

# How, why, for whom and in what context, do sexual health clinics provide an environment for safe and supported disclosure of sexual violence

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# BMJ Open How, why, for whom and in what context, do sexual health clinics provide an environment for safe and supported disclosure of sexual violence: protocol for a realist review

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## ABSTRACT

**Introduction** Supporting people subjected to sexual violence includes provision of sexual and reproductive healthcare. There is a need to ensure an environment for safe and supported disclosure of sexual violence in these clinical settings. The purpose of this research is to gain a deeper understanding of how, why, for whom and in what circumstances safe and supported disclosure occurs in sexual health services.

**Methods and analysis** To understand how safe and supported disclosure of sexual violence works within sexual health services a realist review will be undertaken with the following steps: (1) Focussing of the review including a scoping literature search and guidance from an advisory group. (2) Developing the initial programme theories and a search strategy using context-mechanism-outcome (CMO) configurations. (3) Selection, data extraction and appraisal based on relevance and rigour. (4) Data analysis and synthesis to further develop and refine programme theory, CMO configurations with consideration of middle-range and substantive theories.

**Data analysis** A realist logic of analysis will be used to align data from each phase of the review, with CMO configurations being developed. Programme theories will be sought from the review that can be further tested in the field.

**Ethics and dissemination** This study has been approved by the ethics committee at University of Birmingham, and has Health Research Authority approval. Findings will be disseminated through knowledge exchange with stakeholders, publications in peer-reviewed journals, conference presentations and formal and informal reports. In addition, as part of a doctoral study, the findings will be tested in multisite case studies.

**PROSPERO registration details** CRD4201912998. Dates of the planned realist review, from protocol design to completion, January 2019 to July 2020.

## INTRODUCTION

### What are the sexual and reproductive health consequences of sexual violence?

The association between sexual violence and poor sexual and reproductive health of individuals is known; links with unwanted

## Strengths and limitations of this study

- Proposes the use of realist approach to explore contextual factors and underpinning casual mechanisms for safe and supported disclosure of sexual violence in a healthcare setting.
- Will integrate a wide range of evidence to consider what works, how and for whom when disclosing sexual violence in sexual health services.
- Will integrate secondary data, from a wide range of sources of literature including academic and grey literature, and primary data in the form of key informant interviews.
- Will be guided by an advisory group where the programme theories will be developed and refined.
- The findings of the realist review will not be generalisable, although may be transferable, and therefore application of the findings to other settings should be considered carefully.

pregnancy, sexually transmitted infections (STIs), HIV/AIDS, hepatitis B, recurrent urinary tract infection, pelvic pain and pelvic inflammatory disease as well as genital injury and trauma are reported.<sup>1-7</sup> For example, a large prospective UK-based cohort study of adolescents treated after sexual assault, found the pregnancy rate at 4 months was high (4%) relative to population estimates for young women (2% in girls aged 15 to 17 years and <1% in those younger than 16 years) and the STI rate was higher than expected (12%, compared with population estimates for new STIs at 4%).<sup>8</sup>

However, the relationship between sexual violence and sexual and reproductive health consequences is not straightforward. For example, where higher rates of STIs are reported it is not clear whether they are directly related to the assault or more indirectly associated.



A Canadian team demonstrated an association between sexual assault as an adult and acquisition of a STI in the past year, however the survey of more than 35 000 participants was unable to tell whether the STI occurred as a consequence of the assault or whether the association was indirect, for example, the trauma of sexual assault has increased subsequent sexual risk taking, or whether STI acquisition was increased in this group independent of the sexual assault.<sup>2</sup>

The authors of this current review based in the UK, argue, irrespective of the reasons as to why poor sexual outcomes are higher in this group, a healthcare response is warranted. Indeed, sexual and reproductive health problems are the most frequently reported physical health concerns in those subjected to sexual violence.<sup>9</sup>

### Sexual healthcare services

It follows that services beneficial for those subjected to sexual violence will include pregnancy testing, pregnancy prevention (ie, emergency contraception), abortion services, STI testing and/or prophylaxis, treatment of injuries and psychosocial counselling. One online survey from the USA of 143 women identified prevention of medical and physical consequences as the main reasons to disclose sexual assault.<sup>10</sup> However, it is well recognised that many do not access this healthcare. In an US study looking at post-rape medical care of 445 women, only 93 (21% of victims) received medical attention.<sup>11</sup> The majority of those who did seek medical attention were concerned with STI acquisition and pregnancy.<sup>11</sup> An earlier study reported similar findings with just over a quarter of women who had experienced rape as an adult receiving medical care.<sup>12</sup> Here also they found the post-rape concerns of STIs, specifically HIV/AIDS acquisition, were identified on receipt of medical care.<sup>12</sup>

In the UK, sexual healthcare is delivered by primary care, third sector and community-based organisations as well as through integrated sexual health services. The latter, and where this review focusses, are expected to offer a full range of STI and blood borne virus testing, treatment and management and a full range of contraceptive provision, along with health promotion and prevention activity. Local data collection at one of the largest integrated sexual health services in Europe, covering a population of 1.3 million, found that one adult per day attended to seek help after sexual violence (Umbrella Sexual Health Service, Birmingham, UK; internal report 2019). A national service specification for integrated sexual health services recommends that all patients should be screened for sexual violence.<sup>13</sup> Additional guidance on sexual violence screening comes from BASHH (British Association of Sexual Health and HIV), the NHS (National Health Service) and Healthcare Improvement Scotland.<sup>14–16</sup> The guidelines and standards set out the expectations for sexual health service provision for those seeking care after sexual violence.

Individuals have further needs in addition to immediate sexual healthcare, and the sexual health sector can

act as an important referral point for other services, for example, for forensic medical examination, social welfare support, community mental health support and legal aid. All individuals should be provided with access to the criminal justice system and there will be those in whom timely referral to forensic services is warranted.<sup>17</sup> An important referral pathway, particularly for those who wish (or are unsure) to report to police, is for a sexual assault forensic examination. In the UK, Sexual Assault Referral Centres offer a range of services including forensic examinations that allows evidence to be stored and reporting to be considered at a later date.

A systematic review identified key themes regarded by patients as priorities for delivering a high-quality service after sexual violence as being patient focussed, trauma informed and empowering.<sup>18</sup> Underpinning this is the need for healthcare professionals to convey their belief in the patients' experience.<sup>19–22</sup>

### What are the issues around disclosure of sexual violence?

The process of disclosure itself is not proven to be helpful in reducing mental health sequelae after sexual violence; the lack of significant differences in poor mental health sequelae between the disclosure and non-disclosure groups in the study by Carretta *et al* suggests that rape trauma is present irrespective of disclosure;<sup>23</sup> but it may be that disclosure opens a gateway to further services and support.

While changes in societal norms have led to an increase in disclosing sexual violence, most of it remains hidden.<sup>24–27</sup> The latest Crime Survey for England and Wales shows that around five in six victims (83%) did not report their experiences to the police with annual figures for non-reported episodes around 160 000.<sup>28</sup> Many do not disclose because of stigma, victim-blaming, secrecy and self-silencing and self-blame.<sup>23 29</sup>

Despite recognising that sexual health services are selected by individuals as a place to disclose sexual violence and get help, it is not known what aspects of the sexual health service create a conducive environment for safe disclosure of sexual violence. With a wide range of people accessing this setting, for example, in respect of age, gender and ethnicity (the realist 'context'), the service may need to adapt its environment and how it works (the realist 'mechanism') if it is to meet the specific needs around safe disclosure (the realist 'outcome'). An example of the contextual diversity in relation to accessing appropriate sexual healthcare is demonstrated by Du Mont *et al* where they found women who were sexually assaulted by a current or former partner were less likely than those assaulted by another known assailant or stranger to have been administered emergency contraception ( $p < 0.001$ ) or prophylaxis for sexually transmitted infections ( $p < 0.001$ ), or counselled for the potential use of HIV post-exposure prophylaxis ( $p < 0.001$ ).<sup>30</sup>

This review will employ a realist approach<sup>31</sup> to understand how, why, for whom and in what context, sexual health clinics provide an environment, for safe and

supported disclosure of sexual violence. The authors are also aware that disclosure can have harmful psychological consequences, particularly when individuals are faced with negative responses.<sup>32</sup> Studies have reported an association between negative disclosure experiences and higher risk of onset of mental disorder, such as post-traumatic stress disorder.<sup>33 34</sup> If reactions to disclosure are critical in the recovery process,<sup>27</sup> it is important to consider what is meant by negative responses, and to consider how we create the space for 'safe' disclosures in health settings.

### Aims and objectives

The objectives are to:

1. Understand how and why any potentially relevant attributes of sexual health services optimise safe and supported disclosure of sexual violence for particular groups of adults in certain contexts.
2. Synthesise the findings from objective 1 into initial programme theories that can be tested in future case studies.

### Context of the review

The review is part of a larger project and forms the basis of doctoral work for RJC. The programme theories generated during the review process will be tested and refined during later stages of the PhD using a variety of research methods as part of a realist evaluation. The overall intention is to build a framework for sexual health services to use in order to maximise safe and supported disclosure for those who have experienced sexual violence.

## METHODS AND ANALYSIS

### Methodology

A realist approach is fitting for this complex area of healthcare and will allow for a deeper understanding of how safe and supported disclosure of sexual violence works within sexual health services.<sup>35 36</sup> Whereas traditional research modalities emphasise the usual cause-and-effect of a positivist paradigm, the realist approach goes beyond asking if the intervention works, or comparing one intervention to another, and instead sets out to understand why an intervention works, for whom it works and in what circumstances it works.<sup>31</sup> The realist approach will consider the way different contexts produce differing responses to the intervention.<sup>37</sup> The intervention in this case is sexual health service delivery and the desired outcome is safe and supported disclosure of sexual violence, although unintended outcomes will be examined. The authors are aware that harmful or unhelpful outcomes can occur in relation to disclosure and these will be reported where identified.

Pawson and Tilley (1997) developed the following formula as a way to represent how interventions work: Context (C) + Mechanism (M) = Outcome (O) (CMO).<sup>31</sup> The CMO is considered a heuristic; a method proposed to unravel the assumptions surrounding the theory (in realist terms and programme theory) of how the

### Box 1 A context-mechanism-outcome configuration related to sexual health clinics providing an environment for safe and supported disclosure of sexual violence

If healthcare professionals are trained in trauma-informed care ('context') they will recognise the importance of, and offer, patient choice ('resource of mechanism'), so that patients feel empowered ('response of mechanism') and become more likely to make a disclosure ('outcome').

intervention works given contextual influences and underlying mechanisms of action.

Mechanisms, in realist terms, are underlying causal processes. Pawson and Tilley construct programme mechanisms as comprising both 'reasoning and resources'.<sup>31</sup> Here, mechanisms seek to explain how and why people respond (also referred to as 'reasoning') to resources offered by sexual health services to produce the outcome of safe and supported disclosure. Mechanisms are not components of the sexual health service but are better conceptualised as responses that individuals have to resources within that service such as trust, engagement, motivation and confidence in response to an aspect of the service. The review will search for the real, underlying and probably invisible causes of how safe and supported disclosure is realised.<sup>38</sup> Box 1 provides an example of a CMO, depicting the resource and response of the realist mechanism.

The 'C' of CMO, contexts, are considered factors that make the mechanisms more or less likely to be triggered. In this review, the potential key contexts include participants' sexual identities, gender, immigration status, ethnicity and age, as well as aspects of the service such as healthcare professional attitudes and beliefs, as each is likely to influence an individual's response to engagement with sexual health services. As put during a critique of realist research, 'Context matters – a lot'.<sup>39</sup> Applied realism aims to move beyond identifying *which* context enables a mechanism to be triggered, and instead to 'explain(s) *why* the explanations are different in different contexts or for different subgroups'.<sup>38</sup> Westhorp encourages a deeper understanding of the way contexts work when facilitating the triggering of mechanisms. She argues there is an additional mechanism at work within the context itself, allowing the programme mechanism to fire (or constrain its firing).<sup>38</sup>

As summarised by Jagosh 'the advantage of the theory-driven approach (used in the realist review) is in addressing aspects of causation as this provides explanatory power about why a programme worked or failed given the resources offered through an intervention and the response to those resources'.<sup>37</sup> During this review, programme theories will be developed and underlying causal mechanisms identified as to how and why certain attributes of sexual health services optimise safe and supported disclosure of sexual violence.

While the findings from this realist review may not be generalisable as interventions work differently in different



contexts and through different mechanisms, the theory-based understandings about the influences of contexts on mechanism and outcomes will be transferable to different contexts.

### Patient and public involvement

Involvement in the review will take two main forms. First, participation in the advisory group involves patient advocates and other public stakeholders. This group advises on patient priorities and patient preferences on how best to support disclosure of sexual violence in healthcare settings. Second, patients will be recruited for informant interviews and will steer the project as they support or refute theory development and ensure the relevance and importance of findings.

### Current stage of the review work

Despite the iterative nature of realist reviews, it is possible to produce a protocol that reflects the planned review's intentions, the methods to be employed, the direction of work to date and the initial findings that form a guide for the next steps of the review. A reflective account will be maintained so that the sources of programme theories developed are transparent and the programme theories can be tracked back to sources.

An advisory group was created at the outset of the project, that includes the researcher, RJC, two academics (with interests in researching the area of sexual violence and abuse, vulnerable groups and critical realism), a healthcare professional working in a London-based sexual health service with a special interest in sexual violence, a manager and an advocate from in a third sector agency supporting adults and children of all ages and genders after sexual violence, and a patient advocate working in LGBTQ (lesbian, gay, bisexual, transgender and queer) sector. Engagement with the advisory group is ongoing as initial ideas and programme theories are discussed and refined drawing from their experience and expertise. Three initial CMO configurations were agreed from the findings of an initial literature scoping exercise, a discussion with the advisory group and a meeting with doctoral supervisors.

### Planned review strategy

The review protocol was registered on the PROSPERO database. The following proposed steps conform to the RAMESES (Realist And Meta-narrative Syntheses: Evolving Standards) standards of realist review:<sup>40</sup>

1. Focussing of the review.
2. Developing the initial programme theories and a search strategy using CMO configurations.
3. Selection, data extraction and appraisal based on relevance and rigour.
4. Data analysis and synthesis to further develop programme theory, context, intervention and mechanism configurations with consideration of middle-range and substantive theories.

### Focussing of the review

The focussing of the review is to develop initial realist programme theories that hypothesise whether or not, how and why, sexual health clinics provide an environment for safe and supported disclosure of sexual violence. It will theorise contextual influences and the underlying mechanisms of action that support this disclosure outcome. The underlying causal mechanisms will be considered from different viewpoints, with input from multiple stakeholders including service users, healthcare professionals and other support staff.

An initial scoping exercise was undertaken by RJC using database searches (see online supplementary file 1 for broad search terms). All titles were reviewed by RJC. During this exercise the reviewer sought to capture broad and recurring themes about disclosure of sexual violence in order to theorise potential CMO configurations. Sixty-three articles, more relevant to the topic area, were reviewed in more depth as they provided potential key realist contexts and mechanisms.

Examples of possible mechanisms identified during the scoping exercise included responses to the application of trauma-informed care. Trauma-informed care brings about a different approach to service users, for example, an awareness of the need for psychological safety during the consultation and when offering physical examinations, with patient choice being central in the health consultation.<sup>41–44</sup> Possible responses from individuals receiving this form of care are feelings of being understood and of feeling empowered. Wider contextual issues were also noted in the literature including stigma, victim-blaming and fear in relation to disclosure of sexual violence.<sup>45–48</sup> Additionally there were challenges faced by particular patient groups in accessing care beyond that of the fear and stigma itself. For example, men, older age groups, those with pre-existing mental health complaints and sexual violence occurring within intimate partner relationships were identified in the scoping exercise as groups experiencing additional barriers when considering disclosure of sexual violence.<sup>30 47 49–52</sup> Each of these may be important contexts during programme theory development.

### Developing the initial programme theories and search strategy using CMO configurations

Findings from the scoping exercise were discussed with the advisory group. Themes were prioritised with what were felt to be important contexts and potential mechanisms for addressing the review question; what are the key underpinning mechanisms, in differing contexts, leading to safe and supported disclosure of sexual violence? The initial programme theories (IPTs) resulting from the scoping review and advisory group meeting are expressed initially using the CMO configuration (see [box 2](#)). The advisory group also discussed the desired outcome and the importance of recognising that disclosure is not always beneficial for individuals, particularly if healthcare

## Box 2 CMO frameworks

*Level of individual:* Service users' backgrounds (eg, differences in age/gender/sexuality/disability/ethnicity) (context) create differing responses to aspects of the sexual health service, which in turn contribute or constrain a response (mechanism), thereby modifying the disclosure (outcome).

*Service level:* Those subjected to sexual violence, attending a sexual health service where a trauma informed approach is promoted within the service (context), will identify the service as responsive to their needs (mechanisms) resulting in safe and supported disclosure (outcome).

*Service and community level:* Sexual health services cognisant of social influences (eg, stigma/victim-blaming/cultural norms) and social movements (eg, #MeToo) (context) and that create environments sensitive to these social factors, either to counteract or to promote these wider social factors (mechanism) will result in safe and supported disclosure of those attending (outcome).

providers are unaware of the potential harm that can occur during the disclosure process.

Using these CMO frameworks, an iterative searching scheme with inclusion and exclusion criteria was devised (table 1) and are planned for the following databases: AMED (Allied and Complementary Medicine), BNI (British Nursing Index), CINAHL (Cumulative Index of Nursing and Allied Health Literature), Cochrane database, Embase, HMIC (Health Management Information Consortium), MEDLINE, PsycINFO and PubMed. Citation tracking will be used in SSCI (Social Sciences Citation Index) via the Web of Science, Scopus and Google Scholar, and reference list screening of included studies. This iterative component is integral to the realist review.

Inclusion and exclusion criteria provide a searching framework but unlike traditional systematic with rigid criteria, a broader range of evidence will be considered if relevant to develop or refine IPTs. Additional, separate searches may be conducted to identify literature relating to particular mechanisms.

Around four to six key informant interviews (KII) are planned. Individuals, including service users who have experienced sexual violence, healthcare professionals and third sector professionals with relevant expertise, will provide a source of primary data contributing to theory building. In addition KII, will serve as a check of the relevance of the theories already proposed.

### Selection, data extraction and appraisal

A realist review uses iterative, purposive sampling from a wide range of evidence to develop, refine, confirm and refute theories about how and why an intervention works, for whom and in what circumstance.<sup>53</sup> Therefore the searches will include sources from a range of fields so that learning from other settings can be incorporated into the review and contribute to greater understanding of potential contexts and mechanisms.<sup>54</sup> For example, one CMO identified healthcare staff trained in trauma-informed as an important context, with the potential to

**Table 1** Search criteria

	Inclusion
<b>Context</b>	Adults (aged 18 years and over); subjected to sexual violence and abuse; social contexts that may impact interventions or service provision (eg, stigma/victim-blaming/cultural norms) and movements (eg, #MeToo). Settings to include sexual and reproductive healthcare settings.
<b>Mechanism (resource and response)</b>	Different service provisions, for example, trauma informed care, routine enquiry, training and education, use of technology in this setting, social media and online publicity for the sexual health service. Creating responsive service, building trust, and so on.
<b>Outcome</b>	Disclosure, safe disclosure, supported disclosure; unintended outcome: re-traumatisation and victim-blaming.
	<b>Exclusion</b>
	We plan to exclude the following contexts (with justification in brackets): studies focussed on adults disclosing child sexual abuse, or intimate partner violence where sexual violence is not specified. Studies prior to 2010 not initially included (justification: transfer of public health, including sexual health commissioning in UK to local government in 2013, and growth of movements such as #MeToo in social media since this time). Non-OECD (Organisation for Economic Cooperation and Development) countries, and non-healthcare settings (justification: significant contextual differences).



trigger causal mechanisms. The authors plan to employ searches that include the concept of trauma-informed care beyond that found in sexual health setting. This will include searches from other specialist domains such as from mental health and substance abuse practice and research.

A clear audit trail of the source of included pieces of evidence will be maintained. A grey literature search will include relevant policy documents. In addition, forward and backward citation tracking of key papers will be used together with hand searching of relevant journals. Any key papers already known to the authors and identified through initial scoping exercises will also be eligible for inclusion, as well as any recommended by members of the advisory group.

At this stage the inclusion and exclusion criteria are guided by the focus of the review (see [table 1](#)), and the articles will be screened by title and abstract by RJC. A 10% random sample will be checked by CB-J and disagreements resolved with JDCR until consensus is achieved. The full texts will then be obtained and screened by RJC with a 10% sample checked by CB-J and again disagreements resolved by JDCR.

Inclusion and exclusion decisions for full texts will be based on relevance and rigour in keeping with realist review methods as described in the RAMESES publication standards: realist syntheses.<sup>55</sup>

- ▶ *Relevance*- whether it can contribute to theory building and/or testing; and
- ▶ *Rigour* - whether the methods used to generate the relevant data are credible and trustworthy.

This pragmatic approach judges the quality of the data and its sources by evaluating trustworthiness, plausibility and coherence.<sup>56</sup> Judgements on each study will be recorded in a data extraction table. Furthermore, limitations of studies will be recorded when decisions are being made as to the 'weight' of studies in influencing the generation and refinement of the initial programme theories. Searching will continue until sufficient data are found ('theoretical saturation') so that the initial programme theories are sufficiently coherent and plausible. This will involve agreement from the literature findings as well as from key informant interviews and the advisory group.<sup>55</sup>

The full texts of all relevant documents will be imported into NVivo (a qualitative data analysis software tool). A core set of descriptors for each study will be recorded (author, title, year, country), type of data (primary evidence and study type, review, opinion piece), patient group, health setting, intervention description and outcomes. Data will be coded as context, mechanism or outcome. In addition, data will be recorded as containing evidence for the generation of IPT, for supporting or contradicting the IPT and evidence that provides explanatory reasoning that contributes to the theory of how the intervention works.

### Analysis and synthesis to further develop programme theory, and context, intervention and mechanism configurations

As Wong *et al* states, the basic analytical task in a realist review is to find and align the evidence to demonstrate that particular mechanisms generate particular outcomes and to demonstrate which aspects of context matter.<sup>40</sup>

Therefore, at this stage, the analysis will work to refine or generate new context-mechanism-outcome configurations to explain whether and to what degree, mechanisms are activated within a particular context to produce the outcome of safe and supported disclosure. Patterns of demi-regularity (semi-predictable patterns) across differing but related contexts and research fields will be considered.<sup>57</sup> During this stage of analysis, the CMO findings will be synthesised back into the initial programme theories, and the IPTs refined as appropriate.

Future advisory group meetings are planned to ensure IPTs continue to be viewed as important and relevant. The advisory group will help prioritise the explanatory accounts, and if these programme theories are felt to be described in insufficient detail by the literature identified in the initial searches, supplementary targeted searches of the academic and grey literature and additional key informant interviews will be performed. Additionally, input from the doctoral supervisors will include verification of the data and their agreement with the IPTs.

Middle-range theories will be considered; these are the theories that '...involve abstraction, ...but they are close enough to observed data to be incorporated in propositions that permit empirical testing.'<sup>58</sup> The final task will involve drawing on substantive theory to help further identify mechanisms and features of context, and in order to make sense of the pattern of findings. Possible relevant substantive theories include candidacy theory and social cognitive theory.<sup>59 60</sup> Other theories used in papers identified during the review will be considered, as well as further searching for theories with good explanatory fit by the authors if a gap still exists.<sup>61</sup>

### ETHICS AND DISSEMINATION

As key informant interviews are planned ethical approval was sought and obtained (Health Research Authority obtained, REC reference 19/WM/0297 IRAS project ID 266583). Informed consent will be obtained for all interviews. Support for both participants and the interviewer is available and safeguards during the interview itself are agreed. RJC will perform all the interviews and is experienced in working with those subjected to sexual violence.

The review will be published in a peer-reviewed journal and the authors will make the findings available to relevant interested bodies including third sector organisations. The findings will be relevant for policy, decision makers and clinicians working in healthcare, particularly sexual health; the findings are also expected to be transferable to other healthcare settings. In addition, the findings from the review will be of use to other researchers and academics in the field of violence and abuse, and



can be used as a basis for further work. Finally, the review findings will be used for the next stage of the doctoral project and the theories about why, how and for whom this service works for disclosure of sexual violence will be 'tested' within two sexual health services in England. The development of coherent and plausible theoretical explanations of how, why and for whom sexual health services provide a safe and supportive environment for disclosure, will be invaluable for service user and professional alike.

**Contributors** All authors contributed to the conceptualisation of the review. RJC wrote the first draft. CB-J, JDCR and IM critically reviewed it and provided comments to improve the manuscript. All authors have read and approved the final manuscript.

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**Competing interests** JDCR reports personal fees from GSK Pharma, Hologic Diagnostics, Mycovia and Janssen Pharma as well as ownership of shares in GSK Pharma and AstraZeneca Pharma; and is author of the UK and European Guidelines on Pelvic Inflammatory Disease; is a Member of the European Sexually Transmitted Infections Guidelines Editorial Board; is a Member of the National Institute for Health Research Funding Committee (Health Technology Assessment programme). He is an NIHR Journals Editor and associate editor of Sexually Transmitted Infections journal. He is an officer of International Union against Sexually Transmitted Infections (treasurer), and a charity trustee of the Sexually Transmitted Infections Research Foundation.

**Patient and public involvement** Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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