How to prevent cervical cancer:

HPV – we are coming to get you!
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Aims of the presentation

• Decades of efforts of cervical cancer prevention
  – What are we doing now?
  – What’s not working?
  – What’s left to do?
Mortality has declined across Europe in most countries since the introduction of cervical screening, but ...

European Cancer Observatory; IARC [http://eco.iarc.fr/EUREG/AnalysisG.aspx](http://eco.iarc.fr/EUREG/AnalysisG.aspx)
Women are screened in different ways in each country

- It is difficult to see the correlation of screening algorithm with the incidence of cervical cancer

<table>
<thead>
<tr>
<th>Country</th>
<th>Age Range and Screening Interval [Years]</th>
<th>Incidence of cervical cancer per 100K women</th>
<th>Coverage (%)</th>
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<tbody>
<tr>
<td>Ireland</td>
<td>20, 30, 40, 50, 60, 70</td>
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<td>Germany*</td>
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<td>80</td>
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<td>UK: Scotland*</td>
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<td>UK: N Ireland*</td>
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<td>Netherlands*</td>
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<td>France*</td>
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<td>UK: Wales</td>
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<td>Finland</td>
<td>20, 30, 40, 50, 60, 70</td>
<td>5.2</td>
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</tr>
</tbody>
</table>

Sources for this figure: HPV information centre, 2015; IARC, 2015; NHS, 2013; PHA, 2013

*countries currently including HPV testing as a part of screening
There are four main steps in the screening pathway from the patient and clinic perspective:

- **Consultation**
  - Check personal details
  - Explain screening
  - What testing involves (cytology & HPV)
  - History (sexual, medical, contraception, previous results)
  - Describe results process

- **Cervical sample & admin**
  - Take cervical sample
  - Complete testing form, label sample and set aside for collection
  - Input into IT system

- **Pathology**
  - Transportation to cytology lab
  - Process sample (cytology & HPV triage)
  - Report results (Open Exeter)
  - Cytology
  - +/- HPV
  - +/- other findings

- **Results**
  - Letter to patients
  - +/- phone call for those needing follow-up
  - Routine recall or refer for colposcopy

Timeline:
- **Consultation**: 10 mins
- **Cervical sample & admin**: 10 mins
- **Pathology**: 2 Weeks
- **Results**: 10 mins
Population and public health perspective

• Reduced incidence or prevalence of
  – Infection
  – Complications and disease
• Better use of limited resources
• Reducing health inequalities
Service / provider perspective

- Improve patient flow
- More efficient services
- Attracting new / different patients
- Reduce
  - Follow-up
  - Admin
  - Errors
Clinician perspective

• Better
  – Care for patients
  – Patient outcomes

• Greater clinical confidence in diagnosis / treatment
Patient perspective

• Better experience and communication
  – Less stressful / anxiety
• Better coordination of care and medical information
• Faster results
• More effective treatment
• Faster return to health
• Prevent or reduce risk of short and long term complications
Imagine you are a patient

You go to your clinic to have a cervical smear and/or HPV swab taken.

The nurse says you have a choice:

Standard test – get results in 2 weeks
Point of care test – get results in 2 hours

As a patient, what would you choose?
What do we need to do to understand the benefits, costs and value of a new rapid test?
Where would a rapid test fit into the current screening pathway?

- **Consultation**
  - Check personal details
  - Explain screening
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Timeline:
- 10 mins
- 10 mins
- 2 Weeks
- 10 mins
Using a rapid HPV test for triage testing

- Cytology: 3.2 Million
  - Cytology Negative (94%)
  - Mild dyskaryosis, borderline (5%)
- HPV test: 164 Thousand
  - HPV Negative (43%)
  - HPV positive (57%)
- Colposcopy: 127 Thousand
  - HPV positive (57%)
  - Moderate & severe dysplasia (1%)
- Recall: 10 mins, 10 mins, 2 Weeks, 10 mins
Opportunities for a rapid HPV test under HPV triage

• Random access rapid test – quicker results and reporting
• Faster turnaround time = patient benefit
  – Reduce transport from cytology to HPV lab
• HPV triage volumes ideal for random access platform
• Cytologists want more involvement in patient management
Using a rapid HPV test for triage testing

HPV Triage

Cytology
- 3.2 Million
  - Cytology Negative (94%)

HPV test
- Mild dyskaryosis, borderline (5%)
- HPV test
- HPV Negative (43%)
- HPV Positive (57%)

Colposcopy
- 164 Thousand
  - HPV Positive
  - Moderate & severe dysplasia (1%)

Recall

Rapid test HPV triage
- Consultation: 10 mins
- Cervical sample & admin: 10 mins
- Results: 10 mins
- 1 Week
Integrating HPV primary screening with cytology triage

Rapid test HPV primary

Consultation 10 mins
Cervical sample & admin 10 mins
1 Day
Results 10 mins

HPV Primary

HPV test
HPV positive (12%)
3.2 Million
HPV Negative (88%)

Cytology
394 Thousand
Cytology Negative (70%)

Colposcopy
118 Thousand
Borderline or worst (30%)
Recall or early recall
Advantages and concerns of implementing a rapid HPV test in clinics

**Advantages**

- Women want a faster result
- Could reduce anxiety
- A new test/testing paradigm might encourage women to be screened
- ↓ Time to results for negatives
- ↓ Transportation
- Rural patients and practices
- ↓ Reporting errors

**Concerns**

- ↑ Workload for practice staff
- Impact on screening uptake?
- Commissioning/funding systems
- False positives (increase anxiety)
- Benefits across disease management pathway?
- Quality control issues
Experts’ views on a rapid HPV test

“A point of care test for HPV [in primary HPV screening] may not be good for a service but could be good for patients”

– GP consultant

“My first thoughts are that it sounds good on paper, and might be good in certain situations, but it’s likely to be more work and more expensive, so I’m not sure”

– GP nurse

“We need to collect data on patient views about a rapid result and about the anxiety of waiting for a result”

– Commissioner

“How would we quality control a rapid testing platform in the community?”

– Policy maker

“A good model might be for local primary care networks to have one clinic that processes the rapid tests, like a localised ‘hub and spoke’ model”

– GP consultant

“I think a rapid test might encourage women to attend who don’t usually go for screening”

– Gynaecologist
Questions to consider for the future about HPV testing

- Self-taken vaginal swabs?
- Part of an STI screen?
- Cost per screen?
- Determine HPV vaccination?
- Reporting for tests done in private clinics?
- Management pathway for other cancers?
We need new ways to identify and access patients who don’t engage current services

- Reasons for not accessing services
  - Convenience / accessibility
  - Stigma
  - Anxiety / embarrassment
  - Education
  - Cultural issues
  - Special needs
  - Private vs public
  - Cost

Szarewski et al., 2011; Blomberg et al., 2008; Neilson and Jones, 1998; Orbell, 1996; Oscarsson et al., 2008; Waller et al., 2009
New opportunities using self-taken samples for HPV testing

• Increasing evidence is available about the performance of self-collected samples vs clinician collected

• Several important points
  – Recruitment determines effectiveness; letter vs direct sampling kit (see also Verdoordt, Euro J Cancer 2015)
  – Performance and acceptability of the sampling device
  – Clinical performance of the test
  – Managing hrHPV results (loss to follow-up)

Arbyn and Castle, Cancer Epidemiology, Biomarkets & Prevention 2015 (Commentary to Rozemeiher K, Kok IMCM, Naber SK, et al, Cancer Epidemiology, Biomarkets & Prevention 2014)
Opportunities in LMIC

• Toliman et al, JCM, online first April 13, 2016
  – Papua New Guinea, women asked to provide self-collected vaginal swab and clinician collected cervical sample
  – Women with positive findings offered cryotherapy same day—transforming care to a ‘test and treat’ model
  – Found good agreement between both samples

• Kuhn et al, National Cancer Institute meeting, 2016
  – Compared self-take swabs to clinician collected swabs in South Africa for test and treat
  – Patient sampling acceptable; test needs to have good performance on both samples
Potential impact of a rapid test

• For low-resource areas with less clinical support, self-collected samples and rapid testing could make a big difference to care (Catarino, WJCO, 2015)
  – Trained staff not needed to collect sample
  – Simple, rapid tests now a possibility
  – Same day treatment – more targeted approach

• Possibilities of using urine and/or self-taken vaginal swab
  – Impact of rapid testing for other STIs and test & treat models

• Increase uptake of screening (or facilitate screening)
• Can transform current pathways
Questions please!