <input type="checkbox"/>	
	1 to 3 patients per month <input type="checkbox"/>	Don't see patients with STI symptoms <input type="checkbox"/>	
<b>Q12. Approximately how many patients do you see per month, who are worried about STIs but who are asymptomatic?</b>			
	4 or more patients per month <input type="checkbox"/>	Less than 1 patient per month <input type="checkbox"/>	
	1 to 3 patients per month <input type="checkbox"/>	Don't see patients worried about STIs <input type="checkbox"/>	
<b>Q13. How frequently would you offer advice to patients about prevention of STIs in the following situations?</b> <i>Please tick all that apply</i>			
	<b>Always</b>	<b>Sometimes</b>	<b>Never</b>
Consultation re STIs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prior to travel abroad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Morning after pill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pregnancy test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smear test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ante-natal care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Review of "Pill" prescription	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, please specify			
<b>Q14 (i) How do you manage patients presenting with the following STIs, Please tick all that apply in section (i)</b> <b>Q14 (ii) Please indicate which of these STIs you notify to your local Department of Public Health</b> <i>Please tick all that apply in section (ii)</i>			
	<b>(i) Patient Management</b>		<b>(ii) Notify to Department of Public Health</b>
	<b>Treat on your own clinical diagnosis / suspicion</b>	<b>Only treat with laboratory confirmation</b>	<b>Refer</b>
			<b>Always</b> <b>Sometimes</b> <b>Never</b>
Ano-genital warts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chancroid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Chlamydia trachomatis</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Genital Herpes Simplex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gonorrhoea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Granuloma inguinale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hepatitis B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HIV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lymphogranuloma venereum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-specific urethritis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Syphilis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trichomoniasis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q15. Do you notify other infectious diseases to your local Department of Public Health?</b>			
Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never <input type="checkbox"/>			



Agree      Disagree

- [illegible]

\_\_\_\_\_

Please tick all that apply

- Agree      Disagree**

[illegible][illegible]

**Always      Sometimes      Never**

-



<b>Q20. Do you have any difficulty obtaining supplies of appropriate swabs from your local laboratory?</b>			
Always <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Never <input type="checkbox"/>	
<b>Q21. What actions do you take in relation to contact tracing / partner notification? Please tick all that apply</b>			
	<b>Always</b>	<b>Sometimes</b>	<b>Never</b>
No action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advise patient that contacts / partners should see their GP or go to STI clinic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide patient with prescription for contacts / partners.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refer patient to STI clinic for contact tracing / partner notification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q22. Have you noticed any change in the number of STIs presenting to your practice in the last 5 yrs?</b>			
Increase <input type="checkbox"/>	Decrease <input type="checkbox"/>	No Change <input type="checkbox"/>	
<b>Q23. In your opinion, which of the following would be useful to GPs in the management of STIs?</b> <i>Please tick all that apply</i>			
	<b>Agree</b>	<b>Disagree</b>	
Additional training in diagnosis and management of STIs	<input type="checkbox"/>	<input type="checkbox"/>	
National guidelines for the diagnosis and management of STIs	<input type="checkbox"/>	<input type="checkbox"/>	
Protocols agreed with local STI clinic	<input type="checkbox"/>	<input type="checkbox"/>	
Information regarding case definitions for STIs	<input type="checkbox"/>	<input type="checkbox"/>	
Access to additional laboratory facilities	<input type="checkbox"/>	<input type="checkbox"/>	
Better access to STI / ID consultant expertise / referral	<input type="checkbox"/>	<input type="checkbox"/>	
Patient information booklets	<input type="checkbox"/>	<input type="checkbox"/>	
Payment of special consultation fee for screening / treatment / advice re STIs	<input type="checkbox"/>	<input type="checkbox"/>	
Other <i>Please specify</i>			
<b>Q24. How often do you test for Chlamydia (in symptomatic or asymptomatic patients) each month?</b>			
4 or more patients per month <input type="checkbox"/>	Less than 1 patient per month <input type="checkbox"/>		
1 to 3 patients per month <input type="checkbox"/>	Don't test for Chlamydia <input type="checkbox"/>		
<b>Q24. Would you be in favour of a targeted Chlamydia screening programme for 16 to 25 year olds in general practice?</b>			
Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Additional comments on Chlamydia screening			
<b>Date Survey Completed:</b> <span style="border: 1px solid black; padding: 2px 5px;">  </span> <span style="border: 1px solid black; padding: 2px 5px;">  </span> / <span style="border: 1px solid black; padding: 2px 5px;">  </span> <span style="border: 1px solid black; padding: 2px 5px;">  </span> / <span style="border: 1px solid black; padding: 2px 5px;">2</span> <span style="border: 1px solid black; padding: 2px 5px;">0</span> <span style="border: 1px solid black; padding: 2px 5px;">0</span> <span style="border: 1px solid black; padding: 2px 5px;">4</span>			

Thank you for your participation in this survey

**Don't forget to complete the FREEPOST postcard and include yourself in the prize draw.**

**Please return this completed survey in the FREEPOST envelope provided to the  
National Disease Surveillance Centre**

## Appendix 4: Laboratory Questionnaire

### Laboratory Diagnostic Practices for Sexually Transmitted Infections

A survey by the European Surveillance of Sexually Transmitted Infections and the Imperial College, London in conjunction with the Irish Society of Clinical Microbiologists and the National Disease Surveillance Centre



**Imperial College**  
London

**Laboratory Name:**

**Laboratory Address:**

**Hospital Name:**

**Hospital Address:**  
(If different from  
Laboratory address)

## GONORRHOEA

### Q1 Please indicate the location of the diagnostic testing of gonorrhoea

	Near Patient testing (e.g. clinic laboratory)	Microbiology laboratory
Gram-stained smear (intracellular Gram negative diplococci)	<input type="checkbox"/>	<input type="checkbox"/>
Culture	<input type="checkbox"/>	<input type="checkbox"/>
Molecular test	<input type="checkbox"/>	<input type="checkbox"/>

### Q2 Please indicate the tests performed for the diagnosis of gonorrhoea for specimens from differing sites from men

	Urethra	Urine	Rectum	Pharynx	Other site, please specify
Gram-stained smear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Molecular test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

### Q3 Please indicate the tests performed for the diagnosis of gonorrhoea for specimens from differing sites from women

	Urethra	Urine	Cervix	Vagina	Self taken swabs/ Vaginal Tampons	Rectum	Pharynx	Other, please specify
Gram-stained smear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Molecular test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

### Q4 If you use a molecular test for the diagnosis of gonorrhoea, please indicate the following:

Kit and manufacturer of the test used to screen all your samples

Whether you confirm your positive results      **Yes** ☐      **No** ☐

The method and manufacturer of the confirmatory test

### Q5 If you culture for *N. gonorrhoeae*, please indicate the following:

Where do you obtain your medium?      Commercially ☐      Own laboratory produced ☐

What type of medium is used?      Selective ☐      Non-selective ☐      Both ☐

Which agar base is used?

Which growth supplement is used?  
Please specify and give concentration used

If you use a **blood supplement**:

What is the source of blood (e.g. horse)

What concentration of blood is used (e.g. 5%)

How is the blood lysed? (e.g. saponin or heat)

Which antimicrobial agents are used for selection? (please tick all that apply)

	<b>Yes</b>	<b>Concentration (g/ ml)</b>
Vancomycin	<input type="checkbox"/>	<input type="text"/>
Colistin	<input type="checkbox"/>	<input type="text"/>
Nystatin	<input type="checkbox"/>	<input type="text"/>
Trimethoprim	<input type="checkbox"/>	<input type="text"/>
Lincomycin	<input type="checkbox"/>	<input type="text"/>
Amphotericin	<input type="checkbox"/>	<input type="text"/>
Other, please specify		<input style="width: 300px;" type="text"/>

## GONORRHOEA

**Q6** If you culture for *N. gonorrhoeae*, please indicate the following:

	Yes	No
Are the specimens inoculated directly onto the culture plate from the patient?	<input type="checkbox"/>	<input type="checkbox"/>
Are swabs taken and placed in transport medium?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, which transport medium is used? <input style="width: 400px;" type="text"/>		
What is the maximum incubation time for the culture of plates? (Hours)	24hr <input type="checkbox"/>	48hr <input type="checkbox"/>
	72hr <input type="checkbox"/>	Other, please specify <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/> <input style="width: 40px;" type="text"/>
What is the incubation temperature?	<input style="width: 30px;" type="text"/> <input style="width: 30px;" type="text"/> °C	
What is the method of providing carbon dioxide?	CO <sub>2</sub> Incubator <input type="checkbox"/>	GasPak jar <input type="checkbox"/>
	Candle jar <input type="checkbox"/>	Other, please specify <input style="width: 150px;" type="text"/>

**Q7** Which of the following tests do you use for confirming the identity of colonies as *N. gonorrhoeae*?

	Yes	No
None	<input type="checkbox"/>	<input type="checkbox"/>
Oxidase	<input type="checkbox"/>	<input type="checkbox"/>
Gram stain for Gram negative cocci	<input type="checkbox"/>	<input type="checkbox"/>
Coagglutination (e.g. Phadebact)	<input type="checkbox"/>	<input type="checkbox"/>
Immunofluorescence (e.g. GC Microtrak)	<input type="checkbox"/>	<input type="checkbox"/>
Carbohydrate utilisation	<input type="checkbox"/>	<input type="checkbox"/>
Aminopeptidase (e.g. Goncheck)	<input type="checkbox"/>	<input type="checkbox"/>
Identification kits (Please specify)	<input type="checkbox"/>	<input type="checkbox"/>
Other, (Please specify)	<input style="width: 350px;" type="text"/>	

**Q8** Please give details of your method of susceptibility testing

Do you perform susceptibility testing?	All isolates <input type="checkbox"/>	Selected <input type="checkbox"/>	Other <input style="width: 100px;" type="text"/>
Which method is in use?	Disc diffusion <input type="checkbox"/>	Breakpoints <input type="checkbox"/>	E Tests <input type="checkbox"/>
			Agar dilution MICs <input type="checkbox"/>
Do you use control strains with each batch of tests?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Do you use a recommended method? (e.g. WHO, NCCLS)	Please specify <input style="width: 150px;" type="text"/>		
Do you participate in an external quality assurance scheme?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
If yes, please specify	<input style="width: 300px;" type="text"/>		
Do you participate in any surveillance programme?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
If yes, please specify	<input style="width: 300px;" type="text"/>		

**Q9** Do you send any gonococcal isolates to a reference laboratory for confirmation:

	Yes	No
Identification	<input type="checkbox"/>	<input type="checkbox"/>
Antimicrobial susceptibility testing	<input type="checkbox"/>	<input type="checkbox"/>
Strain typing by phenotypic or DNA methods	<input type="checkbox"/>	<input type="checkbox"/>

If so, please give address

## CHLAMYDIA

**Q10 Please indicate the tests performed for the diagnosis of chlamydial infection for specimens from differing sites from men**

	Urethra	Urine	Rectum	Pharynx	Other site, please specify
Culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
EIA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Immuno-fluorescence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Molecular test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

**Q11 Please indicate the tests performed for the diagnosis of chlamydial infection for specimens from differing sites from women**

	Urethra	Urine	Cervix	Vagina	Self taken swabs/ Vaginal Tampons	Rectum	Pharynx	Other
Culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EIA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Immuno-fluorescence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Molecular test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q12 If you use an EIA test for the diagnosis of chlamydial infection, please indicate the following:**

The kit and manufacturer of the test used to screen all your samples

	<b>Yes</b>	<b>No</b>
Do you confirm positive results?	<input type="checkbox"/>	<input type="checkbox"/>
Do you use the same test for confirmation?	<input type="checkbox"/>	<input type="checkbox"/>

Please give the method and manufacturer of the confirmatory test, if different from above

**Q13 If you use an immuno-fluorescence test for the diagnosis of chlamydial infection, please indicate the following:**

The kit and manufacturer of the test used to screen all your samples

	<b>Yes</b>	<b>No</b>
Do you confirm positive results?	<input type="checkbox"/>	<input type="checkbox"/>
Do you use the same test for confirmation?	<input type="checkbox"/>	<input type="checkbox"/>

Please give the method and manufacturer of the confirmatory test, if different from above

**Q14 If you use a molecular test for the diagnosis of chlamydial infection, please indicate the following:**

The kit and manufacturer of the test used to screen all your samples

	<b>Yes</b>	<b>No</b>
Do you confirm positive results?	<input type="checkbox"/>	<input type="checkbox"/>
Do you use the same test for confirmation?	<input type="checkbox"/>	<input type="checkbox"/>

Please give the method and manufacturer of the confirmatory test, if different from above

## GONORRHOEA & CHLAMYDIA

**Q15 Please indicate the sites tested for *N. gonorrhoeae* and chlamydia in men**

### *N. gonorrhoeae*

	Urethra	Urine	Rectum	Pharynx	Other site, please specify
Heterosexual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Homosexual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

### chlamydia

	Urethra	Urine	Rectum	Pharynx	Other site, please specify
Heterosexual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Homosexual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Q16 Please indicate the sites tested for *N. gonorrhoeae* and chlamydia in women**

	Urethra	Urine	Cervix	Vagina	Self taken swabs/ Vaginal Tampons	Rectum	Pharynx	Other site, please specify
<i>N. gonorrhoeae</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chlamydia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## SYPHILIS

**Q17 If readily available, please give approximate numbers of the cases of syphilis detected at different stages per YEAR**

Primary	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Early Latent	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Tertiary	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Stage Unknown	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Secondary	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Late Latent	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Congenital	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Total	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

### ANTIGEN DETECTION:

**Q18 Please indicate which (if any) tests you perform on genital lesions for the diagnosis of primary syphilis**

Dark ground microscopy	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
If yes, where is this performed?	Near patient (in clinic) <input type="checkbox"/>	Microbiology Lab <input type="checkbox"/>		
	Other, please specify			
Do you have access to molecular methods (PCR) for the diagnosis of syphilis?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
If yes, is this a multiplex PCR including other causes of genital ulcer disease?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
If yes, please give details				
Do you screen oral fluid for treponemes?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
If yes, please specify test used				

## SYPHILIS

ANTIBODY DETECTION (SEROLOGY):

Please indicate which tests are used for screening and confirmation of syphilis

Please also indicate the kit & manufacturer of each test.

		<u>Screening</u>		<u>Confirmatory test performed by your lab</u>			<u>Referral for confirmation</u>		<u>Kit &amp; Manufacturer Used</u>
		Yes	No	Always	Sometimes	Never	Yes	No	
<b>Q19</b>	Qualitative VDRL/RPR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q20</b>	Qualitative TPHA/TPPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q21</b>	EIA (IgG/IgM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q22</b>	Quantitative VDRL/RPR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q23</b>	Quantitative TPHA/TPPA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q24</b>	FTA-Abs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q25</b>	IgM EIA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q26</b>	Other, please specify								

	Yes	No
<b>Q27</b> Do you send specimens to a reference laboratory for confirmation?	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q28</b> Do you include "in-house controls" with each batch of tests?	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q29</b> Do you participate in external quality assurance schemes?	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q30</b> Please give details of any external quality assurance schemes you participate in		

### PLEASE COMPLETE IF AVAILABLE:

Please indicate the time from receiving the specimen to the report leaving the laboratory (in days)

	GONORRHOEA	CHLAMYDIA	SYPHILIS
<b>Q31</b> Positive report <b>MEAN TIME</b>	_ _	_ _	_ _
<b>Q32</b> Positive report <b>RANGE TIME</b>	_ _  to  _ _	_ _  to  _ _	_ _  to  _ _
<b>Q33</b> Negative report <b>MEAN TIME</b>	_ _	_ _	_ _
<b>Q34</b> Negative report <b>RANGE TIME</b>	_ _  to  _ _	_ _  to  _ _	_ _  to  _ _



## PLEASE COMPLETE IF AVAILABLE:

Please give an approximate number of specimens received for each bacterial STI per year:

	Gonorrhoea	Chlamydia	Syphilis
<b>Q35</b> GU / STD clinic (Self referral)	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Q36</b> Antenatal clinics	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Q37</b> Ob/Gyn clinic	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Q38</b> Other hospital clinics	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Q39</b> Private clinics / non-hospital	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Q40</b> Student health care	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Q41</b> General practice	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Q42</b> Asymptomatic screening	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Please specify population</b>	<input type="text"/>		
<b>Q43</b> Other	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Please specify</b>	<input type="text"/>		

## REPORTING

Please answer the following questions with regard to gonorrhoea, syphilis and chlamydia ONLY if you report surveillance data to a third party

**Q44** Indicate, for each infection, if you send results to a Department of Public Health or Other.

	<u>Department of Public Health</u>		<u>Other</u>		If yes, please state location
	Yes	No	Yes	No	
Gonorrhoea	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Syphilis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Chlamydia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Q45** How is information transmitted?

	<u>Paper</u>		<u>Electronic</u>		<u>Automatic upload</u>	
	Yes	No	Yes	No	Yes	No
Gonorrhoea	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Syphilis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Chlamydia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Q46** How often is data transferred?

	<u>Daily</u>		<u>Weekly</u>		<u>Monthly</u>		<u>Quarterly</u>		<u>Annually</u>	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Gonorrhoea	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Syphilis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Chlamydia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

## REPORTING

Q47 Is the data anonymous?

GonorrhoeaChlamydiaSyphilis

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

Q48 If no, is it possible to link to other data on the patient?

GonorrhoeaChlamydiaSyphilis

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

Q49 Please indicate what information is reported:

GonorrhoeaChlamydiaSyphilis

Yes	No
-----	----

Yes	No
-----	----

Yes	No
-----	----

Total number of isolates received

<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Anatomical site of isolation

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Country of acquisition (domestic or abroad)

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Mode of transmission (heterosexual / homosexual)

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Antimicrobial susceptibility results

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Antimicrobial resistance only

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>
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## RESPONDENT DETAILS

Survey Completed by:

Position

Signature

Date of Completion

Please return completed forms in SAE provided to: \_\_\_\_\_

**Dr. Mary Cronin,  
Specialist in Public Health Medicine,  
National Disease Surveillance Centre,  
25 - 27 Middle Gardiner Street,  
Dublin 1  
Telephone: 01 - 87 65 300**

