

Electrical Impedance Colposcopy



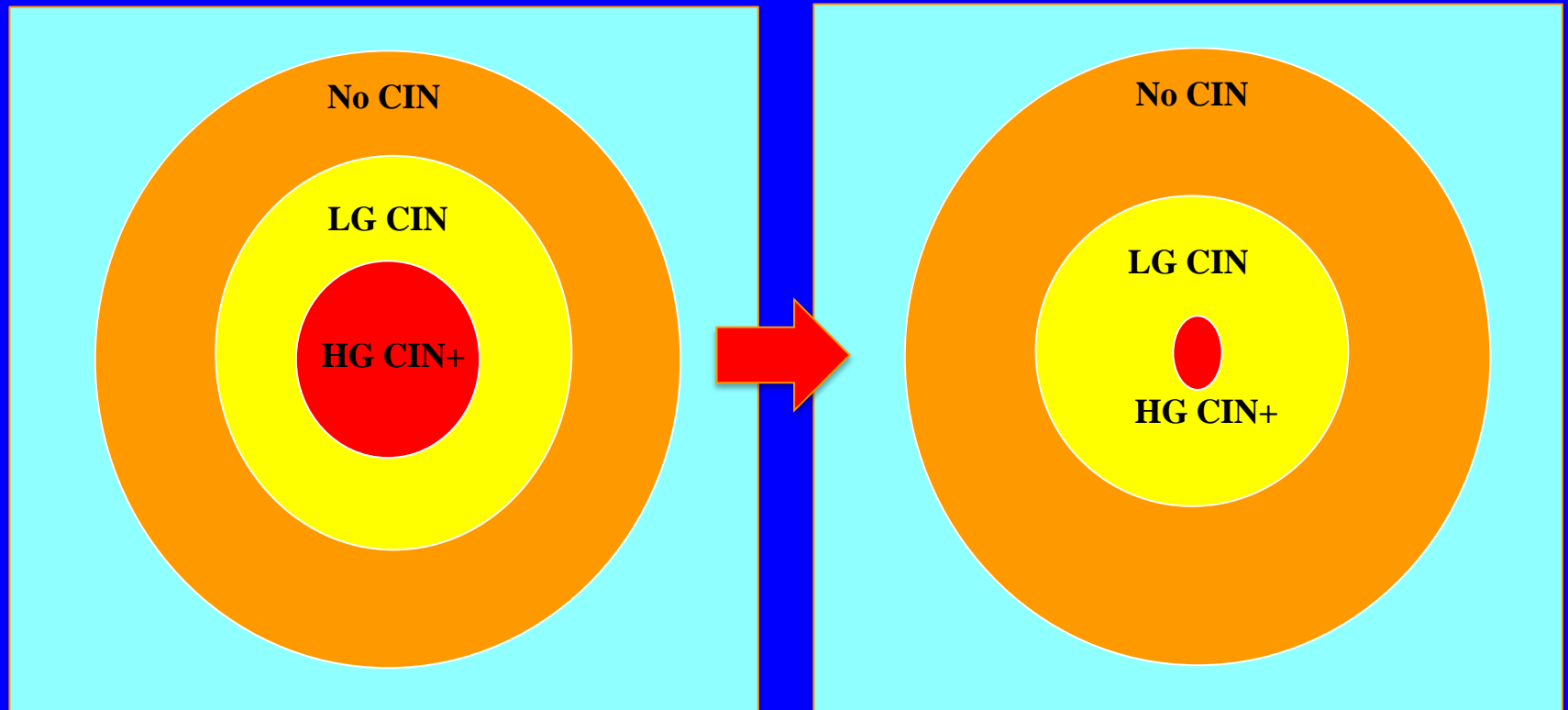
CWE Redman
BSCCP, Cardiff, May 2017



Challenges facing colposcopy

- Low sensitivity of colposcopy
- HPV primary screening
- HPV vaccination

Needle in the Haystack

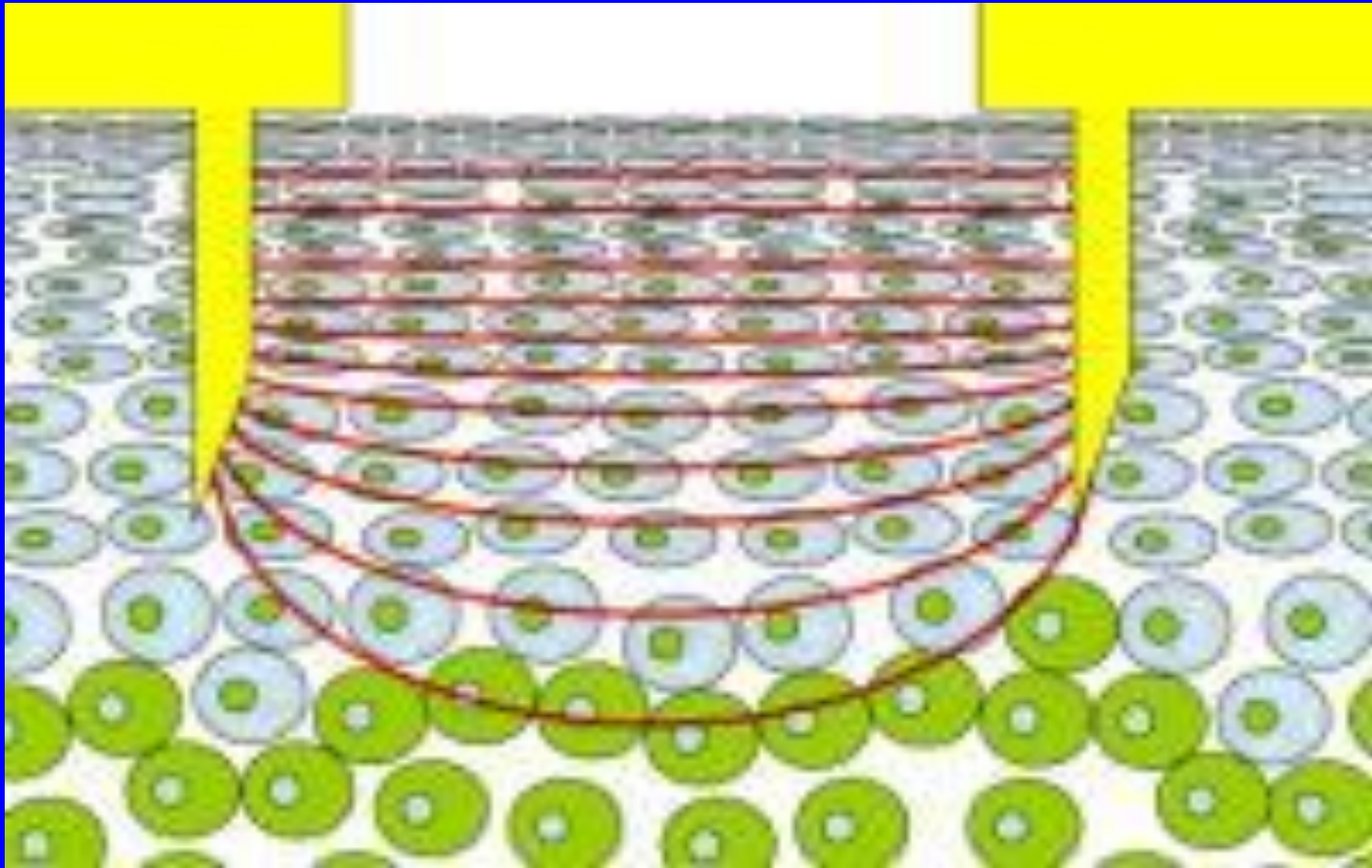


How to improve colposcopy

- Training / certification
- Number of biopsies
- Adjunctive technologies

Electrical Impedance Spectroscopy

Measures resistance by applying a weak alternating current between two electrodes on the tip of the probe.



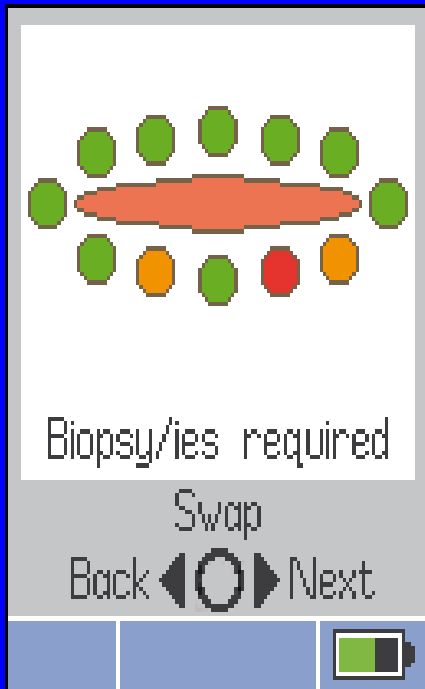
Zedscan



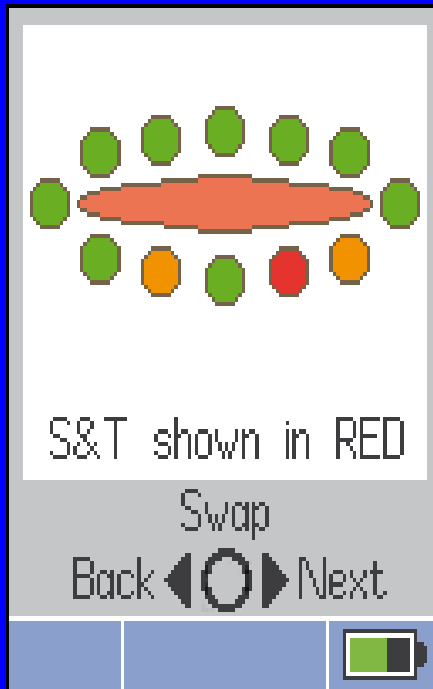


- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

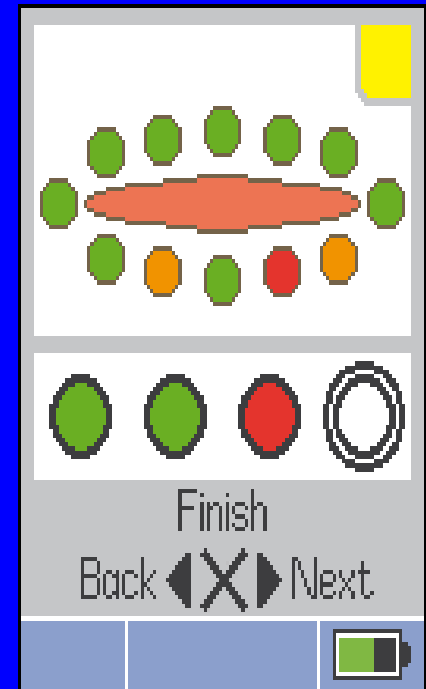
Real time data processing and displayed on hand set



Identifies areas
to biopsy



Identifies areas
that pass threshold
for 'see & treat



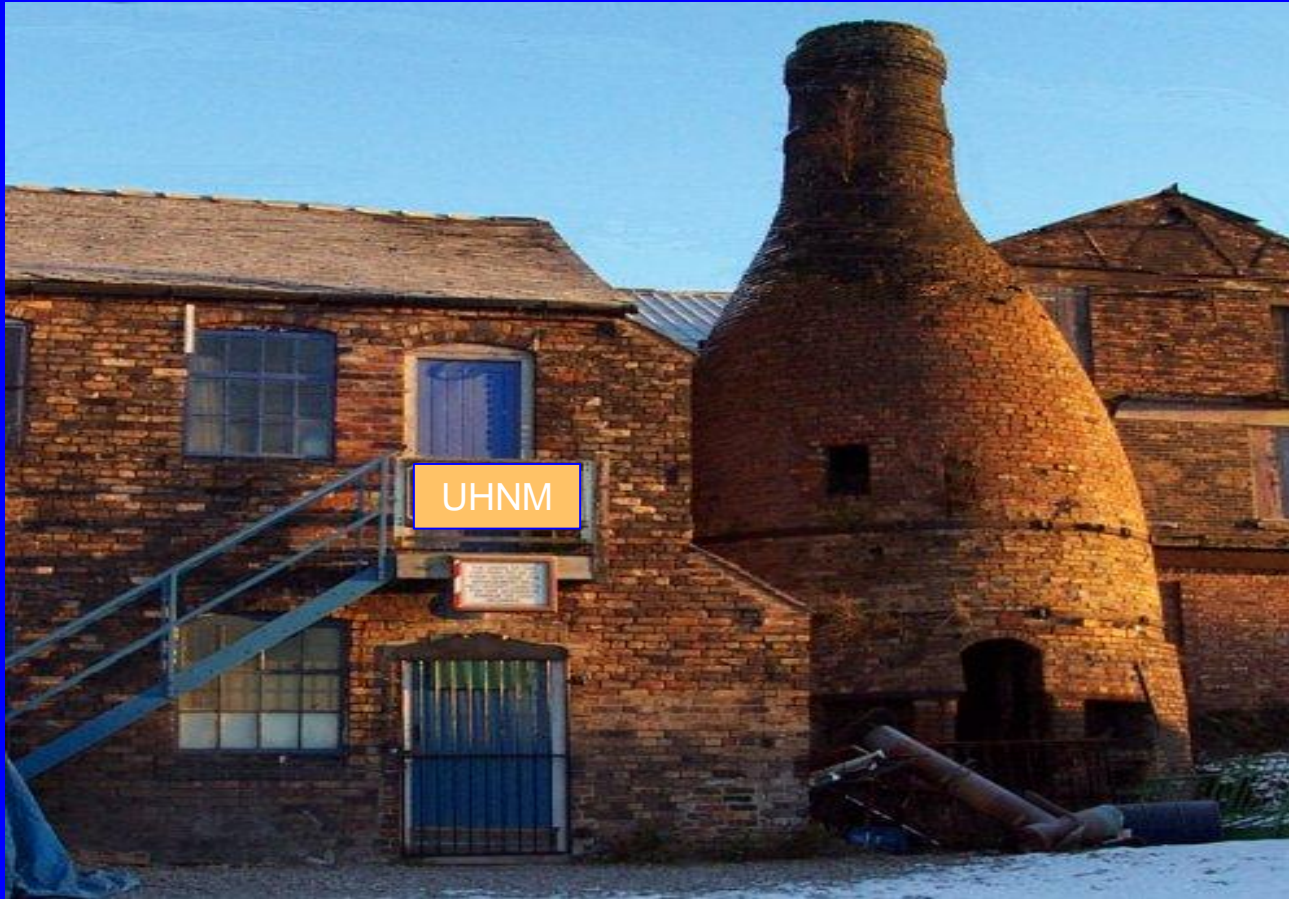
Single point mode to
accurately identify
site to biopsy

What it does

- Improves sensitivity
- Improves specificity
- Faciliates see-and-treat

Accuracy of detection of high-grade cervical intraepithelial neoplasia using electrical impedance spectroscopy with colposcopy. Tidy JA, Brown BH, Healey TJ, Daayana S, Martin M, Prendiville W, Kitchener HC. BJOG. 2013 Mar;120(4):400-10

UHNM Feasibility Exercise



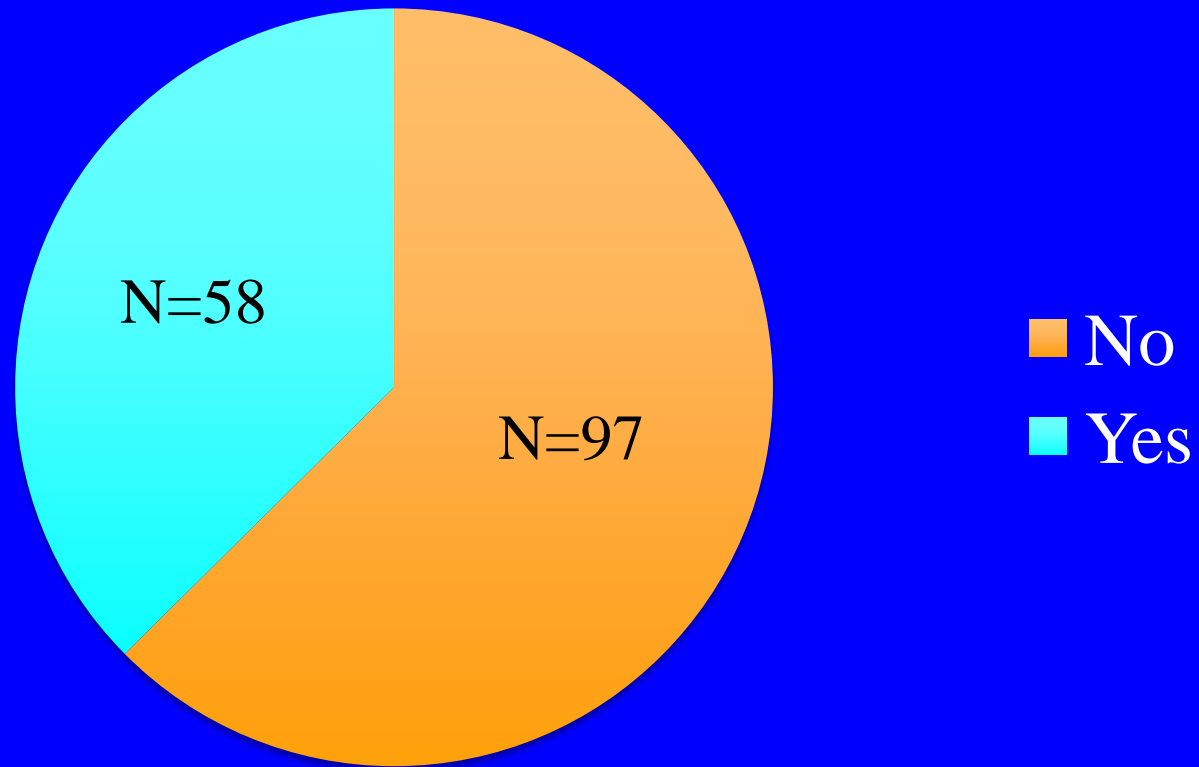
Population

- **May 2017 – March 2018**
- **Total of 208 colposcopy pats**
- **155 Zedscan eligible**

EXCLUSIONS (n=53):

- | | |
|----------------------------|-----------|
| • TZ 3 | 25 |
| • Clinical referral | 17 |
| • ? Invasive | 06 |
| • Glandular | 03 |
| • No cervix | 02 |

Was Zedscan used (N=153)?

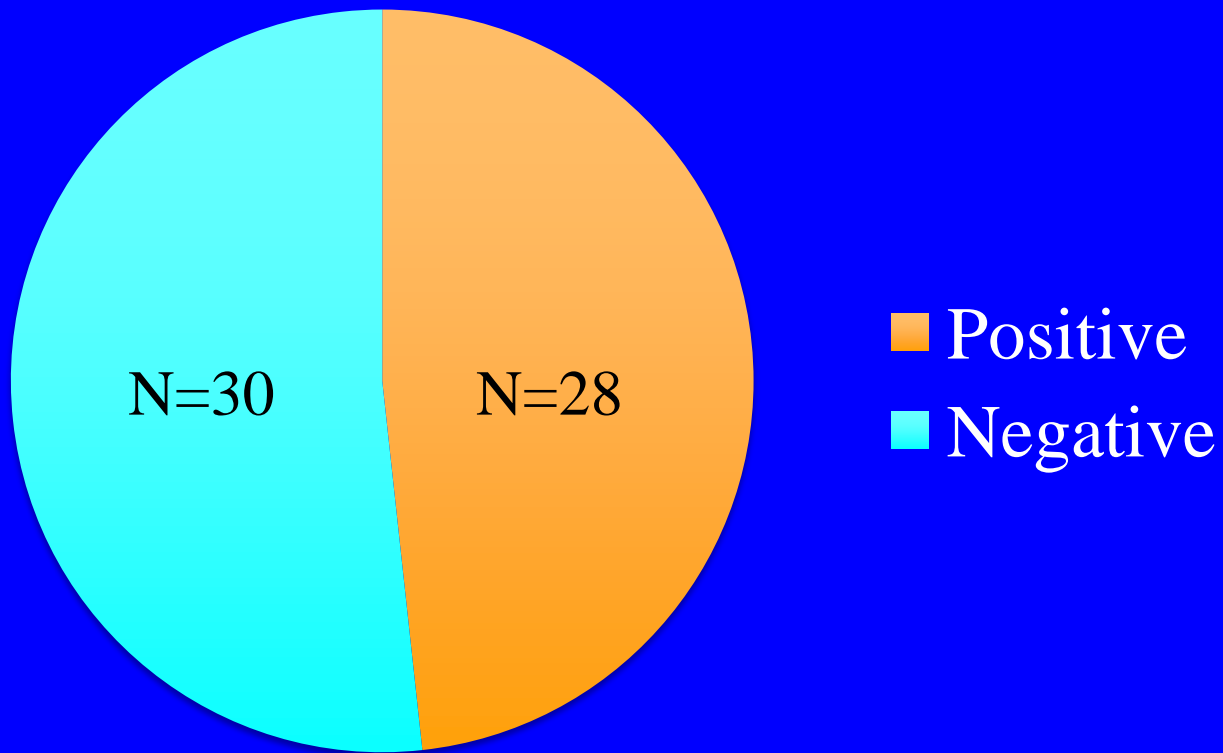


Zedscan not used (n=97)

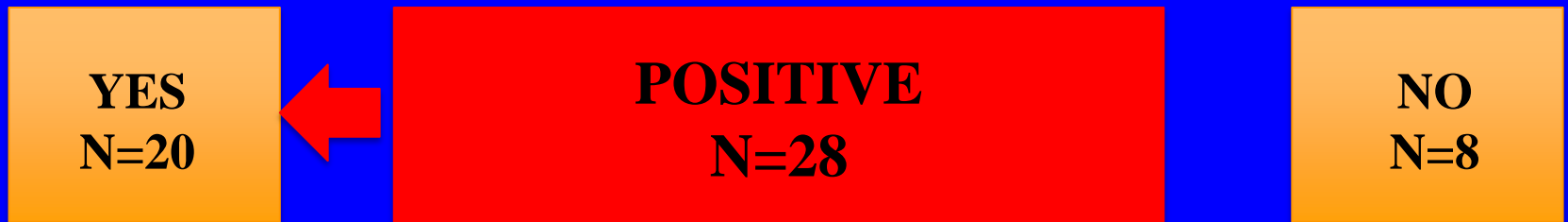
Reason	No biopsy	Loop	Punch	Total
No reason	9	0	4	13
TZ2	6	1	0	7
Patient	3	3	2	8
HG disease	0	56	0	56
Pregnancy	4	0	0	4
Period	4	0	0	4
Failure	3	0	2	5

- Scope for improving specificity in patients with HG referrals?
- Use in pregnancy?
- Teething problems

Zedscan used (n=58) - Results



Alter Management?



	No CIN	CIN 1	CIN 2	Total
Would not have taken bx	5	1	4	10
Single bx only	8	2	0	10

Improve sensitivity
Reduces number of biopsies taken per patient

Alter Management?

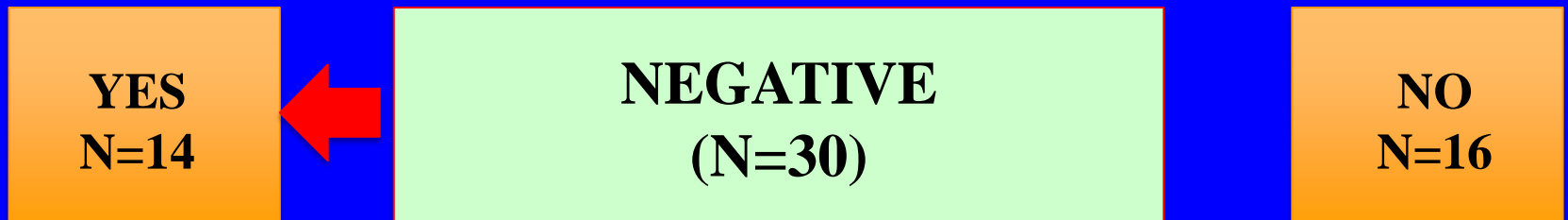


Biopsies (n=5)	No CIN	CIN 1	CIN 2	Total
Would taken bx anyway	0	0	2	2
Failed single point	2	1	0	3

No biopsy (n=3)

- 2 patients opted for conservative mx – HPV-ve at 6 mo
- 1 patient: failed single point + opted for conservative mx

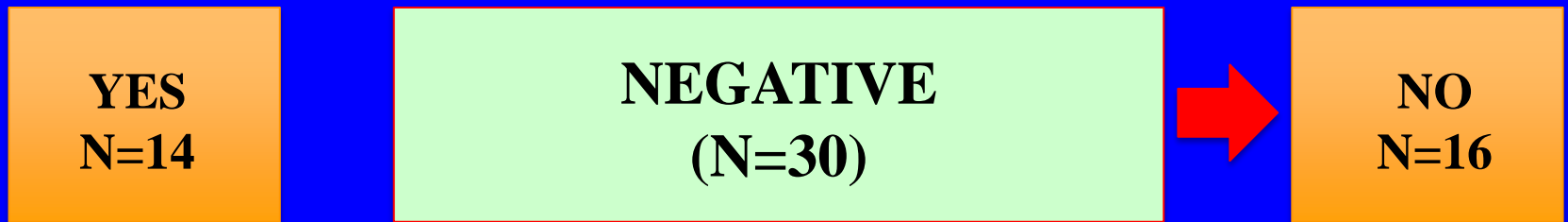
Alter Management?



	Total
Would otherwise have taken biopsies	13
Might have performed Rx CIN2)	1

Reduced number of patients biopsied
Might aid conservative management of CIN2

Alter Management?



	Total
Would not have taken biopsies in any event	16

Provides reassurance and facilitates adherence to
PHE HPV Triage / TOC algorithm

Summary

- Relatively easy for clinician + patient
- Can't use in all cases
- Reduces the number of women biopsied
- Reduces the number of biopsies taken
- Should improve specificity / sensitivity
- Provides reassurance

Comments

- Helpful
- Flexible / not intrusive
- Provides objectivity
- Use and usefulness will depend on context

