The role of the cytology laboratory and SCCRS

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Plan for today

• Laboratory processing
• SCCRS overview
• The importance of sampling
• Inadequate samples
• Symptomatic women & normal cytology
• Out of date vials
• Test of cure & HPV testing in the future
• Most frequent queries from sample takers
Learning objectives

• Understand the correct use of SCCRS
• Understand laboratory processing
• Understand the importance of correct sampling of the cervix
• Understand the significance of a negative report
• Knowledge of SCCRS lab issues
• Knowledge of HPV testing in the SCSP
Who am I?

• Laboratory manager for Histopathology and Cytology in Lanarkshire
• Advanced Practitioner in Cervical Cytology
• Cervical Cytology and Histopathology network manager for Scotland
• President of the British Association for Cytopathology
• Council Member of Institute of Biomedical Science
• More than 40 years experience in cytology
Handbook for Healthcare Professionals taking cervical screening tests

1. Purpose of the Handbook
2. Staff Training and Competencies
3. Indications for a Cervical Screening Test
4. Equipment and Chaperone
5. Consultation before taking sample
6. Taking a Cervical Screening Test
7. Documentation
8. Some Frequently Asked Questions
9. Complications arising from the Procedure
10. Discussing Results – sample scripts
11. Ensuring a Failsafe Cervical Screening Programme
12. Health Promotion
13. Equality and Diversity Impact Assessment
14. References
15. Bibliography
Purpose of the Handbook

“This handbook aims to give Healthcare Professionals clear guidance as to what is expected of them when undertaking cervical screening within the Scottish Cervical Screening Programme”
SCCRS
March 2000; Report on Quality Improvement Review of Cervical Screening Call-Recall Arrangements in Scotland recommended a "consistent Scotland-wide call-recall system"

“go live” with SCCRS 2007
What does SCCRS do?

- Collect information from Primary Care registries, GPs, laboratories and colposcopy clinics
- Call or recall women for cervical smears
- Issue results to smear takers and women
- Provide programme monitoring data
- Adaptable to include new tests - HPV
Design features: lab module

• Access to full screening history
• Allows rapid reviewing and previewing
• Error trapping to reduce likelihood of erroneous recommendations for management
• Easy derivation of statistics
• Control over statistics remains with lab
• Work booked in by one laboratory easily reported in another
Laboratory processing
Laboratory processing

- Reception
- Production of cell circle on T5000
- Staining
- Coverslipping
- Imaging
- Rapid preview (IQC)
- Primary screening
- Checking
- Reporting of abnormal samples
Quality control in the laboratory

- Recording and analysis of all errors (lab and sample taker)
- Checking at all stages in processing – staining, labelling, screening
- Two year training period and National standard exam for all primary screeners
- Rapid preview of all slides
- Checker role
Quality control in the laboratory (2)

- National targets for laboratory and screener performance – QA group
- Inter – laboratory and intra - laboratory comparisons
- Identification of poor performance
- EQA for screening and staining
- CIN2+ audit
- Invasive cancer audit
Sample adequacy
What is an adequate smear?

- **Laboratory viewpoint:**
  the sample contains sufficient numbers of well preserved squamous epithelial cells

- **Sample takers viewpoint:**
  The cervix has been fully visualised
  The cervical transformation zone (TZ) has been sampled with a broom device using x5 clockwise rotation
Normal nulliparous cervix

1. Ectocervix squamous epithelium

2. Endocervical canal endocervical cells

3. Squamo–columnar junction
Why sample the TZ?

- Cervical Intraepithelial Neoplasia (CIN), the precancerous condition, is considered to originate within the metaplastic epithelium of the transformation zone

- Essential that this area is sampled when taking smear
Transformation zone indicators

• How do we know if you have sampled the Transformation zone?
• We cannot be certain but....
  • Immature metaplastic cells
  • Endocervical cells
• If at least one of these components is seen microscopically, this is considered cytological evidence of TZ sampling
TZ sampling
Endocervical sampler

DO NOT USE FOR ROUTINE CERVICAL SCREENING!!!
Does an adequate smear require *cytological evidence* of TZ sampling?

**NO!**

A negative cytology report does not indicate that the sample has been taken correctly. It simply means that there are no abnormal cells in the sample but the sample may not be taken correctly.
Endocervical cells

- Typical appearance and can be readily identified in samples
Immature metaplastic cells

These cells develop from epithelium originally covered by endocervical cells.
Only the sample taker can determine that the cervix is correctly sampled

- Fully visualising the cervix
- Insert central bristles of the broom into the cervical os
- Rotate the broom 5 TIMES in a CLOCKWISE direction
Unsatisfactory samples

- Heavily bloodstained samples
  - Contact bleed, menses
- Scanty samples
  - Atrophy, difficult sample taking
- Inflammatory exudate
  - Infection, inflammation
- Contaminants
  - Lubricant, pessary
Negative sample
Unsatisfactory sample: insufficient cells
Unsatisfactory: heavily bloodstained
Reporting categories
Negative

**Routine recall**

- 3 yearly for 25-50 yr olds
- 5 yearly for 50-65 yr olds

**Early repeat smear** if previous borderline or if on follow-up after treatment

**Refer for gynaecology** if clinical symptoms
Borderline Nuclear Changes (BNC)

- ‘Holding’ category
- May be due to HPV
- Often small numbers of atypical cells of uncertain significance
- No more than x3 BNC in 10-year period without referral to colposcopy
BNC Category

Often associated with HPV infection

Distinction between BNC and mild dyskaryosis may be difficult

Management – repeat in 6 months. Refer for colposcopy if changes persist x3.

Conservative management of CIN1
Low grade dyskaryosis / CIN 1
Koilocytes
High grade Dyskaryosis (moderate) / CIN 2
High grade dyskaryosis (severe) / CIN 3
Severe dyskaryosis ? invasive
Glandular neoplasia /CGIN
Symptomatic patients

- Cervical cytology is a screening test not a diagnostic test
- Symptomatic women should be referred
- Unless they are due a smear, women who present with symptoms or signs e.g. PMB, PCB, suspicious cervix should not have a smear.
- A negative report from a symptomatic woman should not prevent a referral or further investigations.
SCCRS

- Real time system
- All sample takers should have access
- Unlabelled vials
- Incomplete and multiple requests
- Screening age controls
Most Common SCCRS Datix incidents (but still relatively rare!)

- Unable to identify vial
- Out of date vials
- Incorrect patient
- Two vials with same name
- Incorrect management
Recent changes to age range for screening

- In June 2016 age range changed from age 20-60 to 25-65
- Brings Scotland into line with the rest of the UK
- Women between 50 and 65 will be screened every five years
- Went live on 6th June 2016
Changes to age range for screening

• HPV is a common transient infection in young women
• Many young women are referred for colposcopy with no evidence of high grade disease leading to over-treatment
• Cervical cancer in the 20-25 age group is extremely rare
• Women over 50 with negative histories are at low risk of cervical cancer
• No longer possible to record smears from under 20’s
HPV testing

- The decision to move to hrHPV primary testing has been recently made by Scottish Government
- Implementation will take at least two years
- Press release in August 2017
- HPV is the main cause of cervical cancer
- Test of Cure
- HPV test as primary test and cytology as triage
HPV testing

- Same sample is required
- More sensitive than cervical cytology
- Less specific than cervical cytology
- High negative predictive value
- Management of HPV+ve, cytology –ve cases
- Project team in place and subgroups starting to meet
Frequently asked questions and laboratory issues

- Glandular abnormalities
- Immuno-suppressed patients
- Test of Cure
- Women under 20 years
- Clinical suspicion of malignancy
- Out of date vials
Summary

• Sample the cervix properly
• You cannot rely on a negative result if you have not visualised and sampled the cervix
• Refer symptomatic women
• Cervical cytology is a screening test
• Avoid taking heavily bloodstained samples
• Check for out of date vials
• Age range and frequency changed in June 2016
• HPV testing is the future
The future

- Sample taker training
- Further changes to age and frequency of screening
- HPV primary testing
- Still the same sample required
- Role of self sampling
- Changing role for cervical cytology
- Changes to SCCRS
- A reconfiguration of the screening programme
Finally....

- Developing role of HPV in cervical cancer prevention. Kitchener et al BMJ 17\textsuperscript{th} August 2013 vol 347

- Come and visit us in the lab!