CHLAMYDIA TESTING IN THE SOUTH WEST

Overview

The costs of delivering a chlamydia testing programme across the South West are high. This briefing summarises the recent trends in chlamydia testing and sets out the current issues associated with delivering a comprehensive testing programme. The costs, benefits and evidence for improving value for money are presented alongside recommendations for ensuring optimum delivery of chlamydia testing in the South West.

Background

Chlamydia is a common bacterial sexually transmitted infection which is frequently asymptomatic. Infection risk is higher for young people under the age of 25 and is associated with having a new sexual partner or having more than one sexual partner in the past year; inconsistent condom use; and social deprivation. If left untreated, chlamydia infection can result in serious long-term consequences, particularly for women where it might lead to Pelvic Inflammatory Disease (PID), ectopic pregnancy or infertility. It is estimated that a third of Tubal Factor Infertility (TFI) incidence is due to chlamydia infection. These consequences reduce quality of life among those affected and result in costs to the healthcare system.

The importance of controlling and preventing onward transmission of chlamydia infection has been recognised by the inclusion of the chlamydia detection rate as one of the health protection indicators in the Public Health Outcomes Framework (PHOF). Public Health England recommends that Local Authorities aim to achieve a chlamydia detection rate of at least 2,300 diagnoses per 100,000 population aged 15 to 24. Detection rates represent infections identified, thereby reducing risk of sequelae in those patients and interrupting transmission on to others. Therefore higher detection rates indicate increased control activity. It is expected that achievement of the target detection rate would further contribute to the control of chlamydia prevalence.

Although the chlamydia detection rate is likely to be an indicator of prevalence, it is not used as a prevalence rate as it may simply reflect increased coverage or targeting of services. The majority of chlamydia infections are asymptomatic and remain undetected. Therefore chlamydia diagnosis rates are not used to accurately estimate population prevalence. However at a national level, it is reported that prevalence rates for young women are likely to range from 3 to 5.3% and from 2.4 to 7.3% for young men.

1 2015 UK national guideline for the management of infection with Chlamydia trachomatis
www.bashh.org/documents/UK%20Chlamydia%20Guidelines%202015.pdf
Chlamydia Testing

Chlamydia testing can help prevent and control chlamydia through early detection and the treatment of infection, reducing onward transmission to sexual partners and the prevention of the consequences of untreated infection.

The National Chlamydia Screening Programme (NCSP) in England was established in 2003 and recommends that all sexually active men and women aged under 25 are tested for chlamydia annually or on change of sexual partner (whichever is more frequent). The programme advises that testing should be delivered opportunistically, by embedding it within existing services. Sexually active young adults should be offered a test free of charge when visiting their GP, community sexual and reproductive health services, pharmacies and specialist genitourinary medicine services. Additionally, testing may also be provided through outreach or via self-sampling kits ordered through the internet.

Testing coverage

The opportunistic approach to chlamydia testing has achieved high rates of coverage. More than 1.6 million chlamydia tests were performed in England during 2014 in young people aged 15 to 24. This accounts for over a third (35%) of sexually active young women and one in seven (14%) of young men being tested for chlamydia over the course of the year.

Location - Across the country there is great variation in chlamydia testing coverage, detection rates and the proportion testing positive. The percentage of young people tested for chlamydia ranges from 21% to 28% depending on the area of residence. Detection rates also vary from 1,660 per 100,000 to 2,288 per 100,000 for different parts of the country. Positivity however, does not vary significantly, ranging from 7.6 to 9.2%. It may therefore be deduced that the variation in detection rates is due either to the differing testing rates or that the programme is effectively identifying those at higher risk of chlamydia (Figure 1).

Figure 1 Chlamydia testing coverage, detection rates and proportion of positive tests among 15 to 24 year olds by testing venue and area for 2012 to 2014

Trends - Analysis of the trends during the three years from 2012 to 2014 shows a general decline in testing coverage, a small increase in positivity and a small decline in the detection rate. It is likely that this is a result of a combination of the following changes:

i. **Improvements in data quality** - There has been a reduction in double counting of tests due to data coding improvements by both providers and laboratories. Data for 2014 are therefore more representative of true chlamydia testing activity when compared to previous years

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ii. A true decline in testing coverage - The decline in coverage is mostly attributable to fewer tests in community venues which may be, in part, a result of the integration of sexual health services in a number of programme areas

iii. Targeted testing of populations at highest risk of infection - Sexual health services have focused testing efforts on sexual health services where positivity rates are highest

Gender - Chlamydia detection rates are approximately twice as high in females as in males across all areas of the country. This generally reflects higher testing rates in females.

Deprivation - There is also considerable geographic variation in detection rates. The higher chlamydia detection rates tend to be found in the most deprived areas and the lowest in the least deprived. Therefore the target of 2,300 per 100,000 is more often achieved in the most deprived areas.

Testing venue - The majority of chlamydia tests and diagnoses occur in genitourinary medicine (GUM) clinics. However, a large number of tests are also carried out in Sexual and Reproductive Health venues (SRH) and in primary care. Only small numbers of tests are taken through pharmacies or abortion venues (Table 1).

Table 1 Chlamydia tests, diagnoses and percentage of tests positive by testing venue, 15-24 year olds, 2014, England

<table>
<thead>
<tr>
<th>Testing venue</th>
<th>Tests</th>
<th>Diagnoses</th>
<th>Tests positive (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUM clinic</td>
<td>576,808</td>
<td>61,508</td>
<td>10.7</td>
</tr>
<tr>
<td>SRH venue</td>
<td>318,453</td>
<td>27,979</td>
<td>8.8</td>
</tr>
<tr>
<td>Primary care</td>
<td>295,447</td>
<td>17,334</td>
<td>5.9</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>16,723</td>
<td>1,382</td>
<td>8.3</td>
</tr>
<tr>
<td>Abortion venue</td>
<td>20,819</td>
<td>1,349</td>
<td>6.5</td>
</tr>
<tr>
<td>Other or unknown</td>
<td>435,760</td>
<td>28,441</td>
<td>6.5</td>
</tr>
<tr>
<td>Total</td>
<td>1,664,010</td>
<td>137,993</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Source: Public Health England

As might be expected, positivity rates are highest in GUM clinics, as patients attending these services are more likely to be diagnosed with sexually transmitted infections than those attending community based venues5 (Figure 2).

Figure 2 Chlamydia tests and diagnoses by testing venue, 15-24 year olds, 2014, England

Source: PHE - Data from routine GUM and integrated GUM/SRH clinic returns and community services

Since 2012, the proportion of tests from GUM clinics has increased. This is due to both the increased accuracy in coding of testing venue in routine reporting, as well as a reflection of a true increase in the number of tests reported from these clinics. As more tests have been taken in GUM clinics from 2012 to 2014, the overall testing reported from primary care has declined by 9% (Figure 3).

**Figure 3 Chlamydia tests by testing venue among 15-24 year olds, 2012-2014, England**

Source: Public Health England

**High risk groups** – High risk groups include disadvantaged young people, men who have sex with men (MSM) and some Black and Minority Ethnic (BME) communities.

There is evidence of a consistent association between socioeconomic disadvantage and higher risk of chlamydia infection. Chlamydia infection increases across multiple measures of disadvantage, including lower educational attainment, lower occupational class and living in deprived areas.

The number of diagnoses of chlamydia reported in MSM has risen sharply in recent years, increasing by 26% in the past year. During 2014, one in five (21%) of chlamydia diagnoses in men attending GUM and Sexual and Reproductive Health (SRH) clinics were among MSM.

There is evidence that people who test positive for chlamydia are at increased risk of a subsequent positive chlamydia test, compared to those who initially test negative. This may be due to inadequate partner management, continuing risk behaviour and on rare occasions, treatment failure.

The NCSP recommends that re-testing is built into the care pathway at the earliest possible stage, ideally at the first test. It is also recommended that effective partner notification pathways are established to enable testing and treatment of partners of patients testing positive.

**Testing in the South West**

In the South West, the number of chlamydia tests undertaken and the number of positive results recorded for each local authority area between October 2014 and September 2015 are presented below. This shows that a test positive rate of approximately 1 in 10 has been achieved in some areas, but that this falls to 1 in 15 for large parts of the South West (Table 2).

The target detection rate of 2,300 per 100,000 15 to 24 year olds is set by the Department of Health to encourage high volume testing and diagnoses. During 2014, only three local authorities in the South West met this chlamydia detection rate.

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8 CTAD, 2014
Table 2 Number of chlamydia tests, positive results, positive rates and detection rates per 100,000 target population in the South West

<table>
<thead>
<tr>
<th>Local Authority</th>
<th>Number of tests*</th>
<th>Number of test positives*</th>
<th>Test positive rate (%)*</th>
<th>Detection rate per 100,000**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torbay</td>
<td>3,330</td>
<td>363</td>
<td>10.9</td>
<td>2,598</td>
</tr>
<tr>
<td>Plymouth</td>
<td>10,818</td>
<td>1,071</td>
<td>9.9</td>
<td>2,718</td>
</tr>
<tr>
<td>Swindon</td>
<td>4,880</td>
<td>449</td>
<td>9.2</td>
<td>1,944</td>
</tr>
<tr>
<td>Wiltshire</td>
<td>9,837</td>
<td>846</td>
<td>8.6</td>
<td>1,684</td>
</tr>
<tr>
<td>Devon</td>
<td>18,061</td>
<td>1,481</td>
<td>8.2</td>
<td>1,733</td>
</tr>
<tr>
<td>Poole</td>
<td>3,805</td>
<td>312</td>
<td>8.2</td>
<td>2,188</td>
</tr>
<tr>
<td>Bournemouth</td>
<td>8,463</td>
<td>677</td>
<td>8.0</td>
<td>2,610</td>
</tr>
<tr>
<td>Cornwall</td>
<td>14,699</td>
<td>1,073</td>
<td>7.8</td>
<td>1,844</td>
</tr>
<tr>
<td>Somerset</td>
<td>11,797</td>
<td>873</td>
<td>7.4</td>
<td>&lt;1,530</td>
</tr>
<tr>
<td>Gloucestershire</td>
<td>16,370</td>
<td>1,195</td>
<td>7.3</td>
<td>1,645</td>
</tr>
<tr>
<td>Dorset</td>
<td>8,647</td>
<td>588</td>
<td>6.8</td>
<td>1,513</td>
</tr>
<tr>
<td>North Somerset</td>
<td>5,754</td>
<td>374</td>
<td>6.5</td>
<td>2,234</td>
</tr>
<tr>
<td>South Gloucestershire</td>
<td>7,968</td>
<td>502</td>
<td>6.3</td>
<td>1,601</td>
</tr>
<tr>
<td>Bath &amp; North East Somerset</td>
<td>5,950</td>
<td>357</td>
<td>6.0</td>
<td>1,377</td>
</tr>
<tr>
<td>Bristol</td>
<td>19,379</td>
<td>1,124</td>
<td>5.8</td>
<td>1,818</td>
</tr>
<tr>
<td>ENGLAND</td>
<td>1.6 million</td>
<td>137,993</td>
<td>8.6</td>
<td>2,012</td>
</tr>
</tbody>
</table>

* October 2014 – September 2015  ** During 2014
Source: CTAD, 2014

The Issue

The costs of delivering a comprehensive chlamydia testing programme are high. In 2009 it was estimated that chlamydia testing was costing an average of £45 per test\(^9\). However the individual cost of offering testing varies according to both the setting where the tests are offered and the local commissioning arrangements.

With increasing pressure on limited funds for sexual and reproductive health services, all programmes are under scrutiny. Ensuring programme efficacy and value for money is a priority. Some of the questions to address include:

- Are the sexual health commissioners investing funds effectively?
- What is the ideal balance of provision? Should the priority be to offer opportunistic testing through existing sexual health services or should more investment be focused on the promotion of self-testing kits ordered on-line?
- Could chlamydia testing be targeted more effectively, prioritising areas of social deprivation, partner notification and re-testing positives?

\(^9\) CTAD, 2014
\(^{10}\) NCSP annual report 2008-09 The bigger picture, 2009
Could commissioners be working collectively to achieve better financial arrangements with providers?

Findings

1. Summary of the research

Public Health England’s review of evidence for opportunistic chlamydia testing\(^ {11}\) refers to an economic evaluation conducted in 2003, prior to the introduction of the NCSP. This evaluation estimated that opportunistic testing of under 25 year old men and women every year would cost £27,269 for every Quality Adjusted Life Year (QALY) gained, thus taking into account both the quantity and quality of life saved through the intervention and comparing this to no testing for chlamydia and assuming that 10% of acute chlamydia infections progress to PID. This figure was considered cost-effective as it falls within the parameters set by the National Institute for Health and Care Excellence (NICE) of £20,000 to £30,000 per QALY gained.

Since the launch of the NCSP, work has been on-going to improve the assumptions used in cost-effectiveness studies at a national level, in order to provide updated economic evaluations of chlamydia testing for England. This work continues.

The NCSP team in Public Health England (PHE) has developed Chlamydia Care Pathway Tools that can be used to identify the areas of programme delivery where implementing change may lead to improved outcomes. Through workshops, the team help commissioners to understand the tools and identify where best to deploy limited resources to maximise the number of chlamydia diagnoses.

A review of the current research and recent publications on the cost-effectiveness of chlamydia testing provides some insight into what works and how the impact of the programme might be increased. The key points extracted from the papers\(^ {12} \) \(^ {13} \) \(^ {14} \) \(^ {15} \) \(^ {16} \) include:

- Chlamydia testing has been shown to have significant health benefit - chlamydia does cause ill health
- Value for money will improve if the cost of identifying a positive can be reduced
- Higher rates of testing were found to increase the overall cost-effectiveness
- Increasing detection:
  - The most effective time to detect chlamydia infection is following the change of sexual partner, not at an annual testing appointment. An annual chlamydia test is not a good preventer of PID
  - Retesting positives within three months is a low cost way to identify disease
  - Testing focussed on high prevalence areas (higher than 5%) through links with colleges, prisons, youth services and young workplaces would increase detection

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\(^ {12} \) Harder, E et al (2016) Risk Factors for Incident and Redetected Chlamydia Trachomatis Infection in Women, Denmark 2016. Sexually Transmitted Diseases 43: 2


An increased focus on the provision of testing in areas of deprivation, where chlamydia prevalence is higher and population groups are less likely to test frequently, would increase detection rates.

The number of sexual partners is the greatest indicator of risk of chlamydia infection, rather than age. Detection would therefore rise if testing was open to individuals over 24 years of age.

Ensuring high quality partner notification is likely to substantially improve detection rates and cost-effectiveness.

Regular use of audit by providers would help to identify opportunities for increasing test uptake.

- Reducing the cost of testing:
  - Increasing the availability of self-testing and use of on-line services would reduce the cost of testing. On-line services are particularly popular in the 21-30 year old age group, but may not be appropriate for everyone.
  - Utilising alternative venues such as pharmacies, colleges, sports clubs and GP surgeries, particularly those in areas of higher deprivation, for the distribution of testing packs could reduce overall costs.
  - Working collaboratively across providers and manufacturers could reduce the cost of testing and/or treatment.
  - Charging the individual a small cost or requesting a financial contribution for on-line tests, particularly for those aged over 24 years would reduce the central costs of providing tests.

2. Local audit

The models of delivery utilised by local authorities across the South West vary significantly. Some authorities predominantly offer chlamydia testing through primary care, overseen by a central office under an annual contract and through the use of incentive payments. Other authorities outsource their testing programme to private companies with a limited budget. Some local authorities work collectively; others work independently.

In addition, the cost pathways established by each local authority differ considerably. In some areas the cost of chlamydia testing is embedded within the cost of wider service provision. Some authorities include all elements of the testing pathway, including partner notification, within their budgeting; whilst others only consider the costs of the initial test. Extracting specific costs for chlamydia testing for the South West has ultimately not been viable.

Generalisation of financial information about testing and the costs of provision in different settings would potentially allow some crude analysis of costs and an assessment of value for money for chlamydia testing in the South West. It would be interesting to gain a rough view on the average cost per test and the cost per positive result for each setting.

However, it has not proved possible to collect, collate or approximate data on costs across the South West, given the huge variations in both delivery model and budget pathways. A cost-effectiveness analysis is therefore not practical on a South West basis.

3. Local analysis

Although collective analysis has not proved viable across all 15 local authorities, studies at a local level have been able to produce useful data and conclusions. In both North Somerset and South Gloucestershire, analyses of the chlamydia testing provision have been conducted. A summary of the analysis in North Somerset is included below (Case Study 1).
Case Study 1: Chlamydia and value for money in North Somerset

In December 2015 North Somerset Council (Public Health) completed a review of the value for money of providing chlamydia testing through primary care (GPs and pharmacies) and remotely (Preventex). Calculated costs were only those incurred by public health, costs to the wider health system were not estimated though impacts were considered in an options appraisal.

The cost of provision of chlamydia testing depends on local arrangements. North Somerset Council has an annual block contract with the Avon Chlamydia Screening Office (CSO). Contracts with GPs and pharmacies included incentive payments for each chlamydia test; at the time of the review around a third of GP-initiated tests and all pharmacy-initiated tests were managed by the CSO. An activity based contract was in place with Preventex with a defined allocated budget; once the budget was reached activity would be stopped.

The cost per test and cost per positive result was estimated for each route of provision based on: activity through and payments to the CSO; incentive payments to GPs and pharmacies; Preventex reported costs per test (plus CSO reported cost for follow up of positive results); and laboratory costs estimated at £10 per test.

High-level findings of the review included recognition that whilst a block contract is in place increasing the number of tests managed through the CSO (within current capacity) would improve the value for money of the block payment. Partner notification managed through the CSO is likely to be more cost-effective than management by GPs. GP and pharmacy provision was good value although costs depend on the level of incentives paid and the proportion of GP-initiated tests channelled through the CSO. Preventex was found to be relatively expensive, given the additional cost of follow up of positive results by the CSO.

Sexual health services across Bristol, North Somerset and South Gloucestershire are being re-commissioned for 2017/18, therefore interim recommendations for 2016/17 were made to: maintain the CSO contract and look for efficiencies of 7.5%; withdraw the remote service; maintain and monitor pharmacy activity with current incentive payments; maintain GP activity and use incentive payments to encourage greater use of the CSO for follow up of results. Implementation of these recommendations is predicted to lead to savings of around £17,000 in 2016/17.

It may be useful to conduct individual reviews of local chlamydia testing services, looking specifically at cost effectiveness, value for money and validity of the chosen model of provision.

Conclusions

- The National Chlamydia Screening Programme (NCSP) is not currently delivered as a screening programme, but a chlamydia testing programme.

- The chlamydia testing programme is delivered using a semi-targeted approach, focusing on sexually active 15 to 24 year olds. Taking a population based targeted approach would not necessarily result in a more effective programme. However effectiveness of the programme could be improved by targeting on high risk population groups, focusing on areas of high deprivation and prioritising routine retesting and partner notification. These changes would potentially reduce costs by both cutting the number of tests undertaken where risks are low, but also through increased early detection resulting in more effective, timely treatment.

- Full collaboration for the delivery of a chlamydia testing programme across the South West is not likely to be viable. It would require a huge undertaking that would cause great upheaval and massive change. Ultimately, the different processes and programmes currently in place may not prove compatible if alignment was attempted across the region.

17 Chlamydia Screening: A review of activity and value for money in North Somerset, December 2015
• However, collaboration across the South West may be possible for some elements of the chlamydia testing programme. This might include the collective commissioning and distribution of testing kits.

• A full cost-effectiveness analysis of the chlamydia testing programme has not been possible at a regional level as comparable data is unavailable and the explorative work would require significant additional costs. However, local analysis may prove useful in informing decisions about changes to the current delivery of local programmes. Initial research should ideally focus on the variation in cost and positivity by setting.

• It would be interesting to carry out further research across the South West looking at the varying models of delivery. Each programme and commissioner is currently following a different set of arrangements. It would be really useful to consider the differences and analyse how the different approaches are affecting outcomes, cost and value for money.

RECOMMENDATIONS

1. Improve effectiveness:

Based on initial findings from the research, it can be seen that chlamydia testing could be more effective by ensuring that there is a stronger focus on:

• encouraging repeat testing at the time of partner change
• maintaining good quality treatment and partner notification pathways
• encouraging retesting of those with a positive test result
• targeting high risk population groups and areas of high social deprivation
• expanding on-line testing
• improving the uptake of testing by young people through offering appropriate testing options
• utilising the PHE Chlamydia Care Pathway Tools to improve effective delivery

2. Integration:

By continuing to integrate chlamydia testing into broader health services for young adults, local authorities can ensure that testing remains widely available. There does not appear to be strong evidence to support a standalone programme of chlamydia testing with its associated, additional running costs. Integration will also help the development of positive relationships with services, enabling young people to develop and maintain good sexual health throughout their lives.

3. Working together:

It would be valuable to explore options for collective working. Where local authorities are working together, costs can be reduced. Collective working is likely to achieve better value through economies of scale or as a result of negotiating lower cost options with providers.

4. Further research at a local level:

Study of the available data at a regional level does not demonstrate a clear, single conclusion. It has not been possible to provide a definitive comment on the value for money achieved through the current provision of chlamydia testing in the South West. Generalisation is not viable across such a diverse range of provision. Analysis of local data would provide useful information about current arrangements and costs. It is therefore recommended that this analysis is carried out at a local level.