Screening experiences and the views of general practitioners and practice nurses towards the barriers and facilitators of proactive, Internet-based chlamydia screening

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Words: 4671 (excluding abstract, refs, tables etc.) – qualitative paper including quotations
Abstract

Background
Chlamydia trachomatis is a common bacterial sexually transmitted infection (STI), which disproportionately affects young people under 25 years. Commonly, more women are offered screening than men. This study obtained the views of general practitioners and practice nurses towards Internet-based screening and assessed levels of support for the development of proactive screening targeting young heterosexual men via the Internet.

Methods
In-depth, semi-structured telephone interviews with 10 general practitioners and 8 practice nurses, across Central Scotland. Topics covered: experience of screening heterosexual men for chlamydia, views on the use of the Internet as a way to reach young men for chlamydia screening, beliefs about the potential barriers and facilitators to Internet-based screening. Transcripts from audio recordings were analysed with Framework Analysis, using QSR NVivo10.

Results
Experiences of chlamydia screening were almost exclusively with women, driven by the nature of consultations and ease of raising sexual health issues with patients; few practice nurses reported seeing men during consultations. All participants spoke in favour of Internet-based screening for young men. Issues of the ease of access and convenience as well as anonymity and confidentiality were identified as being both potential barriers and facilitators to the success of an Internet approach to screening. Concerns over practical issues as well as those pertaining to gender and socio-cultural issues were raised.
Conclusions

An Internet-based approach to screening might not be the panacea if there is no accompanying effort to tackle wider social and cultural barriers, along with shifts in young people’s and health professionals’ attitudes towards screening. However, employing innovative approaches as part of a multi-faceted approach is required to ensuring effective interventions reach the policy agenda.
Background

Chlamydia, the most common bacterial sexually transmitted infection (STI) in the UK [1], disproportionately affects young people under 25 years. Prevalence in the general population is mostly similar for women and men [2]. Screening for chlamydia among the target population at risk of infection can lead to early detection, reduction in transmission and to a reduction in associated morbidities [3]. Thus, early identification and treatment of infections remains paramount. There are two screening approaches: proactive, or systematic, which use population registers to invite members for a test, and; opportunistic, which involves health professionals offering tests to patients attending health care or other defined settings for unrelated reasons [4]. Various countries have taken an opportunistic approach to control the population prevalence of chlamydia including England, which has a National Chlamydia Screening Programme (NCSP). A randomised controlled trial of opportunistic screening is underway in Australia, with results from the ACCEPt trial due in 2014 [5]. Norway is exploring and planning a proactive approach [6], and a recent trial conducted in three regions of the Netherlands (the Chlamydia Screening Implementation programme) [7], evaluated the effectiveness of systematic, yearly chlamydia screening. The Dutch trial found no impact on chlamydia positivity rates or on estimated population prevalence [7].

Whilst treating infections remains paramount, opportunistic approaches have largely failed to demonstrate sufficient coverage among the target population [8], have tended not to achieve sustained screening engagement over time or show effectiveness in reducing population prevalence [9]. It is also an approach which has thus far largely
failed to include men to the same extent as women: the NCSP in England reached
only 16% of young people aged 15-24 years (24% of women and only 8% of men) in
2007/08 [3], although some areas have since seen higher coverage. In Scotland, in
2010, 27% of all tests performed were on men [10]. Screening men is primary
prevention for women and could help normalise screening and reduce the
psychosocial stigma for women associated with submitting one sex to surveillance,
testing and treatment [11]. However, barriers to a proactive approach include: the
largely asymptomatic nature of the infection which provides no physical cue with
which to seek healthcare; and the poor willingness among young people to access
‘stigmatising’ GUM or other clinical settings [12]. There is a continued need to
evaluate different approaches to screening, paying attention to the involvement of
young adult men.

Online social media, such as social networking sites (e.g., Facebook), blogs and chat
rooms have become integral parts of adolescents' and young adults' lives. Interactive
computer-based interventions for sexual health promotion were assessed in a
systematic review and found to be effective tools for learning about sexual health, and
showed positive effects on self-efficacy, intention and sexual behaviour [13].
Computer-based technology has also been effective in increasing condom use for HIV
prevention [14]. Media such as the Internet offers exciting potential for sexual health
interventions, as they can be a low cost and flexible way to reach young people and
could provide the easy, convenient and confidential approach to screening that young
people report they want [12]. Young people hold favourable views towards the use of
technology for STI screening [15-17], want straightforward information [15],
authenticity of voice on websites [18] and to be treated like adults [17]. Postal testing
kits, obtained via the Internet are acceptable [19], but direct mailing of kits appear to perform better than test-request kits [20]. Internet-based approaches are also showing better screening uptake than clinic-based approaches among men [21]. The use of the Internet for chlamydia screening has the potential to ease pressure from time-limited staff, such as general practitioners (GPs) and practice nurses (PNs), and in contexts where there is the absence of a national programme or where there may be limited availability of screening outwith specialist sexual health services, the Internet could fill a gap to act as an adjunct to clinical services. Whilst there remain challenges in building a sufficiently robust evidence-base on which to devise screening policy [9], further research questions continue to be posed, including whether sustaining a certain level of uptake with repeat systematic screening could lead to a reduction in chlamydia prevalence [7].

The intent of this study was to gather evidence to inform the subsequent design of an Internet-based approach to chlamydia screening targeting young men (aged 16-24 years). Understanding the views of GPs and PNs to the potential use of registers to contact men for chlamydia screening is vital to the future design of a randomised controlled trial (RCT) involving patient lists. Thus, to aid the development of our intervention, we explored the barriers and facilitators to implementing an Internet chlamydia screening approach, including the acceptability of such an approach. In addition to seeking the views of young men, we also sought the views of health professionals. Elsewhere we report men’s views from fifteen focus groups (n=60) [17]; here we detail the views of the GPs and PNs.

**Methods**

**Design and setting**
Participants were selected purposefully, to include GPs and PNs working at practices in the most and least deprived areas across two regions across central Scotland, as well as practices with low and high percentages of young men (aged 15-24 years) registered with the practice. This was to obtain views from those who may have different perspectives due to practice-based issues (e.g., serving a largely elderly population may not incline staff towards sexual and reproductive health services, including chlamydia screening). We set out to conduct short but focused semi-structured telephone interviews in order to generate comprehensive explanations of the specific phenomena under consideration and include a plurality of voices and experiences. We aimed to recruit twenty GPs and PNs (10 of each). To reach GPs and PNs, we sent 241 letters outlining the study to practices across the two chosen regions. In the letter we stated: ‘We would appreciate your consideration of this invitation and will follow-up this letter with a telephone call.’ We then began to contact a purposive sample of these (high/low deprivation; high/low percentages of young men registered); we continued this process until we had conducted eighteen interviews and had reached data saturation. At saturation we ceased contacting practices so most practices were not contacted with a follow-up telephone call. As such, we do not have a full response rate for the 241 letters sent.

We assigned general practices with a deprivation score by using data provided online by Information Statistics Division (ISD) Scotland (www.isdscotland.org/GPpracs&pops) and referring to the Scottish Index of Multiple Deprivation (SIMD) quintiles, where 1 is the most deprived and 5 is the least deprived) to link postcode data with SIMD rank. The Scottish Government website provides an interactive map to identify the SIMD rank of small areas [22]. The 2012
SIMD combines 38 indicators across 7 domains, namely: income, employment, health, education, skills and training, housing, geographic access and crime; the overall index is a weighted sum of the seven domain scores. We also assigned practices with the percentage of men aged 15-24 years registered at the practice. We offered remuneration for participants’ time (£30 for GPs and £20 for PNs).

Data collection
Telephone interviews were designed to be brief, lasted between 15 and 35 minutes and focused on key areas, including: screening experience, views towards the use of the Internet as a way to reach young men for chlamydia screening, and identifying barriers and facilitators to an Internet-based screening approach. A semi-structured topic guide was designed to guide participants through these topic areas, with the use of prompts and probes particularly on the topic of barriers and facilitators.

Data analysis
The telephone interviews were audio recorded, transcribed verbatim and checked by KL. QSR Nvivo10 was used to facilitate analysis. Transcripts were read repeatedly by SM and a thematic coding framework was developed on a collaborative, iterative basis within the team (including SM, KL, LM); the Framework Approach was employed, where data are coded, indexed and charted systematically, then organised using a matrix or framework [23]. The team worked through the five key stages of Framework: familiarisation, identifying a thematic framework, indexing, charting, mapping and interpretation. Framework Analysis begins deductively from the study aims and objectives (generating prepositions), but is also inductive (using patterns and associations derived from observations) [24]. Constant comparison was carried out to
check for deviant cases as well as similarities, in an iterative process; we explored whether there were any differences in experience and views by deprivation and percentage of young men registered to the practice attributes, as well as by the gender of the GP (but not for PN as we were only able to interview female PNs) and between the GPs and PNs. There were few differences in views between GPs and PNs, and we outline them where there are, but more differences identified in relation to experiences.

Ethics

Ethical approval was obtained from West of Scotland Research Ethics Committee 1 (Ref: 11/AL/0398). Consent was obtained by participants being read the consent form over the telephone and verbally agreeing to each point. Participants were asked for this to be audio-recorded, so that a recorded record of the consent was obtained. A copy of the form was posted to the participants for reference. All participants agreed to the consent process and their interview being audio-recorded.

Illustrative quotes are used throughout indicating the participants’ category: GP for general practitioner; PN for Practice Nurse; and the gender, Glasgow or Edinburgh location and practice SIMD code (e.g., PN1, Female, Glasgow, SIMD 1).

Results

Participant and practice demographics
We conducted telephone interviews with 10 GPs and 8 PNs between February and May 2012. Table 1 shows the spread of practices from SIMD quintiles (1 being most deprived and 5 being least deprived) and the percentages of young men aged 15-24
years registered with the practice. Whilst we recruited GPs and PNs from practices across SIMD categories, and we were able to recruit even numbers of male and female GPs to the study, we were unsuccessful in recruiting any male PNs, despite purposefully seeking them though searching the websites of practices and attempting ‘snowballing’ techniques. Across the eighteen practices the percentage of young men registered with the practice were broadly similar, with the exception of a few, which had either a very low percentage (e.g., 6.5%) or in one case a very high percentage (42.9%) (see Table 1).

**Experiences of screening women and men for chlamydia**

General practitioners, and particularly the PNs, described their experiences of chlamydia screening as being almost exclusively with women, which reflects the national testing figures for Scotland showing 73% of tests conducted with women [10]. Interviewees perceived there to be a higher attendance at general practice by women compared to men, driven by contraception consultations, cervical smear tests (Pap tests) or breast screening, and this was cited regularly by both the GPs and PNs as underlying their perceived greater opportunity for, and thus experience of, opportunistic screening of women. Perceptions of low attendance by young men were cited by both GPs and PNs as a major reason for their lower experience of screening male patients for chlamydia. Practice Nurses, far more than the GPs, reported very few occasions of interacting with young men. The few occasions mentioned tended to be for specific clinic attendance, such as an asthma clinic, but such clinics were not consistently available across the practices represented by the participants as they depended on patient need across practices.

I think there’s definitely a difference in the amount of opportunistic screening that goes on because of the access of males coming to their doctors basically. (GP2, Male, SIMD5)
I suppose [pause] - I guess one of the reasons for the differences that we see more young female patients then we see young men, we have more interaction with them, they come in for their contraceptive pill and they generally consult more frequently. We don’t see that in many 20 year old men in and about the place so that would probably explain the difference in my testing rates between the two groups. (GP4, Male, SIMD5)

However, when interviewees were asked to describe the percentage of their practice list that were young men under 25 years, and to reflect on the frequency of the visits these young men may make over a 12 month period, it often prompted GPs to reassess their perceptions of men’s low attendance, whilst PNs continued to assert that they had few opportunities to interact with young men.

Although interviewees reported men’s attendance at general practice as a reason for lower screening among them, they also referred to workload and priorities relegateing screening to low on the agenda.

I think it’s just that there’s so much else going on in general practice at the moment that, you know, sort of screening the young male population just isn’t on the agenda. (GP8, Female, SIMD5)

I’d go out of my way to avoid randomly bringing up new things because we've got enough staff to deal with it and I'm always running 15 or 20 minutes late anyway. The fewer new unsolicited healthcare intervention the better [laughs] and we've got all the QOF [Quality Outcomes Framework] stuff to do. We're already bugging people enough…(GP4, Male, SIMD5)

… you might not think of ways to extend the consultation, you might just decide to meet the patient expectation and nothing more. (GP10, Male, SIMD2)

Experiences of screening for chlamydia were strongly linked to the nature of the patient-led consultation, with many believing it easier to raise issues of sexual health with patients when attending for related issues. There was a common belief from
both GPs and PNs that women are exposed more, or are used to, health-related messages pertaining to sexual and reproductive health as well as being more used to routine screening (e.g., cervical screening).

I think women are easier to talk to about things like that, especially younger women, and especially you’ve got them in for things like smears and stuff, you know, and sometimes when they come in for things like that they tend to open up a bit more about other things, especially to a woman who again they can maybe relate to being a bit like their mum, if you see what I mean! [laugh] (PN6, Female, SIMD5)

Whilst GPs described their reluctance to initiate conversations around sexual health with men, very few PNs offered such accounts. Descriptions of such encounters were often characterised as ‘difficult’, ‘awkward’ and ‘challenging’. As a consequence, any tests they conducted with men were largely driven by the men self-reporting symptoms, which would then lead to STI conversations and investigation.

It can be a bit awkward. It’s sort of how you gauge it. (GP6, Female, SIMD1)

R: I wouldn’t necessarily discuss sexual health [with men], in fact unless they brought the subject up I wouldn’t broach it to be honest.
I: Mm-hmm, mm-hmm. So what if they came in with some sort of sore knee or an issue like that?
R: No, it wouldn’t be appropriate, I don’t think. (PN5, Female, SIMD2)

Although GPs own embarrassment and discomfort was not always a key factor in failing to raise the issue of screening with men, those based at practices in areas of high deprivation were not confident that chlamydia was a high priority for their patients.

… most of the young men I see are not coming in for sore knees, they’re coming in for methadone prescriptions and often quite complicated consultations…(GP10, Male, SIMD2).
General Practitioners, in particular, spoke of being uneasy with ‘unsolicited health care intervention’ and with making health promotion ‘leaps’.

- it is part of ‘GP thing’ to respond to demand brought and to extend into health promotion is “always a bit of a leap for both the doctor and the patient”. (GP10, Male, SIMD2)

However, when probed, GPs admitted they asked unsolicited questions about smoking or alcohol, including to patients seeking advice for sports-related injuries. These ‘leaps’ were justified by GPs because they were part of the practices’ contractual issues and related to financial incentives. The fewer PNs who spoke about these issues were related to the infrequency with which they interacted with men in their practice.

Respondents spoke of chlamydia screening being higher in their practice when payments were offered but witnessing, and participating in, a subsequent reduced concern once there was no longer a financial incentive for the practice. One PN reflected on this payment period and suggested that in her practice there were so few positive infections identified that the £10 payment per screen was ‘quite a lot of money to be spent on health, to reassure somebody’ (PN3, Female, SIMD3).

**Views towards proactive, Internet-based screening**

No GP or PN dismissed this approach outright as unworkable or unrealistic. All spoke in favour of it, in general terms, but offered a variety of views towards the ways it could be successful and reach the populations for a high uptake, and the perceived challenges to its success. Views ranged from it being “wholly appropriate” and “entirely the way to reach” young men through to the still supportive, but tentative, “potentially quite a clever idea” and “worthwhile exploring”. The unanimous
support for the use of the Internet for screening was commonly borne of the belief that technologies fall within the domain of ‘youth’, and are thus entirely appropriate for this population.

I presume that like technology is maybe the right way forward with this. Because that’s, you never see a young person that does not have a mobile phone.  (PN8, Female, SIMD2)

Two GPs spoke of the reduction of hours for GPs if a nation-wide service with funding was introduced, leading to a favourable view towards an Internet-based approach.

…certainly if it [screening] was done at health board level, well I think all GPs would be happy with it (laughs) because it would be…yeah, out of their hands. (GP8, Female, SIMD5)

**Barriers and facilitators**

*Design and recruitment facilitators*

The facilitators of an Internet-based approach to screening young people for chlamydia identified by respondents focused on ease of access and convenience, as well as the importance of anonymity and confidentiality.

The easier it is for them, the better, probably. The more convenient it is for them, the better. (GP3, Female, SIMD5)

Almost every participant spoke of the anonymous or confidential nature of an Internet-based screening approach being vital if it is to appeal to young people. For PNs in particular, this was borne out of their reflections of the potential for no anonymity in GP attendance, in particular the potential to ‘bump into’ someone.
“I think they’re [young people] always concerned about the anonymity of things and GP practice, you go the doctors and you bump into your next door neighbour or your mother’s friend…” (PN8, Female, SIMD2)

Confidentiality issues were raised by around half of all participants in relation to the type of data that would be accessed from registers for this approach; it was acceptable for age and date of birth data to be accessed but not detailed medical records. Most made the point that registers are being used for screening programmes, such as cervical and bowel. Four GPs and two PNs pondered whether some people may get annoyed at receiving an unsolicited screening letter, which might have a knock-on effect to practices.

Six GPs and two PNs mentioned practical issues that would need to be considered for an Internet screening approach, including who sends screening invitation letters and the accuracy of address information for young people. One GP believed there would need to be a ‘very small step between the screening invitation and actually being able to do the test’ (GP9, Male, SIMD4).

Most respondents spoke with ease about targeting particular populations for health education or screening offers, often referring to examples within their own practice such as previous efforts to screen for chlamydia or to reach out to young smokers on their practice list. The approach of targeting particular sub-populations, based on age, was not questioned. Although one GP did question whether men may face scrutiny by partners relating to infidelity if there was a lack of understanding that all young men were being offered screening.

…if the young man lives with a partner, and if the partner sees ‘chlamydia screening’, she needs to be told that it’s purely screening, and not that her partner’s been cheating around, and someone has asked for the partner to be
tested, in case he’s got an infection because of his infidelity. (GP7, Male, SIMD1).

*Socio-cultural barriers*

Participants were often keen to stress that an Internet screening approach could be successful if young people considered testing as a normal thing to do. Half of all respondents believed that normalisation of testing could be assisted by a nation-wide marketing campaign to kick start it, but also the need for such a campaign to continue so as to help keep momentum by keeping the service in young people’s minds. For some, such a widespread awareness of the screening taking place for all age-eligible young people may lead to relationships not becoming jeopardised by the screening letter arriving in the post.

Respondents also stressed perceived barriers pertaining to gender-related issues, including perceptions among young people that chlamydia is a ‘woman’s disease’, associated with infertility and promiscuous women. Consequently, these respondents believed that such young people fear the stigma of attending for a STI test where they can be seen and identified as promiscuous. No respondent spoke about men in this way, but some did mention the embarrassment men may feel asking for a STI test. Support for the Internet approach therefore rested on the anonymity of the approach and non-clinic attendance. Young men were described as reluctant in general to discuss issues relating to their sexual health, although some went on to widen their thoughts on this to the issue of youth’s low perception of risk for STIs.

…it’s the ostrich sort of thing - let's not think about it. it'll not happen, sort of thing (PN8, Female, SIMD2).
Respondents also described women as more likely to be at ease with screening offers, given their experiences of cervical screening, but also with other regular medical intrusions in their lives due to contraception appointments. Reproductive health conversations were perceived to occur more often with women, and as such respondents questioned whether an approach that included men without an accompanying educational element might not ultimately reach men.

if you’ve got somebody who’s already got their awareness raised, and who’s thinking, “I probably ought to get this screening done, but I’m too embarrassed to go and talk to a GP about it.” If you’ve got somebody in that situation then, obviously, I think doing it on the Internet would be good. (GP10, Male, SIMD2)

**Discussion**

This study obtained the views of GPs and PNs in Scotland towards Internet-based screening and assessed levels of support for the development of proactive screening targeting young heterosexual men via the Internet. The limitations include the small sample size and no male practice nurse being included in our sample; data were gathered from short, focused telephone interviews, which limit the richness of the available descriptions. Nevertheless, themes reflect those identified by others, including GPs and PNs in other contexts [25].

Whilst all participants spoke in favour of Internet-based screening, in general terms, they offered a variety of views towards the ways it could be successful and reach the populations for a high uptake, as well as towards the perceived challenges to its success. Issues relating to ease of access and convenience as well as anonymity and confidentiality were identified by GPs and PNs as being both potential barriers and facilitators to the success of an Internet approach to screening young people for
chlamydia. Ensuring young people do not feel targeted by a screening offer was raised by study respondents, and also by many of the young men in the study, as we reported elsewhere [17]. Indeed, the issues raised by these health professionals were largely mirrored in the young men’s views towards Internet-based screening as a way to reach them: men wanted to be reassured that the approach would be easy, convenient and also confidential [17]; GPs and PNs recommended screening be easy and confidential. The findings reported here reiterate the importance of confidentiality and convenience to young people [12, 26, 27].

The combined data from our study with GPs and PNs as well as with young men [17] have identified barriers and facilitators that would either help or hinder an Internet screening approach. We have identified support for the approach from these health professionals if screening is offered in a particular way, including being backed by a campaign to raise awareness. The young men provided a list of key ‘ingredients’ that would encourage their engagement with Internet-based screening, including: use a serious not a jokey tone; convey information simply; have an authentic voice by avoiding adults masquerading as youth, and; avoid fear narratives [17]. Identifying design-related and other barriers facilitators, from the target group as well as the health professionals who could support it, has been an important first step towards developing an Internet screening intervention, and follows the guidance on developing complex interventions [28].

It seems likely that key challenges in moving forward with further work on the use of the Internet for chlamydia screening pertain to the overall effectiveness of chlamydia screening as well as wider social and cultural factors associated with young people’s
sexual behaviours. Concerns have been raised about the ability of screening to reach sufficient numbers of young people to reduce chlamydia prevalence and also for screening to interrupt subsequent sequelae, such as pelvic inflammatory disease [29]. The Dutch trial of a systematic approach to screening using the Internet, showed insufficient levels of uptake sustained over the three year screening period to reduce chlamydia prevalence [7]. Thus, reaching the target group, engaging them in screening and doing so repeatedly over time remains a key challenge. This is where the evidence of wider social and cultural barriers associated with young people’s sexual behaviours identifies issues that could continue to impede screening reach. A systematic review of qualitative literature on factors shaping young people’s behaviours found seven key themes across 268 studies, including gender stereotypes being crucial in determining social expectations, and social expectations hamper communication about sex [30].

Conclusions

Our findings suggest that more than just increasing access to testing and communicating the ease of testing is required if greater screening coverage among key groups is to be achieved. An Internet approach to screening may not be able to tackle all of these issues, if it is only focused on the delivery of a service; therefore, the limits of this as a screening approach must be acknowledged. Internet-based approaches are acceptable to young people and professionals [15-17], and are reaching men and those from low socio-economic areas [21]. However, this approach requires accompanying efforts to tackle wider social and cultural barriers. What is
required is to perhaps employ such approaches within a multi-faceted approach and ensuring effective interventions reach the policy agenda [31].

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

KL and LM designed the study. KL collected the data; SM conducted the detailed coding and analysis, with input from KL and LM. KL wrote a first draft of the manuscript, collated comments from LM, SM and Prof Paul Flowers, thereafter re-drafting the manuscript. All authors approved the final manuscript.

Acknowledgements

We are thankful to the general practitioners and practice nurses who very kindly gave us their time and views. We are thankful to our Advisory Group: Prof Paul Flowers (Glasgow Caledonian University); Dr Julia Bailey and Prof Graham Hart (UCL); Colin Anderson (NHS Lanarkshire). This study was funded by the Chief Scientist Office at the Scottish Government (CZG/2/515). Lisa McDaid and Susan Martin are funded by the UK Medical Research Council as part of the Sexual Health programme (MC_U130031238/MC_UU_12017/2) at the MRC/CSO Social and Public Health Sciences Unit, University of Glasgow, although Susan was employed by GCU during the coding and analysis period. Ethics approval was granted by West of Scotland Research Ethics Committee 1 (Ref: 11/AL/0398).
 References


22. [http://www.scotland.gov.uk/Topics/Statistics/SIMD]


## Tables

**Table 1: Participant and practice demographics**

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