NHSCSP – an update

Helen Burrell
NHSCSP – how far has it come?

- The cervical cancer death-rate increased threefold from 1967 to 1987 in women aged under 35

- Trend reversed since the national screening programme began in 1988
Cancer of the cervix (mortality/100,000)

- Mortality falling in developed world
- Mortality rising in developing world

![Graph showing trends in incidence and mortality, England 1988 to 2008](image)

- **ASIR (Age Standardized Incidence Rate)**: Per 100,000 female population
- **ASMR (Age Standardized Mortality Rate)**: Per 100,000 female population

Legend:
- *Blue line*: England - Incidence
- *Black line*: England - Mortality
NHS Cervical Screening Programme

- Has had its ups and downs through the 1990’s...
Quality control measures in NHSCSP

- First NHSCSP guidelines on Quality Assurance issued in 1996
- Many more published since...
2001 – Informed Choice

‘The Facts’ Leaflet added to all invitation letters
2003

- Death rates fall below 1000
- Screening start aged standardised to 25
- Changes to screening frequency based on age
  - 25 – 49 (3 yearly)
  - 50 – 64 (5 yearly)
- Rollout of Liquid Based Cytology
  - To be completed by 2008
2004 - 2008

Coverage rates showed decline in younger women

% coverage (less than 5 years since last adequate test)

2006 data as at 10th August 2006

© Data prior to 2005, re-used with the permission of the Department of Health
Non-attendance – why?

- Fear
- Worry about result
- Embarrassment
- Lack of understanding
- Language barriers
- Previous experiences
- Unable to get convenient appointment
- It won’t happen to me...
- I didn’t realise I was at risk...
Non-attenders comments

- “I felt too fat, and embarrassed, even though I knew the doctors and nurses saw all shapes and sizes”

- “I remember watching Jade on the TV and just thinking, 'That must be awful'. But I still didn't go for a test. I just didn't think it would happen to me.”

- Both women diagnosed with cervical cancer
Learning Disabilities

- http://www.bristollearningdifficulties.nhs.uk/
- http://www.ld4u.org.uk/
- http://spot-on-directory.com
Cervical Screening for Lesbian and Bisexual Women

- Women should be offered screening and consider attending, regardless of their sexual orientation.
- May have had sex with a man in the past.
- HPV can be transmitted through lesbian intercourse.
- Leaflet available on the NHS cancer screening website and Avonweb.
Women from black, Asian and minority ethnic groups are less sure of their cervical cancer risk than white women, according to a poll commissioned by the NHS Cancer Screening Programmes.

Over half (56 per cent, or 433 women) of white women polled considered themselves very aware of the risks associated with the disease only 36 per cent (279 women) of non-white women felt confident they were aware of the risks.
Multi-ethnic Women and Girl’s Clinic

- Charlotte Keel Health Centre
- 0117 902 7111
- Last Wednesday of every month 9.30am – 12 noon
- Any woman can attend (registered with a GP or not)
- All female multi-disciplinary team with specialist training in contraception, reproductive and sexual health
- Information and advice over phone for health professionals during clinic opening times
2009 – Jade Goody

<table>
<thead>
<tr>
<th>Year</th>
<th>2005/6</th>
<th>2006/7</th>
<th>2007/8</th>
<th>2008/9</th>
<th>2009/10</th>
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<tbody>
<tr>
<td>Number</td>
<td>3,358,464</td>
<td>3,170,460</td>
<td>3,223,239</td>
<td>3,607,373</td>
<td>3,272,167</td>
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</table>

**Number of women screened aged 25-64 (millions)**

**Bar Chart**

- **2005/06**: 3.2 million
- **2006/07**: 3.1 million
- **2007/08**: 3.2 million
- **2008/09**: 3.6 million
- **2009/10**: 3.3 million
2010 - Coverage

Coverage by Age Group:
- 25-29: 61.5% (2008-09), 62.8% (2009-10)
- 30-34: 71.1% (2008-09), 72.8% (2009-10)
- 35-39: 75.3% (2008-09), 76.9% (2009-10)
- 40-44: 77.9% (2008-09), 78.7% (2009-10)
- 45-49: 77.2% (2008-09), 77.8% (2009-10)
- 50-54: 79.1% (2008-09), 80.1% (2009-10)
- 55-59: 82.5% (2008-09), 82.6% (2009-10)
- 60-64: 78.3% (2008-09), 77.2% (2009-10)

25-49 (coverage <3.5 yrs since last test)                  50-64 (coverage <5 yrs since last test)
Cervical Cancer In The Under 25’s

- Very rare
- Increased rates of borderline changes
- Risk of over-treatment
- Screening would do more harm than good

Evidence reviewed in 2009
  - Still considered robust
  - Symptoms should not be ignored
Cervical Cancer In the Under 25’s

- "I was only 20 when I encountered bleeding between periods and severe pain in the abdomen area."

- “I went to my GP in February last year because I was bleeding between periods and after sex. I'd had these problems before but had not been offered a smear test because I was too young.”

- "My doctor always dismissed the bleeding as hormonal or something to do with the contraceptive pill I was on”
• A cervical cytology test is not appropriate

• Cervical cancer can present with symptoms but CIN is not symptomatic

• Visual inspection of the cervix with a speculum to exclude established malignancy

Clinical Practice Guidance for the Assessment of Young Women aged 20-24 with Abnormal Vaginal Bleeding
Questions

- What are the risk factors for developing cervical cancer?
- What percentage of cervical samples will be abnormal?
- What percentage of cervical samples will be high grade?
- What percentage of women with CIN3 will go on to develop cervical cancer?
Cervical cancer

- Risk factors
  - High risk HPV
  - Smoking
  - Immunosuppression
  - Non-attendance for screening

- No genetic risk factors identified
### Abnormal samples

<table>
<thead>
<tr>
<th>8. Tests showing abnormality: GP &amp; community clinics</th>
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<td>All ages</td>
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<td>25-64</td>
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</table>
High Grades

<table>
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<th>9. Tests showing high-grade abnormalities: GP &amp; community clinics</th>
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<td></td>
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<tr>
<td>2005/6</td>
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<tr>
<td>---------------------</td>
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<tr>
<td>All ages</td>
</tr>
<tr>
<td>25-64</td>
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</tbody>
</table>
Progression of CIN3

- About 35% of CIN3 would progress to cancer over 20 years if left untreated
Cervical screening

- Will we see a drop in coverage?
- Regular attendance essential
No screening test is perfect

- Sampling error
- Material not transferred to vial
- Lab screening error
- Interval cancers

- **Regular attendance for screening is essential**

- Women should be told to come back if any abnormal bleeding even if their test was negative
  - Not an indication for additional cervical screening test
Didn’t contact GP until next smear due

- “I'd been having a few problems with irregular bleeding for over a year and slowly they had been getting worse. I wasn't worried as it never occurred to me bleeding was a sign of cancer. I had never been educated about cervical cancer. So I continued to tolerate the bleeding for another six months.”

- This woman was diagnosed with cervical cancer
Invasive Audit Data

- National requirement
- Southmead audit of cases 2007 - 2010
Frequency of Invasive Cervical Cancer By Age
For The Years 2007-2010 (n=89)
Screen Detected Cases
First Call

- Aged 26 years at diagnosis
- First screening test aged 25 yrs revealed moderate dyskaryosis
- Colposcopic biopsy showed CIN2
- LLETZ showed microinvasive SCC, completely excised, Stage 1a1
Screen Detected Cases
First Call

- 42 years old at diagnosis
- Registered with GP in 2003, but failed to respond to repeated invitations for screening
- First recorded cervical screening test was in 2008
- Severe invasive, urgent referral
- At colposcopy, an invasive tumour mass was seen (the cytology request form had described ectropion)
- Biopsies showed early invasive changes, but clinically the tumour was large and so she was treated with chemo-radiotherapy (Stage 2B)
Screen Detected Cases

Previous cytology reports confirmed on review

- 30 yrs old at diagnosis
- Attended screening in 2005, found to have severe dyskaryosis
- Colposcopy & LLETZ performed which showed CIN 3, extending to the ecto- & endocervical margins
- Failed to attend further colposcopy / screening (reason given is ‘opted out of screening’), despite repeated invitations
- Re-attended for screening in 2010: Severe dyskaryosis
- LLETZ showed microinvasive SCC extending to margins
- Radical hysterectomy showed no residual cancer
Screen Detected Cases
Previous cytology reports revised on review

- 51 years old at diagnosis
- Negative routine cytology screen 2001
- Routine cytology in 2004 reported as negative
- On review, slide is scantily cellular, containing mainly polymorphs, but some groups of metaplastic cells showing borderline change?inflammatory?dyskaryosis
- Routine cytology in 2007 showed severe dyskaryosis
- Colposcopy→LLETZ which showed invasive adenosquamous carcinoma extending to the margins
- Radical hysterectomy showed positive paracervical and pelvic nodes
- Post-op chemo/radiotherapy
Interval Cancer

- Aged 60 years at diagnosis
- Negative screening cytology in 2000
- Cytology in 2005 showed inflammatory changes, but was negative
- Referred by GP in 2007 to gynae clinic with PMB
- Large cervical mass, biopsy showed high grade, poorly differentiated SCC, staged 4A
- Patient received chemo/radiotherapy
Never Attended

- 34 years old at diagnosis
- First invited for a screening test in 1997
- Repeated invitations after this
- Presented in 2007 with PV discharge to GP who sent swabs and a cytology sample
- Cytology showed severe dyskaryosis
- Punch biopsy showed CIN2-3
- LLETZ revealed two small foci of microinvasive SCC with CIN3 extending to the margins
- Further LLETZ showed complete excision
Age-specific incidence rates and number of cases of cervical cancer diagnosed by five year age group, England 2008
Map of mortality (Cervical Cancer) by Cancer Network, 2004-2008

Age standardised rate per 100,000 population
- 1.7 to 1.8 (4)
- 1.9 to 2.2 (7)
- 2.3 to 2.5 (8)
- 2.6 to 2.9 (7)
- 3.0 to 3.3 (4)

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NHSCSP – Current Issues

- HPV Vaccination programme
- HPV testing
Worldwide Cervical Cancer Cases Attributed to HPV Type
HPV Testing

- **High sensitivity**
  - Tests for all high risk types (doesn’t specify which type is present)
  - Will detect almost all cases

- **Low specificity**
  - Many women who are HPV positive will not have abnormal cells
  - Cervical cancer is a rare outcome of HPV infection
HPV Testing

- Low grade abnormalities – will they progress or regress?
HPV Testing (Jan 2008)

- Sentinel Sites
  - 6 labs in UK involved (inc Bristol)
  - NOT Bath

Following samples tested for presence of high risk HPV:
- Borderline and mild dyskaryosis
- Negative samples post treatment for CIN(test of cure)
## HPV Triage for low grade samples

<table>
<thead>
<tr>
<th>Cytology Result (unless previous HPV Test)</th>
<th>Current Management</th>
<th>HPV Triage Management</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>HPV –ve</td>
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<td>HPV +ve</td>
</tr>
<tr>
<td>Borderline</td>
<td>Repeat in 6 months</td>
<td>Routine recall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colposcopy referral</td>
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<tr>
<td>Mild</td>
<td>Colposcopy referral</td>
<td>Routine Recall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colposcopy referral</td>
</tr>
</tbody>
</table>
Test of Cure

- After treatment for CIN
- 6 month repeat cytology and HPV test
- Negative for high risk HPV $\Rightarrow$ 3 yearly recall
- Positive for high risk HPV and/or cytology positive $\Rightarrow$ Colposcopy and follow up management as per national guidelines
Test of Cure

- Dramatically reduce annual follow-up samples in the long-term
- Approx 80% TOC are HPV negative
2011 - HPV testing

- HPV Testing is to be rolled out Nationally over the next couple of years
  - Year 1 – testing on low grades
  - Year 2 – test of cure
Benefits of HPV testing

- Quicker referral and treatment if necessary
- TOC
Case 1 – with HPV testing

- Routine screen
- BC HPV+
- Colp at 8 weeks from date of test
- CIN3 on biopsy
- LLETZ
- TOC at 6 months, negative
- Routine recall
- Time for whole episode 9 months
Case 1 – without HPV testing

- Routine screen
- BC
- Repeat at 6 months, BC
- Repeat at 6 months BC
- Colp 14 -18 months from date of test
- CIN 3 LLETZ
- Annual follow up for 10 years
- Time for whole episode 12 years
Case 2 – with HPV testing

- Routine recall
- Borderline HPV+
- Colposcopy referral
- Cervical Cancer Stage 1A1
- LLETZ
- 10 years annual follow up
- Normal fertility and life expectancy
Case 2 – without HPV testing

- Routine recall
- Borderline
- Repeat at 6 months
- Colp referral delayed for 6-12 months
- Cervical Cancer Stage 1B+
- Radical treatment
- Fertility and mortality affected
HPV - Issues

- Consent – needed from every patient
- 14 day turnaround
- Sample taker education prior to rollout (doesn’t affect Bristol sample takers)
  - Explanation of results and recall to patient if they have a query
    - e.g. borderline changes, HPV negative, routine recall
HPV Vaccination Programme
Cervarix & Gardasil

- Vaccinate against the high risk HPV types 16 & 18 which are found in 70% of cervical cancers

- **NOT** a vaccine against cervical cancer
Vaccination

- At best will prevent 75% of cases of cervical cancer (if uptake 100%)
  - Pre-exposure to virus
  - 3 injections completed
  - Immunity achieved
  - Uptake

Does NOT give protection against the other high risk types

At least 25% of cases of cervical cancer are NOT due to HPV 16 & 18
HPV and NHSCSP

- Cervical screening must continue
  - Provide protection for those not vaccinated
  - Prove effectiveness of vaccine (may be regional variations)
  - Pick up cervical abnormalities caused by other HPV types
  - Cervical screening currently remains the most effective way of preventing cervical cancer