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**One to one interventions to
reduce the transmission of
sexually transmitted infections
(STIs) including HIV, and to
reduce the rate of under 18
conceptions, especially among
vulnerable and at risk groups**

NICE public health intervention guidance

One to one interventions to reduce the transmission of sexually transmitted infections (STIs) including HIV, and to reduce the rate of under 18 conceptions, especially among vulnerable and at risk groups.

Ordering information

You can download the following documents from www.nice.org.uk/PHI003

- The NICE guidance (this document) which includes all the recommendations, details of how they were developed and evidence statements.
- A quick reference guide for professionals and the public.
- Supporting documents, including evidence reviews and an economic analysis.

For printed copies of the quick reference guide, phone the NHS Response Line on 0870 1555 455 and quote N1186.

This guidance represents the views of the Institute and was arrived at after careful consideration of the evidence available. Those working in the NHS, local authorities and the wider public, voluntary and community sectors should take it into account when carrying out their professional, managerial or voluntary duties.

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Foreword

The Department of Health asked the National Institute for Health and Clinical Excellence (NICE or the Institute) to produce public health guidance on interventions to reduce the transmission of chlamydia (including screening) and other sexually transmitted infections (STIs) (including HIV) and to reduce the rate of under 18 conceptions, especially among vulnerable and at risk groups. This guidance focuses on one to one interventions to prevent STIs and under 18 conceptions.

The guidance is for NHS and non-NHS professionals who have a direct or indirect role in, or responsibility for, sexual health services. This includes those working in local authorities and the education, community, voluntary and private sectors.

The Public Health Interventions Advisory Committee (PHIAC) has considered the reviews of the evidence, an economic appraisal, stakeholder comments and the results of fieldwork in developing these recommendations.

Details of PHIAC membership are given in appendix C. The methods used to develop the guidance are summarised in appendix D. Supporting documents used in the preparation of this document are listed in appendix E. Full details of the evidence collated, including fieldwork data and activities and stakeholder comments, are available on the NICE website, along with a list of the stakeholders involved and the Institute's supporting process and methods manuals. The website address is: www.nice.org.uk

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1 Recommendations

This document constitutes the Institute's formal guidance on one to one interventions to prevent sexually transmitted infections (STIs) and under 18 conceptions. The recommendations in this section are presented without any reference to evidence statements. Appendix A repeats the recommendations and lists their linked evidence statements.

Recommendation 1

Who is the target population?

Key groups at risk of STIs including:

- men who have sex with men
- people who have come from or who have visited areas of high HIV prevalence.

Behaviours that increase the risk of STIs include:

- misuse of alcohol and/or substances
- early onset of sexual activity
- unprotected sex and frequent change of and/or multiple sexual partners.

Who should take action?

Health professionals working in:

- general practice
- genito-urinary medicine (GUM)
- community health services (including community contraceptive services)
- voluntary and community organisations
- school clinics.

What action should they take?

- Identify individuals at high risk of STIs using their sexual history.
Opportunities for risk assessment may arise during consultations on contraception, pregnancy or abortion, and when carrying out a cervical

smear test, offering an STI test or providing travel immunisation. Risk assessment could also be carried out during routine care or when a new patient registers.

- Have one to one structured discussions with individuals at high risk of STIs (if trained in sexual health), or arrange for these discussions to take place with a trained practitioner.

Recommendation 2

Who is the target population?

Key groups at risk of STIs including:

- men who have sex with men
- people who have come from or who have visited areas of high HIV prevalence.

Behaviours that increase the risk of STIs include:

- misuse of alcohol and/or substances
- early onset of sexual activity
- unprotected sex and frequent change of and/or multiple sexual partners.

Who should take action?

Health professionals trained in sexual health who work in:

- general practice
- GUM
- community health services (including community contraceptive services)
- voluntary and community organisations
- school clinics.

What action should they take?

- Have one to one structured discussions with individuals at high risk of STIs. The discussions should be structured on the basis of behaviour change theories. They should address factors that can help reduce risk-taking and

improve self-efficacy and motivation. Ideally, each session should last at least 15–20 minutes. The number of sessions will depend on individual need.

- For details of a range of behaviour change theories see ‘Predicting health behaviour’ (Conner and Norman 2005).

Recommendation 3

Who is the target population?

Patients with an STI

Who should take action?

- Health professionals working in general practice, GUM and community health services (including community contraceptive services), voluntary and community organisations and school clinics. (However, they may need to refer the patient to a specialist.)
- Specialists with responsibility for helping to contact, test and treat partners of patients with an STI (partner notification). They may be sexual health advisers, general practitioners (GPs) or practice nurses providing enhanced sexual health services, chlamydia screening coordinators or GUM clinicians.

What action should they take?

- Help patients with an STI to get their partners tested and treated (partner notification), when necessary. This support should be tailored to meet the patient’s individual needs.
- If necessary, refer patients to a specialist with responsibility for partner notification. (Partner notification may be undertaken by the health professional or by the patient.)
- Provide the patient and their partners with infection-specific information, including advice about possible re-infection. For chlamydia infection, also consider providing a home sampling kit.

Recommendation 4

Who is the target population?

Population served by a PCT

Who should take action?

PCT commissioners

What action should they take?

- Ensure that sexual health services, including contraceptive and abortion services, are in place to meet local needs. All services should include arrangements for the notification, testing, treatment and follow-up of partners of people who have an STI (partner notification).
- Define the role and responsibility of each service in relation to partner notification (including referral pathways).
- Ensure staff are trained.
- Ensure there is an audit and monitoring framework in place.

Recommendation 5

Who is the target population?

Vulnerable young people aged under 18. This may include young people:

- from disadvantaged backgrounds
- who are in – or leaving – care
- who have low educational attainment.

For a more detailed definition of vulnerable young people see Department for Education and Skills (2006) 'Teenage pregnancy: accelerating the strategy to 2010'.

Who should take action?

- GPs, nurses and other clinicians working in healthcare settings such as primary care, community contraceptive services, antenatal and postnatal

care, abortion and GUM services, drug/alcohol misuse and youth clinics, and pharmacies.

- GPs, nurses and other clinicians working in non-healthcare settings such as schools and other education and outreach centres.

What action should they take?

- Where appropriate, provide one to one sexual health advice on:
 - how to prevent and/or get tested for STIs and how to prevent unwanted pregnancies
 - all methods of reversible contraception, including long-acting reversible contraception (LARC) (in line with NICE clinical guideline 30)
 - how to get and use emergency contraception
 - other reproductive issues and concerns.
- Provide supporting information on the above in an appropriate format.

Recommendation 6

Who is the target population?

Vulnerable young women aged under 18 who are pregnant or who are already mothers. This may include young women:

- from disadvantaged backgrounds
- who are in – or leaving – care
- who have low educational attainment.

For a more detailed definition of vulnerable young people see Department for Education and Skills (2006) 'Teenage pregnancy: accelerating the strategy to 2010'.

Who should take action?

Midwives and health visitors who provide antenatal, postnatal and child development services

What action should they take?

- Regularly visit vulnerable women aged under 18 who are pregnant or who are already mothers.
- Discuss with them and their partner (where appropriate) how to prevent or get tested for STIs and how to prevent unwanted pregnancies. The discussion should cover:
 - all methods of reversible contraception, including LARC (in line with NICE clinical guideline 30), and how to get and use emergency contraception
 - health promotion advice, in line with NICE guidance on postnatal care (NICE clinical guideline 37)
 - opportunities for returning to education, training and employment in the future.
- Provide supporting information in an appropriate format.
- Where appropriate, refer the young woman to the relevant agencies, including services concerned with reintegration into education and work.

2 Public health need and practice

Sexually transmitted infections

Sexual health in the UK has deteriorated over the last 12 years, with large increases in many STIs. The diagnosis of chlamydia in GUM clinics has increased by over 300% (from 32,288 in 1995 to 104,155 in 2004), and gonorrhoea by over 200% (from 10,580 in 1995 to 22,335 in 2004) (HPA 2005). In addition, the incidence of HIV has increased more than threefold, from 2500 cases diagnosed in 1995 to just over 7000 in 2005 (HPA 2006a).

Overall, the number of STIs and other conditions diagnosed in GUM clinics in the UK increased by 3% between 2004–2005 (from 751,282 to 790,387) (HPA 2006b).

Some of this rise may be due to the greater availability and increased sensitivity of tests and to increased awareness of the services available. It may also reflect significant changes in people's knowledge, attitudes and patterns of sexual behaviour. The second 'National survey of sexual attitudes and lifestyles' (NATSAL 2000) provides the most recent data on sexual behaviour in Britain. Since 1990, first intercourse is taking place at a younger age, a greater proportion of people have multiple partners, and a greater proportion of men report having had a same sex partner (Johnson et al. 2001).

Risky sexual behaviour may be influenced by a number of factors:

- low self-esteem
- lack of skills (for example, in using condoms)
- lack of negotiation skills (for example, to say 'no' to sex without condoms)
- lack of knowledge about the risks of different sexual behaviours
- availability of resources, such as condoms or sexual health services
- peer pressure
- attitudes (and prejudices) of society which may affect access to services.

(Ellis et al. 2003)

Under 18 conceptions

England's under 18 and under 16 conception rates have fallen by 11.1% and 15.2% respectively since the introduction of the 'Teenage pregnancy strategy' in 1998. Rates are now at their lowest level for 20 years (TPU 2006).

However, the UK still has the highest rate of teenage pregnancy in western Europe. In 2004, there were 39,545 under 18 conceptions in England and 41% ended in abortion. In the same year, there were 7179 under 16 conceptions and 57.6% ended in abortion.

Inequalities

Sexual health problems disproportionately affect those experiencing poverty and social exclusion. Individuals and groups who find it most difficult to access

services include asylum seekers and refugees, sex workers and their clients, those who are homeless and young people in – or leaving – care. The highest burden is borne by men who have sex with men, some black and minority ethnic groups and young people.

For some young people, becoming a parent is a positive choice. However, teenage pregnancy is often associated with poor health and social outcomes for both the mother and child. Young mothers are more likely to suffer postnatal depression and less likely to complete their education. Children born to teenage parents are less likely to be breastfed, more likely to live in poverty and more likely to become teenage parents themselves (Botting et al. 1998).

The 'Teenage pregnancy strategy' has highlighted the following risk factors which increase the likelihood of teenage pregnancy.

- Risky behaviours. These include:
 - early onset of sexual activity
 - poor contraceptive use
 - a mental health problem, a conduct disorder and/or involvement in crime
 - alcohol and substance misuse
 - already a teenage mother or had an abortion.

- Education-related factors:
 - low education attainment or no qualifications
 - disengagement from school.

- Family/background:
 - living in care
 - daughter of a teenage mother
 - daughter of a mother who has low educational aspirations for them
 - belonging to a particular ethnic group (in the 2001 census, 'mixed white', 'black Caribbean', 'other black' and 'white British' were over-represented among teenage mothers).

(DfES 2006)

The risk of an STI or an unintended pregnancy is associated with:

- high numbers of partners
- high rate of partner change
- unsafe sexual activity such as unprotected sex.

Sexual health targets

The government set out a number of sexual health targets in the public health white paper 'Choosing health' (DH 2004). These form part of a public service agreement (PSA) with the Department of Health (DH) and include:

- a reduction in the under 18 conception rate by 50% by 2010, as part of a broader strategy to improve sexual health
- all patients contacting GUM clinics to be offered an appointment within 48 hours by 2008
- a decrease in the rate of new diagnoses of gonorrhoea
- an increase in the percentage of people aged 15–24 accepting chlamydia screening by 2007.

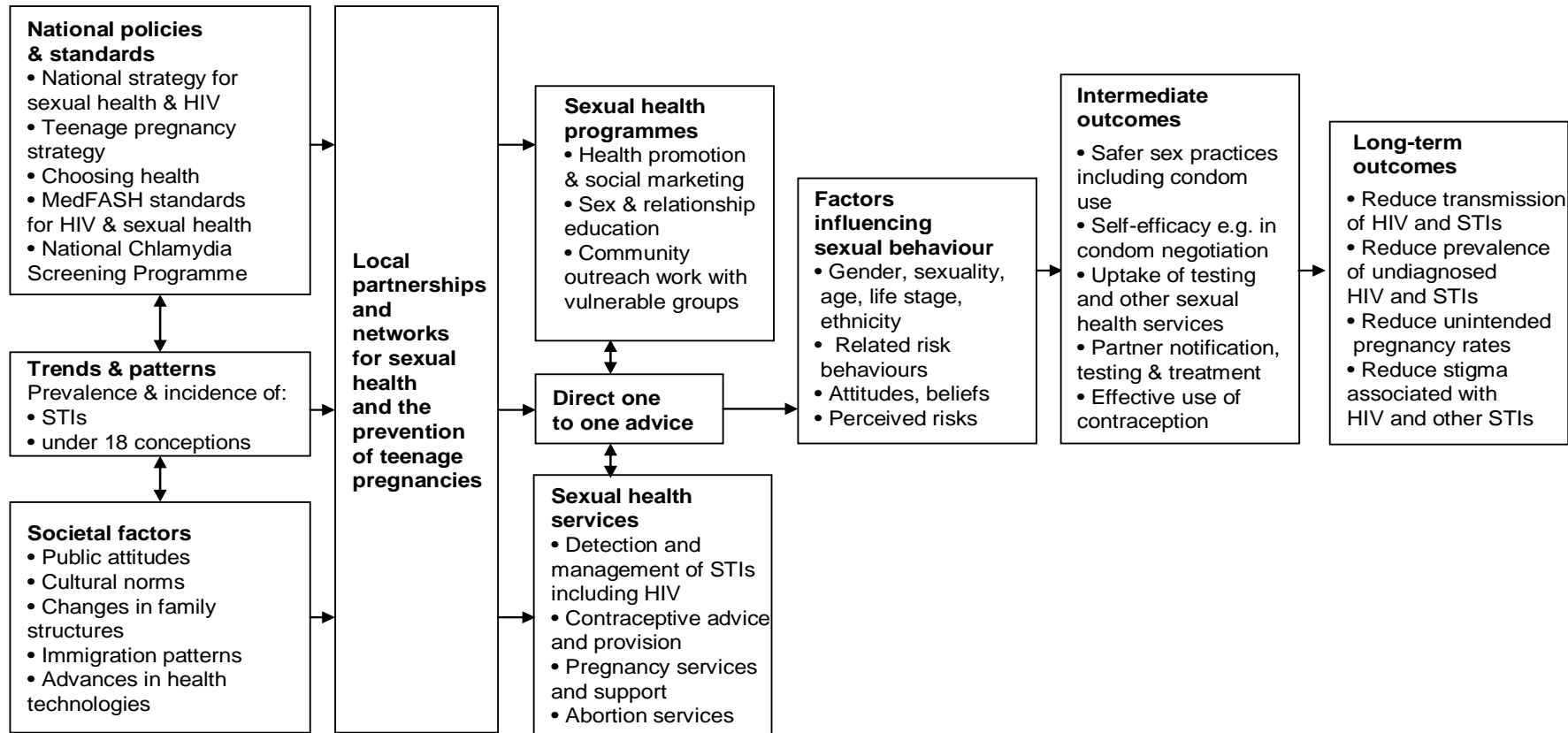
Reducing the under 18 conception rate is a joint PSA for the DH and the Department for Education and Skills (DfES 2004). It is also a national PSA for local government.

Practice

Figure 1 below provides a framework to use for sexual health services. It describes the context and desired outcomes. It also highlights the range of interventions (including those carried out on a one to one basis) which are designed to promote sexual health and deliver sexual health services.

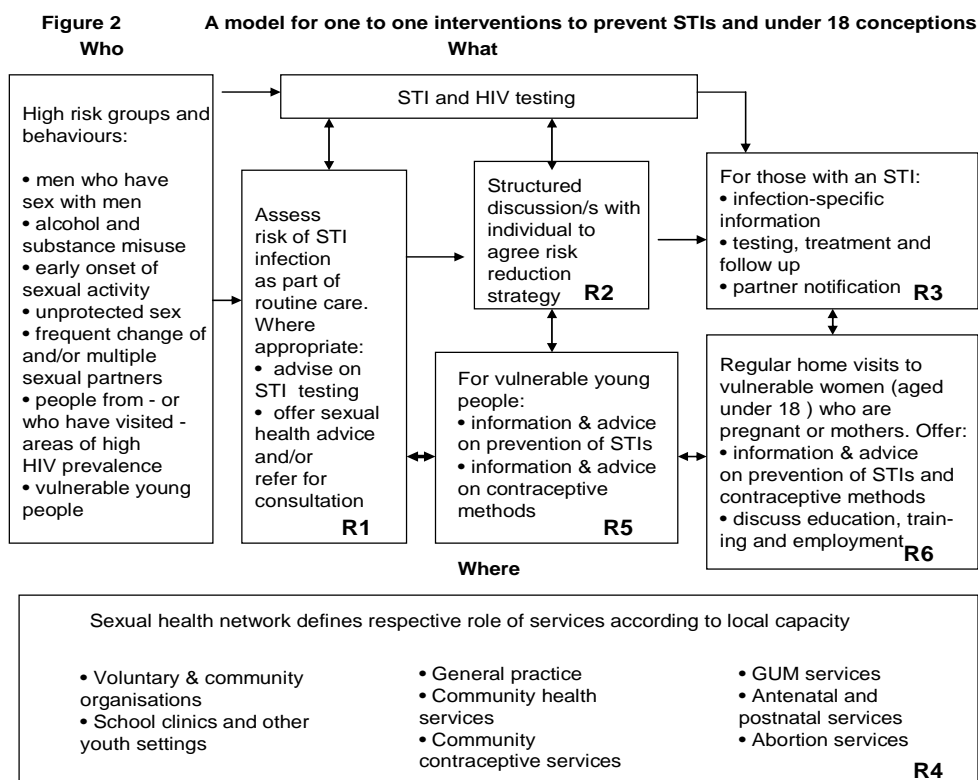
Figure 1

Sexual Health Interventions Framework



One to one interventions are integral to the modernisation of sexual health services.

Figure 2 sets out the relationship and links between different one to one interventions for the prevention of STIs and under 18 conceptions. It places the recommendations (R1–6) in the context of current service provision. This provision is defined in the ‘National strategy for sexual health and HIV’ (DH 2001) and national guidance documents such as the ‘Recommended standards for sexual health services’ (MedFASH 2005).



The guidance is aimed at healthcare professionals working in the NHS who have a role in and/or responsibility for sexual health. It will also be relevant to non-NHS professionals and others with a responsibility for sexual health working in local authorities and the education, voluntary, community and private sectors.

3 Considerations

PHIAC took account of a number of factors and issues in making the recommendations.

- 3.1 Much of the evidence is US-based. However, PHIAC considered that it was sufficiently applicable to the UK context to inform the recommendations. Members also considered the consistency of findings across the studies to assess the strength of evidence.
- 3.2 PHIAC recognised that one to one interventions are only one element of a broader sexual health strategy that is needed to prevent STIs and under 18 conceptions. PHIAC did not assess the relative effectiveness (and cost effectiveness) of one to one interventions versus other types of intervention.
- 3.3 PHIAC considered that implementation of the recommendations will make an important contribution to the modernisation of sexual health services, in line with the 'National strategy for sexual health and HIV' (DH 2001). The guidance promotes universal provision of one to one sexual health interventions for the prevention and early detection of STIs and the prevention of under 18 conceptions. This should be part of the routine care offered in primary care (including that offered by enhanced services in general practice) and by contraceptive services. One to one sexual health interventions should also be provided by pharmacists who are trained in this area. (Again, they may provide this as part of enhanced services.)
- 3.4 This guidance complements current developments concerned with the asymptomatic screening of STIs (such as the Chlamydia Screening

Programme and HIV testing). PHIAC recognised that individuals who are at risk of STIs need a choice of options, including rapid and open access to testing services, as well as one to one sexual health advice.

It should be noted that PHIAC did not consider the effectiveness of the National Chlamydia Screening Programme. However, evidence relating to the effectiveness of one to one interventions in preventing chlamydia was considered. Specific recommendations on HIV testing and treatment were not within the scope of this guidance.

- 3.5 People at risk of STIs can only benefit from sexual health services if they are accessible, convenient and confidential. It is important that services are developed in consultation with the client group.

Vulnerable young people and individuals who engage in risky sexual behaviours tend not to attend primary care or community health services on a regular basis. Less traditional settings will need to be considered for the provision of sexual health services for these clients. Education, training, employment and youth services will all play an important role in pointing young people to sexual health services.

- 3.6 The configuration of sexual health services will be dependent on local circumstances and capacities. Local sexual health networks will need to agree a suitable model of service delivery for the prevention and treatment of STIs and the prevention of under 18 conceptions. (STI services should cover testing, risk assessment, treatment of infection, partner notification and follow up.) This model should define the respective roles of primary care, community contraception services, specialist GUM and other services.

PHIAC recognised that the recommendations do not stand alone. They should be implemented in conjunction with infection-specific prevention and treatment guidelines and protocols. When working with young people, the recommendations should be implemented with regard to the

Fraser guidelines 'Gillick v West Norfolk & Wisbech AHA & DHSS (1985)' and guidance produced by the Teenage Pregnancy Unit.

- 3.7 The training requirements of those involved in delivering one to one sexual health interventions (within both NHS and non-NHS settings) will need to be assessed. Current training guidance and access to accredited courses should assist in meeting these requirements.

4 Implementation

The Healthcare Commission assesses the performance of NHS organisations in meeting core and developmental standards set by the DH in '[Standards for better health](#)' issued in July 2004. The implementation of NICE public health guidance will help organisations meet the standards in the public health (seventh) domain in '[Standards for better health](#)'. These include the core standards numbered C22 and C23 and the developmental standard D13. In addition, implementation of NICE public health guidance will help meet the health inequalities target as set out in 'The NHS in England: the operating framework for 2006/7' (DH 2006).

NICE has developed tools to help organisations implement this guidance. The tools will be available on our website (www.nice.org.uk/PHI003).

- Costing tools:
 - costing report to estimate the national savings and costs associated with implementation
 - costing template to estimate the local costs and savings involved.
- Slides highlighting key messages for local discussion.
- Practical advice on how to implement the guidance and details of national initiatives that can provide support.
- Audit criteria to monitor local practice.

5 Recommendations for research

PHIAC notes that current UK and US research being undertaken on 'expedited partner therapy' may inform future guidance in this area. The Committee recommends that the following research questions should be addressed in order to improve the evidence relating to one to one interventions in the UK.

1. What are the most effective and cost-effective methods of – and tools for – identifying individuals at high risk of STIs and under 18 conceptions?
2. What are the key characteristics of an effective and cost-effective one to one discussion to reduce STIs and under 18 conceptions among people who engage in high risk behaviour?
3. What is the relative effectiveness and cost effectiveness of one to one interventions delivered by different health professionals and in different settings?
4. In the UK, what are the most effective and cost-effective methods of contacting, testing and treating partners of patients who have an STI, particularly those engaged in high risk behaviour?
5. What utility scores should be applied to individuals with STIs and women who conceive under 18 to generate QALYs for use in cost-effectiveness analysis?

More detail on the evidence gaps identified during the development of this guidance is provided in appendix B.

6 Updating the recommendations

In March 2010, these recommendations will be reviewed and the state of the evidence base at that time will be reassessed. A decision will then be made about whether it is appropriate to update the guidance. If it is not updated at that time, the situation will be reviewed again in March 2012.

7 Related NICE guidance

Postnatal care: routine postnatal care of women and their babies. NICE clinical guideline 37 (2006). Available from www.nice.org.uk/CG037

Long-acting reversible contraception. NICE clinical guideline 30 (2005). Available from www.nice.org.uk/CG030

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Appendix A: recommendations for policy and practice and supporting evidence statements

This appendix sets out the recommendations and the associated evidence statements taken from three reviews of effectiveness (see appendix D for the key to study types and quality assessments). It also sets out a brief summary of findings from the economic appraisal and the fieldwork.

The three reviews of effectiveness are:

- Review 1: 'Contraceptive advice and provision for the prevention of under 18 conceptions and STIs: a rapid review'.
- Review 2: 'Rapid review of the evidence for the effectiveness of screening for genital chlamydia infection in sexually active young women and men'.
- Review 3: 'Rapid review of the evidence for the effectiveness of partner notification for sexually transmitted infections including HIV'.

Recommendations are followed by the evidence statement(s) that underpin them. For example: **(evidence statement 1.1)** indicates that the linked statement is numbered 1 in the review 'Contraceptive advice and provision for the prevention of under 18 conceptions and STIs: a rapid review'; **(evidence statement 2.1)** indicates that it is numbered 1 in the 'Rapid review of the evidence for the effectiveness of screening for genital chlamydia infection in sexually active young women and men'

The reviews are available on the NICE website (www.nice.org.uk/PHI003).

Where a recommendation is not directly taken from the evidence statements, but is inferred from the evidence, this is indicated by **IDE** (inference derived from the evidence).

Recommendation 1

Who is the target population?

Key groups at risk of STIs including:

- men who have sex with men

- people who have come from or who have visited areas of high HIV prevalence.

Behaviours that increase the risk of STIs include:

- misuse of alcohol and/or substances
- early onset of sexual activity
- unprotected sex and frequent change of and/or multiple sexual partners.

Who should take action?

Health professionals working in:

- general practice
- genito-urinary medicine (GUM)
- community health services (including community contraceptive services)
- voluntary and community organisations
- school clinics.

What action should they take?

- Identify individuals at high risk of STIs using their sexual history. Opportunities for risk assessment may arise during consultations on contraception, pregnancy or abortion, and when carrying out a cervical smear test, offering an STI test or providing travel immunisation. Risk assessment could also be carried out during routine care or when a new patient registers.
- Have one to one structured discussions with individuals at high risk of STIs (if trained in sexual health), or arrange for these discussions to take place with a trained practitioner.

(Evidence statement 1.1, 1.2, 1.3, 1.4, 2.20, 2.21, 2.26, 2.29, IDE)

Recommendation 2

Who is the target population?

Key groups at risk of STIs including:

- men who have sex with men
- people who have come from or who have visited areas of high HIV prevalence.

Behaviours that increase the risk of STIs include:

- misuse of alcohol and/or substances
- early onset of sexual activity
- unprotected sex and frequent change of and/or multiple sexual partners.

Who should take action?

Health professionals trained in sexual health who work in:

- general practice
- GUM
- community health services (including community contraceptive services)
- voluntary and community organisations
- school clinics.

What action should they take?

- Have one to one structured discussions with individuals at high risk of STIs. The discussions should be structured on the basis of behaviour change theories. They should address factors that can help reduce risk-taking and improve self-efficacy and motivation. Ideally, each session should last at least 15–20 minutes. The number of sessions will depend on individual need.

For details of a range of behaviour change theories see 'Predicting health behaviour' (Conner and Norman 2005).

(Evidence statement 1.1, 1.2, 1.3, 1.4, IDE)

Recommendation 3

Who is the target population?

Patients with an STI

Who should take action?

- Health professionals working in general practice, GUM and community health services (including community contraceptive services), voluntary and community organisations and school clinics. (However, they may need to refer the patient to a specialist.)
- Specialists with responsibility for helping to contact, test and treat partners of patients with an STI (partner notification). They may be sexual health advisers, general practitioners (GPs) or practice nurses providing enhanced sexual health services, chlamydia screening coordinators or GUM clinicians.

What action should they take?

- Help patients with an STI to get their partners tested and treated (partner notification), when necessary. This support should be tailored to meet the patient's individual needs.
- If necessary, refer patients to a specialist with responsibility for partner notification. (Partner notification may be undertaken by the health professional or by the patient.)
- Provide the patient and their partners with infection-specific information, including advice about possible re-infection. For chlamydia infection, also consider providing a home sampling kit. .

(Evidence statement 3.1, 3.2, 3.8, 3.16, IDE)

Recommendation 4

Who is the target population?

Population served by a PCT

Who should take action?

PCT commissioners

What action should they take?

- Ensure that sexual health services, including contraceptive and abortion services, are in place to meet local needs. All services should include arrangements for the notification, testing, treatment and follow-up of partners of people who have an STI (partner notification).
- Define the role and responsibility of each service in relation to partner notification (including referral pathways).
- Ensure staff are trained.
- Ensure there is an audit and monitoring framework in place.

(Evidence statement 3.1, 3.2, 3.8, 3.16, IDE)

Recommendation 5

Who is the target population?

Vulnerable young people aged under 18. This may include young people:

- from disadvantaged backgrounds
- who are in – or leaving – care
- who have low educational attainment.

For a more detailed definition of vulnerable young people see Department for Education and Skills (2006) 'Teenage pregnancy: accelerating the strategy to 2010'.

Who should take action?

- GPs, nurses and other clinicians working in healthcare settings such as primary care, community contraceptive services, antenatal and postnatal care, abortion and GUM services, drug/alcohol misuse and youth clinics, and pharmacies.

- GPs, nurses and other clinicians working in non-healthcare settings such as schools and other education and outreach centres.

What action should they take?

- Where appropriate, provide one to one sexual health advice on:
 - how to prevent and/or get tested for STIs and how to prevent unwanted pregnancies
 - all methods of reversible contraception, including long-acting reversible contraception (LARC) (in line with NICE clinical guideline 30)
 - how to get and use emergency contraception
 - other reproductive issues and concerns.
- Provide supporting information on the above in an appropriate format.
(Evidence statement 1.3, 1.4, 1.18, 1.19, IDE)

Recommendation 6

Who is the target population?

Vulnerable young women aged under 18 who are pregnant or who are already mothers. This may include young women:

- from disadvantaged backgrounds
- who are in – or leaving – care
- who have low educational attainment.

For a more detailed definition of vulnerable young people see Department for Education and Skills (2006) 'Teenage pregnancy: accelerating the strategy to 2010'.

Who should take action?

Midwives and health visitors who provide antenatal, postnatal and child development services

What action should they take?

- Regularly visit vulnerable women aged under 18 who are pregnant or who are already mothers.
- Discuss with them and their partner (where appropriate) how to prevent or get tested for STIs and how to prevent unwanted pregnancies. The discussion should cover:
 - all methods of reversible contraception, including LARC (in line with NICE clinical guideline 30), and how to get and use emergency contraception
 - health promotion advice, in line with NICE guidance on postnatal care (NICE clinical guideline 37)
 - opportunities for returning to education, training and employment in the future.
- Provide supporting information in an appropriate format.
- Where appropriate, refer the young woman to the relevant agencies, including services concerned with reintegration into education and work.

(Evidence statement 1.17, IDE)

Evidence statements

Evidence statement 1.1

In summary, the evidence on the effectiveness of one to one interventions for the prevention of STIs is mixed but, on balance, marginally supports the interventions. There is evidence from Project RESPECT a large (++) US study (Kamb 1998) that both a two session and a four session one to one counselling intervention can reduce STIs in the long and very long term in heterosexuals, and from one (+) study that STIs in men can be reduced in the long term after one 90 minute session (Kalichman). However, the effect appears to decrease over time, with one study finding a reduction in effect after 6 months (Kamb 1998).

RESPECT intervention model

This comprised brief or enhanced counselling sessions. The brief intervention

consisted of two, 20 minute, client-focused interactive sessions with a counsellor. It involved negotiating an acceptable and achievable risk-reduction plan that focused on condom use. The enhanced counselling consisted of four interactive sessions with a counsellor, based on the theory of reasoned action. The sessions took place over a 2 week period. The first lasted 20 minutes, the remainder were 60 minutes long. They involved negotiating a long-term plan for behaviour change. The aim was to ensure condoms were consistently used. Both types of counselling helped change the attitudes and self-efficacy (determining intention) of women who attended. Only the more intensive counselling was effective for men. The models of behaviour change underpinning RESPECT were the social cognitive theory and the theory of reasoned action.

Evidence statement 1.2

In addition EXPLORE, a large (++) US study of ten sessions of one to one counselling for MSM [men who have sex with men], found a 15.7% reduction in HIV infection but this was not statistically significant (EXPLORE 2004). The other studies found no effect on STIs, but may have been underpowered for this outcome.

EXPLORE intervention model

The intervention consisted of 10 core counselling modules delivered at one to one counselling sessions, over a 4–6 month period. Typically, one module was delivered per session. After the initial 10 modules, maintenance sessions were delivered every 3 months. The intervention was designed to address the individual, interpersonal and other factors associated with risk taking by some men who have sex with men. These factors include: the greater pleasure derived from risky sexual behaviour; negative mood states; communication difficulties; social norms that encourage misperceptions of risk and risk taking; use of alcohol or recreational drugs; and life events and environments that are catalysts for risk taking. The intervention was carried out by counsellors who had completed the required 40 hours of training specified by the intervention protocol.

Evidence statement 1.3

Interventions with adolescents appeared to be particularly effective. A subgroup analysis of Project RESPECT (Bolu 2004) found a significant reduction in sexually transmitted infections with both the four and two session interventions versus a didactic control. Although this was the only study to show a statistically significant difference, the general trend in this group of studies was towards a reduction in STIs.

Evidence statement 1.4

Twenty five studies reported condom use, of which only eight showed a statistically significant increase in condom use in the intervention group compared to the control. However, overall there is weak evidence (that is, it is mixed or conflicting but on balance marginally supports) that one to one STI/HIV prevention interventions can increase short and long-term condom use compared to control. Project RESPECT, a large good quality (++) US study found an increase in condom use in both the four and two session counselling intervention groups compared to a didactic control (Kamb 1998). However, several studies found the effect of an intervention appears to decrease or disappear over time. Greater uniformity is needed in the way in which condom use is measured in studies.

(For details of the RESPECT intervention model see page 23.)

Evidence Statement 1.17

Six studies evaluated interventions to support pregnant women or mothers. Although only two of the studies focused solely on adolescents (O'Sullivan 1992, Quinlivan 2003) all included at least 40% of adolescents and focused on disadvantaged, low income women. There is good evidence that multi-session support and home visiting for disadvantaged low income pregnant women or mothers can prevent repeat pregnancies with two (+) (Olds 2002; Olds 2004) and one (-) (O'Sullivan 1992) studies showing a significant reduction in repeat pregnancies in the intervention group compared to control. In addition one (-) study (Olds 1997) found a reduction in repeat pregnancies in poor unmarried women, although not in the sample as a whole.

Evidence Statement 1.18

In relation to the prevention of pregnancy, two (-) studies evaluated contraception advice and support in a clinic-based setting (Shlay 2003; Winter 1991). Neither found a significant reduction in pregnancies but both showed a trend towards a reduction in the intervention group compared to control.

Evidence Statement 1.19

Seven studies reported contraception use. This was measured in various different ways, including oral contraception, emergency contraception (EC) and condom use. Four studies showed a statistically significant effect on contraception use. Two increased oral contraceptive use. These were a (++) RCT (Quinlivan 2003) and a (+) RCT (Danielson 1990) that found one to one interventions with teenagers can improve contraception use in the long term. Of the two (++) studies of advanced provision of EC, one (Harper 2005) found an increase in the use of EC at 6 month follow-up and the other (Gold 2004) found a short term increase in EC use but this was no longer significant at 6 months. This study (Gold 2004) also reported an increase in condom use but no significant difference in use of the oral contraceptive pill (Gold 2004). In the other studies the general trend was towards an increase in contraception use although one (-) study found the effect on contraception use was no longer significant at 12 months (Winter 1991). Therefore, there is some evidence that one to one interventions with under 18s can increase contraception use.

Evidence Statement 2.20

There is evidence from two (+) controlled trials (one randomised, one non-randomised) that offering chlamydia testing in general practice increases the number of young women and men screened compared with usual care. This evidence applies to women and men under 30 years attending general practices.

Evidence Statement 2.21

There is evidence from two (+) randomised controlled trials (one large, one small) suggesting that changing systems of health service delivery can increase the numbers of teenage women screened opportunistically, and the

number of chlamydia cases detected. This evidence applies to sexually active young women under 20 years attending general paediatric or teen clinics.

Evidence Statement 2.26

Descriptive studies in general practice (two studies, one ++, one +) suggest that offering GPs incentives [to screen patients] might increase acceptance rates by patients. There were too few studies to be able to say anything about the effects of incentives on effective screening rates.

Evidence Statement 2.29

Data from one (+) randomised controlled trial, one (++) descriptive study, and three (+) descriptive studies (one + contradictory study) show that less than half of women and men under 25 years attending general practice get screened for chlamydia because not all those who are eligible for screening are offered a test.

Evidence Statement 3.1

There is evidence from four large randomised controlled trials (two +; two -) that patient delivered partner therapy, plus additional information for partners, reduces persistent or recurrent infections in women and men diagnosed with gonorrhoea or chlamydia by approximately 5% compared to patient referral (either minimal or supplemented by contact card).

Evidence Statement 3.2

There is evidence from one large randomised controlled trial (-) that patient referral, supplemented by additional information about infection for index patients and partner(s), reduces persistent or recurrent infections in men diagnosed with gonorrhoea or chlamydia by approximately 5% when compared to minimal patient referral.

Evidence Statement 3.8

There is weak evidence from two randomised controlled trials (both -) that giving index patients diagnosed with chlamydia sampling kits for their partner(s) can increase the number of partners who get tested, when compared to getting the partner(s) to visit their doctor for testing.

Evidence Statement 3.16

There is evidence from one randomised controlled trial (++) that patient referral for patients with chlamydia conducted in general practice is at least as effective, in terms of partners who get treated, when compared to referring patients to a specialist health service.

Cost-effectiveness evidence

Overall, one to one interventions were found to be cost effective. The results of the cost-effectiveness analysis are summarised below.

STI counselling interventions

Most of the brief STI counselling interventions appear cost effective when compared with 'usual treatment' (using £30,000 per QALY as the threshold). The incremental analysis demonstrated that brief interventions involving information giving or developing motivation and behavioural skills (particularly among women) produce the greatest benefits for the least cost. More intensive behavioural skills counselling and enhanced counselling appear to be least cost effective. These analyses apply to the general population, including vulnerable young women.

In the absence of data, no costs were attributed to 'usual treatment'. As a result, when interventions are compared against usual treatment the cost difference may be overestimated and the incremental cost-effectiveness ratios may be artificially high.

The loss of quality of life (QALYs lost) is particularly important in the analysis. The cost per QALY may be high (if low values are assigned to the change in quality of life) but brief STI counselling falls below a £30,000 per QALY threshold (based on 0.1 of a QALY change).

Partner notification at GP clinics

Partner notification by a practice nurse in a general practice costs the same as in a GUM setting – but more patients can be treated in a GP setting.

Fieldwork Findings

Fieldwork aimed to test the relevance, usefulness and the feasibility of implementing the recommendations and the findings were considered by PHIAC in developing the final recommendations. The fieldwork was conducted with practitioners and commissioners involved in sexual health services. They included practitioners working across youth, community and clinical settings in the NHS, local authorities and the voluntary sector. The fieldwork report is at: www.nice.org.uk/PHI003

Fieldwork participants who work with young people were overwhelmingly positive about the recommendations and their potential to help reduce STIs and under 18 conceptions. Many participants stated that the recommendations were already part of current practice. (Those working in general practice were least likely to be involved in STI prevention.)

The recommendations were viewed as reinforcing aspects of the modernisation agenda for sexual health, particularly in relation to the:

- identification of asymptomatic sexually transmitted infections
- role of primary and community services in providing level 1 and 2 sexual health services, as defined by the 'National strategy for sexual health and HIV'
- provision of choice of referral for STI testing and treatment
- promotion of the use of long-acting reversible contraception methods and information about the availability and use of emergency contraception
- increased integration of STI prevention and community contraceptive services.

While practitioners and commissioners did not view the recommendations as offering a new approach, these interventions have not been implemented universally. Wider and more systematic implementation would be achieved if there was/were:

- a clearer definition of the nature of one to one interventions (offering details such as, ‘what should be done, who should carry it out and where?’)
- information about the relative effectiveness of one to one interventions versus other options
- information about how the recommendations might help meet the national GUM 48 hour access target
- recognition of the need for open access to STI testing, and the general need for acceptable, accessible and confidential sexual health services
- recognition of the need for local flexibility in service provision
- incentives to encourage GPs to get involved in STI prevention
- provision of and/or access to training opportunities to develop competencies for the delivery of sexual health interventions.

Appendix B: gaps in the evidence

PHIAC identified a number of gaps in the evidence relating to the one to one interventions under examination, in particular, from the UK, based on an assessment of the evidence, stakeholder comments and fieldwork. These are set out below.

1. More rigorous evaluation of the effectiveness and cost effectiveness of one to one interventions to prevent STIs (including HIV) and under 18 conceptions in the UK. Studies should be sufficiently powered to detect a reduction in STI infections and conceptions. They should include the following:
 - interventions by different health professionals in different settings (for example, in schools, youth and outreach settings)
 - peer led interventions
 - interventions aimed at vulnerable groups.
2. A comparison of the relative effectiveness and cost effectiveness of one to one and group interventions aimed at reducing STIs and unintended teenage pregnancies.
3. An evaluation of the most effective and cost effective ways of communicating sexual health information to young people and the wider public. In particular, an assessment of effective and cost effective ways of addressing the stigma and discrimination surrounding sexual health issues.
4. An evaluation of the relative effectiveness and cost effectiveness of proactive and opportunistic screening to detect, prevent and reduce chlamydia.
5. An evaluation of the relative effectiveness and cost effectiveness of different methods of partner notification.
6. Generation of QALYs for use in cost-effectiveness analysis by deriving utility scores for individuals with STIs and for underage conception.

Utility scores need to be quantified for the UK population as a whole and among high risk groups (for example, for re-infection and multiple infection rates and the incidence of other health complications).

7. Studies to reflect the effects of onward transmission of STIs, using dynamic (rather than static) modelling to capture re-infection rates and further health consequences.

PHIAC made 5 recommendations for research. These are listed in section 5.

Appendix C: membership of the Public Health Interventions Advisory Committee (PHIAC), the NICE Project Team and external contractors

Public Health Interventions Advisory Committee (PHIAC)

NICE has set up a standing committee, the Public Health Interventions Advisory Committee (PHIAC), which reviews the evidence and develops recommendations on public health interventions. Membership of PHIAC is multidisciplinary, comprising public health practitioners, clinicians (both specialists and generalists), local authority employees, representatives of the public, patients and/or carers, academics and technical experts as follows.

Mrs Cheryll Adams Professional Officer for Research and Practice Development with the Community Practitioners' and Health Visitors' Association (CPHVA)

Professor Sue Atkinson CBE Independent Consultant and Visiting Professor in the Department of Epidemiology and Public Health, University College London

Professor Michael Bury Emeritus Professor of Sociology at the University of London and Honorary Professor of Sociology at the University of Kent

Professor Simon Capewell Chair of Clinical Epidemiology, University of Liverpool

Professor K K Cheng Professor of Epidemiology, University of Birmingham

Mr Philip Cutler Forums Support Manager, Bradford Alliance on Community Care

Professor Brian Ferguson Director of the Yorkshire and Humber Public Health Observatory

Professor Ruth Hall Regional Director, Health Protection Agency, South West

Ms Amanda Hoey Director, Consumer Health Consulting Limited

Mr Andrew Hopkin Senior Assistant Director for Derby City Council

Dr Ann Hoskins Deputy Regional Director of Public Health for NHS North West

Ms Muriel James Secretary for the Northampton Healthy Communities Collaborative and the King Edward Road Surgery Patient Participation Group

Professor David R Jones Professor of Medical Statistics in the Department of Health Sciences, University of Leicester

Dr Matt Kearney General Practitioner, Castlefields, Runcorn and GP Public Health Practitioner, Knowsley

Ms Valerie King Designated Nurse for Looked After Children for Northampton PCT, Daventry and South Northants PCT and Northampton General Hospital. Public Health Skills Development Nurse for Northampton PCT

CHAIR Dr Catherine Law Reader in Children's Health, Institute of Child Health, University College London

Ms Sharon McAteer Health Promotion Manager, Halton PCT

Professor Klim McPherson Visiting Professor of Public Health Epidemiology, Department of Obstetrics and Gynaecology, University of Oxford

Professor Susan Michie Professor of Health Psychology, BPS Centre for Outcomes Research & Effectiveness, University College London

Dr Mike Owen General Practitioner, William Budd Health Centre, Bristol

Ms Jane Putsey Lay Representative. Chair of Trustees of the Breastfeeding Network

Dr Mike Rayner Director of British Heart Foundation Health Promotion Research Group, Department of Public Health, University of Oxford

Mr Dale Robinson Chief Environmental Health Officer, South Cambridgeshire District Council

Professor Mark Sculpher Professor of Health Economics at the Centre for Economics (CHE), University of York

Dr David Sloan Retired Director of Public Health

Dr Dagmar Zeuner Consultant in Public Health, Islington PCT

Expert cooptees to PHIAC:

Dr Helen Ward Clinical Senior Lecturer, Division of Epidemiology, Public Health and Primary Care, Imperial College London

Dr Richard Ma General Practitioner, London

Ms Kate Quail Regional Teenage Pregnancy Coordinator, East Midlands

Dr Angela Robinson Consultant in Genito-Urinary Medicine, London

Expert testimony to PHIAC:

Mary Mcintosh Director, National Chlamydia Screening Programme

Ian Simms Scientific Adviser, National Chlamydia Screening Programme

Professor Catherine Peckham National Screening Committee

NICE Project Team

Mike Kelly

CPHE Director

Antony Morgan

Associate Director

Geraldine McCormick

Analyst

Amanda Killoran

Analyst

Bhash Naidoo

Technical Adviser (Health Economics).

External contractors

External reviewers

The Universities of Hertfordshire and Berne carried out the reviews of the evidence of effectiveness. The principal authors were: Francis Bunn and Fiona Brooks (review 1) of the University of Hertfordshire; Nicola Low and

Nichole Bender (review 2) of the University of Berne; and Sven Trelle and Aijing Shang (review 3), also from the University of Berne.

NERA Consultancy carried out the cost-effectiveness review. The authors were: David Lewis, Leela Barham and Nicholas Latimer.

The University of Birmingham produced a modelling report on an economic evaluation of opportunistic screening for chlamydia. The authors were: Pelham Barton and Tracey Roberts.

Fieldwork

The fieldwork was carried out by SHM Ltd and Liverpool John Moores University.

Appendix D: summary of the methods used to develop this guidance

Introduction

The reports of the reviews and economic appraisal include full details of the methods used to select the evidence (including search strategies), assess its quality and summarise it.

The minutes of the PHIAC meetings provide further detail about the Committee's interpretation of the evidence and development of the recommendations.

All supporting documents are listed in appendix E and are available from the NICE website at: www.nice.org.uk/PHI003

The guidance development process

The stages of the guidance development process are outlined in the box below:

1. Draft scope
2. Stakeholder meeting
3. Stakeholder comments
4. Final scope and responses published on website
5. Reviews and cost-effectiveness modelling
6. Synopsis report of the evidence (executive summaries and evidence tables) circulated to stakeholders for comment
7. Comments and additional material submitted by stakeholders
8. Review of additional material submitted by stakeholders (screened against inclusion criteria used in reviews)
9. Synopsis, full reviews, supplementary reviews and economic modelling submitted to PHIAC
10. PHIAC produces draft recommendations
11. Draft recommendations published for comment by stakeholders and for field testing
12. PHIAC amends recommendations
13. Responses to comments published
14. Final guidance published on website

Key questions

The key questions were established as part of the scope. They formed the starting point for the reviews of evidence and facilitated the development of recommendations by PHIAC. The overarching question was: How can one to one interventions contribute to the reduction of STIs (including HIV) and the reduction of the rate of under 18 conceptions? The subsidiary questions were:

1. What is the aim/objective of the intervention? What is it trying to change?
2. What outcome measures are used to assess effectiveness? How valid and appropriate are they?

3. What is the content of the intervention? Does it influence effectiveness?
4. Does the way it is carried out (the type/mode of communication, for example) influence effectiveness?
5. Does effectiveness depend on the job title/position or other factors such as age, gender, sexuality or ethnicity of the deliverer (leader)? What are the significant features of an effective deliverer (leader)?
6. Does the site/setting of delivery influence effectiveness?
7. Does the intensity, length or frequency influence effectiveness/duration of effect?
8. Does effectiveness vary according to age, gender, sexuality, socio-economic status or ethnicity of target audience?
9. What evidence is there on cost effectiveness?
10. What are the barriers to implementing effective interventions?

These questions were refined further in relation to the topic of each review (see reviews for further details).

Reviewing the evidence of effectiveness

Three reviews of effectiveness were conducted.

Review 1 'Contraceptive advice and provision for the prevention of under 18 conceptions and STIs: a rapid review'.

Review 2 'Review of evidence for the effectiveness of screening for genital chlamydial infection in sexually active young women and men'.

Review 3 'Review of evidence for the effectiveness of partner notification for sexually transmitted infections including HIV'.

Identifying the evidence

The following core databases were searched for randomised controlled trials, controlled before/after studies and qualitative studies (process only): Medline,

Embase, Psychinfo, DARE and Sigle from 1990–2005. Reference lists from included studies were hand searched.

Further details of databases, search terms and strategies are included in the review reports.

Selection criteria

Inclusion and exclusion criteria for each review varied and details can be found at: www.nice.org.uk/PHI003

However, in general:

- review 1 included one to one interventions which offered information, advice, condoms, counselling, cognitive behavioural therapy and/or activities that increase self-confidence, self-esteem and skill development
- review 2 considered any activity described as screening or where testing for chlamydia was offered to asymptomatic sexually active adults
- review 3 considered any intervention described as partner notification or contact tracing, or where partners were located and informed that they have been exposed to an infection
- studies in both NHS and non-health settings were considered. Details of the studies that were excluded can be found in the reviews.

Quality appraisal

Included papers were assessed for methodological rigour and quality using the NICE methodology checklist, as set out in the NICE technical manual 'Methods for development of NICE public health guidance' (see appendix E). Each study was described by study type and graded (++, +, -) to reflect the risk of potential bias arising from its design and execution.

Study type

- Meta-analyses, systematic reviews of RCTs or RCTs (including cluster RCTs).

- Systematic reviews of, or individual, non-randomised controlled trials, case-control studies, cohort studies, controlled before-and-after (CBA) studies, interrupted time series (ITS) studies, correlation studies.
- Non-analytical studies (for example, case reports, case series).
- Expert opinion, formal consensus.

Study quality

- ++ All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions are thought very unlikely to alter.
- + Some criteria have been fulfilled. Those criteria that have not been fulfilled or not adequately described are thought unlikely to alter the conclusions.
- Few or no criteria fulfilled. The conclusions of the study are thought likely or very likely to alter.

The studies were also assessed for their applicability to the UK.

Summarising the evidence and making evidence statements

Data from the reviews was summarised in evidence tables (see full reviews and the synopsis). Outcomes of interest included:

- review 1: reductions in under 18 teenage conceptions and STIs including HIV (primary outcomes), and increased condom use, improved sexual health knowledge, and a reduction in the number of sexual partners and general sexual risk taking (intermediate outcomes)
- review 2: reduction in the prevalence and incidence of chlamydia and female reproductive tract morbidity
- review 3: reduction in the incidence and prevalence of STI (patient and index patient), increase in number of partners contacted, tested and treated.

The findings from the reviews were synthesised and used as the basis for a number of evidence statements relating to each key question. The evidence

statements reflect the strength (quantity, type and quality) of evidence and its applicability to the populations and settings in the scope.

Economic appraisal

The economic appraisal consisted of a review of economic evaluations and a cost-effectiveness analysis.

Review of economic evaluations

A systematic search was carried out on four databases from January 1990 to December 2005: Econlit, NHS HEED, NEED, DARE. The results of these searches were supplemented by results from the parallel effectiveness reviews and additional papers identified by NICE. The main inclusion criteria were:

- studies focused on one to one interventions
- studies set in countries in Europe, US, Canada and Australia
- studies set in prison, army, primary care and secondary care settings.

Included studies were assessed for quality using a checklist based on the criteria developed by Drummond et al. (1997). Studies were then given a score (++, +, -) to reflect the risk of potential bias arising from its design and execution. The evidence tables for the cost-effectiveness review are included in the review (see appendix E).

Cost-effectiveness analysis

Economic models were constructed to incorporate data from the reviews of effectiveness and cost effectiveness. The results are reported in 'PHIAC 6.7 economic modelling report' (University of Birmingham) and 'PHIAC 6.10 economic modelling report' (NERA consultancy). They are available on the NICE website at: www.nice.org.uk/PHI003

Fieldwork

Fieldwork was carried out to evaluate the relevance and usefulness of NICE guidance for practitioners and the feasibility of implementation. It was conducted with practitioners and commissioners who are involved in sexual

health services. They included those working across youth, community and clinical settings in the NHS, local authorities and voluntary sector.

The fieldwork comprised:

- a qualitative study using structured focus groups in Birmingham, Leeds, Bristol and Plymouth, carried out by SHM Ltd.
- an online Delphi study carried out in the North West and London regions by John Moores University.

The two studies were commissioned to ensure there was ample geographical coverage. The main issues arising from these two studies are set out in appendix A under 'Fieldwork findings'. The full fieldwork report is available on the NICE website: www.nice.org.uk/PHI003

How PHIAC formulated the recommendations

At its meetings in May 2006 and September 2006 PHIAC considered the evidence of effectiveness and cost effectiveness. In addition, at its meeting in December 2006, it considered comments from stakeholders and the results from fieldwork to determine:

- whether there was sufficient evidence (in terms of quantity, quality and applicability) to form a judgement
- whether, on balance, the evidence demonstrates that the intervention is effective or ineffective, or whether it is equivocal
- where there is an effect, the typical size of effect.

PHIAC developed draft recommendations through informal consensus, based on the following criteria.

- Strength (quality and quantity) of evidence of effectiveness and its applicability to the populations/settings referred to in the scope.
- Effect size and potential impact on population health and/or reducing inequalities in health.
- Cost effectiveness (for the NHS and other public sector organisations).
- Balance of risks and benefits.

- Ease of implementation and the anticipated extent of change in practice that would be required.

Where possible, recommendations were linked to an evidence statement(s) (see appendix A for details). Where a recommendation was inferred from the evidence, this was indicated by the reference 'IDE' (inference derived from the evidence).

The draft guidance, including the recommendations, was released for consultation in October and November 2006. The guidance was signed off by the NICE Guidance Executive in February 2007.

Appendix E: supporting documents

Supporting documents are available from the NICE website (www.nice.org.uk/PHI003). These include the following.

- Review of effectiveness
- Economic analysis: review and modelling reports
- Fieldwork report
- A quick reference guide for professionals whose remit includes public health and for interested members of the public. This is also available from the NHS Response Line (0870 1555 455 – quote reference number N1186).

Other supporting documents include:

- ‘Methods for development of NICE public health guidance’ available from: www.nice.org.uk/page.aspx?o=299970
- ‘The public health guidance development process: An overview for stakeholders including public health practitioners, policy makers and the public’ available from: www.nice.org.uk/page.aspx?o=299973