Health Care Needs Assessment:

Sexual health services for NHS Grampian

David Watkin
Registrar in Public Health Medicine
david.watkin@nhs.scot

Phil Mackie
Consultant in Public Health

Stephanie Bernard
Candidate for Master of Public Health

Table of Contents

Introduction *3*
Background 3
Aims and objectives 3
Areas for focus 4
Methods and data sources 4
Data sources 4
Review of literature *5*
Demographics *9*
Sexual health services in Grampian *11*
Overview 11
Current activity 12
Epidemiological assessment *19*
Sexually-transmitted infections 19
Abortion 26
LARC 28
Corporate perspectives *30*
Challenges identified *35*
Long-acting reversible contraception 35
Abortion 35
Staffing 36
Geographical disparities 37
Sexually-transmitted infections 37
Service location 37
Outreach 38
Recommendations *39*
Appendix 1: Glossary and abbreviations *41*
Appendix 2: References *42*
Appendix 3: Literature review methodology *43*
Design 43
Eligibility Criteria 43
Data extraction and quality appraisal 43
Data analysis and synthesis 44
Thanks and acknowledgements *45*

Introduction

Background

This health care needs assessment was undertaken on behalf of NHS Grampian's Managed Care Network (MCN) to inform decision-making regarding sexual health service provision for people living in the Grampian region (Aberdeen City, Aberdeenshire and Moray).

Recently-published data from Public Health Scotland has shown a marked increase in the incidence of sexually transmitted infections in Scotland, both when compared to those recorded during the COVID-19 pandemic and those recorded before the pandemic. There has also been in increase in demand for abortion services in Grampian and in Scotland. These areas are explored in the "*Epidemiological assessment*" section.

This report focuses on the role of the NHS Grampian specialist Sexual Health Service. However, it should be noted that sexual health care is also delivered in primary care and in other settings. This includes both contraception and sexually transmitted infection testing. Whilst these additional settings are not covered in this report, their existence must be noted so as to interpret the findings and recommendations in the appropriate context.

Aims and objectives

The aim of this report is to generate a Grampian-specific evidence base concerning the needs of the local population with regards to sexual health services. This can then be compared to current available services, and recommendations made regarding identified areas of unmet need. The objectives are to:

1. Review current provision of sexual health services within NHS Grampian.
2. Identify any changes in demand and need for services from the population.
3. Explore the descriptive epidemiology of sexual health within NHS Grampian.
4. Describe any areas of good practice or areas for improvement, as identified by staff working within the Grampian Sexual Health Service.
5. Identify any gaps between service need and service provision.
6. Consider differential needs of the different subpopulations that make up NHS Grampian's population.
7. Make recommendations regarding any unmet need that is identified.

A systematic review will also examine and synthesise the published literature with regards to models of care for long-acting reversible contraception (LARC) and abortion services, as well as the attitudes of patient groups towards those models. Literature on models of a wider

sexual health service were significantly heterogenous, with difficulty in applying these to Grampian's unique mix of urban, rural and remote populations.

Areas for focus

Initial scoping discussions with stakeholders have identified some key areas for focus:

- The need for, and provision of, long-acting reversible contraception (LARC).
- The need for, and provision of, abortion services.
- The need for diagnostic and treatment services for sexually transmitted infections.

Methods and data sources

Epidemiological data were obtained from Illuminate Tableau regarding the incidence and trends of sexually-transmitted infections within the Grampian region. This was also used to compare local rates with those observed nationally, as well as comparing incidence across different age bands.

With regards to the published literature on LARC and abortion service-models, a systematic review and narrative synthesis of studies were conducted. Electronic databases (CINAHL, MEDLINE via OVID, Web of Science, Scopus, PubMed) were searched between June and July 2023. Manual and journal searching of Google, Google Scholar, British Medical Journal as well as reference-by-reference checking were performed.

Data sources

- Demographic data were obtained from the General Register Office for Scotland (GROS), as well as statistics.gov.scot
- Further demographic data were obtained from Scotland's Census 2022 (published 2023) and the Scottish Public Health Observatory.
- Activity data were provided by the Grampian Sexual Health Service.
- Epidemiological data were obtained from Illuminate Tableau, including TrakCare PMS, Apex Laboratory System, and Pharmacy Information System.
- Literature searches were conducted on CINAHL, MEDLINE via OVID, Web of Science, Scopus and PubMed. Manual and journal searching of Google, Google Scholar and the British Medical Journal were also performed.

Review of literature

A systematic review was conducted in June 2023. The review was commissioned as part of this HCNA, and was performed by a postgraduate student at the University of Aberdeen. As well as contributing to the HCNA, it also forms the basis of a currently-unpublished Master of Public Health dissertation.

The review focussed on identifying different models for LARC and abortion services, and appraising the evidence for their effectiveness (*Bernard S, 2023*). It also looked for literature regarding women's perceptions and attitudes towards LARC in Scotland and the wider UK. Methodology and search strategy can be found in Appendix 3. The final analysis comprised 31 studies in total; 19 studies were in relation to LARC/abortion service-models, with 12 studies in relation to women's perceptions of LARC. A mixture of study designs were incorporated in the review. 4 were randomised controlled trials, 15 were qualitative studies, 3 were cohort studies, 3 systematic reviews, 2 mixed method studies, 1 cross sectional studies, 1 descriptive study, 1 controlled time trend analysis, and 1 quantitative study.

Three studies explored the nurse-led model of care for provision of contraception and medical abortion. Overall, these studies evaluated a nurse-led model to be cost effective, similarly effective as physician-provision as well as being accessible. A further study (*Tomnay J et al, 2018*) was done to describe how a nurse led medical abortion service was run in a rural setting in Australia and showed an overall 75.1% of women CI (69.0%-80.6%) had a successful medical termination of pregnancy. Another study also set in Australia (*Moulton J et al, 2022*), aimed to establish a model to reduce barriers to access to sexual and reproductive services in rural areas. A further study (*Sjöström S et al, 2016*) focused on the cost effectiveness of nurse-led abortion models, with an ICER estimate of -831.25 EUR (compared to standard care) when only direct cost was considered, and -1750 EUR when total costs were included; this study concluded that nurse-led medical abortion services were more cost-effective than those that were physician-led.

Several studies discussed other models of abortion service delivery, including telemedicine *(Aiken A et al, 2021)* and mail-order pharmacy *(Gambir K et al, 2020)*. These were found to be similarly efficacious to in-clinic medical abortion; many of these service-models and studies were prompted and necessitated by the COVID-19 pandemic.

When considering women's perceptions of long-acting reversible contraceptives, the review identified five main themes:

- Long-lasting effects

- Two studies (*Walker S et al, 2016*) (*Okpo E et al, 2014*) suggested that women may be put off by the long-acting nature of LARC; that the term long-acting suggested permanence or difficulty in reversing its effect.

- Myths and fears
  - Several studies explored myths surrounding the use of LARC. Fear of an ongoing effect on future fertility (particularly with the intrauterine coil) was a strong indicator for non-use (*Walker et al, 2016*). Two studies suggested that the process of coil-fitting being either embarrassing or painful were also major barriers. Four other studies reported that young women considered LARCs to be mainly for older or women who had previously given birth.
- Experiences
  - Four studies reported that women's main source of information on LARCs were second-hand experiences from friends, family members and social media (*Walker S et al, 2016*) (*Okpo E et al, 2014*). Medical professionals such as GPs were seen as a secondary information source.
- Inadequate and inaccurate information
  - One study from Scotland (*Glasier A et al, 2008)* found that although a majority of women were aware of LARC techniques, there was limited awareness of the individual methods. Further studies using focus group techniques also suggested that even in women who were aware of the concept of LARC, most were not familiar with the individual methods involved.
- Side-effects
  - Further studies found that the side-effects of LARC (or the perceived risk of side-effects) were significant barriers to their use. Fear of observable side-effects, particularly weight gain, influenced both uptake of LARCs and their continued use, and often outweighed the fear of unplanned pregnancy (*Glasier A et al, 2008).* Other studies amongst health professionals suggested that misconceptions regarding LARCs were common; in particular, there appeared to be a common belief that IUCs could cause pelvic inflammatory disease and were unsuitable for nulliparous women. Another study of attitudes amongst midwives (*McCance K, 2014*) suggested that many considered contraception/LARC to be only a minor aspect of their practice.

Overall, the literature from this systematic review identified effective telemedicine, nurse-led and remote models for the delivery of abortion services. Although many of these studies were not based in the UK, many were in high-income countries with similar healthcare systems, and several specifically mentioned their use in remote and rural communities. The uptake of these

models has been accelerated by the restrictions imposed by the COVID-19 pandemic, but appear to be similarly effective to clinic-based models, particularly in early pregnancy (before 10 weeks of gestation).

When considering uptake of LARC, literature suggests that awareness and understanding of LARCs may be limited, particularly in younger women. This may be exacerbated by health professionals sharing some of the common misconceptions surrounding these methods. Women's preference for friends, family and social media as a source of information on LARC may suggest that alternative public-awareness campaigns may be necessary to reach our target populations.

There was a limited amount of Scotland-specific literature; inferences must be drawn from other populations, particularly those that share demographic similarities with the Grampian region. However, even in settings with demographic similarities, there are likely to be differences in the policy, financial and legal landscapes in which these models operate. There was also minimal literature on some of the challenges currently being perceived within the LARC service, particularly the transition of LARC services from primary care to specialist providers.

Health Improvement Scotland (HIS) published standards for sexual health services in January 2022. These replaced previous standards that were in place from 2008. Work is being carried out within NHS Grampian to audit our service against these standards. The standards are:

1. **Leadership and governance.** Each organisation demonstrates effective leadership, governance and partnership working in the management and delivery of sexual health services.
2. **Shared and supported decision making.** All individuals receive inclusive information to facilitate informed choice and shared and support decision making.
3. **Education and training.** Each organisation demonstrates commitment to the education and training of all staff involved in sexual health care, appropriate to roles and workplace setting.
4. **Access to sexual health care.** All individuals have equitable and consistent access to sexual health care.
5. **Sexual well-being.** All individuals are empowered to maintain positive sexual health, well-being and function.
6. **Prevention, detection and management of sexually-transmitted infections and sexually-transmitted bloodborne viruses.** All individuals can access safe, high-quality and person-centred services for the prevention, detection and treatment of STIs, including sexually-transmitted bloodborne viruses.
7. **Services for young people.** Young people can access safe, high-quality and person-centred sexual health care which upholds their rights.

8. **Reducing sexual health inequalities.** Organisations actively work to reduce sexual health inequalities and provide tailored support and clinical interventions for people most at risk of poor sexual health.
9. **Reducing unintended pregnancy.** People are empowered and informed about their reproductive rights and can access a full range of methods to reduce unintended pregnancy if they choose to do so.
10. **Abortion care.** Women, trans and non-binary people who can become pregnant can access safe, timely and person-centred abortion care services.

Demographics

The population of Grampian in mid-2021 was estimated at 586,530, representing around 11% of the population of Scotland. Within Grampian, 39% of the population live in Aberdeen City, 45% in Aberdeenshire and 16% in Moray. The region includes urban areas, as well as rural and remote communities. The health board covers an area of over 8,700 square kilometres.

Census data from 2022 gave estimated age-demographics as displayed in Table 1.

Age band	Aberdeen City	Aberdeenshire	Moray	NHS Grampian
0-4 years	10,700	13,200	4,200	28,100
5-9 years	11,400	15,800	4,900	32,100
10-14 years	11,000	16,600	5,300	32,900
15-19 years	13,300	13,900	5,000	32,200
20-24 years	18,900	10,900	4,400	34,200
25-29 years	17,100	12,000	4,900	34,000
30-34 years	17,300	15,100	5,500	37,900
35-39 years	16,600	16,800	5,400	38,800
40-44 years	14,800	17,400	5,300	37,500
45-49 years	13,300	17,500	5,700	36,500
50-54 years	14,100	20,400	7,100	41,600
55-59 years	14,100	20,700	7,400	42,200
60-64 years	13,200	18,300	6,900	38,400
65-69 years	11,100	16,200	6,000	33,300
70-74 years	9,900	15,000	5,500	30,400
75-79 years	7,300	11,200	4,400	22,900
80-84 years	5,100	7,100	2,900	15,100
85-90 years	3,200	4,100	1,700	9,000
90+ years	1,800	2,200	900	4,900

Table 1: number of residents in each 5-year age band by local authority area, Scotland's Census 2022.

The population pyramid of the Grampian region as a whole is shown below in Figure 1. Individual population pyramids for Aberdeen City and Aberdeenshire are also presented here. It should be noted that the population pyramids demonstrate a markedly different age distribution for Aberdeen City, when compared to Aberdeenshire or Moray, or Grampian as a whole. Aberdeen City accounts for 53% of Grampian's 20-29 year old residents, despite representing only 39% of Grampian's total population. The differences in age demographics are likely to have implications for the different local authorities in terms of their sexual health care needs.

According to data from the 2020 Annual Population Survey, 3.1% of Scottish participants identified as gay, lesbian or bisexual. This is consistent with the Scottish Surveys Core Questions 2019 (SSCQ) which found that 2.9% of participants identified as LGB or other. Grampian-specific data were not easily available, and it is likely that Grampian's LGBTQ+ population are not evenly-distributed geographically across the region.

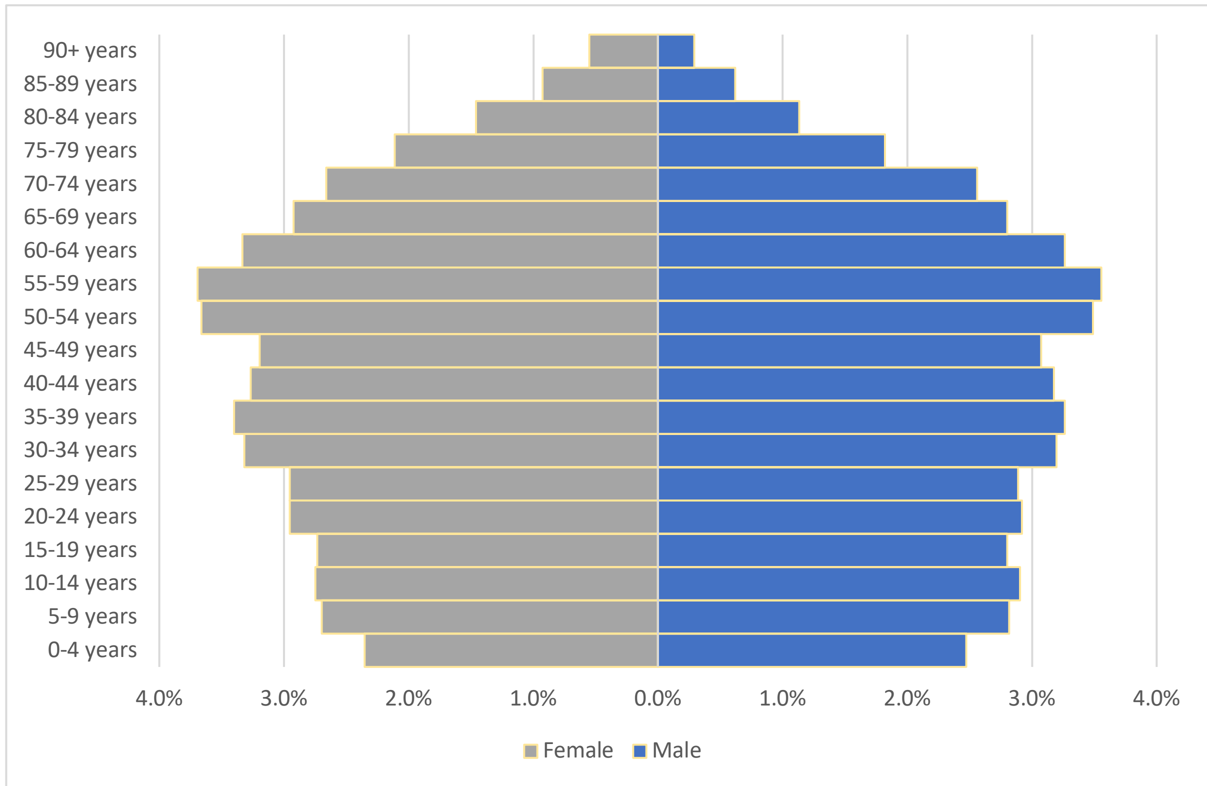
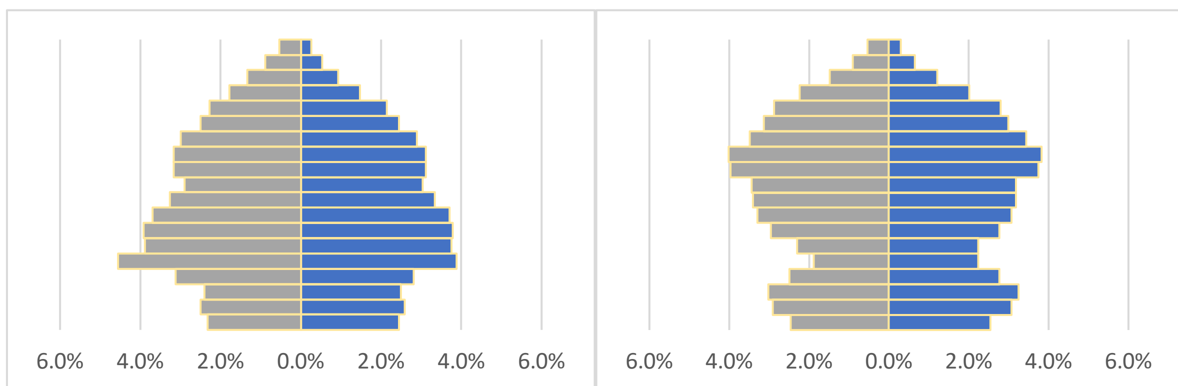


Figure 1: population pyramid for NHS Grampian residents, data from Scotland's Census 2022. Below are population pyramids for Aberdeen City (left) and Aberdeenshire (right).



The region contains one prison (HMP YOI Grampian), which houses over 500 prisoners, both male and female. This institution is already served by a weekly outreach clinic from the sexual health service.

Sexual health services in Grampian

Overview

NHS Grampian Sexual Health Service (GSHS) is an integrated sexual health service hosted by the Aberdeen City Health and Social Care Partnership to provide Sexual Health Services across the Grampian region. The service is busy, with over 40,000 clinical contacts per year. Current staffing includes 7 consultants, 8 trainee and specialty doctors, 5 healthcare assistants, 17 nurses, and 16 members of administrative staff. There are no current unfilled vacancies.

The service has well-established links other areas of NHS Grampian; partnership working includes working with Public Health, Gynaecology, Obstetrics, Infectious Diseases, Laboratory Medicine and Fertility Medicine.

The main GSHS site is based within the Aberdeen Community Health and Care Village, Frederick Street in the centre of Aberdeen. A wide range of services are offered at this central location including prevention methods, testing, treatment and care for Sexually Transmitted infections (STIs) and Human Immunodeficiency Virus (HIV), priority access clinics for urgent care, contraception including Long-Acting Reversible Contraception and young person's clinics.

There is a well-established community gynaecology service which receives over 1,800 primary care referrals per year and has a joint referral pathway with acute gynaecology. Abortion care for residents in Grampian is also accessed and delivered within the SHS community service. Over 90% of abortions are now delivered as home procedures having undergone a significant development around the time of the COVID-19 pandemic, with the roll out of early medical abortion at home and earlier intervention. The service also provides remote assessment for NHS Shetland and Orkney.

A Forensic Suite for the provision of forensic assessment in cases of sexual assault and rape is also contained within the service, and is currently led by the forensic team of NHS Grampian. GSHS works closely with this team, seeing patients after this initial contact for follow on care. Self-referral forensic examination was launched in April 2022.

Complimentary to the main central site there are a number of GSHS clinics delivered across the Grampian region. Weekly clinics are delivered in Elgin, Peterhead, Fraserburgh, Banff, Her Majesty's Prison (HMP) and Young Offenders Institute (YOI) Grampian. A further clinic, specifically for Gay, Bisexual and Other Men who Have Sex with Men (GBMSM) is also delivered in Aberdeen city centre; this is designed and delivered in partnership with Alcohol and Drugs Action, a third-sector partner organisation. Given the remote and rural nature of

Grampian, GSHS also encourages the use of technology to improve patient care with telemedicine integrated into patient pathways.

Current activity

Appointment data were obtained from the Grampian Sexual Health Service, covering the period from January 2020, through to August 2023. These data are presented below. It should be noted that these data show numbers of appointments, not the number of unique service users.

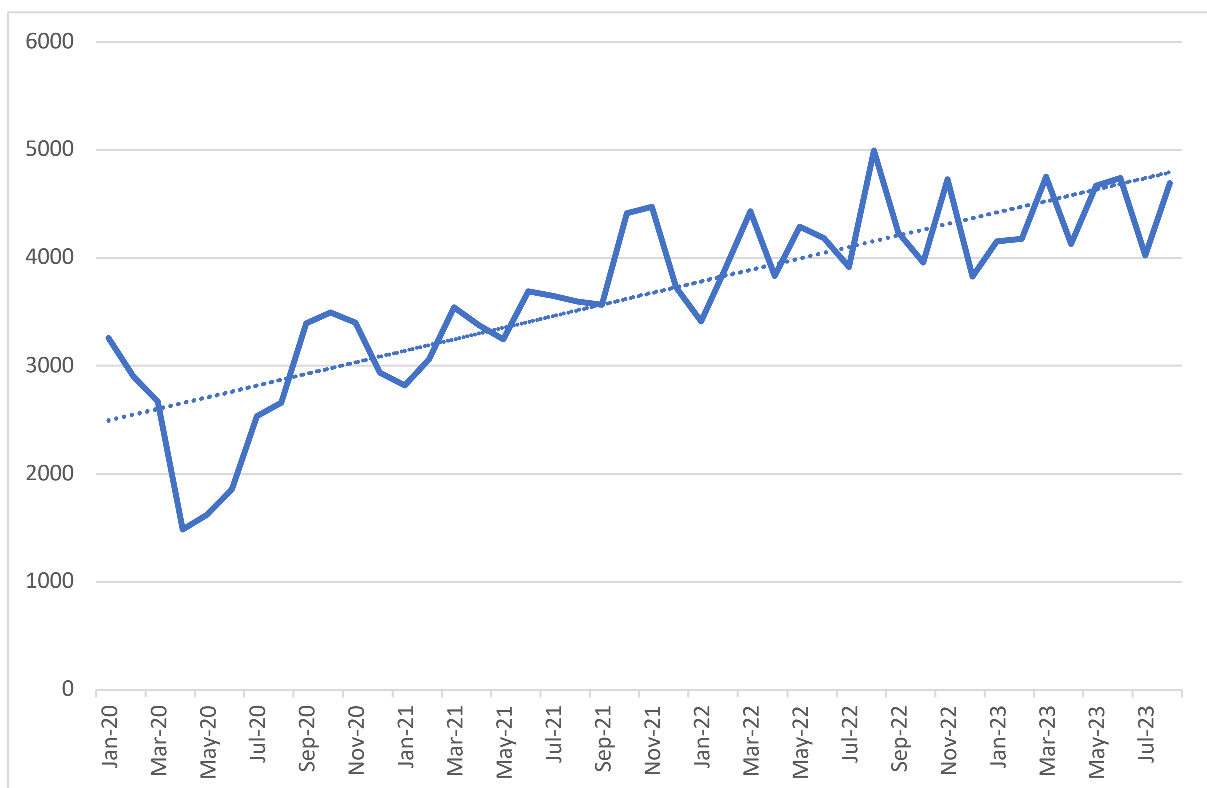


Figure 2: total appointments over time, January 2020-August 2023.

During the first eight months of 2023, the service has provided over 35,000 appointments, at an average of 4,415 appointments per month. Over the last 12 months available, there were a total of 52,064 appointments. Even when accounting for the low baseline (due to the drop in activity during the COVID-19 pandemic), there appears to be a clear trend of increasing levels of overall activity over the time series. There appears to be some stabilisation of appointment numbers over the past 12 months, but this continues to be at a high level when compared to previous years.

Over the previous twelve months, the most common appointment type is follow-up (43%), closely followed by new appointments (38%). Ongoing HIV care and virtual appointments

formed a much smaller proportion of overall appointment activity (7% and 13% respectively). These proportions are roughly stable over the study period, as displayed in Figure 3.

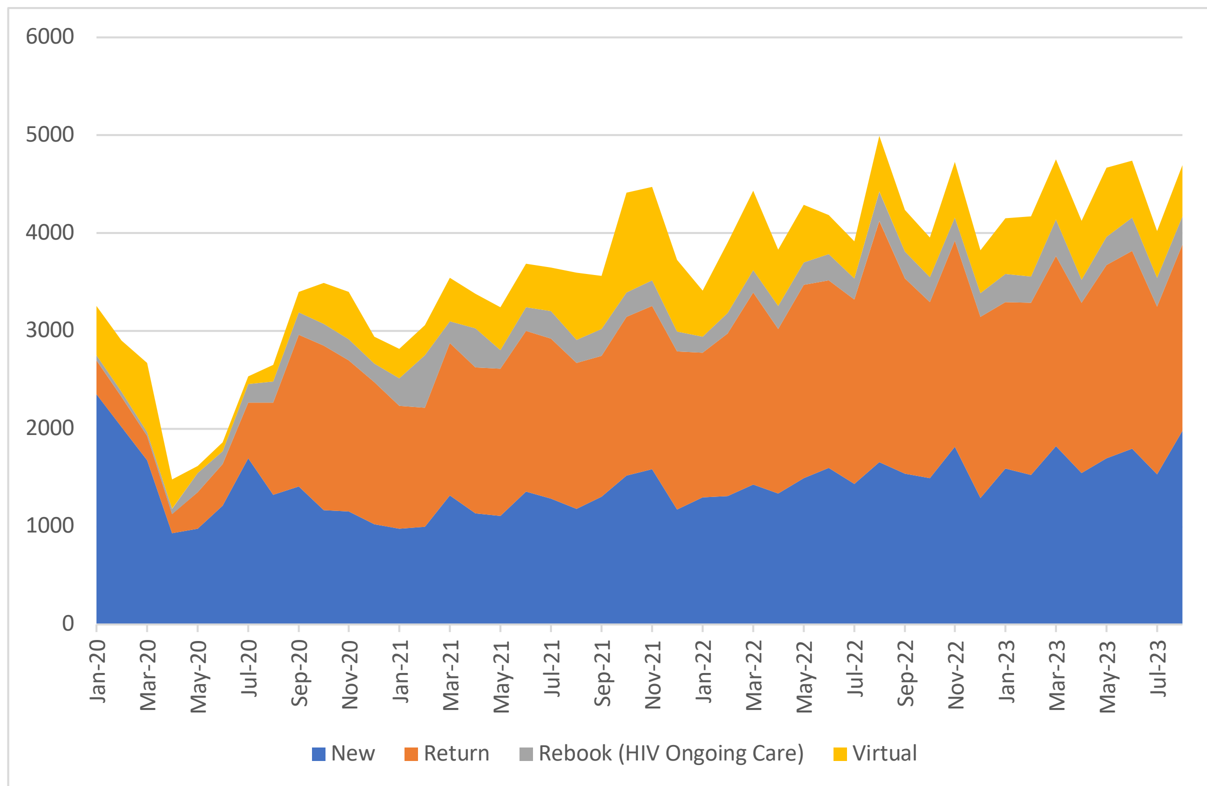


Figure 3: total appointments over time, January 2020-August 2023, separated by appointment type.

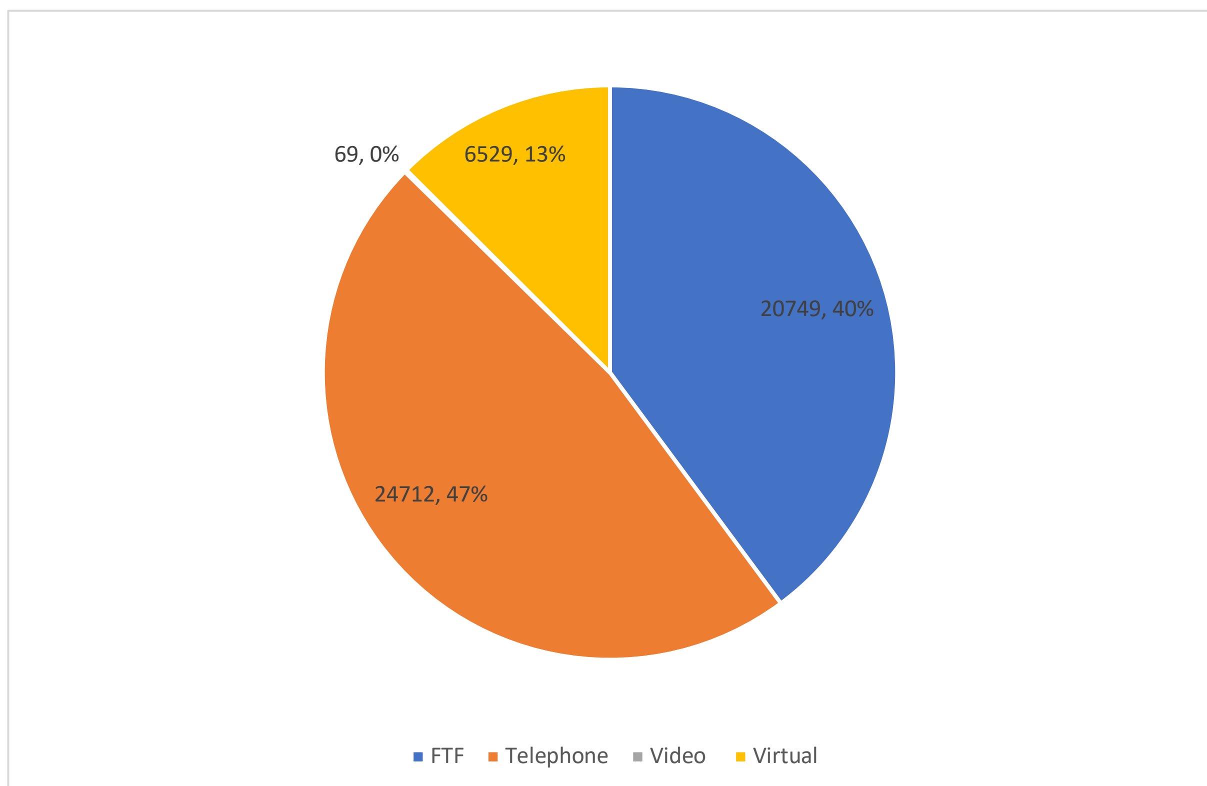


Figure 4: appointments by method, September 2022-August 2023.

As shown above in Figure 4, the most common method of appointment is currently via telephone (47%). Face-to-face appointments account for 40% of appointments, with virtual appointments accounting for 13%, and less than 1% for video consultations.

Reason-for-attendance was available for 21,683 encounters in the past 12 months. The remainder attended for treatment, testing etc. It is also worth noting that contraception was routinely discussed at all appointments, regardless of primary reason for attendance. The proportions of these reasons-for-attendance are shown in Figure 5, with an explanation of abbreviations in Table 2 below.

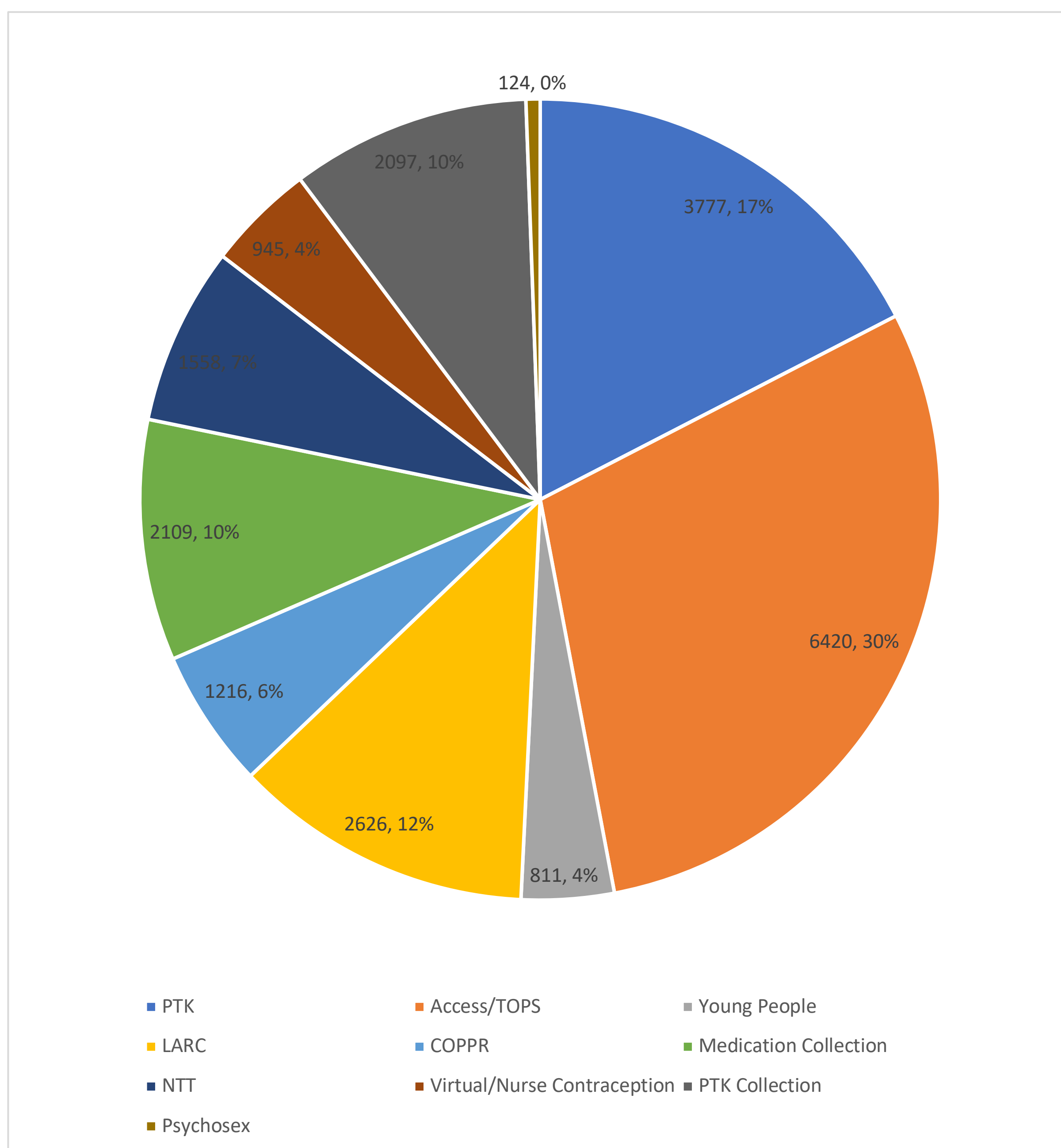


Figure 5: appointments by reason for attendance (where recorded), September 2022-August 2023.

Abbreviation	Explanation
PTK	Postal Testing Kit clinic
Access/TOPS	Termination of pregnancy/abortion
LARC	Long-acting reversible contraception
COPPR	Electronic prescribing
NTT	No-talk testing
PTK Collection	Collection of Postal Testing Kit
Psychosex	Psychosexual clinic

Table 2: abbreviations for reason-for-appointment.

Reason-for attendance was not recorded for 58% of appointments; the GSHS stated that these attendances were for testing or treatment of sexually-transmitted infections. Of the 21,683 appointments with a recorded reason, the most common reason was for abortion services (6,420), followed by Postal Testing Kit clinic (3,777) and LARC services (2,626).

During scoping discussions for the HNA, multiple stakeholders identified an increased demand for LARC and abortion as key drivers of pressure on the sexual health service. Accordingly, the trends of these appointment types are demonstrated below in Figures 6 & 7.

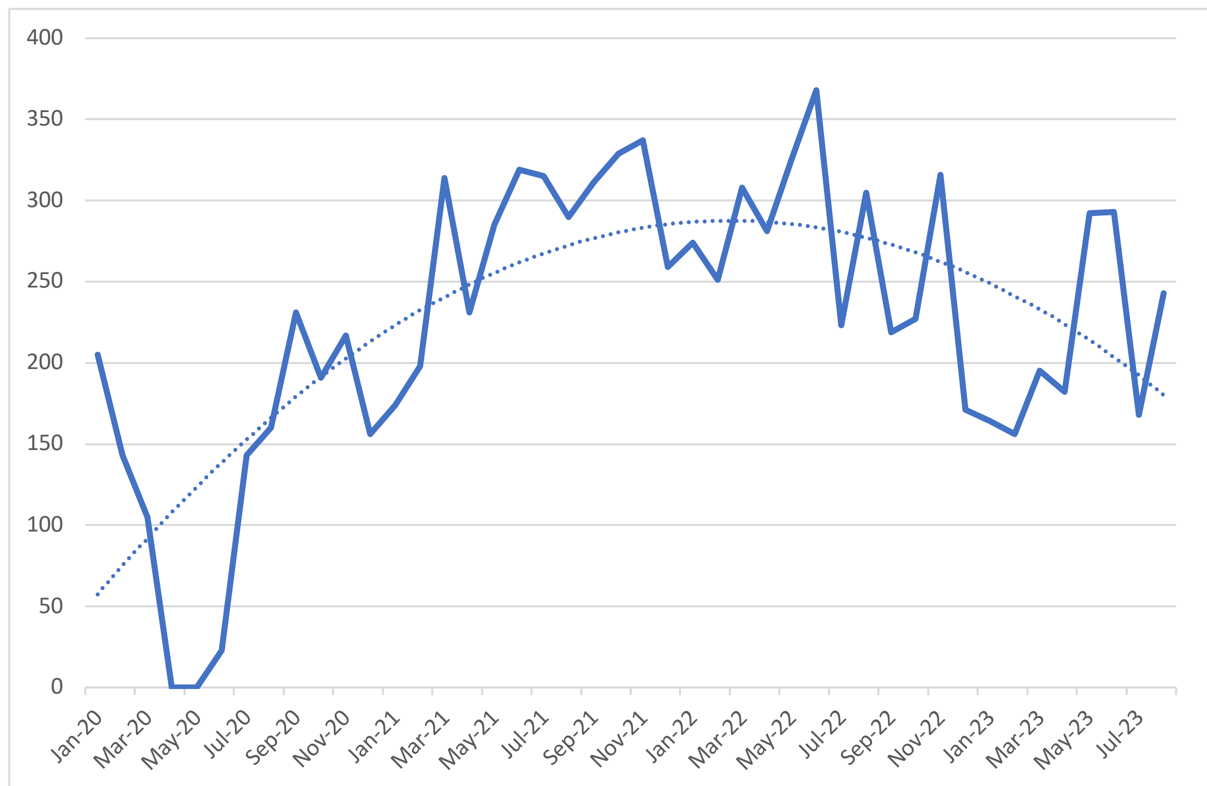


Figure 6: number of appointments for long-acting reversible contraception, 2020-2023.

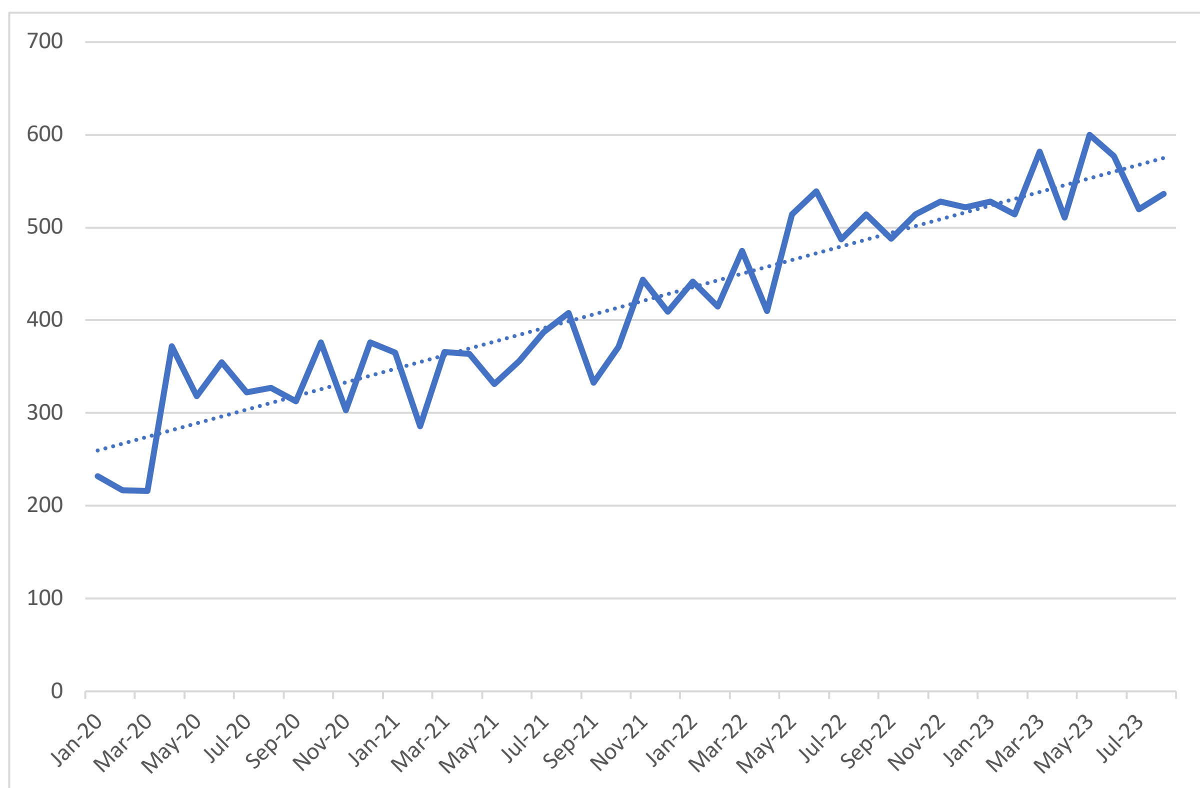


Figure 7: number of appointments for abortion, 2020-2023.

When considering the trend in LARC appointments within the GSHS (Figure 5), there was an obvious increase in appointment numbers following the acute phase of the COVID-19 pandemic. This is likely to be reflective of a move from primary care to specialist services for the provision of LARC, rather than a true increase in demand. There has been some reduction in appointments since June 2022, where there was the peak of 368 appointments in the month. This appears to be a reduction in demand, consistent with a nationwide fall in the uptake of LARC; however, given other trends that we shall see in service activity and epidemiology (notably abortion), this may represent a reduction in demand without a true reduction in need. It should also be noted that "bridging contraception" was made available via pharmacies in November 2021; it is possible that this scheme may also have had some effect on LARC uptake.

Demand for termination-of pregnancy appears to be on a clear upward trajectory over the past three years (Figure 7). The last six months have seen an average of 554 appointments per month, compared to 490 appointments per month during the corresponding period of 2022, 369 appointments per month during the same period of 2021, and 318 appointments per month during the same period of 2020; this represents an increase in TOP appointments of 74% over a three-year period. The reasons for this increase in TOP appointments are likely to be multifactorial and complex; they may include reduced use of LARC, difficulty in accessing contraception services, changes in habits around condom use, changes in use of oral contraception, or socioeconomic conditions making the continuation of pregnancies more harmful to the physical and mental health of the woman.

As previously seen in Figure 4, around 40% of the appointments in the past twelve months were conducted face-to-face. This represents a total of just under 21,000 appointments. Of those, the vast majority (around 95%) of these appointments were conducted at Aberdeen Health Care Village. 822 face-to-face appointments were held in Elgin, with smaller numbers at Fraserburgh, Peterhead, and Banff. This is displayed below in Figure 8. It should be noted that peripheral clinics are not currently able to offer the same service as those available at Aberdeen HCV, both in terms of the types of service available and the opening times for appointments etc.

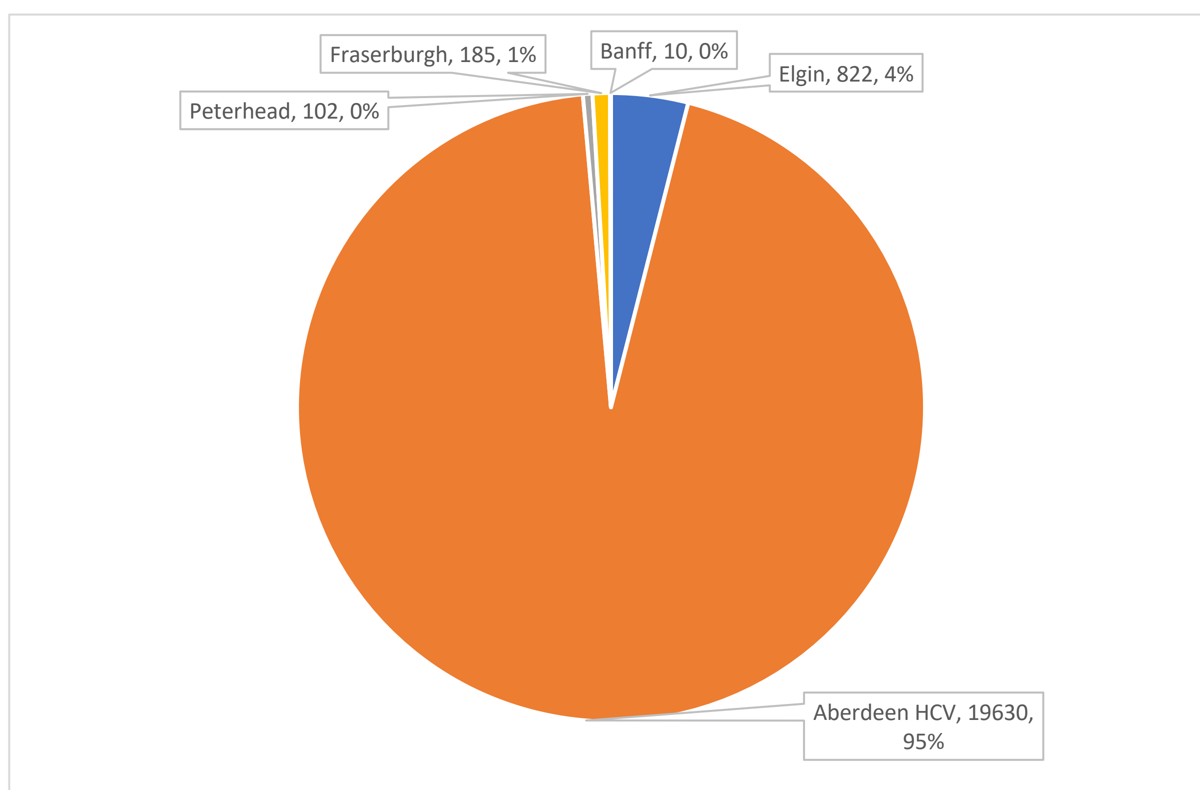


Figure 8: face-to-face appointments by location, September 2022 - August 2023.

The locations of these face-to-face appointments can be compared with the relative population sizes of the regions that make up NHS Grampian. 95% of face-to-face appointments were seen at Aberdeen Health Care Village; this is despite Aberdeen City representing less than 40% of the population of Grampian. This would suggest that either (i) large numbers of people from Aberdeenshire and Moray are accessing their sexual health services at Aberdeen Health Care Village, or (ii) those who live outwith Aberdeen City are accessing alternative appointment types, such as phone or virtual clinics, or (iii) there is a marked difference between the demand for sexual health services in Aberdeen City compared to the other regions of Grampian. In reality the explanation is likely to be a combination of all of the above factors. Historically, individuals from Aberdeenshire and Moray have often accessed services in Aberdeen due to both convenience (proximity to their workplace, for

example), as well as wishing to avoid accessing sexual health services in smaller communities where they are more likely to encounter people that they know. Further work may be necessary to accurately characterise service users' reasons for accessing care where they do; this will be further explored in this report's recommendations.

Over the past twelve months, young adults aged 18 to 29 years have been the majority of appointment-users, using 54.2% of appointments. The next most common age bracket are the 30 to 44 year olds (30.9%), followed by 45 to 69 year olds (9%), with far fewer numbers of under eighteens (3.7%) and over 60s (2.2%). The trend over time is demonstrated below in Figure 9.

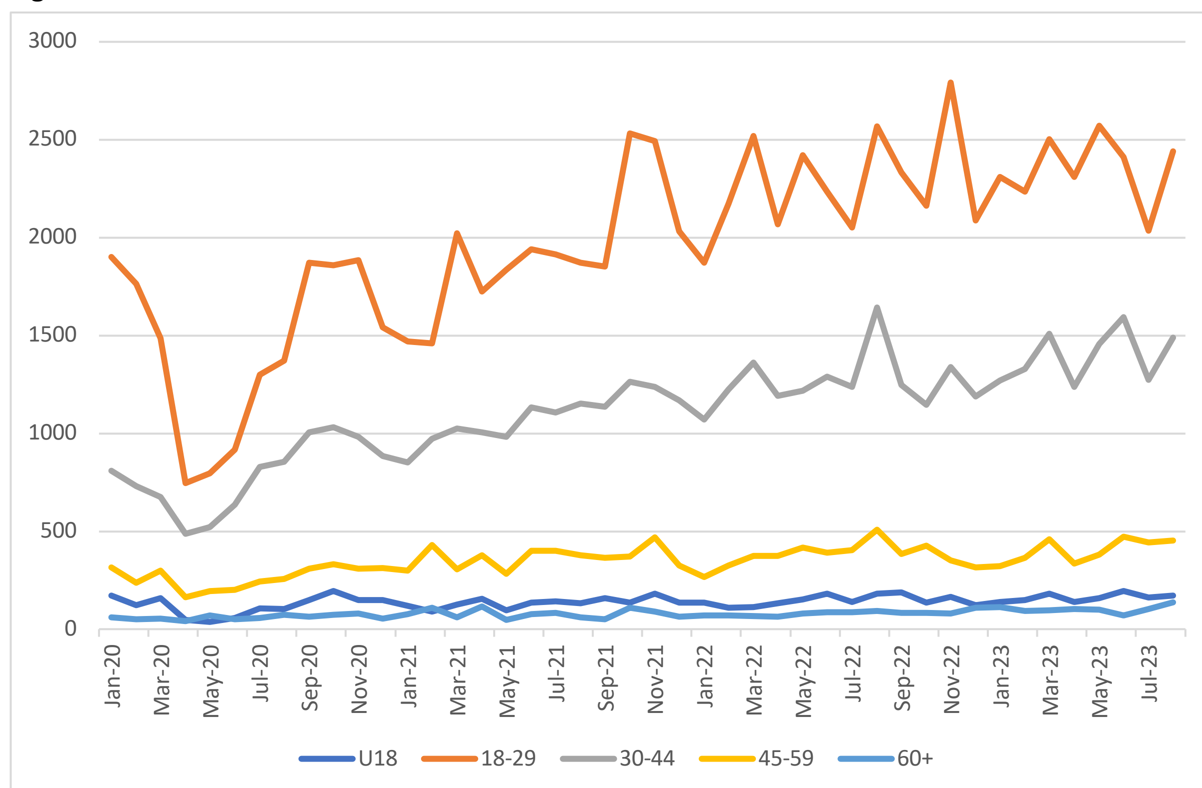


Figure 9: number of appointments by age-group, 2020-2023.

As can be seen above, the level of demand from adults over the age of 45 and young people under the age of 18 have remained fairly static over the past three years. The overall rise in number of appointments appears to be driven by increased demand in the 18 to 29 year old and 30 to 44 year old age brackets. This would be in keeping with an overall rise in activity that is at least partly driven by an increase in TOP demand, as women in their reproductive years will have greater need for those services (compared to women in either older or younger age brackets). However, as the following epidemiological assessment demonstrates, increasing demand from this cohort may also be driven by increasing incidence of sexually-transmitted infections.

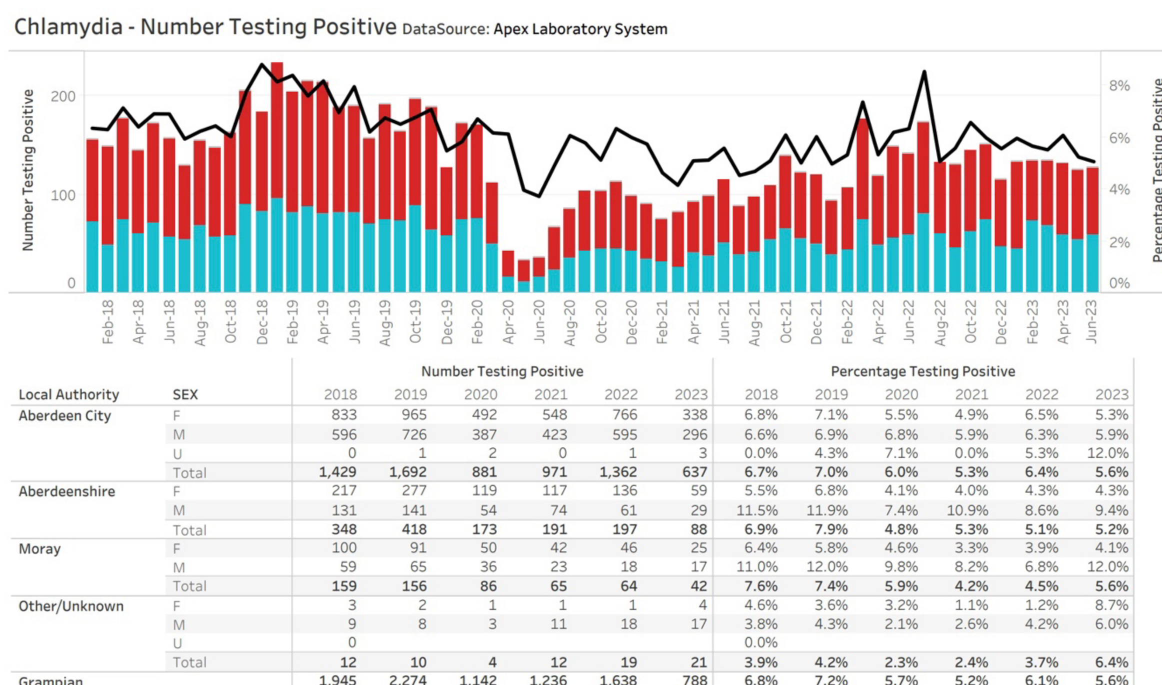
Epidemiological assessment

Sexually-transmitted infections

Epidemiological data on sexually-transmitted infections were obtained from the Apex Laboratory System, via Illuminate Tableau. Data were also obtained from Public Health Scotland regarding national trends in sexually-transmitted infections, in order to make comparisons with our local data.

Chlamydia trachomatis

Grampian-specific data on Chlamydia trachomatis infections are presented below in Figure 10.



		Number Testing Positive						Percentage Testing Positive					
Local Authority	SEX	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
Aberdeen City	F	833	965	492	548	766	338	6.8%	7.1%	5.5%	4.9%	6.5%	5.3%
	M	596	726	387	423	595	296	6.6%	6.9%	6.8%	5.9%	6.3%	5.9%
	U	0	1	2	0	1	3	0.0%	4.3%	7.1%	0.0%	5.3%	12.0%
	Total	**1,429**	**1,692**	**881**	**971**	**1,362**	**637**	**6.7%**	**7.0%**	**6.0%**	**5.3%**	**6.4%**	**5.6%**
Aberdeenshire	F	217	277	119	117	136	59	5.5%	6.8%	4.1%	4.0%	4.3%	4.3%
	M	131	141	54	74	61	29	11.5%	11.9%	7.4%	10.9%	8.6%	9.4%
	Total	**348**	**418**	**173**	**191**	**197**	**88**	**6.9%**	**7.9%**	**4.8%**	**5.3%**	**5.1%**	**5.2%**
Moray	F	100	91	50	42	46	25	6.4%	5.8%	4.6%	3.3%	3.9%	4.1%
	M	59	65	36	23	18	17	11.0%	12.0%	9.8%	8.2%	6.8%	12.0%
	Total	**159**	**156**	**86**	**65**	**64**	**42**	**7.6%**	**7.4%**	**5.9%**	**4.2%**	**4.5%**	**5.6%**
Other/Unknown	F	3	2	1	1	1	4	4.6%	3.6%	3.2%	1.1%	1.2%	8.7%
	M	9	8	3	11	18	17	3.8%	4.3%	2.1%	2.6%	4.2%	6.0%
	U	0						0.0%					
	Total	**12**	**10**	**4**	**12**	**19**	**21**	**3.9%**	**4.2%**	**2.3%**	**2.4%**	**3.7%**	**6.4%**
Grampian		1,945	2,274	1,142	1,236	1,638	788	6.8%	7.2%	5.7%	5.2%	6.1%	5.6%

Figure 10: Chlamydia positive tests in Grampian, 2018-2023. Female patients are shown in red, male patients are shown in blue.

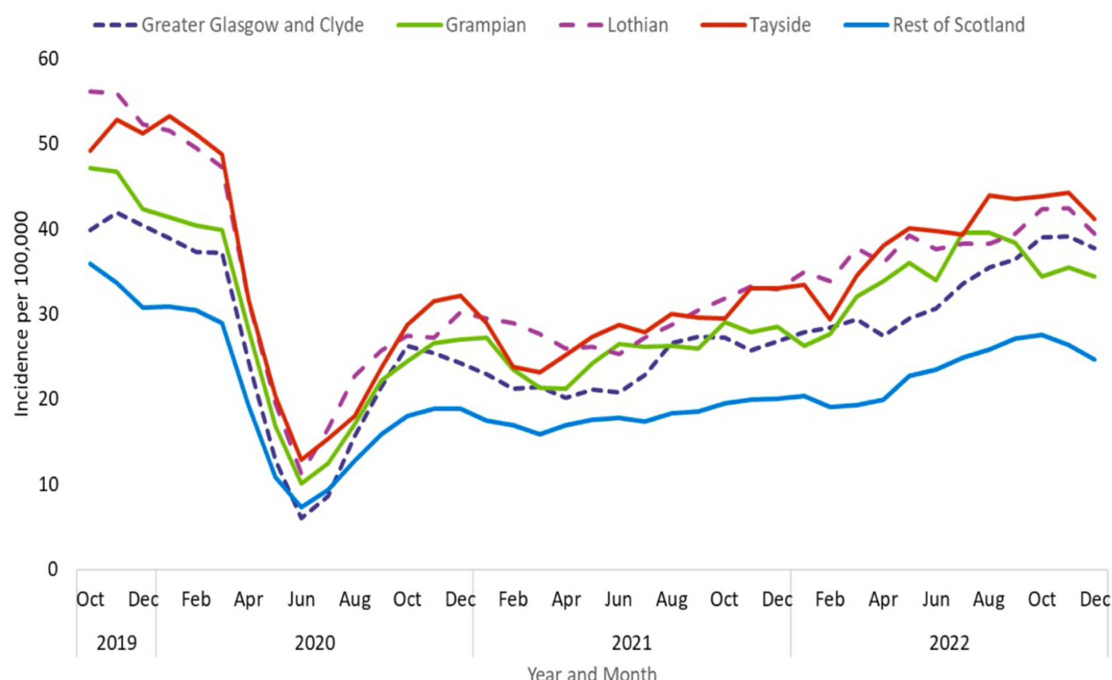
Data are presented from January 2018 to June 2023. Women account for between 55-60% of positive tests. Aberdeen City accounts for 73-83% of cases in Grampian, with Aberdeenshire contributing 11-18%, and Moray 4-8%.

Total cases increased between 2018 to 2019, from 1,945 to 2,274. There was a marked decrease in positive cases in 2020 (1,142 cases), which coincided with the COVID-19 pandemic. This is likely to be due to a combination of changing sexual behaviour due to pandemic restrictions, as well as reduced presentation for testing. There may also have been a change in the local population due to the pandemic; for example, many university students

studied remotely, rather than in person. Since 2020 (and the subsequent lifting of COVID-related restrictions), the total number of positive cases has increased, with 1,236 cases in 2021 and 1,638 in 2022. However, total case numbers have not yet recovered to the levels seen immediately pre-pandemic. The reason for this is unclear; possible hypotheses include a more general change in sexual behaviour following the pandemic, or changes in the demographics of the local population.

The trends in Grampian were compared with trends observed more widely in Scotland, and those published in Public Health Scotland's "*Chlamydia trachomatis infection in Scotland 2013-2022"* report. A similar incidence pattern has been observed in Grampian and nationally; the incidence of diagnosed chlamydia infection has increased gradually since the COVID-19 pandemic, but has not reached levels seen prior to the pandemic. Nationally, around 56% of cases were female. In 2022, 72% of diagnoses in women were in those aged less than 25 years compared to 50% in men. Historically, the majority of chlamydia diagnoses in women have been in those aged less than 25 years, while in men, diagnoses are distributed across all age groups.

Figure 11 shows a three-month rolling average of the incidence of diagnosed chlamydia infections per 100,000 people in the four NHS boards with the greatest incidence as well as at a national level.



Data source: ECOSS. Incidence is based on number of positives per 100,000 population aged 15-64 years using the National Records for Scotland estimate as at 30 June 2021.

Figure 11:Three-month rolling average incidence of diagnosed Chlamydia trachomatis infection per 100,000 persons by selected NHS Board, October 2019 to December 2022

All four health boards have shown a similar pattern of a significant drop in incidence around the time of the first COVID-19 lockdowns, followed by an increase in cases thereafter, but not reaching pre pandemic levels. These four health boards are all above the national average; however this is likely to be expected as all contain cities with large populations of young people (including several universities) who are in the age range where chlamydia is most commonly diagnosed.

The majority of chlamydia diagnoses (>70%) in both sexes are in people aged less than 30 years. Figure 12 (below) shows rates of chlamydia infection per 100,000 population aged <25 years in 2022, divided by different NHS boards. The rate in Grampian is 1,579 per 100,000 population; this is above the national average of 1,319, and is the second-highest health board behind NHS Tayside.

NHS Board	Women Number	Women Rate per 100,000	Men Number	Men Rate per 100,000	All number	All rate per 100,000
Ayrshire and Arran	267	1413	155	783	422	1090
Borders	67	1224	28	481	95	841
Dumfries and Galloway	109	1570	63	836	172	1188
Fife	318	1508	175	798	493	1146
Forth Valley	333	1946	193	1070	526	1496
Grampian	649	2118	343	1066	992	1579
Greater Glasgow and Clyde	1162	1668	671	937	1833	1297
Highland	198	1302	98	545	296	892
Lanarkshire	429	1187	254	673	683	925
Lothian	1157	2142	530	1001	1687	1577
Orkney	5	511	*	*	*	243
Shetland	9	798	5	397	14	586
Tayside	565	2372	324	1338	889	1851
Western Isles	8	692	*	*	*	335
Scotland	**5276**	**1746**	**2844**	**908**	**8120**	**1319**

Data source: ECOSS. Incidence is based on number of positives per 100,000 population aged 15-24 years using the National Records for Scotland estimate as at 30 June 2021.

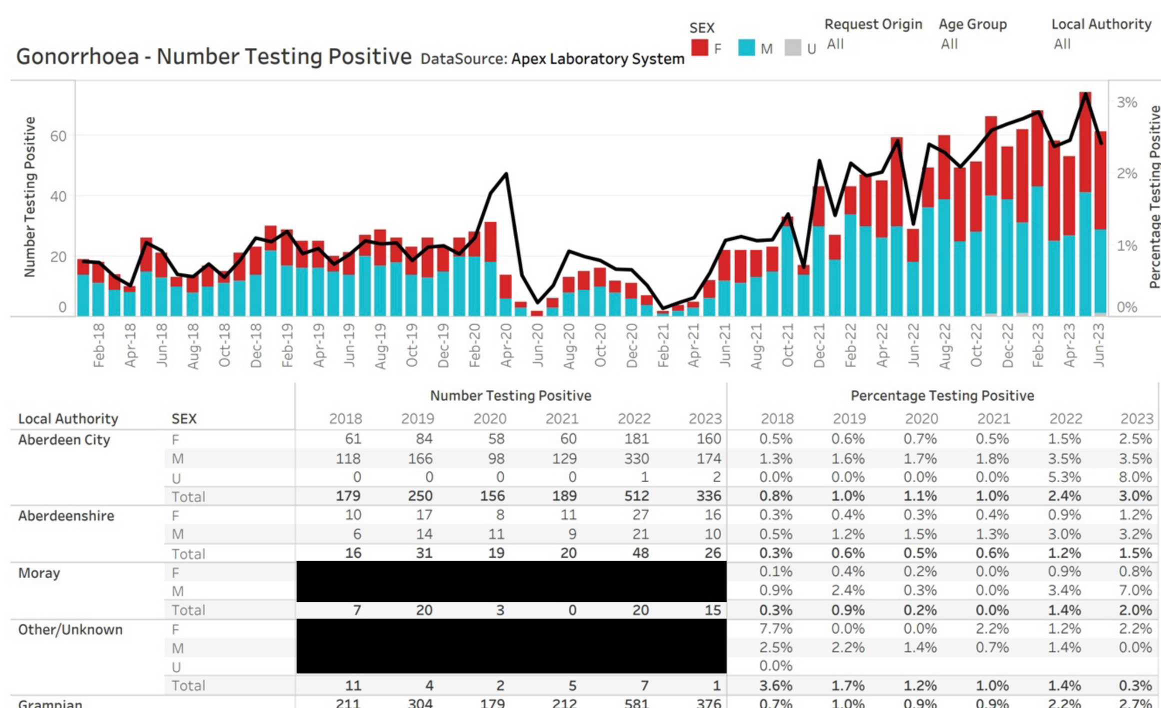
1. Gender unknown for 41 individuals

Figure 12: Laboratory-confirmed diagnoses of Chlamydia trachomatis infection and rate per 100,000 population by NHS board and gender in those aged <25 years, Scotland, 2022.

Within the sexual health clinic setting, the greatest rates of test positivity were observed in heterosexual men; this likely reflects the lower number of heterosexual men who are tested in this setting, compared to women and GBMSM. The higher number of diagnoses in women overall are likely to be reflective of the wider range of opportunities for testing outwith the sexual health clinic setting. Paired with lower numbers of heterosexual men are being tested, it is also likely that there is an under-recognition of positive individuals in heterosexual men.

Neisseria gonorrhoeae

Grampian-specific data on Neisseria gonorrhoeae infections are presented below in Figure 13. These were obtained from Apex Laboratory System, via Illuminate Tableau.



		Number Testing Positive						Percentage Testing Positive					
Local Authority	SEX	2018	2019	2020	2021	2022	2023	2018	2019	2020	2021	2022	2023
Aberdeen City	F	61	84	58	60	181	160	0.5%	0.6%	0.7%	0.5%	1.5%	2.5%
	M	118	166	98	129	330	174	1.3%	1.6%	1.7%	1.8%	3.5%	3.5%
	U	0	0	0	0	1	2	0.0%	0.0%	0.0%	0.0%	5.3%	8.0%
	Total	**179**	**250**	**156**	**189**	**512**	**336**	**0.8%**	**1.0%**	**1.1%**	**1.0%**	**2.4%**	**3.0%**
Aberdeenshire	F	10	17	8	11	27	16	0.3%	0.4%	0.3%	0.4%	0.9%	1.2%
	M	6	14	11	9	21	10	0.5%	1.2%	1.5%	1.3%	3.0%	3.2%
	Total	**16**	**31**	**19**	**20**	**48**	**26**	**0.3%**	**0.6%**	**0.5%**	**0.6%**	**1.2%**	**1.5%**
Moray	F							0.1%	0.4%	0.2%	0.0%	0.9%	0.8%
	M							0.9%	2.4%	0.3%	0.0%	3.4%	7.0%
	Total	**7**	**20**	**3**	**0**	**20**	**15**	**0.3%**	**0.9%**	**0.2%**	**0.0%**	**1.4%**	**2.0%**
Other/Unknown	F							7.7%	0.0%	0.0%	2.2%	1.2%	2.2%
	M							2.5%	2.2%	1.4%	0.7%	1.4%	0.0%
	U							0.0%					
	Total	**11**	**4**	**2**	**5**	**7**	**1**	**3.6%**	**1.7%**	**1.2%**	**1.0%**	**1.4%**	**0.3%**
Grampian		211	304	179	212	581	376	0.7%	1.0%	0.9%	0.9%	2.2%	2.7%

Figure 13: Gonorrhoea positive tests in Grampian, 2018-2023. Data from Moray have been redacted due to small case numbers.

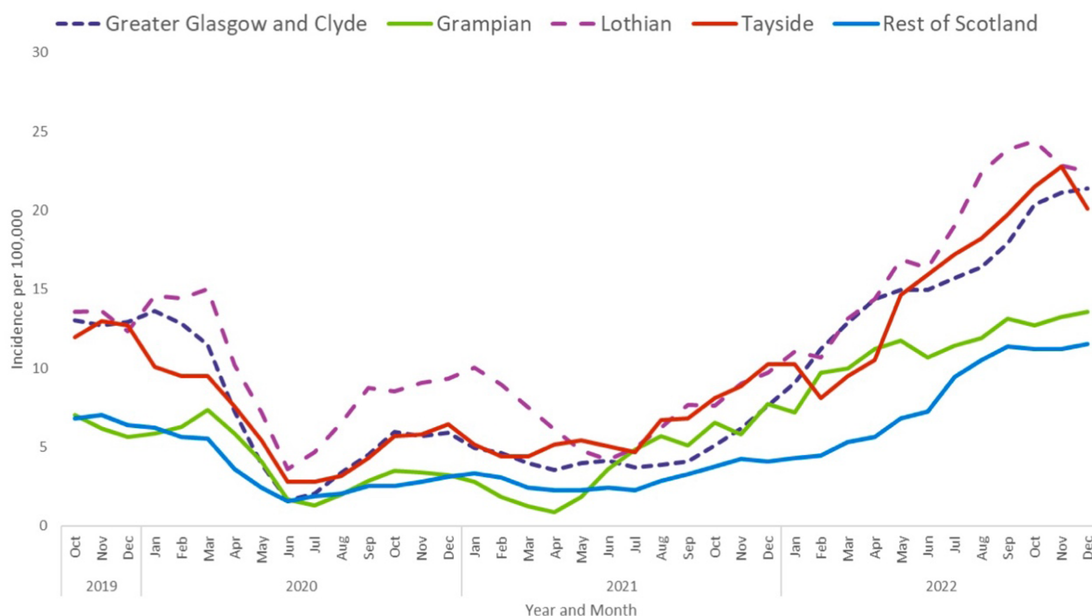
Data are presented from January 2018 to June 2023. Men have consistently accounted for 62-65% of positive tests; however, for 2023 thus far, the percentage of positive cases that are men is only 51%. This should be monitored over the coming months to see if this is an emerging trend or represents a change in the epidemiology. 82-89% of positive tests were seen in individuals from Aberdeen City, 7-11% in Aberdeenshire, and 0-7% in Moray.

Total cases increased between 2018 to 2019, from 213 to 305 per year. As was observed with chlamydia, there was a marked decrease in positive cases in 2020 (180 cases), likely for the same pandemic-related reasons discussed earlier. Since 2020, the total number of positive cases has increased, with 214 cases in 2021 and 587 cases in 2022. In contrast with chlamydia, the total case numbers have recovered to pre-pandemic levels, and have continued to rise to

levels that are considerably higher than those seen in 2019. The first six months of 2023 have recorded 378 positive cases, greater than the whole year period in 2019. This is consistent with trends seen at a national level.

Trends in Grampian were compared with those published in Public Health Scotland's "*Gonorrhoea infection in Scotland 2013-2022"* report. A similar trend has been observed in Grampian and nationally; the incidence of diagnosed gonorrhoea infection has markedly increased since the COVID-19 pandemic, and now has an incidence greater than that seen pre-pandemic. Nationally, 2022 saw a 49% increase in cases relative to those observed in 2019. Incidence of diagnosed gonorrhoea infection has increased rapidly since May 2021, from 3 cases per 100,000 people to 17.2 cases per 100,000 people in November 2022. 67% of cases nationally were in men. There was an age disparity when comparing the two sexes; 77% of diagnoses in women were in those under the age of 25, whereas the same age-group accounted for only 39% of male cases.

Nationally, diagnoses of rectal gonorrhoea in men were at their highest levels in over a decade (1,308 cases in 2022). According to PHS, the increasing incidence of gonorrhoea since 2021 was initially driven by GBMSM; however, since the second quarter of 2022, diagnoses have decreased in GBMSM and increased in women and heterosexual men. Three health boards accounted for 63% of positive diagnoses in 2022; NHS Greater Glasgow & Clyde, NHS Lothian, and NHS Grampian.



Data source: ECOSS. Incidence is based on number of positives per 100,000 population aged 15-64 years using the National Records for Scotland estimate as at 30 June 2021.

Figure 14: Three-month rolling average incidence of diagnosed gonorrhoea infection per 100,000 people aged 15-64y by selected NHS board, October 2019 to December 2022.

Figure 14 (above) shows a rolling average incidence of new gonorrhoea infections per 100,000 population aged 15-64y, both nationally and for four selected NHS boards. Grampian is represented by the green line. All four health boards follow the national trend as previously described; indeed PHS have identified that this trend is replicated across all health boards that have high testing-rates in sexual health services. As shown in Figure 14, whilst the incidence in Grampian has risen above pre-pandemic levels, and is continuing to rise, the incidence is lower than that seen in Greater Glasgow & Clyde, Lothian, and Tayside.

NHS Board	Men Number	Men Rate per 100,000	Women Number	Women Rate per 100,000	All	All Rate per 100,000
Ayrshire and Arran	138	127	92	78	230	102
Borders	30	89	9	26	39	57
Dumfries and Galloway	44	102	26	58	70	80
Fife	216	187	118	98	334	142
Forth Valley	202	209	137	137	339	172
Grampian	340	178	197	105	537	141
Greater Glasgow and Clyde	1161	294	441	109	1602	200
Highland	84	84	63	63	147	74
Lanarkshire	287	137	120	55	407	95
Lothian	995	327	405	128	1400	226
Orkney	*	44	*	15	*	29
Shetland	*	55	*	14	5	35
Tayside	289	223	211	158	500	190
Western Isles	0	0	*	13	*	6
Scotland	3793		1822		5615[1]	

Data source: ECOSS. Incidence is based on number of positives per 100,000 population aged 15-64 years using the National Records for Scotland estimate as at 30 June 2021.

1. Gender unknown for 26 individuals

Figure 15: Laboratory-confirmed diagnoses of gonorrhoea by NHS board, gender and rate per 100,000 population, Scotland, 2022.

Figure 15 is a table showing gonorrhoea diagnoses in 2022 across Scotland's NHS boards, both in real numbers and in a rate per 100,000 population aged 15-64y, including a division by sex. The overall rate in Grampian is 141 cases per 100,000 population; this places Grampian below Lothian, GG&C, Tayside, Forth Valley and Fife.

Nationally, the majority of gonorrhoea cases in both men and women are in people aged under the age of 30 years. In 2022, those under the age of 25 years made-up 77% of diagnoses in women and 39% of diagnoses in men.

Rectal gonorrhoea is a marker for condomless anal intercourse (CAI). In 2022 the number of men diagnosed with rectal gonorrhoea was the highest reported since 2013, with 1,378 positive cases nationally. However, as a proportion of all male gonorrhoea cases, rectal gonorrhoea accounted for 36.3% of total diagnosis, which is slightly below the 10-year average of 36.8%.

The overall picture is one of high and rising rates of gonorrhoea across Scotland. Public Health Scotland suggest that this was initially driven by diagnoses is in GBMSM. However, this will be partly due to this group being more likely to attend sexual health services, e.g. for HIV pre-exposure prophylaxis, and may lead to increased diagnosis rates within this group. Whilst the initial rise may have been driven by this cohort, more recent data suggest that rates of infection are rising both in heterosexual men and women. There is not currently any evidence of increased levels of antimicrobial resistance to account for the current picture. Instead, it is more likely that the rise in infections is due to a combination of increased testing (following recovery of testing programmes from the pandemic), as well as the diagnosis of cases that would otherwise have previously been identified during the pandemic. There is also likely to be a degree of asymptomatic spread from undiagnosed cases. Regardless, a combination of primary and secondary prevention initiatives are likely to be needed to mitigate the rise in infections, both nationally and locally. There is currently a national Incident Management Team (IMT) responsible for managing the current high levels of infection in Scotland, and public awareness campaigns have recently been completed at both a national and a local level. The Chief Medical Officer recently wrote to all health boards advising them to be prepared for an anticipated increase in testing. These recommendations, as well as any further measures arising from the IMT, will need to be implemented locally. This will be further explore in the "Recommendations" section.

Abortion

Epidemiological data on termination-of-pregnancy/abortion were obtained from TrakCare PMS, via Illuminate Tableau. Data were available on number of abortions per quarter, from Q1 of 2012 through to Q2 of 2023. These are demonstrated for the whole Grampian region in Figure 16 below. The trend in abortion rate over time is displayed with a red line.

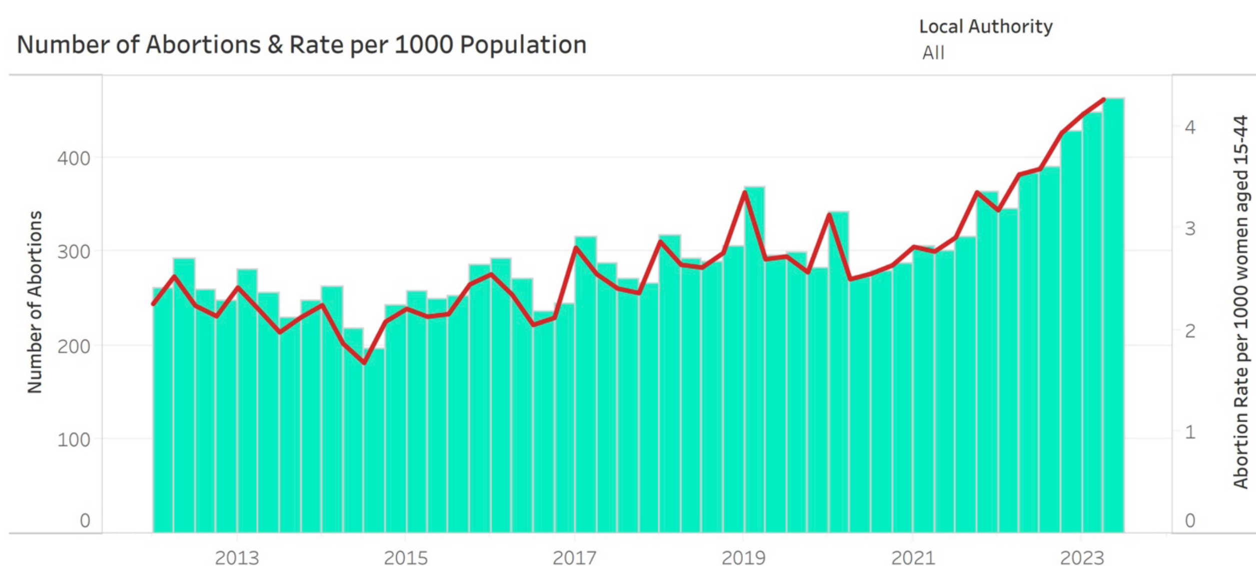


Figure 16: total number of abortions per quarter in Grampian, 2012-2023. Red line shows abortion rate (abortions per 1000 women aged 15-44 years)

As demonstrated previously in the review of service activity, there is a marked increase in both the number of abortions performed, and the rate of abortion across the Grampian area. This appears to begin in late 2020. The abortion rate for Grampian in the second quarter of 2020 was 2.50 abortions per 1000 women aged 15-44y; this had risen to 2.77 in the same quarter in 2021, 3.53 in 2022, and 4.27 in the same quarter of 2023. As seen in the service activity data, this represents an increase in abortion rate of 71% over a three-year period.

Possible hypotheses to explain this trend may include reduced use of LARC amongst women of childbearing age (either due to difficulties in access or reduced demand for these methods), trends towards the use of less-effective methods of contraception (such as fertility-tracking apps), or socioeconomic conditions disincentivising having larger families.

Data from 2019 onwards were also divided into the three local authority areas, to examine any trends or changes in abortion numbers or rates. These are represented in Figure 17 below. Aberdeen City consistently contributes the greatest proportion, compared to the other two local authorities; this is likely to be a combination of population size (when compared to Moray) and a difference in age demographics (when compared to Aberdeenshire).

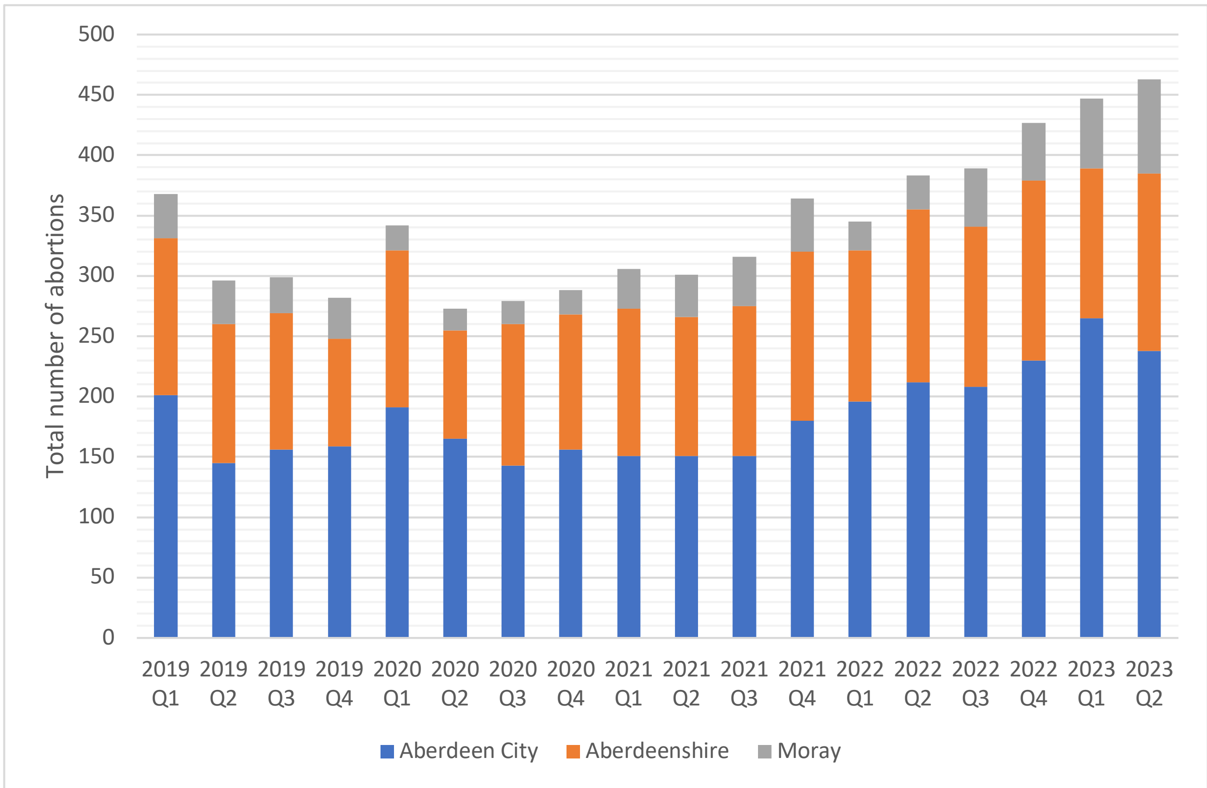


Figure 17: total number of abortions per quarter, divided by local authority area, 2019-2023.

To minimise the effects of these two factors, abortion rates per 1000 women aged 15 to 44 years were calculated for each local authority area from 2019 to present; this is shown in Figure 18 below. Again, abortion rate was shown to be higher consistently in Aberdeen City compared to the other two local authority areas. However, there has been a marked increase in the abortion rate in this age group in Moray, particularly over the past 18 months. The abortion rate has increased from 2.29 abortions per 1000 women in Q2 of 2019, to 4.93 abortions per 1000 women in Q2 of 2023. This rate has increased by 117% over a four-year period. The reason for this is currently unclear; there has been no significant change in population demographics (e.g. a large rise in women of childbearing age) noted, and no other sudden change in contraceptive or other services within the past 12 months. A rapid change in abortion rate in Moray may be reflective of small numbers of abortions overall (relative to Aberdeenshire and Aberdeen City), and may be a random fluctuation rather than a true trend. However, this apparent increase in rate has occurred in the context of increasing rates in all three local authority areas; this is a trend that should be monitored over the coming months to ascertain the extent of this effect, and its persistence.

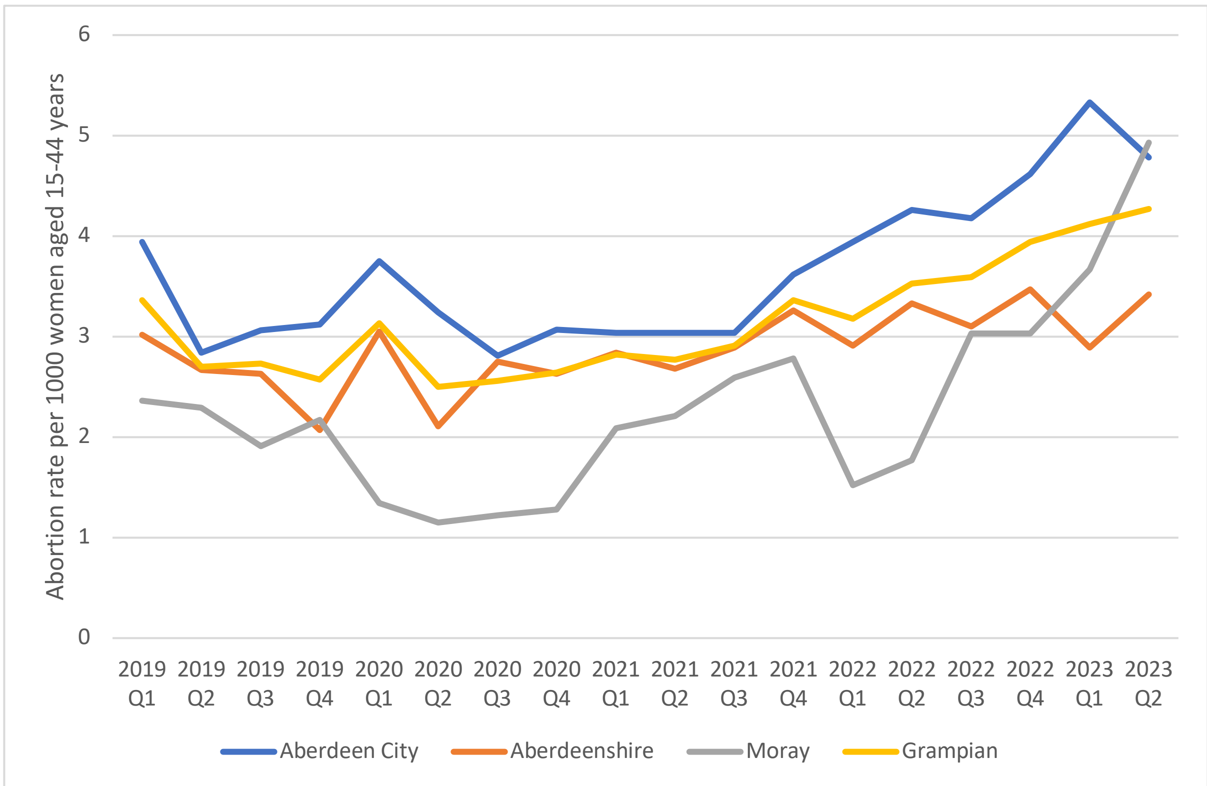


Figure 18: abortion rate per quarter, divided by local authority area, 2019-2023.

The abortion rate in Aberdeen City has also increased over the past three years, from 2.84 abortions per 1000 women in Q2 of 2019, to 4.78 abortions per 1000 women in Q2 of 2023. This represents an increase of 68% over the four-year period. The rate in Aberdeenshire has increased from 2.67 to 3.42 over the same time period, an increase of 28%.

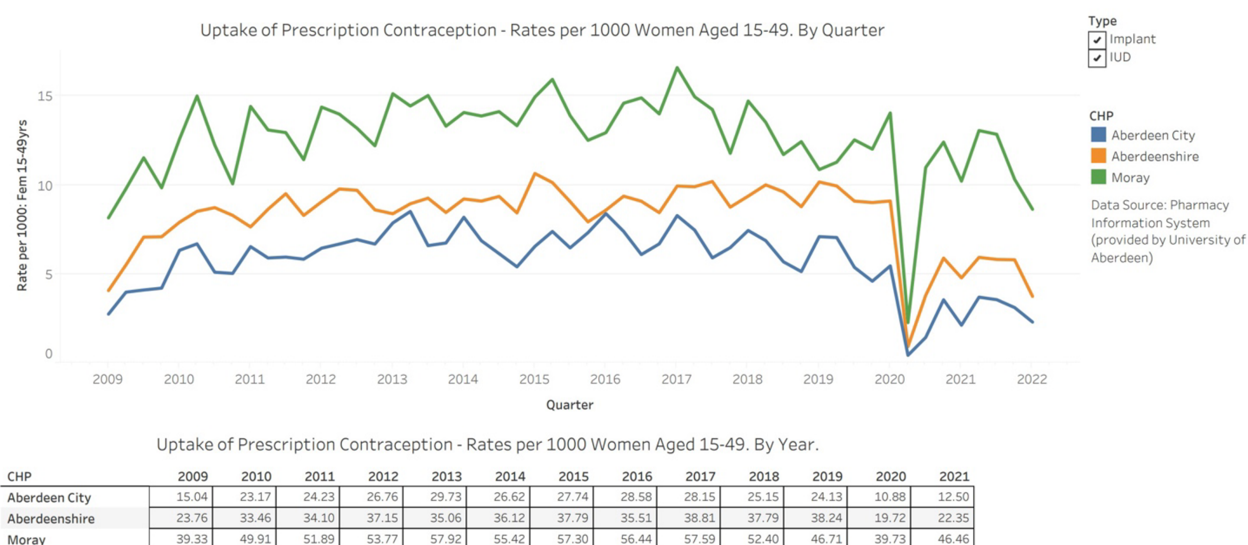
Overall, the numbers of abortions and the abortion rate are increasing across Grampian. These increases are seen to a varying degree over all three local authority areas. Aberdeen City continues to account for around half of the abortions performed across Grampian, with an increasing rate over recent years; however, the rapidly increasing rate seen in Moray will require further monitoring over the coming months.

LARC

Data on uptake of LARC were obtained from the Pharmacy Information System, via Illuminate Tableau. Quarterly rates of uptake were calculated for the three local authority areas, and are displayed below in Figure 19. These data are also displayed by year in the table, starting from 2009 until 2021. It should be noted that these data are based on prescriptions issued, which is being used as a proxy for uptake. There will be some women for whom a prescription is issue who then do not go on to use LARC; it is anticipated that these numbers are small. There will also be some women who will use these prescriptions for reasons other than contraception.

Across the study period, the rate of uptake is consistently highest in Moray, with rates lower in Aberdeenshire, and lowest in Aberdeen City. In 2021, the rate of uptake was 46.5 prescriptions per 1000 women aged 15-49 years in Moray, which was over double the rate in Aberdeenshire (22.4) and almost four times the rate in Aberdeen City (12.5).

Uptake rates in all three local authority areas fell dramatically in 2020, almost certainly due to the COVID-19 pandemic. There has been some recovery in rates since then, but no local authority area has returned to pre-pandemic levels.



Uptake of Prescription Contraception - Rates per 1000 Women Aged 15-49. By Year.

CHP	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Aberdeen City	15.04	23.17	24.23	26.76	29.73	26.62	27.74	28.58	28.15	25.15	24.13	10.88	12.50
Aberdeenshire	23.76	33.46	34.10	37.15	35.06	36.12	37.79	35.51	38.81	37.79	38.24	19.72	22.35
Moray	39.33	49.91	51.89	53.77	57.92	55.42	57.30	56.44	57.59	52.40	46.71	39.73	46.46

Figure 19: rate of uptake of LARC (IUD + implant) per quarter, divided by local authority area, 2009-2022.

These data demonstrate a fall in uptake of LARC over time, with marked geographical disparities. Whilst these may have been exacerbated by the COVID-19 pandemic, the trends appear to have begun before 2020, and have not recovered to pre-pandemic levels since. It is unclear from the data alone whether the fall in uptake is due to difficulties in access for women who would like to use LARC, or a gradual fall in demand for this service; both explanations may be contributing to this picture.

Corporate perspectives

An exercise was conducted between May and September 2023 to ascertain the views of professionals working within the Grampian Sexual Health Service. A mixed methodology was used, involving both a series of semi-structured interviews and a written questionnaire. Sampling was done via a combination of convenience and snowball sampling. Respondents included consultants in Sexual and Reproductive Health, specialty doctors, nurse managers, specialist nurses, sexual health advisors and healthcare support workers.

Responses were analysed, and are presented thematically here.

What do you see as the current strengths of NHS Grampian's sexual health services? In your opinion, what areas of good practice should the service make sure that it continues to provide?

Over half of respondents (55%) identified the current staff as a strength, particularly highlighting teamwork and their ability to work together. A third of respondents (36%) identified the service as being accessible to people who required the service. 27% of respondents felt that the current service was responsive to the changing needs and demands placed upon it. A similar number highlighted that they felt that the service was patient-centred.

> *"The strength of our service is our team and always knowing someone has your back if help is required, the team all work together in this manner to provide the very best care for our patients and each other." – Senior Health Care Support Worker*

Other areas of strength that were highlighted include the integrated nature of NHS Grampian's services (including sexual health, HIV, contraception, abortion care and some community gynaecology), the range of services provided, and the service's embrace of new technologies to deliver care.

What do you see as the current weaknesses of NHS Grampian's sexual health services? In your opinion, what areas of the service should be improved in order to better serve the population?

Respondents identified a number of areas which they felt were in need of improvement. By far the most common issue highlighted was the current imbalance between the demands placed upon the service, and the capacity of the service to respond to those demands. This was identified by 55% of respondents. The other main area for improvement that was

identified (36% of respondents) was the need for greater provision of services outwith the main Aberdeen Health Village. This would include an improvement in the provision of services both in the community and in Aberdeenshire and Moray. Further respondent felt that the service in Aberdeen was overly centralised, which may cause difficulties for some groups and sub-populations to access services.

"We provide a lot of services within sexual health with a static workforce. This can be overwhelming for staff and affect their health and well being. The demand for our services has increased but our workforce hasn't. Yet, we are still seeing huge numbers of patients. …. Nursing staff have limited time for CPD, which has a negative effect on development." – Staff Member

Some respondents (18%) highlighted the limited opening hours of the sexual health service at Aberdeen Health Village; they felt that the lack of opening either in the evening or at the weekend may reduce the accessibility for some service-users.

Respondents identified several other areas that they felt could be improved. These included the provision of online services (for example, the ability to order STI kits, order contraceptive pills, or to book appointments online), the lack of a pharmacy at Aberdeen Health Village, and concerns regarding staff retention in the local area.

In your opinion, are there any challenges or problems for the service that you are anticipating within the next three years? This could include, for example, demographic change, changes in service demand, or changes in staff availability.

The challenge that was most frequently identified was that of staffing. The most common concerns were the ability to replace staff who are due to retire (or leave the service for other reasons), and whether there is an adequate number of trainees coming through the system to replace them. This concern is in regards to medical staff as well as nursing and other allied health professionals. This concern was raised by 55% of the respondents.

"[There are] increasing workforce issues; a number of staff (particularly consultants) are not far off retirement age, with a lack of trainees to replace them." – Consultant in Sexual and Reproductive Health

The other main concern was the anticipated high levels of service demand; This may be either a further increase of demand from current activity, or may simply be the continuation of the current high levels of demand that the service is experiencing. It was suggested that increased demand may come from several sources; these include ongoing high levels of sexually-transmitted infections, high demand for abortion services, as well as the emergence of new

services such as injectable anti-retroviral drugs, and services for menopause. The changing balance of provision between primary care and specialised services may also help to explain an ongoing increase in demand; indeed, the increased reliance of the SHS for provision of LARCs was identified as a challenge by multiple staff members during the semi-structured interviews.

If you were in charge of the sexual health service, what three changes would you make to the service in order to better serve the population?

There were a wide range of possible improvements identified. The most frequently suggested change was in increase in outreach from the main Aberdeen Health Village site. This was identified by 45% of those responding.

It was also identified by several respondents that the key improvement for the service would be an increase in the number of trained staff. This includes an increase in staffing more generally (including administrative and support staff), as well as more specialised roles such as a HIV nurse-specialist. This may in turn have knock-on effects, allowing both new and existing staff to further improve and develop the services offered. Additionally, an increase in staffing (with a corresponding reduction in workload per clinician) would facilitate additional CPD and training for members of the team. It was identified that increasing the number of staff who were able to (and had time to) train other staff would also be welcome.

> *"[I would like to see an] increase of trained staff and more funding; [this] would allow more outreach and more time for training of those outwith the service, [and] widening of training/skillset of those already in the service." – Consultant in Sexual and Reproductive Health*

Respondents were also keen to develop more collaborative ways of working, including the training and upskilling of professionals outwith the specialist sexual health service. Suggestions included working more closely with primary care, pharmacies and social work. It was suggested that more general sexual health provision in primary care may allow the specialist service to concentrate on more complex cases and work with hard-to-reach and high-risk populations.

Several respondents identified an increase in the use of technology to deliver services. This included the use of automation to increase efficiency, an increase in self-service provision, more online services for STI kits and repeat medications, and the use of online media to communicate with service-users. Examples of this were electronic patient questionnaires prior to clinic appointments, the use of social media channels to inform the public, and web-chat facilities to offer advice and information.

55% of respondents suggested various methods of making the service more accessible. Suggestions included more clinic availability during evenings and weekends, more drop-in clinics, availability of STI testing kits in primary care, an increase in overall clinic hours, and more targeted services for specific populations (such as students, young people, GBMSM and LGBTQ+ community).

Key themes and summary
Staffing – Staffing was seen as both a strength of the service, as well as a potential vulnerability. Multiple respondents described the current members of staff as the service's strength, highlighting their teamwork, responsiveness and adaptability. Whilst there may be an element of responder bias (and respondents were not anonymised), those who took part in the interviews and questionnaire consistently expressed high regard for their colleagues. However, staffing was also serially expressed as a potential area for improvement; specifically, the need for more staff to meet current and future levels of demand. This includes both an increase of staff number overall, as well as an expansion of more specific roles (e.g. HIV specialist nurse, pharmacist for the Aberdeen Health Village, staff to provide training to other healthcare providers). Concerns were also expressed regarding the consequences of anticipated retirements in the coming years, both in terms of loss of institutional memory and possible difficulties in recruiting and retaining staff to replace them. Whilst some of these issues are outwith the control of NHS Grampian (e.g. training numbers in Sexual and Reproductive Health are decided at a national level), the recruitment and retention of medical, nursing and ancillary staff appear to be a key priority for the present and future. Levels of staffing interact with multiple other domains and issues identified here, including the ability to cope with increased service demand, the ability to improve training and development for professionals working across the health system, and the ability to adopt new practices and ways of working.
Demand – The increase in demand for sexual health services has been identified as a challenge for GSHS, both now and going forward. The source of increased demand is likely to be multifactorial; as demand appears to be increasing nationally, this is unlikely to be a Grampian-specific issue.

However, whilst there are likely to be upstream factors that are driving demand, there are multiple strategies to mitigate these that have been identified here; these include proactively engaging with hard-to-reach and high-risk populations, an increase in the use of technology, and a focus on health promotion and primary prevention. We may also anticipate further demand on the service as new treatments and priorities emerge, such as a focus on menopause or injectable ARVs.

Access –

Improving access for service-users was identified as a priority by the majority of respondents in this exercise. Outreach was frequently cited as a priority, in order to provide services to hard-to-reach populations.

Other initiatives that were suggested to improve access included an overall increase in clinic hours, clinic provision during evenings and weekends, and the re-introduction of drop-in clinics. There may also be a role for increasing the use of technology and online services, as well as decentralising sexual health care to other providers such as primary care and pharmacies.

Again, the service's ability to increase accessibility is likely to be dependent upon the number and skill-mix of staff.

Challenges identified

Long-acting reversible contraception

The current provision of long-acting reversible contraception has been identified as an area of challenge throughout this review. This was consistent through the preliminary scoping exercise, the review of current activity, the epidemiological assessment, as well as the corporate needs assessment exercise. Perceptions of LARC were also examined during the literature review, as well as in work that has previously been done within the sexual health service.

Scoping identified the concerns of multiple staff members that the service was experiencing an increase in demand for LARC services. This is consistent with the SHS activity data seen between mid-2020 and mid-2022, with a marked increase in appointments for LARC (peaking at 385 appointments in June 2022) following the pandemic.

This, however, contrasts with longer-term trends seen in data from the Pharmacy Information System (as displayed earlier in Figure 19). These data suggest that, aside from the recovery "bounce" after the initial stages of the COVID-19 pandemic, rates of LARC prescriptions overall have been steadily declining since 2017. Rates did not recover to pre-pandemic levels, and have continued to fall; this is consistent with the fall in LARC activity data seen in the past year, as shown in Figure 5.

Overall, the data are consistent with declining uptake of LARC since 2017. There appears to be a shift in LARC provision from primary care to the specialist service since the pandemic, leading to an increase in activity for the SHS; however, over the past 12 months, there has been a reduction in activity, likely due to a reduction in demand for LARC from service-users. In light of trends of termination-of-pregnancy, the reduced activity and prescription may be reflective of a reduction in demand, but not a true reduction in need. In this case, it would be more appropriate to try to encourage demand, rather than reduce the supply of this service.

Abortion

Abortion was also identified during scoping as an area of interest for this piece of work. The concern that was expressed during the scoping exercise was a possible lack of provision for women seeking this service in Moray. There has also been an increase in rates of abortion that has been observed nationally.

When considering the Grampian region as a whole, the number of appointments for abortion has increased by 71% between 2020 and 2023, from an average of 318 appointments per

month to an average of 554 appointments per month. This is also reflected in the epidemiological data displayed in figures 16 and 17.

Whilst there has been an increase in abortion across Grampian, the rate of increase has not been the same in all three local authority areas. The rate of abortion has increased much more rapidly in Moray than in either Aberdeenshire or Aberdeen City. The reasons for this are unclear, and this trend will need monitoring over the coming months to assess its veracity and persistence; however it does highlight the need for equitable access to abortion services for women living in Moray. When comparing the three local authority areas, those with the highest rate of abortion are those with the lowest rates of uptake of LARC, and vice versa. It is unclear whether this relationship is causal, correlation only, or confounded by other factors.

Overall, the increase in rates of abortion observed in Grampian are consistent with wider trends seen across Scotland. The sexual health service should consider whether this is a trend that is likely to be persistent (requiring an increase in supply to meet demand), or whether this phenomenon may be transient, and will reduce with an increased focus and uptake of LARC and other reliable methods of contraception. Either way, ensuring that women in all regions of Grampian have safe and equitable access to abortion should remain a high priority for the service.

Staffing

It has been identified that staffing is a major area of concern for those working within the service. Whilst there are no current staff vacancies, recruitment and retention of staff to NHS Grampian is felt to be difficult, and the sexual health service is no exception. This may be more pronounced in some regions of Grampian compared to others; for example recruitment of staff to Aberdeen City may be easier than recruitment to Moray. This has obvious implications for the service when staff either leave the service or retire, and may contribute to unequal care across the region.

An Increase in staff number would have several benefits. These include an increased ability to meet the needs of the population of Grampian, an increased ability to offer more specialised services (such as specialist HIV nursing), and would reduce workload pressure and burnout in current members of staff.

Given the difficulties in recruitment that have been experienced, a proactive approach may be needed to attracting new staff. This may include recruitment from healthcare students (both medical and nursing) at our local universities, as well as ensuring ample and high-quality post-graduate training opportunities. A focus on ongoing professional development for those working within the service is likely to benefit patients and also improve staff retention.

Geographical disparities

NHS Grampian covers three local authority areas; these areas are all markedly different in terms of ages, population density, rurality, healthcare infrastructure and distribution of at-risk populations. As such, it is entirely appropriate that the different regions may receive (or indeed need) different levels of service depending on their local population. However, these differences need to be carefully considered when planning services, to ensure that resources and services are targeted in such a way as to provide maximum benefit.

There are some disparities between the local authority areas in terms of activity/epidemiology; specifically, the rates of abortion and rates of uptake of LARC. Whilst focus on these areas is warranted at a health board level, we should ensure that efforts are also focussed at a more local level to better understand and address any disparities that we are observing.

Sexually-transmitted infections

Over half of patient contacts across the sexual health service are for the testing and/or treatment of sexually-transmitted infections. This represents over 30,000 appointments in the past 12 months. Epidemiological data have shown that there has been a rise in cases of both Chlamydia trachomatis and Neisseria gonorrhoeae since the pandemic. Whereas the increase in chlamydia has not yet reached pre pandemic levels (and appears to be stabilising), the rates of gonorrhoea infection have continued to rise far beyond what was previously observed in 2019.

Whilst these data are a local manifestation of a national phenomenon, actions to prevent further transmission will need to occur at a local level. When considering chlamydia infections, the rate of infections in Grampian residents under the age of 25 was 1,579 per 100,000 population; this was the second highest in Scotland. Whilst this may be partly explained by Grampian's high level of testing, the rate being in excess of those seen in other similar-sized health boards should be a cause for concern.

Regarding gonorrhoea, the ongoing rise in infections is a concern both locally and nationally. Whilst rates in Grampian are lower than in several comparably-sized health boards, the ongoing trajectory is of increasing infections. Nationally, the picture appears to be of an increasing rate in women and heterosexual men, with a reduction in infections in GBMSM. Targeting of these groups for education and prevention is likely to help with rates of gonorrhoea and other sexually-transmitted infections.

Service location

As mentioned earlier, NHS Grampian covers an area that is geographically large and diverse in terms of population. This necessitates a sexual health service that can cover both the range of people we serve, as well as distributing that service equitably across its geographic footprint. Whilst there may be a number of reasons as to why residents of different parts of Grampian may seek their sexual health care outwith their immediate local area, we must ensure that all areas are served appropriately.

Since the COVID pandemic, the sexual health service has continued to increase and improve the number of appointments offered virtually and via telephone. This has improved access for those in rural and remote areas; however, this technology may not be accessible to everyone, particularly those with reduced access to both devices (e.g. smartphones) and services (e.g. reliable broadband).

In the past 12 months, 95% of Grampian's face-to-face appointments were at Aberdeen Health Village; only 4% were in Moray (Elgin), with 1% of appointments in Aberdeenshire.

Outreach

Outreach was a frequently-identified theme during the corporate needs assessment. As mentioned earlier, Grampian covers a diverse population; however there are particular groups within this population who either require more healthcare from the SHS, or are hard-to-reach but in need of services.

Increasing and improving outreach from the sexual health service into the community may assist with several other of the problems identified during this needs assessment. For example, outreach to young people under the age of 25 may help with the rates of sexually transmitted infections within Grampian; this could also potentially reduce the rates of abortion, and increase the uptake of long acting reversible contraception. However, as previously noted this may be reliant on an appropriate number of staff to be able to deliver these services alongside services at Aberdeen Health Village. Outreach to some of these populations may also require more innovative use of technology, for example the use of social media to reach younger populations.

Recommendations

1) Long-acting reversible contraception

a) This assessment has observed the marked increase of LARC appointments and activity within the GSHS. The main driver of this is likely to be a transition of this service from primary care to secondary care. Steps should be taken to ensure that there is stable and reliable LARC provision for all women across Grampian, available at convenient locations regardless of local authority area. Further work should also examine a wider range of contraceptives, their uptake and trends thereof.

b) Whilst activity within the GSHS has increased, overall uptake appears to have decreased. This has correlated with a rise in demand for abortion services. Reduced uptake may be due to either a reduction in demand or difficulty in accessing LARC due to the transition away from primary care. There should be proactive monitoring of LARC uptake across the three local authority areas, to assess the persistence of these trends. Literature has suggested a change in patient attitudes towards hormonal contraception more generally, as well as patient perceptions regarding LARC with respect to longevity/reversibility/tolerability. We should prioritise patient information and education about contraceptive choices going forward. We should also give consideration to the best medium and messenger for any education campaign, aiming to reach the young adults for whom this service is likely to be the most beneficial.

2) Abortion

a) Rates of abortion have markedly increased, with an observed increase of 71% over the past three years. Whilst this is a trend that is also been observed nationally, the rate of increase has been different when compared between the three local authority areas, with the increase observed in Moray over the past year being particularly noteworthy. Rates of abortion will need to be monitored, with particularly close attention paid to Moray, over the coming months to assess the persistence of these trends. Further work should be considered to identify any associated or causal factors for these increases, particularly any which may be modifiable.

b) Regardless of the reasons behind the rising rate in abortion, the increased demand will lead to extra strain upon NHS Grampian's services. Steps should be taken to ensure the stability of the abortion service, and its ability to meet the needs of women in all local authority areas. Consideration should be given to where these services are geographically located, and ensuring the correct staff mix are available at the appropriate sites.

3) Sexually-transmitted infections

a) Diagnoses of chlamydia in Grampian, similar to Scotland more generally, had risen following the pandemic, but had not returned to pre-pandemic levels. This trend appears to be continuing, albeit at a relatively slow rate. Grampian is amongst the top four health boards for incident cases of chlamydia, which may be reflective of the

degree of testing in these large health boards (Grampian, Tayside, GG&C and Lothian) as well as the characteristically young populations in these health pools that contain large cities. However, this phenomenon cannot be explained entirely by population demographics; when calculating incidence rate based on the population of 15-24 year olds, Grampian comes out second only to Tayside. Accordingly, Grampian should focus on prevention, diagnosis, and treatment of chlamydia, particularly in the young adult populations in which it is most diagnoses are identified. As Aberdeen City accounts for around three-quarters of new diagnoses, this would be a sensible area in which to focus time and resources.

b) The incidence of gonorrhoea in Grampian has dramatically increased, and continues to do so. This is part of a wider trend seen across Scotland; indeed, national-level work is being coordinated by Public Health Scotland. NHS Grampian are, and will need to continue to, engage with PHS during this process, so that we are able to locally implement any nationally-coordinated recommendations. This is likely to include an increase in testing. High-risk populations, such as GBMSM, are likely to need targeted messaging. Again, a high proportion of incident cases are in Aberdeen City (>80%), and so a focus of time and resources here would be prudent. Indeed, promotion of safer sex, condom use etc. is likely to be beneficial for the reduction of both chlamydia and gonorrhoea. Additionally, the JCVI have issued recent guidance recommending the use of 4CmenB vaccines in GBMSM and other high-risk individuals for the protection against gonorrhoea. PHS have adopted this recommendation, and will work alongside the Scottish Government and local health boards to introduce this new vaccine programme. NHS Grampian's vaccination team will need to explore how this programme can be delivered, and implement it in due course.

c) There is currently no evidence nationally to suggest that the rise in incidence of gonorrhoea is due to either a particularly transmissible strain of the bacteria or an increase in antibiotic resistance. Therefore it is likely that the increase in incidence is predominantly due to an increase in high risk sexual behaviours. NHS Grampian should consider proactively monitoring for any other diseases or conditions which may be spread by the same behaviours; for example, HIV and other blood-borne viruses. As the ongoing rise in gonorrhoea nationally is thought to be in groups who are not normally considered to be high risk (women and heterosexual men), it should be considered whether we should be more proactively screening in these populations.

4) Service-user perspectives

a) Formal exercises of gathering independent service-user perspectives and feedback should be considered. This should be conducted to include as many different service-users as possible, and should aim to evaluate the degree to which the current service being provided is meeting their needs and expectations. Care should be taken to avoid responder bias from easy-to-reach populations.

Appendix 1: Glossary and abbreviations

BBV	Blood-borne virus
GBMSM	Gay, bisexual, and other men who have sex with men
GSHS	Grampian Sexual Health Service
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIS	Health Improvement Scotland
HIV	Human immunodeficiency virus
HNA	Health Needs Assessment
IUC	Intrauterine coil
JCVI	Joint Committee on Vaccination and Immunisation
LARC	Long-acting reversible contraception
LGBTQ+	Lesbian, gay, bisexual, trans, queer and others
MCN	Managed Care Network
PHS	Public Health Scotland
SHS	Sexual Health Service
STD	Sexually transmitted disease
STI	Sexually transmitted infection
TOP	Termination of pregnancy

Appendix 2: References

Aiken A et al (2021), *Effectiveness, safety and acceptability of no-test medical abortion provided via telemedicine: a national cohort study*, BJOG: An International Journal of Obstetrics & Gynaecology. 2021 Feb 18;128(9).

Bernard S (2023), *How sexual health services, and in particular long-acting reversible contraception (LARC) services, are organized and delivered in the UK (Scotland),* [Unpublished manuscript].

Gambir K et al (2020), *Effectiveness, safety and acceptability of medical abortion at home versus in the clinic: a systematic review and meta-analysis in response to COVID-19*. BMJ Global Health [Internet]. 2020 Dec 1;5(12):e003934

Glasier A et al (2008), *Attitudes of women in Scotland to contraception: a qualitative study to explore the acceptability of long-acting methods*, Journal of Family Planning and Reproductive Health Care. 2008 Oct 1;34(4):213–7

Health Improvement Scotland (2022), *Sexual Health Standards*, Health Improvement Scotland

McCance K et al (2014), *Midwives' experiences and views of giving postpartum contraceptive advice and providing long-acting reversible contraception: a qualitative study*, Journal of Family Planning and Reproductive Health Care [Internet]. 2014 Feb 5;40(3):177–83.

Moulton J et al (2022), *Co-design of a nurse-led model of care to increase access to medical abortion and contraception in rural and regional general practice: A protocol*, Australian Journal of Rural Health, 2022 Oct 20;30(6):876–83

Okpo E et al (2014) *"But you can't reverse a hysterectomy!" Perceptions of long acting reversible contraception (LARC) among young women aged 16–24 years: a qualitative study*, Public Health. 2014 Oct;128(10):934–9.

Public Health Scotland (2023), *Chlamydia trachomatis infection in Scotland 2013-2022*, Public Health Scotland.

Public Health Scotland (2023), *Gonorrhoea infection in Scotland 2013-2022*, Public Health Scotland.

Sjöström S et al (2016), *Medical Abortion Provided by Nurse-Midwives or Physicians in a High Resource Setting: A Cost-Effectiveness Analysis*, PLOS ONE. 2016 Jun 30;11(6):e0158645

Tomnay J et al (2018), *Providing accessible medical abortion services in a Victorian rural community: A description and audit of service delivery and contraception follow up*, Sexual & Reproductive Healthcare. 2018 Jun;16:175–80

Walker S et al (2016), *Predictors of non-use of intrauterine contraception among women aged 18–49 years in a general practice setting in the UK,* Open Access Journal of Contraception. 2016 Oct;Volume 7:155–60.

Appendix 3: Literature review methodology

Design

A systematic review approach was used under the guidance of the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) Checklist for the reporting of this review. Data sources and search strategy

A systematic search was conducted on five electronic databases (CINAHL, MEDLINE via OVID, Web of Science, Scopus, PubMed) between June and July 2023. A manual search of online databases was also carried out using Google and Google Scholar in addition to journals that produced important articles such as the British Medical Journal (BMJ). References of the chosen papers were also looked into to find any new research or reports that the first searches had missed (reference by reference). Between the concepts, similar keywords and vocabulary were joined using the Boolean terminology OR and AND. Some of the keywords included "models of contraception", "contraception AND abortion delivery models, "family planning provision AND models", "models AND family planning service delivery", "perception OR long acting reversible contraception AND UK", "termination of pregnancy OR delivery models".

Eligibility Criteria

To be included in the report, studies had to be: 1) published in English, 2) in full text format only, 3) studies on models of contraception and abortion service delivery, 4) on high income countries, 5) of any study design 6) studies of the perception of women to Long acting Reversible Contraception (LARCs) in the UK. The following criteria were used to remove studies from the review: 1) models of service delivery on other sexual health services, 2) duplicated publications.

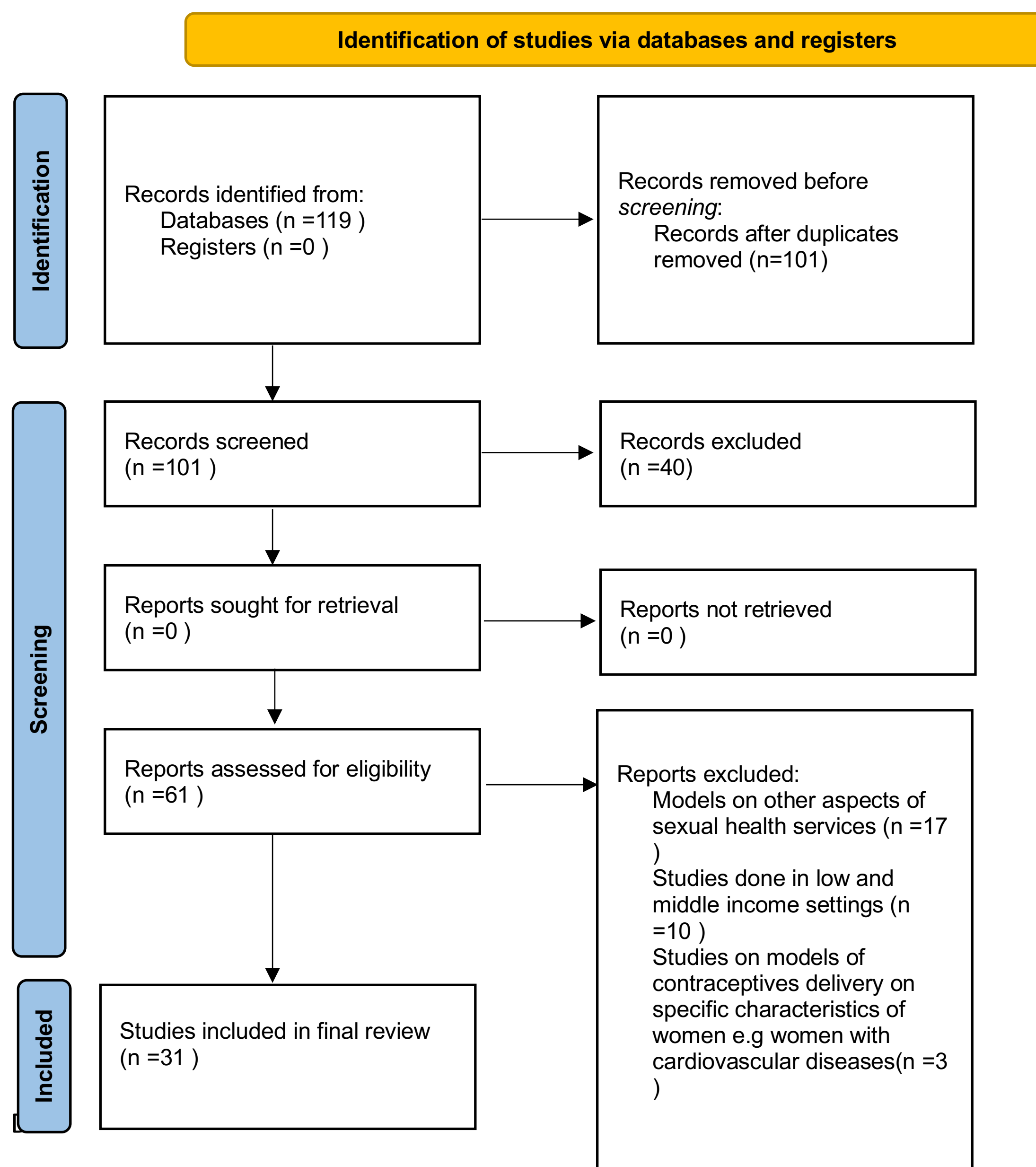
Data extraction and quality appraisal

To check whether articles matched the inclusion and exclusion criteria, the reviewer examined the titles and abstracts of retrieved papers. After screening, data was extracted from each of the studies using a standardised data extraction form. The following domains were on the standardised form: authors, year of publication, study design, study setting, participant characteristics, and outcome.

To assess the quality of included studies, the Cochrane *Risk of Bias tool 1* was used for the Randomized Control Trials (RCTs), while the other studies which included systematic reviews, and other types of study designs were evaluated using the *Critical Appraisal Skills Programme* checklist (CASP), JBI checklist and *Mixed Methods Appraisal Tool* (MMAT).

Data analysis and synthesis

The included papers were not suitable for meta-analysis due to their varied designs and methodologies, thus a narrative (or descriptive) synthesis of the results was conducted by comparing and contrasting data using themes.



Thanks and acknowledgements

DW would like to thank Lisa Allerton, Dr. Daniela Brawley, Dr. Caroline Bates, Sandy Reid and Karen Edwards for their time, expertise, insights and support.