

## Background

- There is increasing interest in optical diagnosis (OD) for small colonic polyps with a 'resect and discard' strategy.
- During OD the endoscopist assigns the polyp diagnosis as high or low confidence using the NICE or equivalent classification.
- Optical diagnosis performance varies and the causes for error are not well documented.

## Aims

- Assess factors that result in an incorrect OD where a high confidence optical diagnosis is made by an experienced endoscopist.

## Methodology

- Prospective study running over 20 months (Feb 20 - Oct 21) at a London bowel cancer screening centre.
- Part of the ongoing DISCARD3 study assessing implementation of optical diagnosis with a resect and discard strategy.
- All polyp diagnosis evaluated by the colonoscopist as high or low confidence using NICE criteria.
- All retrieved polyps sent for histopathology.

## Study overview

- 1 The first 639 diminutive polyps optically diagnosed were reviewed. Of these, 112 were high confidence diagnoses which did not match the final histopathology result.
- 2 Polyp photo quality was assessed in any cases of optical diagnosis-histopathology discordance.
- 3 A root cause analysis of any cases of optical diagnosis-histopathology discordance was performed.

### 3C Photo Quality Checklist Score

Polyp photos were blindly assessed and given 1 point for each of the following criteria:

- Clear surface
- Complete view
- Correct focal distance

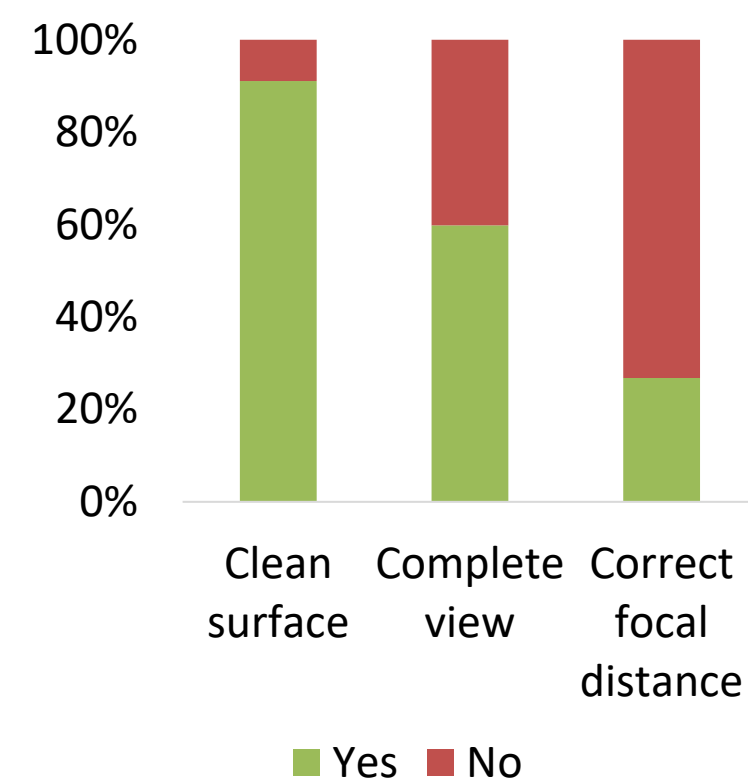
A score of 3 was considered adequate to apply the NICE criteria.

### Causes of optical diagnosis error

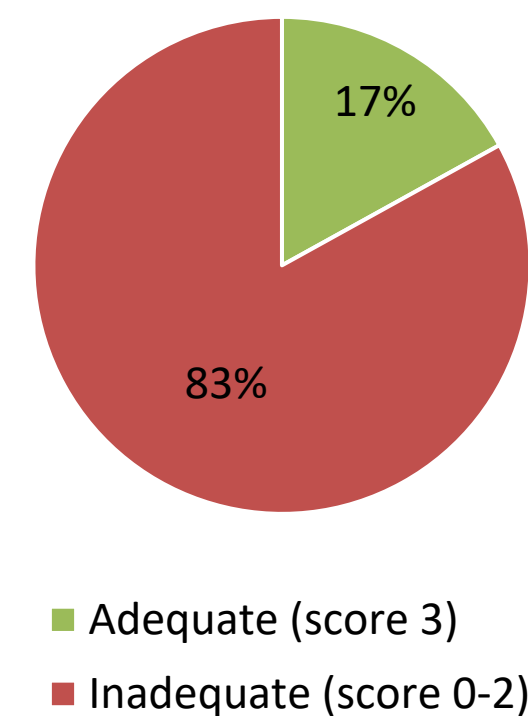
- **NICE mismatch** – NICE criteria could not be fully applied to the polyp (eg mixture of NICE type 1 and type 2 features).
- **NICE not applied** – NICE criteria could be applied but was done incorrectly.
- **Inadequate photo for NICE** – where photo quality was inadequate for NICE criteria to be applied.
- **Specimen processing error** – where there is high confidence that the optical diagnosis was correct with suspected specimen processing/retrieval error.

## Results

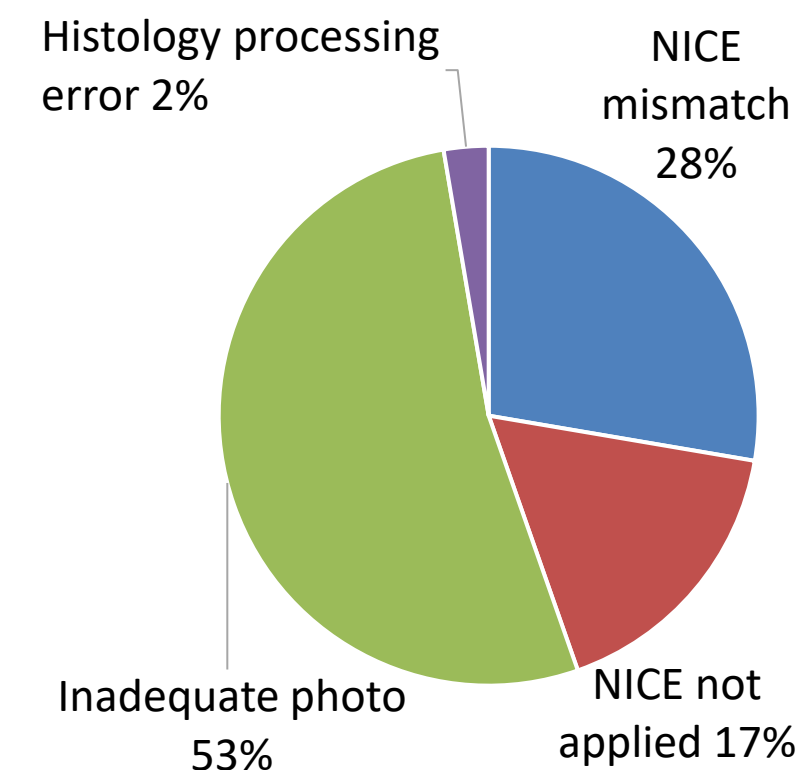
**Figure 1** Photo quality assessment in cases of optical diagnosis error



**Figure 2** Adequacy of polyp photos in optical diagnosis error cases



**Figure 3** Most likely cause of optical diagnosis error



## Conclusions

- Adequacy of polyp photo is critical to quality assurance of OD.
- A significant proportion of OD errors had corresponding inadequate photodocumentation with incorrect focal distance the main photographic issue.
- In cases where photos were adequate, understandable error occurred where lesions had a mixture of NICE type 1 and 2 features.