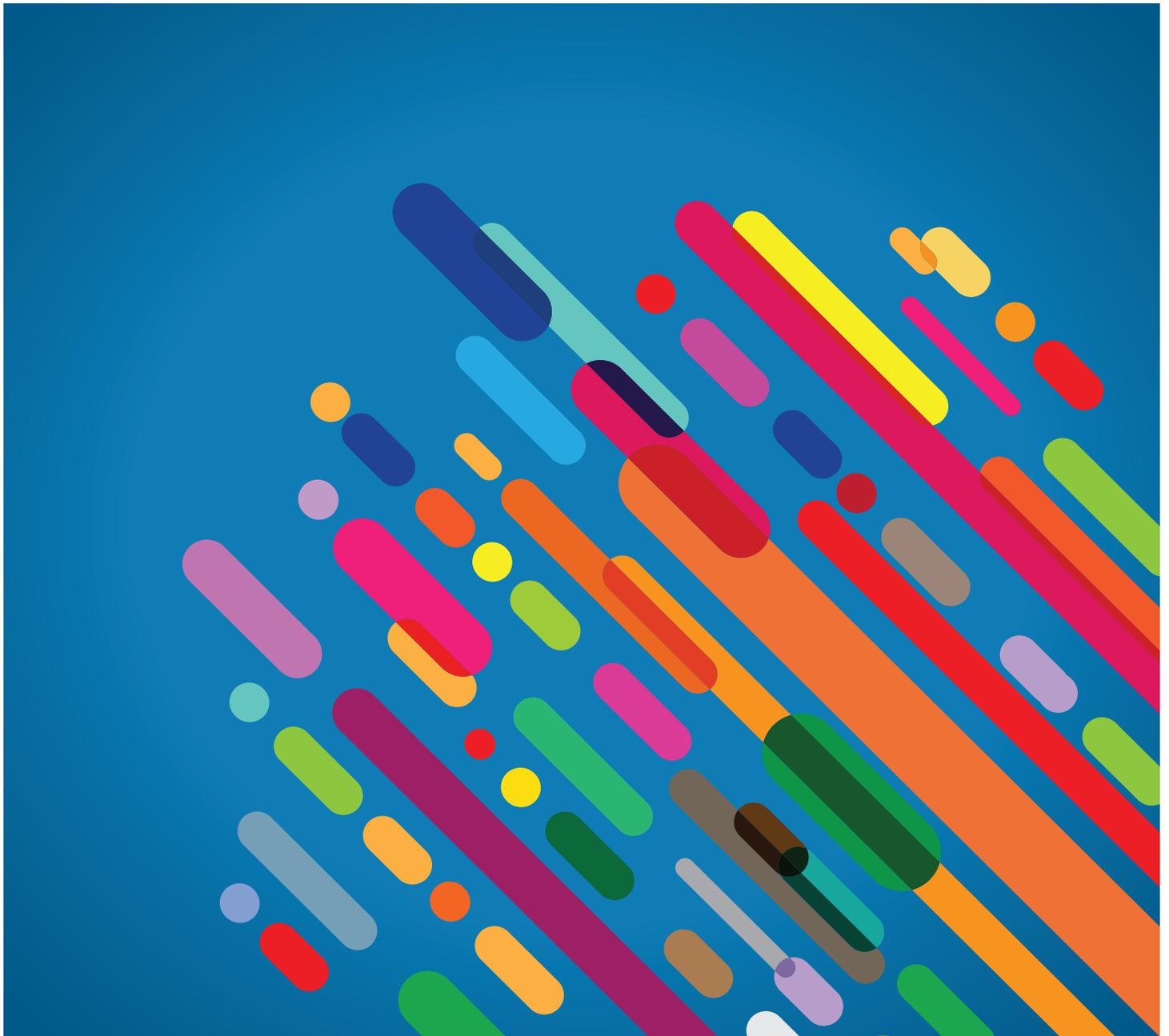




# STI Diagnostics in Ireland: A Survey of Laboratories

June 2018





# Contents

Glossary ..... ii

Foreword ..... iii

**Section 1 ..... 1**

    1.1 Introduction ..... 1

    1.2 Rationale ..... 1

    1.3 Knowledge of current service provision ..... 1

    1.4 Approach to gathering information ..... 3

    1.5 About this report ..... 3

**Section 2 ..... 5**

    2.1 About this section ..... 5

    2.2 Access for laboratory users ..... 5

    2.3 STI diagnostic services provided ..... 7

**Section 3 ..... 16**

    3.1 About this section ..... 16

    3.2 Accreditation for STI diagnostics ..... 16

    3.3 Referral of samples ..... 16

    3.4 Barriers to provision of STI diagnostics ..... 16

**Section 4 ..... 18**

    4.1 Summary ..... 18

    4.2 Areas for action ..... 19

Appendix 1: Project Working Group ..... 20

## Glossary

<b>AST</b>	Antimicrobial susceptibility testing
<b>CT</b>	Chlamydia trachomatis
<b>CUH</b>	Cork University Hospital
<b>EIA</b>	Enzyme immunoassay
<b>Endocx</b>	Endocervical swab
<b>Extragenital samples</b>	Pharyngeal and rectal samples
<b>GC</b>	Gonococcus
<b>GMS</b>	General medical services
<b>GP</b>	General practitioner
<b>HBV</b>	Hepatitis B virus
<b>HCV</b>	Hepatitis C virus
<b>HIV</b>	Human immunodeficiency virus
<b>HPV</b>	Human papillomavirus
<b>HSE</b>	Health Service Executive
<b>HSV</b>	Herpes simplex virus
<b>ICGP</b>	Irish College of General Practitioners
<b>IUD</b>	Intrauterine device
<b>LARC</b>	Long-acting reversible contraception
<b>LGV</b>	Lymphogranuloma venereum
<b>N/A</b>	Not applicable
<b>NAAT</b>	Nucleic acid amplification test
<b>NGO</b>	Non-governmental organisation
<b>NVRL</b>	National Virus Reference Laboratory
<b>R&amp;D</b>	Research and development
<b>SHCPP</b>	Sexual Health and Crisis Pregnancy Programme
<b>STI</b>	Sexually transmitted infection
<b>UHG</b>	University Hospital Galway
<b>VVS</b>	Vulvovaginal swab

## Foreword

Understanding the nature and extent of Ireland's current sexual health service provision was identified as a priority need in the National Sexual Health Strategy 2015–2020. In response, the Health Service Executive (HSE) Sexual Health and Crisis Pregnancy Programme (SHCPP) led a process to gather the necessary information from relevant service providers, including sexually transmitted infection (STI) and contraception services, general practitioners, student health clinics and laboratories involved in STI diagnostics.

This report is one in a series setting out the STI diagnostic services across the country. It presents information about access to services, areas of the country covered and services provided from those who responded to an online survey sent to laboratories in late 2015.

The information presented in this report and associated reports is extremely useful in supporting my role as national Clinical Lead for Sexual Health. It will be used to inform a broader needs assessment for sexual health and the development of an action plan by the SHCPP in the coming years. These actions will address one of the overarching goals of the sexual health strategy: 'equitable, accessible and high quality sexual health services, which are targeted and tailored to need, will be available to everyone'.

Thanks to everyone involved in bringing this piece of work together: the Project Working Group, Dr Fionnuala Cooney and Dr Áine McNamara, Public Health; Dr Miriam Daly, Dr Claire Collins and Marie O'Shea, Irish College of General Practitioners; Helen Barry, formerly Department of Clinical Microbiology, St James's Hospital, Dublin, and now with the Academy of Clinical Science and Laboratory Medicine; Moira Germaine, Health Promotion and Improvement; and Dr Declan McKeown, Health Intelligence. Thanks to my colleagues in the SHCPP; Helen Deely, Programme Head, for supporting this piece of work; and Maeve O'Brien, Research and Policy Officer, and Caroline Hurley, Project Manager, for their invaluable contributions in coordinating and completing this project. Thanks to Ignite research for its support in gathering the data from the services.

Finally, thank you to all the laboratory services that responded to the survey. These contributions have been invaluable in producing a national picture of service provision and in helping to support the plan to improve service provision into the future.

**Dr Fiona Lyons**  
**Clinical Lead Sexual Health**  
**HSE Sexual Health & Crisis Pregnancy Programme**

# Section 1

## 1.1 Introduction

This report provides information on the provision of diagnostics for sexually transmitted infections (STIs) across Ireland. The information presented in this report was provided by laboratory services who responded to an electronic survey designed to document STI diagnostic services provided across the country. The questionnaire was circulated at the end of 2015.

This report is part of a broader project that aims to document current provision of STI testing and management, STI diagnostics in laboratories and contraception services nationally. The objectives of the overall project are to:

- Gather, collate and report data on provision of STI and contraception service provision nationally in relation to geographic location, public access and service availability and services provided.
- Generate maps providing a visual description of the spatial distribution of public STI services nationally in line with population data and weighting for age and deprivation-related risk
- Identify areas for action and report gaps in service provision to inform a sexual health needs assessment. The sexual health needs assessment will inform future service planning and resourcing.

## 1.2 Rationale

The National Sexual Health Strategy 2015–2020<sup>1</sup> is the national framework for the sexual health and wellbeing of the Irish population. It sets out to improve the coordination of services so as to enhance sexual health and wellbeing and to reduce negative sexual health outcomes. A key goal of the strategy is ‘that equitable, accessible and high quality sexual health services, which are targeted and tailored to need, will be available to everyone’. The strategy also aims to reduce levels of crisis pregnancy by improving access to contraception services.

Priority actions under the strategy are the delivery of a mapping exercise of existing sexual health services (recommendation 4.13) and completion of a sexual health needs assessment (recommendation 4.12). These actions are in line with the World Health Organization’s action plan for sexual and reproductive health for Europe,<sup>2</sup> which encourages each country to carry out a situation analysis of existing sexual and reproductive health programmes and services, with particular attention to defining the needs and expectations of vulnerable populations such as those living in poverty and at risk of social exclusion.

To date, there has been no systematic documentation of sexual health services in Ireland as regards geographic location, access and availability of STI and contraception services to the public and availability of STI testing diagnostic services.

## 1.3 Knowledge of current service provision

A mix of public, private and non-governmental organisations (NGOs) provide sexual health services in Ireland. They are based in primary care, community and hospital settings.

Regular testing for people who are sexually active, particularly those with multiple or short-term partners, is an important preventative approach to HIV and STIs. STIs are assessed, tested for and managed in a variety of settings nationally, including general practice, family planning clinics, student health services

1 National Sexual Health Strategy 2015–2020 and Action Plan 2015–2016. Department of Health, 2015.

2 Action plan for sexual and reproductive health: towards achieving the 2030 Agenda for Sustainable Development in Europe – leaving no one behind. World Health Organization, 2016.

and dedicated STI clinics (including clinics for young people, for men who have sex with men or for women affected by prostitution). Some service providers have access to in-house laboratory services, while others must refer samples to external laboratories for diagnosis.

The public STI services, which receive direct public funding, are provided at no cost to patients. Public STI services are not funded from a single budget; some receive funding from primary care, some from public health and some from the acute hospitals division. This heterogeneity in funding reflects the organic way in which services evolved over time, in response to local need and local leadership around the country in securing local resources and establishing public STI services. STI services offered by NGOs and student health clinics are usually provided to patients either free or at a subsidised cost, depending on the service. Private STI services are provided at a cost to the patient. The majority of laboratory services used by clinics and primary care are publicly funded.

In general practice, private patients pay for consultations and for testing and treatment for STIs. Medical card holders and GP visit card holders do not pay for consultations with GPs, but there are no specific provisions for STI testing and treatment or vaccinations under the current General Medical Services (GMS) contract between the Health Service Executive (HSE) and GPs. There are arrangements for cryotherapy of skin lesions and counselling. At the end of 2015, 37.4% of the population had a medical card.<sup>3</sup>

Awareness about safer sex and contraception, and easy and equitable access to services increase consistent use of contraception and protection and thus reduce negative sexual health outcomes such as HIV, STIs and unplanned pregnancies. Contraception services, including emergency contraception, are currently available in healthcare settings such as general practice, family planning clinics and retail pharmacies. A medical doctor's prescription is required for most types of hormonal contraception and for long-acting reversible contraception (LARC). Prescriptions for all forms of LARC, apart from the copper coil, are covered under the medical card. Under the current GMS contract there is provision for insertion and monitoring of LARC, removal of LARC and counselling in relation to fitting of a diaphragm.<sup>4</sup> The following contraception services are covered for patients who hold a medical card under the GMS scheme: visit to the GP, visit to the GP for contraception and insertion/removal of an intrauterine device (IUD) or subdermal implant.

Condoms are available in commercial settings across the country. In 2015 the HSE Sexual Health and Crisis Pregnancy Programme (SHCPP) set up the National Condom Distribution Service to support statutory agencies/bodies and NGOs to supply condoms at no cost to respective patients and service users, including information on condom usage and safer sex.

Concerns about current sexual health services provision include:

- Health professionals working in the sexual health area are encountering increasing numbers of STIs, including localised outbreaks.<sup>5</sup> Some services find it difficult to cope with local demand.
- Fifteen per cent of women in a general population survey (2012) reported embarrassment, cost and difficulty in accessing local services, as factors inhibiting them in accessing contraception. Over half of those who experienced a crisis pregnancy did not use contraception at the time of conception.<sup>6</sup>
- There is no information on how well services are resourced and how well the population is served. There may be inequity in service provision.

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3 Health in Ireland – Key Trends 2015. Department of Health, 2016.

4 Health Professional Regulations, see [www.irishstatutebook.ie/eli/2016/si/233/made/en/pdf](http://www.irishstatutebook.ie/eli/2016/si/233/made/en/pdf).

5 Health Protection Surveillance Centre, 2017.

6 McBride, O., Morgan, K. and McGee, H., 2012. Irish Contraception & Crisis Pregnancy Study 2010 (ICCP – 2010). A Survey of the General Population. Dublin: HSE Crisis Pregnancy Programme.

## 1.4 Approach to gathering information

A multidisciplinary project working group was established to oversee the delivery of this project.<sup>7</sup> An early decision was taken to include all types of STI testing and contraception services (public, private, including GPs and NGOs) and all laboratories providing STI diagnostic services within the scope of the mapping exercise. It was important to include laboratories, as having access to diagnostics is integral to a service's ability to function fully.

In defining STIs, the study focused on the most common infections: chlamydia, gonorrhoea, genital warts, trichomonas, syphilis, genital herpes and pelvic inflammatory disease. Services were not asked about their management of HBV, HCV or HIV, but were asked about their testing practices for these infections.

### Questionnaire and data collection

A research company was commissioned to provide support with the design and development of an online data collection tool and to manage the data collection. The company used online survey software to script the questionnaire, which was designed in stand-alone sections for the different respondent groups: one section for sexual health services, one for laboratories and one for GPs. The online tool routed respondents automatically to the appropriate section of the questionnaire based on their response to the first question about the type of service they provide.

The working group compiled a database of sexual health services and laboratories, with a named contact at each site. In the questionnaire, respondents were asked to identify as one of the following to best describe their service: public STI clinics; public contraception clinics; NGO sexual health and family planning clinics; student health clinics; private STI services and private contraception services. Laboratory services were asked to identify as public hospital laboratory; private hospital laboratory; private laboratory or 'other', in which case they were asked to specify. The research company assigned a unique link to the questionnaire for each email address in the database. It then sent out the individualised link, along with a cover letter explaining the requirements of the study, to the sexual health services and the laboratories. The questionnaire was issued to 73 sexual health services<sup>8</sup> and 39 laboratories in December 2015 and remained open until the end of January 2016.

In parallel, the research company worked with the Irish College of General Practitioners (ICGP) to generate unique links for each of its members. The ICGP then emailed the questionnaire directly to its members.<sup>9</sup>

### Responses received – laboratory services

Of the 39 laboratories invited, one laboratory did not respond and two laboratories were not included because the level of information provided did not meet the requirements for inclusion in the study. In total, 36 valid responses were received, giving a valid response rate of 92%.

## 1.5 About this report

This report presents information provided by 36 respondents and relies entirely on the information provided by those who completed the questionnaire.

Information is presented at a county level. This does not imply that services should be configured at county level or that every county should have services. In general, when services are being planned, some counties are considered together, for example Sligo/Leitrim, Laois/Offaly and Cavan/Monaghan.

7 For membership, please see Appendix 1.

8 See separate report 'Sexual Health Services in Ireland: A Survey of STI and Contraception Services'

9 A total of 1,567 questionnaires were emailed to individual GP practices. For more information please refer to separate report 'Sexual Health Services in Ireland: A Survey of General Practice'

Table 1 presents a by-county breakdown of the number of laboratories invited and the number of laboratories responding.

The report presents the information from services in 15 counties: Cavan, Cork, Donegal, Dublin, Galway, Kerry, Laois, Limerick, Louth, Mayo, Monaghan, Sligo, Tipperary, Waterford and Westmeath. Responses were received from each county in which a service was invited to participate. There was no service identified in the following counties: Carlow, Clare, Kilkenny, Leitrim, Longford, Meath, Monaghan, Roscommon, Tipperary, Wicklow, and Wexford.

**Limitations**

While every effort was made in the questionnaire design to collect service information as accurately as possible, some of the questions may have been incorrectly interpreted and in some cases there were no responses provided.

	County	Number of service invited	Number of services providing valid responses <sup>10</sup>
1	Cavan	1	1
2	Cork	3	3
3	Donegal	1	1
4	Dublin	20	17
5	Galway	3	3
6	Kerry	2	2
7	Kildare	1	1
8	Laois	1	1
9	Limerick	1	1
10	Louth	1	1
11	Mayo	1	1
12	Offaly	1	1
13	Sligo	1	1
14	Waterford	1	1
15	Westmeath	1	1
	<b>TOTAL</b>	<b>39</b>	<b>36</b>

**Table 1: By-county breakdown of invited and responding laboratories**

<sup>10</sup> The number completing the survey denotes the number of services who responded with sufficient information to meet the requirements of the exercise.

## Section 2

### 2.1 About this section

The aim of this section is to provide an overview of the access, availability and provision of STI diagnostics across the country. The findings from the survey are presented under the following headings: **Access for laboratory users** and **STI diagnostic services provided**. Much of the information is presented in tables. In the tables '✓✓' denotes that all the laboratories in the county answered yes to the question; '✓' denotes where some of the laboratories in the county answered yes to the question; and 'X' denotes that none of the laboratories in the county answered yes to the question. 'N/A' denotes not applicable.

### 2.2 Access for laboratory users

At the beginning of the survey, services were asked to indicate what type of service they were, from the following options: public hospital; private hospital/clinic; private laboratory or other. Services were also asked to identify counties to which they provide laboratory services from a list of all counties in the Republic of Ireland; the option 'nationwide' was included. This information is presented in Table 2.

	County	Counties provided with STI diagnostics	Number of services providing valid responses	Public hospital laboratory	Private hospital/clinic laboratory	Private laboratory	Other
1	Cavan	Cavan, Monaghan	1	1			
2	Cork	Cork, Kerry	3	2	1		
3	Donegal	Donegal	1	1			
4	Dublin	Nationwide	17	12	2	2	1 public non-hospital
5	Galway	Clare, Galway, Mayo, Roscommon	3	2	1		
6	Kerry	Kerry	2	1	1		
7	Kildare	Kildare, Wicklow	1	1			
8	Laois	Laois	1	1			
9	Limerick	Clare, Limerick, Tipperary	1	1			
10	Louth	Louth	1	1			
11	Mayo	Galway, Mayo, Roscommon, Sligo	1	1			
12	Offaly	Offaly	1	1			
13	Sligo	Sligo	1	1			
14	Waterford	Carlow, Kilkenny, Tipperary, Waterford, Wexford	1	1			
15	Westmeath	Longford, Meath, Westmeath	1	1			
			36				

Table 2: Location and type of laboratories and counties provided with STI diagnostics

Four of the Dublin-based laboratories indicated that they provide a nationwide service; two are private laboratories, one is based in a public hospital and one is a public non-hospital laboratory. In subsequent tables the Dublin laboratories are divided into those providing a nationwide (Dublin nationwide) service and those that provide a more local service (Dublin).

For the 11 counties where no service was identified (Carlow, Clare, Kilkenny, Leitrim, Longford, Meath, Monaghan, Roscommon, Tipperary, Wexford and Wicklow) 9 are served by a service in an adjacent county. Two counties (Leitrim and Longford) have no service within an adjacent county that provides a service to that county. All counties are served by four Dublin-based laboratories that provide a nationwide service, two of which are public facilities.

Laboratories were also asked to indicate arrangements around receipt and processing of STI samples out of hours Monday to Friday and at weekends. They were also asked to indicate what proportion of their STI samples are received from primary care. The findings are presented in Table 3.

Across the country there is considerable variability in the times when samples are processed and tested, with the majority of counties having a service that processes and tests samples outside of normal working times from Monday to Friday, and a minority of counties have this level of service provision at weekends. Turnaround time for processing, testing and validating results has implications for timeliness of treatment of infections.

There is also considerable variability in the reported percentage of STI diagnostics that are received from primary care across the country, ranging from 10 to 100% in laboratories that report receipt of samples from primary care. Of note, some laboratories report not receiving any STI samples from primary care. This was more likely to be the case in counties with more than one laboratory, particularly Dublin.

County	No. of services in the county	Counties provided with STI diagnostics	Processes and tests samples out of hours Mon to Fri	Processes and tests samples at weekends	% of STI samples received from primary care <sup>11</sup>
Cavan	1	Cavan, Monaghan	X	X	10
Cork	3	Cork, Kerry	✓	X	Median 43, range 10 to 76
Donegal	1	Donegal	✓✓	X	40
Dublin	13	Dublin, Kildare, Wicklow	✓	✓	Median 80, range 1 to 100
Dublin (Nationwide)	4	Nationwide	✓	✓	Median 55, range 28 to 100
Galway	3	Clare, Galway, Mayo, Roscommon	X	✓	Median 33, range 25 to 40
Kerry	2	Kerry	✓✓	✓	Median 90, range 80 to 100
Kildare	1	Kildare, Wicklow	✓✓	X	90
Laois	1	Laois	✓✓	X	80
Limerick	1	Clare, Limerick, Tipperary	X	X	20
Louth	1	Louth	✓✓	X	60
Mayo	1	Galway, Mayo, Roscommon, Sligo	✓✓	✓✓	75
Offaly	1	Offaly	X	X	100
Sligo	1	Sligo	✓✓	X	70
Waterford	1	Carlow, Kilkenny, Tipperary, Waterford, Wexford	X	X	60
Westmeath	1	Longford, Meath, Westmeath	✓✓	X	65

Table 3: Access for laboratory users – times when samples are processed and tested, % samples from GPs

11 Some laboratories in counties with more than one facility indicated that 0% of their STI samples are received from primary care. These have been excluded when presenting medians and ranges in Table 3.

### 2.3 STI diagnostic services provided

In terms of **STI diagnostics provided**, laboratories were asked questions about a range of STI diagnostics, including questions on whether or not the diagnostics were performed ‘in-house’ or referred to another laboratory. The findings from these questions are presented in Tables 4 through Table 9.

With respect to serological testing for HIV, HBV, HCV and syphilis, laboratories were asked to indicate if these tests are available to services using their laboratory. In addition, they were asked to indicate whether or not they receive samples for these tests from primary care. The findings are presented in Table 4.

There is widespread availability of serological testing for HIV, HBV, HCV and syphilis in all counties. For HIV, HBV and HCV testing, this is available in all laboratories that responded in all counties apart from Dublin. There is similar widespread availability of serological testing for syphilis in all counties, though availability is not as widespread as for HIV, HBV and HCV.

Six laboratories based in three counties (Galway, Kerry and Laois) reported that they do not receive serology samples for HIV, HBV, HCV and syphilis from primary care.

County	No. of services in the county	Counties provided with STI diagnostics	Serology available to users		Receive samples from primary care	
			HIV, HBV, HCV	Syphilis	HIV, HBV, HCV	Syphilis
Cavan	1	Cavan, Monaghan	✓✓	✓✓	✓✓	✓✓
Cork	3	Cork, Kerry	✓✓	✓	✓	✓
Donegal	1	Donegal	✓✓	✓✓	✓✓	✓✓
Dublin	13	Dublin, Wicklow, Kildare	✓	✓	✓	✓
Dublin (Nationwide)	4	Nationwide	✓✓	✓✓	✓	✓
Galway	3	Clare, Galway, Mayo, Roscommon	✓✓	✓	X	X
Kerry	2	Kerry	✓✓	✓✓	X	X
Kildare	1	Kildare, Wicklow	✓✓	✓✓	✓✓	✓✓
Laois	1	Laois	✓✓	✓✓	X	X
Limerick	1	Clare, Limerick, Tipperary	✓✓	✓✓	✓✓	✓✓
Louth	1	Louth	✓✓	✓✓	✓✓	✓✓
Mayo	1	Galway, Mayo, Roscommon, Sligo	✓✓	✓✓	✓✓	✓✓
Offaly	1	Offaly	✓✓	✓✓	✓✓	✓✓
Sligo	1	Sligo	✓✓	✓✓	✓✓	✓✓
Waterford	1	Carlow, Kilkenny, Tipperary, Waterford, Wexford	✓✓	✓✓	✓✓	✓✓
Westmeath	1	Longford, Meath, Westmeath	✓✓	✓✓	✓✓	✓✓

**Table 4: STI diagnostic services provided – HIV, HBV, HCV and syphilis serology<sup>12</sup> availability<sup>13</sup> to users**

12 HIV=HIV 1 and 2 Ag/Ab EIA, HBV=serological markers but not molecular assays, HCV=HCV antibody, Syphilis=*T. pallidum* EIA

13 Availability includes where serology samples can be submitted to the laboratory by laboratory users for processing ‘in-house’ or referral to another laboratory.

Table 5 provides information on where serology for HIV, HBV, HCV and syphilis is performed with the following options given to respondents: ‘performed in-house’, ‘referred to another lab’ or ‘not performed in-house or referred on’. In 8 of 15 (53%) counties, all HIV, HBV and HCV serology is done in-house; the corresponding proportion for syphilis serology is 6 of 15 (40%). The National Virus Reference Laboratory (NVRL) is the most common laboratory to which these serology samples are referred. This indicates or suggests that there is a good infrastructure for transportation of samples between these laboratories and the NVRL.

County	No. of services in the county	Counties provided with STI diagnostics	Serology available to users <sup>14</sup>		Performed in-house		Referred to another lab	
			HIV, HBV, HCV	Syphilis	HIV, HBV, HCV	Syphilis	HIV, HBV, HCV	Syphilis
Cavan	1	Cavan, Monaghan	✓✓	✓✓	X	X	NVRL	NVRL
Cork	3	Cork, Kerry	✓✓	✓	✓✓	✓	N/A	Referred to other lab in Cork in one; do not do or refer in one
Donegal	1	Donegal	✓✓	✓✓	✓✓	✓✓	N/A	N/A
Dublin	13	Dublin, Kildare, Wicklow	✓	✓	✓	✓	NVRL	NVRL
Dublin (Nationwide)	4	Dublin	✓✓	✓✓	✓✓	✓✓	N/A	N/A
Galway	3	Clare, Galway, Mayo, Roscommon	✓✓	✓	✓✓	✓	N/A	Referred in one and not available or referred in one
Kerry	2	Kerry	✓✓	✓✓	X	X	CUH	CUH
Kildare	1	Kildare, Wicklow	✓✓	✓✓	X	X	NVRL	NVRL
Laois	1	Laois	✓✓	✓✓	X	X	NVRL	NVRL
Limerick	1	Clare, Limerick, Tipperary	✓✓	✓✓	✓✓	✓✓	N/A	N/A
Louth	1	Louth	✓✓	✓✓	X	X	NVRL	NVRL
Mayo	1	Galway, Mayo, Roscommon, Sligo	✓✓	✓✓	X	X	UHG	UHG
Offaly	1	Offaly	✓✓	✓✓	✓✓	X	NVRL	NVRL
Sligo	1	Sligo	✓✓	✓✓	✓✓	✓✓	N/A	N/A
Waterford	1	Carlow, Kilkenny, Tipperary, Waterford, Wexford	✓✓	✓✓	✓✓	✓✓	N/A	N/A
Westmeath	1	Longford, Meath, Westmeath	✓✓	✓✓	X	X	NVRL	NVRL

**Table 5: STI diagnostic services provided – HIV, HBV, HCV, syphilis serology performed in-house or referred**

<sup>14</sup> Serology available to users includes where samples can be submitted to the laboratory by laboratory users for processing ‘in-house’ or referral to another laboratory.

<sup>15</sup> HIV=HIV 1 and 2 Ag/Ab EIA, HBV=all serological markers but not molecular assays, HCV=HCV antibody, syphilis=*T. pallidum* EIA

Information around availability of molecular diagnostics for chlamydia and gonorrhoea is provided in Table 6.

These diagnostics are available to users within the majority of responding laboratories. Most laboratories refer samples on to another laboratory for testing rather than performing testing in-house. The NVRL is the laboratory to which samples are most likely to be referred.

There is variability in relation to the laboratories that accept various sample types from GPs. Vulvovaginal samples are the sample type least likely to be accepted.

In three of the four 'nationwide' Dublin laboratories, molecular diagnostics for chlamydia and gonorrhoea are performed in-house; this includes both of the public nationwide Dublin-based laboratories. Both public nationwide Dublin-based laboratories accept vulvovaginal, endocervical and extragenital samples from GPs.

Molecular diagnostics for gonorrhoea are carried out at seven laboratories across the country. Six of these laboratories also carry out supplementary/confirmatory gonorrhoea assays in-house, while one laboratory, a private laboratory based in Dublin, refers samples to another laboratory for these tests.

Molecular diagnostics for chlamydia are carried out at ten laboratories across the country. Three of these laboratories also carry out supplementary/confirmatory chlamydia assays in-house; one additional laboratory based in Dublin refers samples to another laboratory for this test.

County	No. of services in the county	Counties provided with STI diagnostics	CT/GC NAAT available to users <sup>16</sup>	Performed in-house	Referred to another lab	Accept GP VVS or Endocx	Accept GP extragenital samples
Cavan	1	Cavan, Monaghan	✓✓	X	NVRL	✓✓	✓✓
Cork	3	Cork, Kerry	✓	CT in 1	GC to NVRL for one; CT to CUH for two	✓✓	✓
Donegal	1	Donegal	✓✓	X	NVRL	✓✓ Endocx X VVS	✓✓
Dublin	13	Dublin, Kildare, Wicklow	✓	✓	NVRL, SJH	✓	✓
Dublin	4	Nationwide	✓	✓	Yes, but not named	✓	✓
Galway	3	Clare, Galway, Mayo, Roscommon	✓✓	✓	UHG	✓	✓
Kerry	2	Kerry	✓	X	CUH	✓ Endocx X VVS	X
Kildare	1	Kildare, Wicklow	✓✓	X	NVRL	✓✓ Endocx X VVS	✓✓
Laois	1	Laois	✓✓	X	Mullingar, NVRL	✓✓	✓✓
Limerick	1	Clare, Limerick, Tipperary	✓✓	✓✓	N/A	✓✓ Endocx X VVS	✓✓
Louth	1	Louth	✓✓	X	NVRL	✓✓ Endocx X VVS	✓ Pharyngeal X Rectal
Mayo	1	Galway, Mayo, Roscommon, Sligo	✓✓	X	NVRL, UHG	✓✓ Endocx X VVS	✓✓
Offaly	1	Offaly	✓✓	X	NVRL	✓✓ Endocx X VVS	X
Sligo	1	Sligo	✓✓	X	NVRL	✓✓	✓✓
Waterford	1	Carlow, Kilkenny, Tipperary, Waterford, Wexford	✓✓	✓✓	N/A	✓✓	✓✓
Westmeath	1	Longford, Meath, Westmeath	✓✓	✓✓	N/A	✓✓	✓✓

Table 6: STI diagnostic services provided – molecular diagnostics<sup>17</sup> – chlamydia and gonorrhoea

<sup>16</sup> CT/GC NAAT available to users includes where samples can be submitted to the laboratory by laboratory users for processing 'in-house' or referral to another laboratory.

<sup>17</sup> Molecular diagnostics=nucleic acid detection technique and does not include confirmatory assays, molecular typing or other molecular diagnostics.

Information on availability of HSV NAAT is presented in Table 7.

HSV NAAT is available to laboratory users across all responding laboratories. HSV NAAT is performed in-house in two laboratories, both public laboratories based in Dublin and both providing a nationwide service. The vast majority of laboratories that refer HSV NAAT samples to another laboratory refer to the National Virus Reference Laboratory. Most laboratories accept samples for HSV NAAT from GPs, as stated; this includes the NVRL. In the case of the NVRL, samples may be referred directly from GPs without going through another laboratory for onward referral.

County	No. of services in the county	Counties provided with STI diagnostics	HSV NAAT available <sup>18</sup>	In-house	Referred	Accept from GPs	Receive samples from GPs
Cavan	1	Cavan, Monaghan	✓✓	X	✓✓	✓✓	X
Cork	3	Cork, Kerry	✓✓	X	✓✓	✓✓	X
Donegal	1	Donegal	✓✓	X	✓✓	✓✓	✓✓
Dublin	13	Dublin, Kildare, Wicklow	✓✓	X	✓✓	✓	✓
Dublin	4	Nationwide	✓✓	✓	✓	✓	✓
Galway	3	Clare, Galway, Mayo, Roscommon	✓✓	X	✓✓	✓	X
Kerry	2	Kerry	✓✓	X	✓✓	X	X
Kildare	1	Kildare, Wicklow	✓✓	X	✓✓	✓✓	✓✓
Laois	1	Laois	✓✓	X	✓✓	✓✓	X
Limerick	1	Clare, Limerick, Tipperary	✓✓	X	✓✓	✓✓	✓✓
Louth	1	Louth	✓✓	X	✓✓	✓✓	✓✓
Mayo	1	Galway, Mayo, Roscommon, Sligo	✓✓	X	✓✓	✓✓	X
Offaly	1	Offaly	✓✓	X	✓✓	✓✓	✓✓
Sligo	1	Sligo	✓✓	X	✓✓	✓✓	X
Waterford	1	Carlow, Kilkenny, Tipperary, Waterford, Wexford	✓✓	X	✓✓	✓✓	✓✓
Westmeath	1	Longford, Meath, Westmeath	✓✓	X	✓✓	✓✓	✓✓

Table 7: STI diagnostic services provided – molecular diagnostics – herpes simplex virus

<sup>18</sup> HSV NAAT available to users includes where samples can be submitted to the laboratory by laboratory users for processing 'in-house' or referral to another laboratory.

Information about gonococcal culture and antimicrobial susceptibility testing is presented in Table 8.

Gonococcal culture is available in the vast majority of responding laboratories, the majority of which is performed in-house. Antimicrobial susceptibility testing is available in the majority too though not in all laboratories performing gonococcal culture. Where available to laboratory users, antimicrobial susceptibility testing is performed in-house in the majority of situations. Similarly, the majority of laboratories report that they accept samples from primary care for culture and antimicrobial susceptibility testing. A smaller number of laboratories report that they receive samples from primary care for these tests.

One of the public laboratories that provides a nationwide service for GC molecular diagnostics (see Table 6), the National Virus Reference Laboratory, does not have gonococcal culture or antimicrobial susceptibility testing available to laboratory users, i.e. it does not perform these tests or refer samples elsewhere for these tests.

County	No. of services in the county	Counties provided with STI diagnostics	GC culture available <sup>19</sup>	GC AST available	Culture in-house	AST in-house	Culture referred	AST referred	Accept samples from GPs	Receive samples from GPs
Cavan	1	Cavan, Monaghan	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	X
Cork	3	Cork, Kerry	✓✓	✓✓	✓	✓	✓	✓	✓✓	✓
Donegal	1	Donegal	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	✓✓
Dublin	13	Dublin, Kildare, Wicklow	✓	✓	✓	✓	✓	✓	✓	✓
Dublin	4	Nationwide	✓	✓	✓	✓	✓	✓	✓	✓
Galway	3	Clare, Galway, Mayo, Roscommon	✓✓	✓✓	✓✓	✓	N/A	✓	✓	✓
Kerry	2	Kerry	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓	X
Kildare	1	Kildare, Wicklow	✓✓	✓✓	✓✓	X	N/A	✓✓	✓✓	✓✓
Laois	1	Laois	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	✓✓
Limerick	1	Clare, Limerick, Tipperary	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	X
Louth	1	Louth	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	✓✓
Mayo	1	Galway, Mayo, Roscommon, Sligo	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	✓✓
Offaly	1	Offaly	✓✓	X	✓✓	X	N/A	X	X	X
Sligo	1	Sligo	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	X
Waterford	1	Carlow, Kilkenny, Tipperary, Waterford, Wexford	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	X
Westmeath	1	Longford, Meath, Westmeath	✓✓	✓✓	✓✓	✓✓	N/A	N/A	✓✓	X

Table 8: STI diagnostic services provided – GC culture and antimicrobial susceptibility testing (AST)

19 GC culture available to users includes where samples can be submitted to the laboratory by laboratory users for processing 'in-house' or referral to another laboratory.

Information about additional STI diagnostics is presented in Table 9.

Many of the diagnostics listed in this section are not routine tests. Some are for management of specific clinical situations and fall into the realm of reference diagnostics which may be required from time to time as part of national surveillance and monitoring of STIs.

Pathogen/test	No. of lab test available	Location of labs	Counties served by labs
<b><i>N. gonorrhoea</i></b>			
Molecular typing	2	Dublin (2)	One Dublin lab provides a nationwide service.
One public laboratory based in Dublin provides a nationwide service.			
<b><i>C. trachomatis</i></b>			
Molecular typing	1	Dublin	One Dublin lab provides a nationwide service.
LGV NAAT	2	Dublin, Waterford	One Dublin lab provides a nationwide service.
LGV supplementary confirmatory assay	1	Dublin	One Dublin lab provides a nationwide service.
LGV Molecular typing	1	Dublin	One Dublin lab provides a nationwide service.
One public laboratory based in Dublin provides all of the above diagnostics and provides a nationwide service.			
<b><i>T. pallidum</i></b>			
<i>T. pallidum</i> NAAT	1	Dublin	One Dublin lab provides a nationwide service.
<i>T. pallidum</i> molecular typing	1	Dublin	One Dublin lab provides a nationwide service.
One laboratory based in Dublin provides all of the above diagnostics and provides a nationwide service.			
<b>HIV</b>			
Supplementary confirmatory assay	4	Dublin, Galway, Sligo, Waterford	One Dublin lab provides a nationwide service.
HIV viral load testing	2	Dublin, Galway	One Dublin lab provides a nationwide service.
HIV resistance testing	1	Dublin	One Dublin lab provides a nationwide service.
One laboratory based in Dublin provides all of the above diagnostics and provides a nationwide service. It is the designated National Virus Reference Laboratory.			
<b>HBV</b>			
HBV DNA	2	Dublin	Both Dublin labs provide a nationwide service.
HBV resistance testing	2	Dublin	Both Dublin labs provide a nationwide service.
Two Dublin laboratories provide all of the above diagnostics and provide a nationwide service. One is the designated National Virus Reference Laboratory.			

Pathogen/test	No. of lab test available	Location of labs	Counties served by labs
<b>HCV</b>			
HCV core (not reference)	5	Dublin (3), Galway, Waterford	Two Dublin labs provide a nationwide service.
HCV resistance testing	1	Dublin	One Dublin lab provides a nationwide service.
One laboratory based in Dublin provides all of the above diagnostics and provides a nationwide service. It is the designated National Virus Reference Laboratory.			
<b>HSV</b>			
HSV resistance	1	Dublin	One Dublin lab provides a nationwide service.
One laboratory based in Dublin provides all of the above diagnostics and provides a nationwide service.			

**Table 9: STI diagnostic services provided – additional diagnostics**

## Section 3

### 3.1 About this section

This section presents the survey findings with respect to laboratory accreditation for STI diagnostics; findings in relation to where samples are referred to for additional tests from around the country; and barriers to the provision of STI diagnostics as reported by respondents to the survey.

### 3.2 Accreditation for STI diagnostics

Laboratories were asked if all the STI diagnostics performed at their laboratory were accredited. The majority – 20/34 (58.8%) – who responded indicated that all STI diagnostics performed at their laboratory were accredited. Whilst the remaining laboratories indicated that not all of their STI diagnostic work is accredited, the extent of this is not known as the answer options were simply ‘no’ or ‘yes, all are accredited’.

### 3.3 Referral of samples

Where laboratories indicated that they referred samples to another laboratory for testing, they were asked to provide information on what laboratory samples were referred to. As outlined earlier in the report, the NVRL was the most common laboratory for referral of chlamydia, gonorrhoea and HSV molecular diagnostics.

A small number of laboratories refer samples for diagnostics to laboratories outside of Ireland. This includes laboratories in France, England and Scotland. The laboratory referring samples to France is a private laboratory and appears to be referring samples to their facility in France. A number of public laboratories refer samples to laboratories in the United Kingdom for specialised diagnostics in chlamydia, gonorrhoea and syphilis. Of note, all of these specialised diagnostics are carried out in Ireland but this is in the absence of a designated reference laboratory with appropriate resources to provide a national service.

### 3.4 Barriers to provision of STI diagnostics

Laboratories were asked if they felt that their facility has significant challenges in providing a full range of services to their service users. 18/35 (51%) answered ‘no’ to this question, while 17/35 (49%) responded ‘yes’ to this question.

For laboratories that answered ‘yes’, they were subsequently asked to rank their top three challenges from a list provided. The list included: users not providing correct samples/information; workload is too high; the facilities in the laboratory are not sufficient; turnaround time is not acceptable; not enough time/funding for R&D specifically; lack of funding; lack of reference facilities and other.

Table 10 shows the number of laboratories citing the various options as their number 1, 2 or 3 barriers to provision of STI diagnostics. For those that responded ‘other’, the following responses were given: ‘we do not see patients with STIs routinely’; ‘insufficient expertise in this area’; and ‘potential and ability to provide full range of services currently within the capability of the laboratory but funding for extended services such as HSV and HPV not available.’

The majority of the barriers relate to capacity and resource issues in the provision of STI diagnostics.

Barrier	Ranking of top 3 challenges (by # of labs)		
	Ranked # 1	Ranked # 2	Ranked # 3
Users not providing correct samples/information	1	2	1
Workload is too high	4	2	3
The facilities in the laboratory are not sufficient	6	7	1
Turnaround time is not acceptable	0	0	3
Not enough time/funding for R&D specifically	1	0	0
Lack of funding	3	3	6
Lack of reference facilities	0	0	0
Other	2	2	0

**Table 10: Barriers to provision of STI diagnostics**

## Section 4

### 4.1 Summary

Overall, there is widespread availability of STI diagnostics in laboratories across the country. Some areas are better served than others. A small number of counties appear to rely on Dublin-based laboratories providing a nationwide service, in particular the National Virus Reference Laboratory for STI diagnostics.

#### Access and availability

There is considerable variability in times when samples are processed and tested across the country, and few laboratories are processing and testing samples at weekends.

The proportion of samples from primary care that make up STI diagnostic workload in laboratories varies considerably. This may be influenced by the availability of a public STI service in that area; varied levels of STI service provision in primary care; and variability in access to transport for samples from primary care to laboratories.

#### Services provided

There is widespread availability of serological testing (HIV, HBV, HCV and syphilis) and molecular diagnostics for chlamydia and gonorrhoea and HSV throughout the country.

A small number of laboratories report that they do not accept samples from primary care, particularly vulvovaginal samples for chlamydia and gonorrhoea testing.

A significant proportion of laboratories reported that they do not receive serological samples from primary care.

The majority of laboratories report availability of culture and antimicrobial susceptibility testing for gonococcus. Some laboratories perform culture but not antimicrobial susceptibility testing. Of note, the National Virus Reference Laboratory does not carry out these tests.

The majority of laboratories report that they accept samples from primary care for culture and antimicrobial susceptibility testing; a smaller number report that they receive these samples from primary care.

Additional specialised diagnostics are carried out at one of two Dublin-based public laboratories. One of these is the National Virus Reference Laboratory.

#### Accreditation for STI diagnostics

A significant proportion (41%) of laboratories indicated that not all of their STI diagnostic work is accredited.

#### Barriers to provision of STI diagnostics

The majority of laboratories indicated that they did not experience barriers to their ability to provide STI diagnostics. Where barriers exist, they appear to relate primarily to capacity and resources.

### Referral of samples

The National Virus Reference Laboratory is the laboratory to which the majority of laboratories refer samples for a variety of tests.

A small number of laboratories are referring samples outside of Ireland for tests that are carried out in Ireland. This relates particularly to additional molecular diagnostics for gonorrhoea, chlamydia (including LGV) and syphilis.

## 4.2 Areas for action

- Development of a directory of STI diagnostics for laboratory service users, particularly for primary care, outlining where samples can be referred to for this work.
- Development of national standards in relation to turnaround time for STI diagnostics.
- Development of STI testing guidelines to include guidance on sample type for laboratories and laboratory service users.
- Development of sentinel sampling for gonococcal culture and antimicrobial susceptibility testing. In particular, development of a mechanism to ensure that a proportion of samples being received by the NVRL for gonococcal molecular diagnostics are submitted for culture and antimicrobial susceptibility testing.
- Further exploration of the significant proportion of STI diagnostic work that is not accredited.
- Further exploration of the barriers to the provision of STI diagnostics cited by a significant proportion of laboratories.
- Development of an STI diagnostic network for appropriate referral of samples for additional STI diagnostic work within Ireland, avoiding the need to refer samples outside of Ireland.

## Appendix 1: Project Working Group

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