Overview of Cervical Screening and Interval Cancer Audit
Cervical Check: Laboratory Webinar
June 2021

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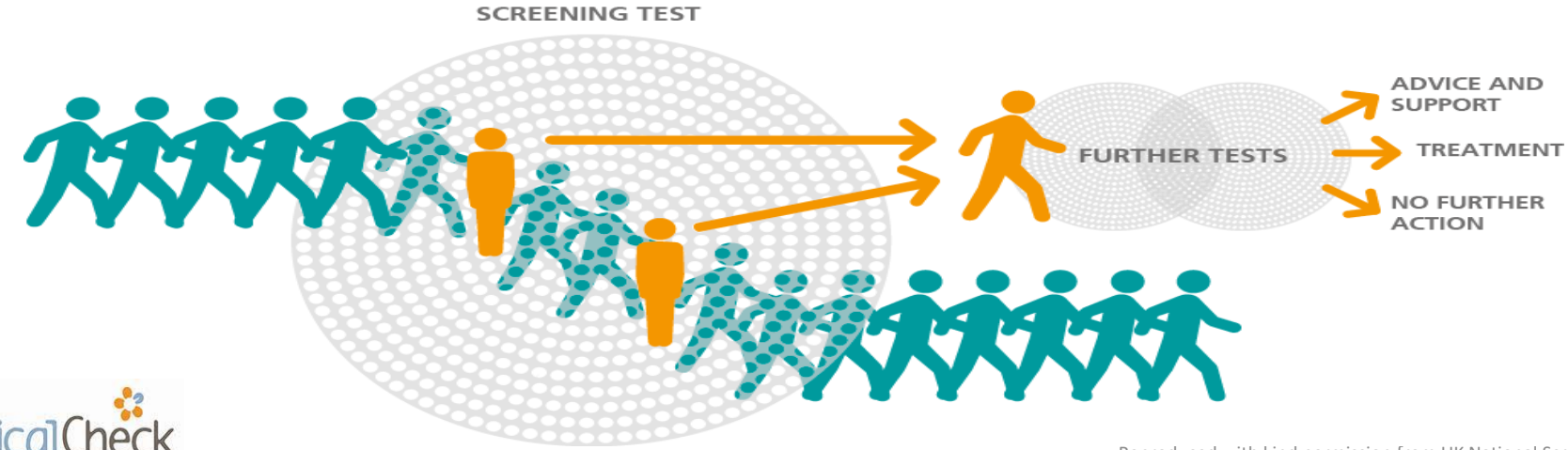
CervicalCheck
AN CLÁR NÁISIÚNTA SCAGTHÁSTÁLA CEIRBHEACS
THE NATIONAL CERVICAL SCREENING PROGRAMME

- What is cervical cancer screening?
- Does cervical cancer screening work?
- The original Cervical Check interval cancer audit
- Scally Scoping Enquiry
- 221 audit
- RCOG
- Expert Reference Group Interval Cancer Audit

What is population based cervical cancer screening?



CervicalCheck
THE NATIONAL CERVICAL SCREENING PROGRAMME

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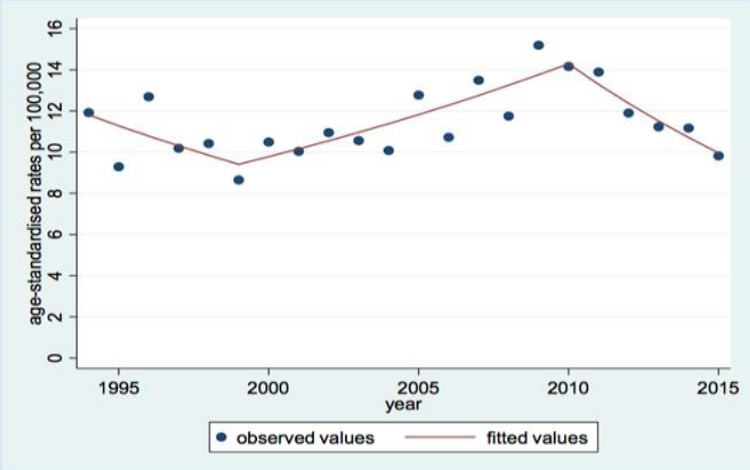
- Assessing risk in INDIVIDUALS and referring those with a higher than normal risk on for further diagnostic tests at colposcopy
- Decreases the incidence of and mortality from cervical cancer IN A POPULATION
  But will not prevent all INDIVIDUALS from getting cervical cancer

Does screening for cervical cancer work?

Lifetime risk of developing cervical cancer differs between:

- **NO** screening = 19 per 1000
- Cytology screening = 2 per 1000
- HPV screening = 1 per 1000

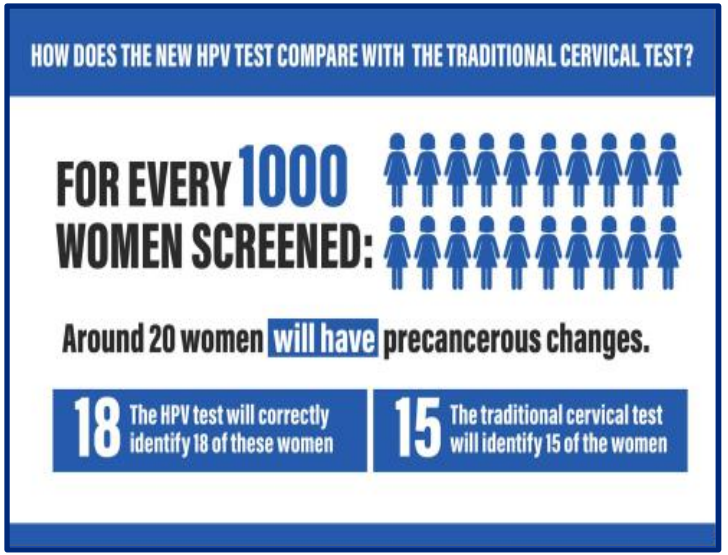
Figure 4. Fitted age-standardised incidence rates, invasive cervical cancer, 1994-2015



period	APC	95% CI
1994-1999	-4.4%	-11.3%, 3.0%
1999-2010	3.9%	1.6%, 6.2%
2010-2015	-7.0%	-12.4%, -1.2%

False negatives in cervical cancer screening

- Screening with cytology prevents 75% of invasive cancers
- Screening with HPV prevents 90% of invasive cancers
- HPV primary screening reduces false negatives from 5 per 1000 to 2 per 1000 women screened
- **There is no cervical screening test that prevents 100% of cancers**



Interval cervical cancer audit

- The CervicalCheck programme performed an interval cancer audit (**retrospective review of cytology**) of ALL women diagnosed with cervical cancer after previous smear test in the programme

- In 2018, a national crisis occurred due to a high profile court cases based on two issues
  - False negative (discordant) smear results on review
  - Non-disclosure of audit (review) results

- No advance guidance for doctors, women (or broader society) on what findings should be expected
  - 6 in 10 concordant
  - 2 in 10 discordant with no impact on clinical care
  - 2 in 10 discordant with impact on clinical care

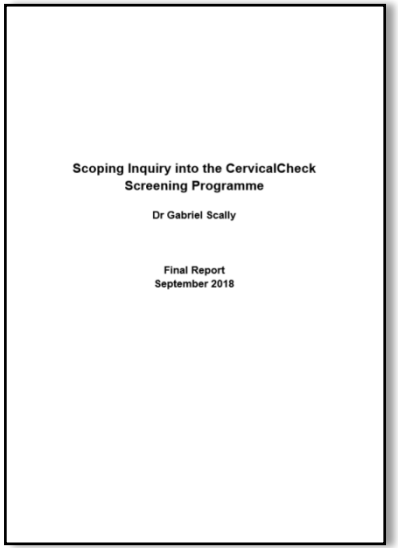
- In **221 out of 1,482 women (15%),** the **retrospective review of cytology** found abnormalities that had not been detected at the time of screening (discordance) which led to a clinically significant delay in diagnosis

- Public Health England Cervical cancer screening QA Audit 2019: **retrospective review of cytology found abnormalities on review that had not been detected at initial screen in 42% of smears**

Dr Scally & CervicalCheck 2018

Scoping Enquiry:

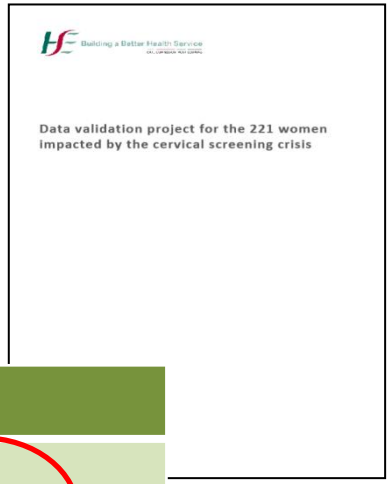
- The audit was well intentioned but “demonstrable deficit of clear governance and reporting lines within CervicalCheck”
- Women expressed very clearly their anger at not being told once the audit results were available and equally angry about the rushed way they were eventually told
- 58 recommendations shared between HSE, DoH and the NCRI. Separated into 116 actions for the HSE; 113 of which are now complete
- “All of the laboratories visited by the Scoping Inquiry team **are meeting the regulatory requirements current in their own country”.**


Scoping Inquiry into the CervicalCheck Screening Programme

Dr Gabriel Scally

Final Report
September 2018

CervicalCheck audit: 221 group

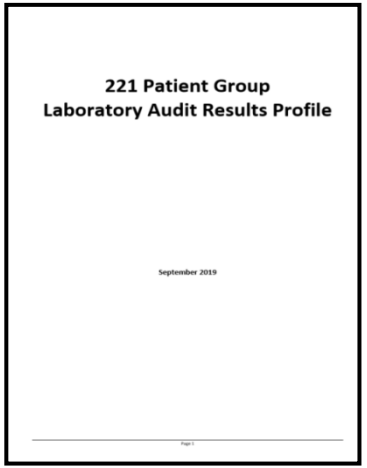


- 221 out of 1,482 (15%) discordant result on retrospective review i.e. abnormalities found that were not detected at time of original smear AND this non detection led to a clinically significant delay
- 76% of 221 cohort diagnosed at pre cancer or stage 1
- Only women who had discordance on the original audit or the RCOG audit are eligible for the DoH Cervical Check tribunal
- All women diagnosed with an interval cancer after May 5th 2018 are ineligible for Tribunal.

Stage	n	%
Pre cancer	9	4
Stage 1	159	72
Stage 2	35	16
Stage 3	10	4.5
Stage 4	7	3
Unknown	1	0.5
Total	221	100%

221 patient group laboratory Audit Results Profile

- A review 343 smear tests in 221 women
- “The data presented in this report is a very small subset of overall data for CervicalCheck (in excess of 3 million screening tests since 2008).”
- “The performance of laboratories used by CervicalCheck has been analysed by Dr Scally and found to be equivalent”.


221 Patient Group
Laboratory Audit Results Profile

September 2019

RCOG Expert Panel Review of Cervical Screening 2019

- c3,000 Irish women diagnosed with cervical cancer 2008-2018
- C40% had never been screened by the programme
- 1,034 women with previous screening had slides reviewed
- Review team upgraded Cervical Check result in 308/1034 (29.8%)
- Overall 159/1034 (15%), the non-detection at time of screening lead to ‘delayed’ diagnosis.

“The findings of the slide review are in line with the patterns of discordance reported in the English Audit of Cervical Cancer (42%)”

“ Women can have confidence in the CervicalCheck programme”

“In recognising the serious consequences that screening failures have for affected women, it is important to also recognise the inability of cervical screening to prevent all cases of cervical cancer.”

Expert review discordance (RCOG)

- Of 28 slides classified by the NSS/CC Audit as negative:
  - 24 confirmed negative
  - 4 upgraded

- Of 35 slides classified by NSS/CC Audit as low grade:
  - 3 downgraded
  - 16 confirmed low grade
  - 14 were upgraded by the Review
  - 2 deemed inadequate

- Of 43 slides classified by NSS/CC Audit as high grade:
  - **10 were downgraded to low grade**
  - **3 downgraded to negative**
  - 29 confirmed high grade
  - 1 deemed inadequate.

Table 8 - Correlation of RCOG Review and Irish Audit Cytology Results all Low Grade and High Grade Grouped

		RCOG Review Results					
		Negative	Low Grade	High Grade	Inadequate	Total	(%)
NSS Audit Results	Negative	24	3	1	0	28	26%
	Low Grade	3	16	14	2	35	33%
	High Grade	3	10	29	1	43	41%
	Total	30	29	44	3	106	
	(%)	28%	27%	42%	3%		100%

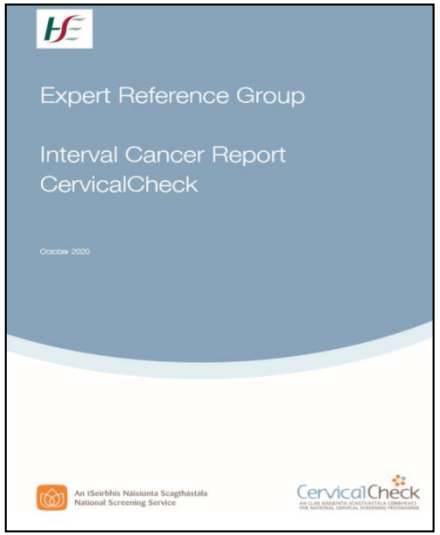
Even when reviewers know a patient has cancer, still 30% discordance of opinion with considerable inter-observer variation in slide review, similar proportions of upgrading and downgrading, not a bias in a single direction.

Expert Reference Group report 2020

- Commissioned as part of the Scally Review in 2018
- Acknowledged that Ireland's cancer screening programmes operate to the highest international standards
- Emphasised that every year people will develop interval cancer.

Key recommendations:

- Offer **patient-requested reviews** for all patients diagnosed with invasive cervical cancers
- Programmatic reviews of cytology to be blinded and anonymised – to support quality assurance and professional education
- Annual interval cancer rate to be developed with the NCRI and benchmarked internationally.



The legal situation

- *… even screening processes which operate at the very highest standards can give rise to different results by competent screeners. In addition,* ***a retrospective review of the screening process after someone has been diagnosed may well give different results, possibly influenced by the difficulties encountered with hindsight. It is thus possible… that a competent screener exercising ordinary care might give a clear result, even in circumstances where it might transpire with the benefit of hindsight that there could have been suspicious material on the slide.*** *For these and doubtless other reasons, it is not simply a case of inferring from the fact that someone obtained a clear result but subsequently was diagnosed with the relevant disease that there was necessarily negligence on someone‘s part.*

Supreme Court Justice Clarke May 2020

Some difficult truths

- In the original NSS/CC audit, the diagnosis of cancer was NOT withheld from women at any time
- Interval cancer audit data has no impact on the treatment or prognosis for women
- Studies in the UK have shown that when women on a screening programme develop cervical cancer, there is a 30-55% chance that abnormalities will be seen when ‘looking back’ that were not obvious at the time of the screening test.
- A discrepancy found on review does not imply that the same finding should have been made under routine screening conditions. When a review is carried out the reviewer knows that the patient has cancer and hence this heightens vigilance and the reporting of abnormalities. This is known as **retrospective bias**.
- The boundary between normality and abnormality is not firmly drawn. This means that **two experts can hold different opinions** on the same case even at the time of review.

Conclusion

- Scally, RCOG and Expert Reference Group reports
  - CervicalCheck is and WAS operating to best international standards

- Cervical screening reduces the risk of developing cervical cancer but does not prevent 100% of cancers
  - all cancer screening programmes will have cases of interval cancers

- When a retrospective review detects an abnormality, that does not prove that it should have been seen at time of screening test

- All reports (Scally, RCOG, ERG) called for a new legal framework
  - decision for society on future of screening.

Supporting Cervical Screening

Many lives will be saved and
many women will NOT develop cancer

Interval cancers will exist -
Women will get cancer after
previous normal smear

Sensitivity

The ability of a test to correctly identify those with the disease

Cytology	73%
HPV	90%

Specificity

The ability of a test to correctly identify those without the disease

Cytology	90%
HPV	90%

False negatives

- Cytology screening 5 in 1000
- HPV screening 2 in 1000

False positives

- Cytology 29 per 1000 women
- HPV **101 per 1000** women

For every positive HPV result, 85% are false positives
For very positive cytology result, 86% are false positives
Screening ≠ Diagnosis
RISK OF OVERTREATMENT


Cochrane Library
Cochrane Database of Systematic Reviews

Cytology versus HPV testing for cervical cancer screening in the general population (Review)

Koliopoulos G, Nyaga VN, Santesso N, Bryant A, Martin-Hirsch PPL, Mustafa RA, Schünemann H, Paraskevaidis E, Arbyn M

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Cochrane Database of Systematic Reviews 2017, Issue 8. Art. No.: CD008587.
DOI: 10.1002/14651858.CD008587.pub2.

www.cochranelibrary.com

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