

5-year post-endoscopy missed colorectal cancer rates: A single center experience

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Thousands of bowel cancer cases missed due to ‘unacceptable’ testing failures

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By **Laura Donnelly**, HEALTH EDITOR

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Thousands of bowel cancer cases are being missed due to “unacceptable” testing failures, research in the BMJ shows.

The UK research found that some providers carrying out colonoscopies were three times as likely as others not to spot signs of disease.

At the worst units, almost one in ten cases which turned out to be bowel cancer were not picked up during the tests, the study led by the University of Leeds found.

Overall unadjusted rate 3
year rate 7.4% (2005-2013)

Burr et al. BMJ 2019;367:16090

Definition: “Missed Cancer”?

World Endoscopy Organisation definition 2014:

- **Interval CRC:** “CRC diagnosed after a colorectal screening examination in which no cancer is detected, and before the date of the next recommended exam”

Non Interval CRC:

- **Post Colonoscopy CRC:** Diagnosis of CRC, within 5 years of negative colonoscopy, where no surveillance was planned

Aim

- Establish the Hutt Valley DHB five year post-endoscopy missed colorectal cancer (CRC) rate
 - Population 146,000
 - ~3500 colonoscopies per year
 - Bowel Screening commenced August 2017

Methodology

- Retrospective study
- Utilized Hutt Valley DHB CRC database
- CRC Diagnosis June 2014 -> June 2019
- Identified cases where colonoscopy was performed within 5 years prior to CRC diagnosis
- Confirmed timing of diagnosis relative to planned surveillance (as per 2011 Ministry of Health Guidance)

Exclusion criteria

- Prior colonoscopic surveillance elsewhere
- Appendiceal Cancer
- Anal Cancer

Data Collection: Demographics

- Patient age
- Gender
- Presence of diverticular disease

- Tumour location
- Stage of tumour
- Histology / Immunohistochemistry

Data Collection: Technical factors

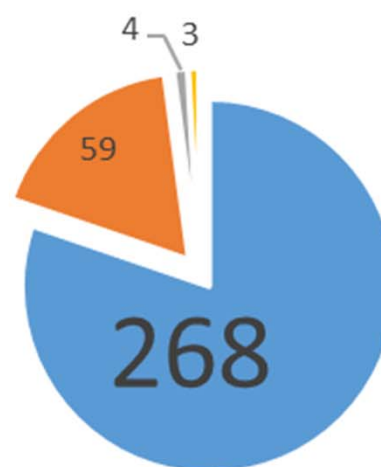
- Seniority of endoscopist performing examination
- Quality of bowel prep
- Extent reached
- Polyps detected
- Polypectomy performed in same segment
- Timing of diagnosis relative to planned surveillance (as per 2011 Ministry of Health Guidance)

Calculation of Missed Cancer Rate

- “Missed CRC” rate = Number Missed CRC / Total number CRC over 5 years.

Results

Patients included in study

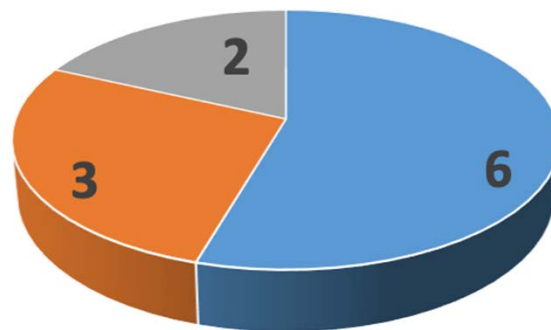


- Included
- Surveillance elsewhere
- Appendiceal Cancer
- Anal Cancer

Results

Total number of cases of "Missed"
CRC identified = 11

11 Missed CRC/268 Total CRC



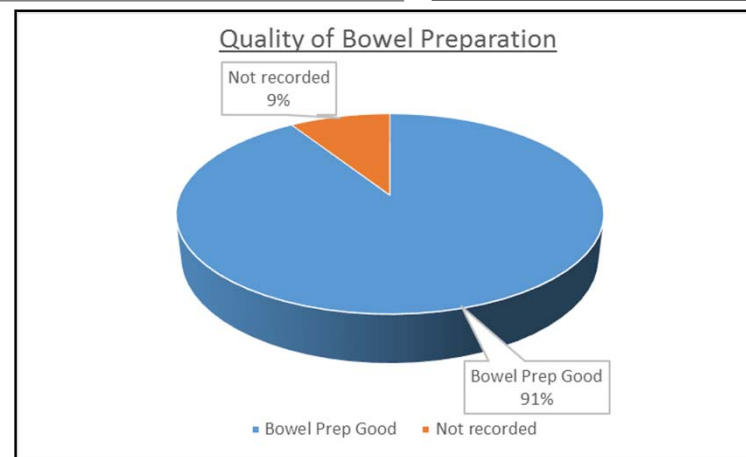
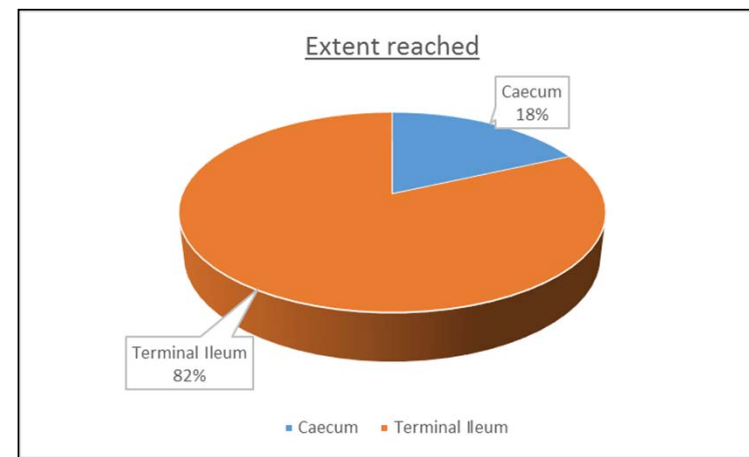
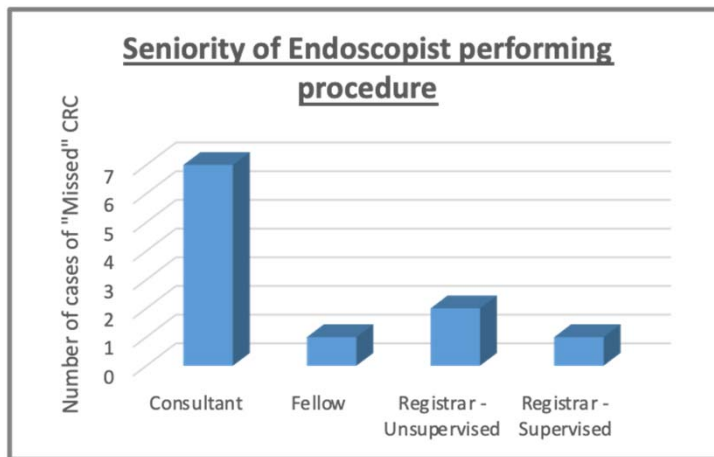
- Post Colonoscopy CRC
- Interval CRC: Polyp Surveillance
- Interval CRC: Post CRC Surveillance

Missed CRC = 4.1%

Results

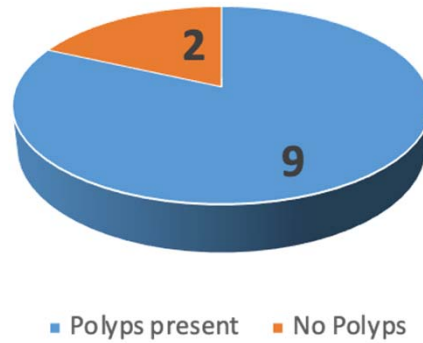
	Number patients	Mean interval since prior colonoscopy (Months)	Mean age at CRC Diagnosis (Years)
Post Colonoscopy CRC	6	28.5 (Range 5-52)	76.8 (Range 65-87)
Interval CRC; Polyp Surveillance	3	25.6 (Range 14-40)	74 (Range 71-78)
Interval CRC; Post-CRC Surveillance	2	45.5 (Range 40-51)	73.5 (Range 71-76)

Results

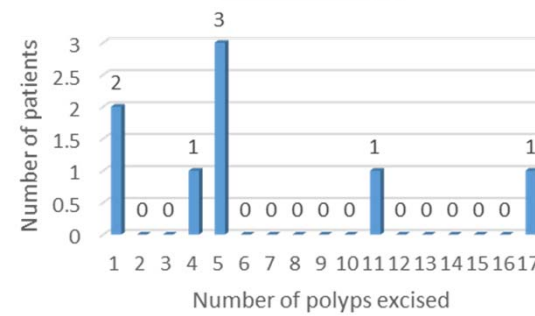


Results

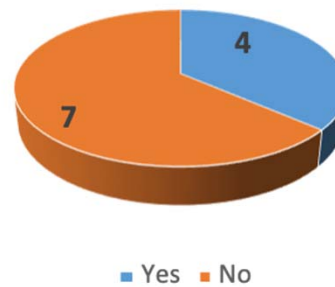
Polyps Identified at Index Colonoscopy



Number of Polyps excised at Index Colonoscopy

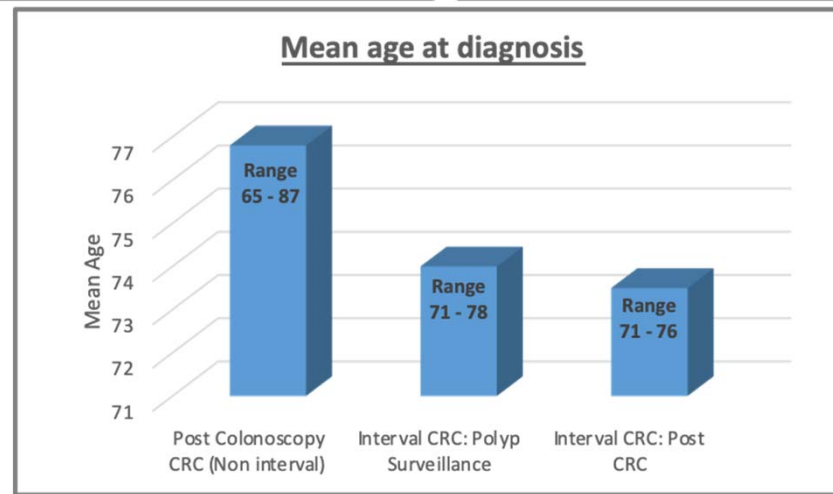
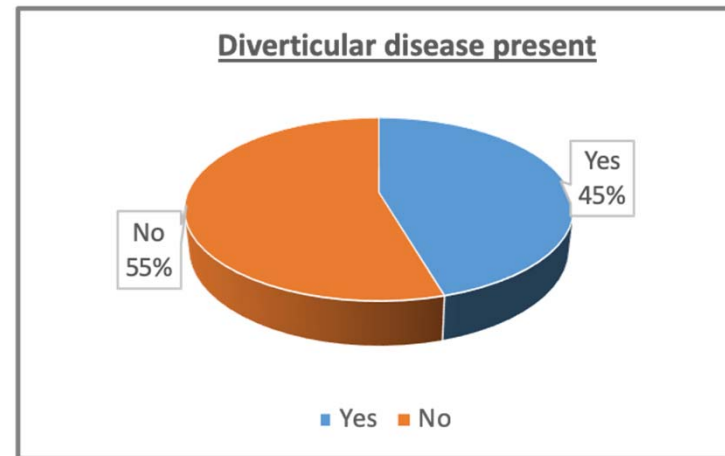
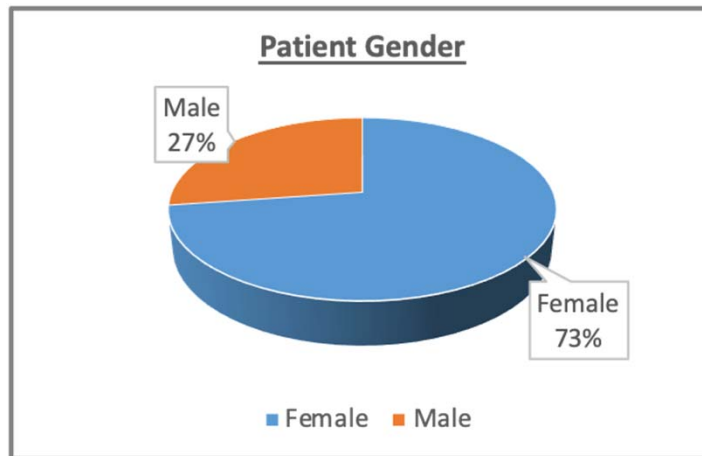


Polypectomy in same bowel segment as subsequent cancer

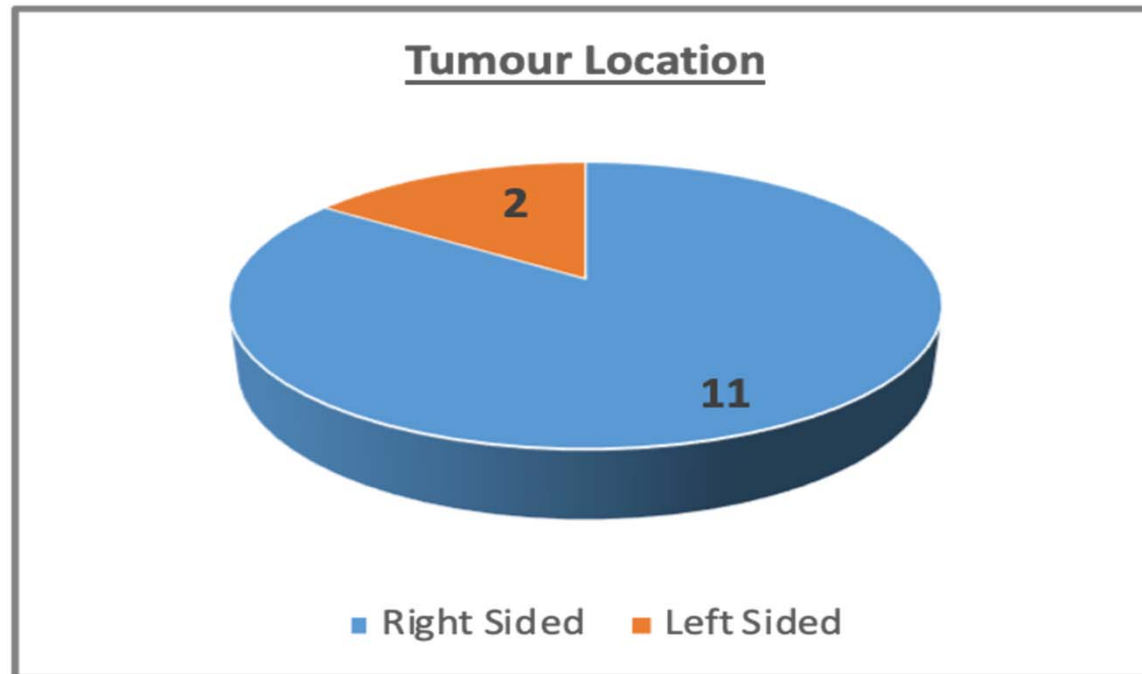


Kaminski et al. NEJM 2010;362:1795-803
 Oka et al. AJG 2015;110:697-707
 Chen et al AJG 2007;102:856-861.
 Robertson et al. Gastroenterology 2005;129:34-41.

Results



Results

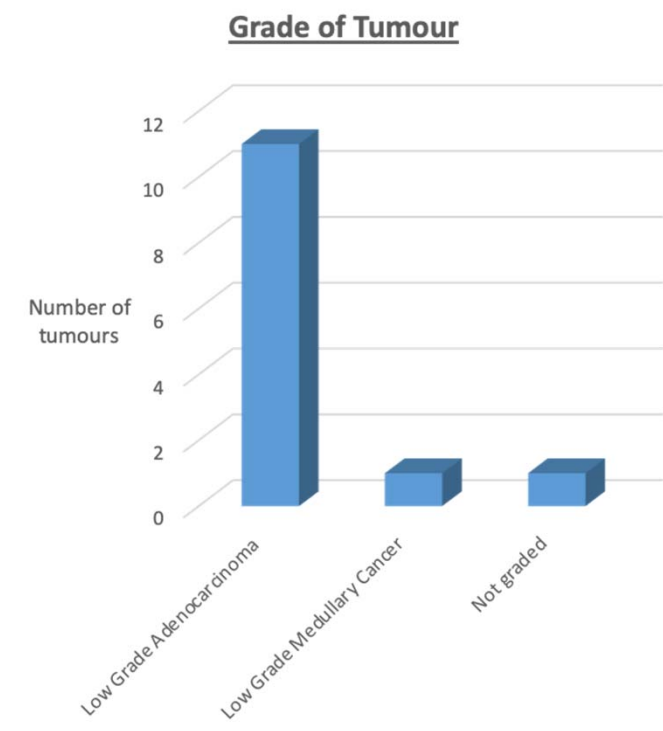
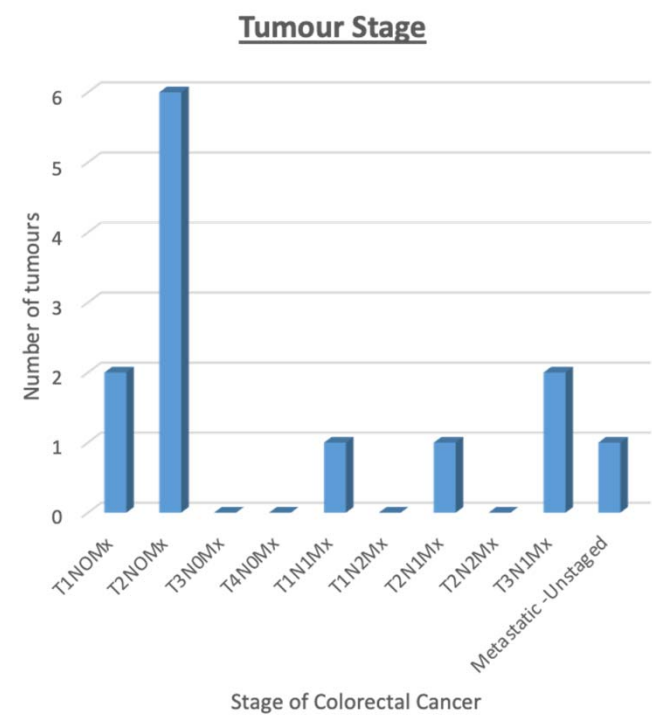


Benedict M et al. WJG 2015;7;21(45):12735-12741
Pohl H et al. CARE study. 2013 144:74-80.
Sawhney et al. Gastroenterology 2006; 131:1700-5
Burgess NG et al. Gastrointest Endosc 2014; 80: 307-310.
Arain MA. AJG 2010;105:1189-1195.
Sanduleanu S et al. Gastrointest Endosc Clin N Am 2010;20:449-460

Results

- 3/11 Right sided CRC tested for Immunohistochemistry:
 - 2 Abnormal Stain:
 - 1 x Loss MLH1
 - 1 x Loss MLH1 & PMS2
- Only 1/2 Left sided CRC tested – Normal stain
- 4/8 Remaining Right sided CRC – Synchronous CRC's
- Probable Sessile Serrated Polyposis Syndrome

Results



Erichsen et al. AJG 2013;108:1332-1340
 Gill et al. Br J Cancer 2012;107(3):417-421.
 Morris et al. Br J Cancer 2012;107:757-764.

Conclusions

- Our 5 year missed CRC rate is less than the UK 3 year target of <5%
- The majority of missed CRC in our study were right sided
- Only 3 Right sided tumours were tested for immunohistochemistry - 2 had abnormal stain
- Synchronous CRC were associated with SSPS in our study

Thank you

- Supervisors:
 - Dr Magda Metzner
 - Dr Jeff Wong
 - Dr Stephen Inns