
INTRODUCTION

In essence, this question is simple – have we got the right level of relative investment in sexual health services in this country? How can Primary care Trusts - PCTs (who are responsible for most of the commissioning of these services) be best advised about investment levels and service provision?

If the level of investment is insufficient, how can a PCT Board, and in particular its Director of Finance be provided with clear evidence to show that more investment will deliver cost-effective benefits (or even reduce costs) in the future?

Individual aspects of this question include the following examples:

- Would the costs of reducing waiting times in GUM Clinics be paid for by reduction in transmission of infections and hence in costs of new cases?
- Would costs of greater investment in preventative services be offset by averted reduced costs of care for Sexually Transmitted Infections (STIs)?
- Would costs of screening services be offset by reduced need for treatment for infertility?
- Would investment in contraception services be offset by reduced need for abortions and maternity services?

Scope of report and definitions.

The areas covered by sexual health include sexually transmitted infections, including HIV, contraception, health promotion and sex education. Note that the benefits from prevention of an STI extend beyond the individual because onward transmission to other people is also prevented.

This report is offered to those commissioning and planning services in the hope that it might be useful in making a case for these services, and will also avoid them needing to replicate this sort of review locally.

Cost-Effectiveness

Often used (incorrectly) simply to mean cost-saving, it is generally taken to mean the ratio between the cost incurred and the benefit produced.

The cost-effectiveness of health interventions are often measured in terms of cost per life year gained. Other measures might include cost per STI/HIV
infection or unintended pregnancy averted. In this report, Quality Adjusted Life Years (QALYs – more details are provided below) have been used as the cost-effectiveness measure where available. Interventions cannot correctly be described as simply as cost-effective or not, but they can compared with each other. Simple advice on stopping smoking costs only a few £s per life year gained, statin treatments to prevent further CHD a few £1000s, and some high cost drugs for cancer or multiple sclerosis £100,000s.

Most would accept that an acceptable cost-effectiveness for the NHS would be below £30,000 per life year gained, and one would be good value at below £1,000 per life-year gained.

**Cost -Utility**

This is usually taken in health economics to refer to a measurement of benefit that takes account of quality as well as duration of life. It is usually measured in cost per Quality Adjusted Life Year (QALY) gained. Interventions, for example that were not life-saving, but improved quality of life – for example, reduced pain, prevented disability or prevented infertility - would be more fairly compared using this measure rather than simple cost-effectiveness which only takes account of life expectancy. The National Institute for Health and Clinical Excellence (NICE) uses this method as part of its Technology Appraisal Process. (Technology appraisals are recommendations on the use of new and existing medicines and treatments within the NHS in England and Wales).

**Cost-Minimisation and Cost-Saving**

Some interventions in and around health care actually save money to the health care funders at the same time as producing health benefits such as reduced mortality or improved quality of life. Examples include treatment of hypertension with first line drugs (beta-blockers or thiazides). Thus the increased costs of these drugs is totally (and more) offset by the averted costs of fewer strokes, heart attacks etc. In these case the precise measurement of benefit (Life Years or QALYs) is usually academic because interventions that both save money and produce a benefit (even if quite small) are always likely to be preferred.
Classification used here

While an exact measure of the cost-effectiveness or cost utility is something that can be useful, for most decision-making it is important simply to know the approximate cost-effectiveness range. For the purposes of this guide for commissioners, a simple four point subdivision is used. Interventions which are not at all effective are not shown, nor are ones where the cost-utility is likely to be over £30,000 per QALY.

There are difficulties in comparing across different interventions due to differences in methodology, how outcomes and costs are measured, setting (for example, international or UK) and study population. Interventions have therefore been allocated to these broad categories where there is compelling evidence rather than individually ranked by precise cost-effectiveness measures.

- **Cost-saving Interventions**

- **Above averagely cost-effective Interventions compared with current NHS expenditure** - Less than £100 per Quality Adjusted Life Year (QALY).

- **Averagely cost-effective Interventions compared with current NHS expenditure (most NHS interventions are in this category)** - £100 to £10,000 per Quality Adjusted Life Year

- **At upper end of cost-effectiveness, but within current NHS range of expenditure** – £10,000 to £30,000 per Quality Adjusted Life Year
SEARCHING AND GENERATING THE EVIDENCE

Literature Search
A simple literature search using Medline was conducted using MESH headings of Sexually-Transmitted-Diseases and Economics or Cost-Benefit Analysis. This was added to by searches carried out by trawling for cost-effectiveness articles in the Journal Sexually Transmitted Infections (on-line); searching the National Research Register; and from searches carried out by colleagues at the HPA. Reference lists from key articles were searched and those working in this field were asked about other publications including those in press/preparation and in “grey literature”. For contraception and abortion services, the literature review and modelling work carried out by Armstrong & Campbell on behalf of the Family Planning Association (fpa) was used.

Consensus Meeting
A Consensus Meeting was held on 12 April 2005 involving key researchers and workers in this area. In addition, PCT commissioning and public health colleagues, and GUM clinicians were present.

RESULTS
While it has been often said that there is insufficient researched and written about the cost-effectiveness of interventions related to sexual health, it is also clear that what has been published has not been made as widely available to commissioners and planners of services as it might. Certainly, the current provision of services does not reflect what is known about the health economics - and there are, for example, many potentially cost-saving or highly cost-effective interventions that are insufficiently invested in.

The table on the following pages represents the synthesis of both the literature search, and the output from this consensus meeting.

The symbol ☺ indicates consensus statements from the meeting.

A database of articles recovered has been set up in the form of a simple MS Excel spreadsheet. Although a working document that will need updating etc., it can be made available in full or in part as requested.

The literature has been divided into the following six subject areas and the number of articles found in each to date is shown in the table below. It is important to note these are not the same as the number of original studies as review articles etc. are included in the count.

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>No. of articles</th>
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<tbody>
<tr>
<td>1 Health promotion</td>
<td>45</td>
</tr>
<tr>
<td>2 Screening</td>
<td>67</td>
</tr>
<tr>
<td>3 Treatment</td>
<td>18</td>
</tr>
<tr>
<td>4 Service Delivery and Organisation</td>
<td>2</td>
</tr>
<tr>
<td>5 Fertility control (contraception &amp; abortion - not including fpa Review)</td>
<td>6</td>
</tr>
<tr>
<td>6 Other</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>148</strong></td>
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</tbody>
</table>
### Cost-effectiveness conclusions from:
**Consensus Meeting ☺ or Literature ( )**

<table>
<thead>
<tr>
<th><strong>Health Promotion and Disease Prevention</strong></th>
<th><strong>Cost-saving</strong></th>
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| There are numerous cost-effective and, importantly, cost saving interventions aimed at promoting sexual health especially due to the high costs associated with HIV/AIDS. Interventions are more cost-effective when they effectively target high-risk groups. | - Free condom provision for medium and high risk groups (mainly men who have sex with men (MSM) and sex workers) ☺ (1,2,3,4,5,6,7,8,9).  
- Condom subsidy or tax reduction schemes (6,10,11).  
- Outreach health promotion and safe sex programmes for high risk groups (mainly MSM and sex workers) and hard to reach groups ☺ (3,12,13,14,15).  
- Provision of AIDS risk reduction messages in gay bars (12).  
- Safer sex skills training session/cognitive behavioural intervention for MSM ☺ (3,5,16,17,18,19).  
- Peer-leader interventions for MSM ☺ (3,5,17,20).  
- High quality integrated Sex and Relationships Education (SRE) ☺ (12) - includes especially Safer Choices School Programme evaluation (a 2-year multi component education programme in US high school students) (21).  
- Needle exchange provision to prevent HIV in injecting drug users ☺ (22,23,24). |

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<tr>
<th><strong>Above averagely cost-effective</strong></th>
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<tr>
<td>- Behavioural HIV risk reduction sessions for high risk women (17,19,25).</td>
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<th><strong>Averagely cost-effective</strong></th>
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| - 1-day cognitive-behavioural HIV risk reduction intervention in male adolescents (26).  
- Intervention based on individualised risk assessment and counselling, peer education, optional HIV testing, and referrals to needed healthcare services, for gay and bisexual male adolescents (27).  
- Use of condoms only 20% of the time by MSM – the message here is that only when condom use is high are condoms cost-saving in this group – in that case condoms are hugely cost-saving (6). |  |

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<tr>
<th><strong>Not very cost-effective but within current NHS range</strong></th>
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Screening
Screening strategies such as targeting all pregnant women for HIV, and young women for chlamydia, are clearly cost-effective - they help lead to early treatment, averting costs of complications (such as infertility), and onward transmission.

Cost-saving
- Antenatal syphilis screening (28).
- Antenatal screening for HIV in high risk women (29,30).
- Screening for syphilis in high-risk prison population (31).
- Many modelling studies conclude chlamydia screening is cost-saving:
  - for selected population groups at high risk (32,33,34,35,36,37,38);
  - for young women (34,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53).

There are some uncertainties about complication rates which means there is more work needed to fine-tune estimates of benefits of screening (50,54,55). Most studies do not use dynamic modelling (39,40,56) which may lead to underestimation of the benefits of screening.

Above averagely cost-effective
- Antenatal syphilis screening (57).
- Antenatal HIV screening in high-risk areas (58,59).

Averagely cost-effective
- Antenatal screening for HIV (59,60,61,62,63,64)
- Chlamydia Screening for other groups – young men, older women (36,39,42,43,44,65). The note above about Chlamydia screening studies also applies here.

Not very cost-effective but within current NHS range
- Screening (and suppressive therapy) to identify discordantly infected heterosexual couples with no history of herpes (HSV-2) infection (66,67).
- HIV screening in acute care settings (68).

Uncertain
Gonorrhoea screening in high risk patients
### Treatment interventions for STIs

**Cost-saving**
- Comprehensive and accessible (including extended outreach) STI treatment services in groups at high risk of HIV ☻ (13,69,70).

**Above averagely cost-effective**
- Comprehensive treatment of bacterial STIs for the general population (10).

**Averagely cost-effective**
- Retroviral treatment for HIV (10) – including Highly Active Antiretroviral Therapy (HAART) ☻ (71).
- Note that the increased treatment costs of HIV/AIDS makes some prevention interventions more cost effective (72).
- Routine HIV testing for STI clinic attenders (73,74).

**Not very cost-effective but within current NHS range**

**Uncertain**

### Service Organisation and Delivery

**Cost-saving**
- Temporary increase in STI services capacity to gain control of a high equilibrium incidence of STIs (75).

**Above averagely cost-effective**
- Good access to STI services with very short or no waiting times so that a low equilibrium level of infection incidence is maintained ☻ (75).
- Partner notification ☻ (14).

**Averagely cost-effective**

**Not very cost-effective but within current NHS range**
Cost-saving
- Contraceptive services, in themselves, result in reduced cost and increased benefit 😊 (76,77).
- Provision of an “ideal” profile (the choice women would make if given full information and offered the range of methods) of contraceptive services that better reflect women’s preferences could save NHS at least £500 million over 15 years. (This is mostly a move from combined oral hormonal to longer acting methods) (76).
- Reducing the delay in obtaining an abortion – savings to the NHS of from £645,000 to £30 million per annum are estimated depending on women’s choice of method. 😊 (76).
- Access to over the counter oral contraception (76).
- Access to emergency contraception. 😊 (76,78).

These conclusions are based especially on research recently commissioned by the Family Planning Association (fpa) (76). This used literature review and modelling methods to establish its conclusions. The full report will be published in September 2005.

Above averagely cost-effective

Averagely cost-effective

Not very cost-effective but within current NHS range

Conclusions and Summary
The overall message is clear - there is evidence and consensus that investment in Sexual Health Interventions is good value for money and in many cases cost-saving.

Key examples in the cost-saving category are: Widespread condom provision; Outreach safe sex training for high risk groups; School Education Programmes; Needle exchange services; Many screening programmes; High quality and rapid access STI services; Wide choice of contraceptive services; and Abortion services provided with minimal delay.

In other words, a Primary Care Trust or other commissioning organisation is actually allocating resources inefficiently if it does not invest (or indeed disinvests) in sufficient of these services to cover the relevant population adequately.

Most other interventions listed here are of cost-effectiveness well within the range accepted by the NHS as good value for money.
REFERENCES

(Numbers in square brackets [ ] refer to the database of references in MS Excel)


Nick Payne, Sexual Health Team, and Rachel O'Brien, Analytical Team, Department of Health, September 2005


Nick Payne, Sexual Health Team, and Rachel O’Brien, Analytical Team, Department of Health, September 2005


