The POst Endoscopy Tumours Study

A national, multi-centre study of post-endoscopy colorectal and upper gastrointestinal cancers in Aotearoa New Zealand

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Collaborative Partners

Aotearoa Clinical Trials	Te Kohinga Ora *Aotearoa* *Clinical Trials*

Study Delivery Timeline

Dates	Description
01 March 2023	Protocol finalised and ethics applications in
June 2023	Ethics approved nationally and locally ● Local teams can submit and upload data asynchronously pending local approval timelines
December 2023	Data processing to determine eligible population
January to March 2024	REDCap users generated and NHIs sent to centres
April 2024	Data upload window opens
October 2024	Data upload window ends - REDCap locked for new entries
November 2024	REDCap Database locked and finalised
November 2024	Data Analysis
December 2024	Planned Dissemination of Results

Study Summary

Study title: The POst Endoscopy Tumours Study

Short title: The POET Study

Study design: Multicentre, retrospective cohort study

Aim: To define the rate and characteristics of post-colonoscopy colorectal cancer (PCCRC) and post-endoscopy upper gastrointestinal cancer (PEUGIC) across public hospitals in Aotearoa New Zealand.

Primary outcome: The PCCRC 3-year rate and the PEUGIC 3-year rate

Secondary outcome: Survival time after PCCRC and PEUGIC diagnosis; compliance with endoscopy audit standards

Eligible centres: All public hospitals in New Zealand will be eligible to participate.

Study population:

1) All adult patients who are diagnosed with colorectal adenocarcinoma within 6 to 48 months of a colonoscopy.
2) All adult patients who are diagnosed with gastroesophageal within 6 to 48 months of an upper gastrointestinal endoscopy.

Study period: 2010 to 2022

1. Background and rationale

Colorectal cancer is the second most common cancer in Aotearoa New Zealand and its incidence is high by international standards (1,2). Colonoscopy is crucial for early detection and screening for colorectal cancer, however approximately 4 - 5% of new colorectal cancer diagnoses occur in patients with a recent negative colonoscopy (3–6). These cases, including both interval and non-interval cancers, are defined by the World Endoscopy Organization (WEO) as post-colonoscopy colorectal cancers (PCCRC), and may be caused due to missed lesions, inadequate exams, incompletely resected lesions, or lesions which were not resected at the time of initial colonoscopy. These cases are significant as they represent possible missed or incompletely resected cancers on a previous colonoscopy (7).

Similarly, in gastro-oesophageal cancers, upper gastrointestinal endoscopy is a gold standard investigation for early mucosal changes suggestive of malignancy (8). Prior literature suggests anywhere from 4.6 to 25.8% of upper gastrointestinal cancers can be classified as “missed” or post-endoscopic gastrointestinal cancers (PEUGIC) (9). Recognition of the incidence rate of PCCRC and PEUGIC has resulted in guidelines, recommendations and quality standards for colonoscopy and upper GI endoscopy to address this problem (8,10).

It is hypothesised that a combination of factors all contribute to ‘missed’ lesions including individual underlying biology increasing colorectal cancer risk, patient factors such as diverticular disease or comorbidities that affect colonoscopy quality, inadequate bowel-preparation, endoscopist technical and decision-making factors, and system delays (3). However, many of these lesions are preventable (11). A false ‘negative’ test has significant implications for clinical decision making and patient care, resulting in symptoms being ignored, further investigations being delayed. Reducing the incidence of PCCRC and PEUGIC should have a significant impact on patient outcomes.

In the United Kingdom there has been significant improvement in PCCRC 3-year rates since initiation of national initiatives, but significant variation in PCCRC 3-year rates still exist between providers based on a recent population-based study by Burr et al. (12). Other international studies in PEUGIC have also shown significant variation in rates (9). This type of data does not exist at a national level in Aotearoa New Zealand. It is considered an urgent priority to determine the rate and characteristics of PCCRC and PEUGIC in Aotearoa New Zealand.

2. Aims

To define the rate of PCCRC 3 year rate and PEUGIC 3-year rate across public hospitals in Aotearoa New Zealand.

3. Outcomes

Primary outcome	**Definition**
Rate of PCCRC and PEUGIC	*As defined by:* Number of PCCRC within inclusion period/Total number of colonoscopies in eligible population AND Number of PEGUIC within inclusion period/Total number of upper GI endoscopies in eligible population
Secondary outcomes	
Survival after PCCRC or PEUGIC	Defined as length of time between date of diagnosis to date of death Survival after PCCRC and PEUGIC will be described.
World Endoscopy Organisation System of Analysis for cause of PCCRC.(3)	Defined as: Missed lesion, examination adequate; Missed lesion, examination inadequate; Detected lesion, not resected; Likely incomplete resection
Centre level variation of PCCRC and PEUGIC	Significant centre variation will be defined by variation lying outside of 95% confidence intervals of funnel plots after adjustment for confounding factors of patient age, sex, comorbidity, year of colonoscopy, NZ deprivation index, inflammatory bowel disease, diverticular disease, previous colorectal cancer, and previous colonoscopy.
Changes of PCCRC and PEUGIC over time	Changes in age-, sex-, and ethnicity-standardised rates of PCCRC and PEUGIC over the study period Trends will be compared with similar cohorts internationally.(13)

4. Methods

4.1. Study Design

POET is a nationwide multi-centre, retrospective observational study of PPCRC and PEUGIC. We aim to adapt the student- and trainee-led collaborative research model as previously used by organisations such as EuroSurg (14), STARSurg (15)

'Mini-teams' of collaborators will participate at each hospital, with a range of members including medical students, junior doctors, trainees, registrars, and supervising consultant.

The local lead of each mini team is responsible for obtaining local ethical approval and coordinating the overall team. Each centre must have a supervising consultant to oversee ethics applications. Up to 4 data collectors will be allowed at each centre, with additional members considered on a case-by-case basis. All members will be PubMed citable authors.

Data will be collected retrospectively on eligible patients from routine clinical notes.

4.2. Setting

POET is open to any publicly-funded secondary or tertiary hospital in New Zealand within the Te Whatu Ora Health NZ Directorate. All participating centres will be required to register the study according to local regulations, evidence of which must be uploaded onto REDCap prior to commencement of data collection from each respective site.

4.3. Definitions

Post colonoscopy colorectal cancer
Defined as any new diagnosis of colorectal adenocarcinoma with a prior colonoscopy between 6 and 48 months.(7) Cases within 6 months or greater than 48 months were defined as a new index diagnosis.

Cases will be further classified as per World Endoscopy Organisation definitions(7):

- Interval: Detected before recommended screening/surveillance interval
- Non interval type A: Detected at recommended screening/surveillance interval
- Non interval type B: Detected after recommended screening/surveillance interval
- Non interval type C: Detected when no screening/surveillance interval had been recommended

Post endoscopy upper GI cancer
Defined as any gastro-oesophageal malignancy diagnosed between 6 months to 3 years of a "cancer-negative" endoscopy. (9,10). Cases within 6 months or greater than 3 years were defined as a new index diagnosis.

The term PEUGIC encompasses both post-endoscopy oesophageal cancer (PEEC) and post-endoscopy gastric cancer (PEGC). (16)

NB: The differing time frame is based on World Endoscopy Organisation recommendations: the 6 to 48 month time frame is to allow data collection for root cause analysis, while the 6 to 36 month timeframe is for overall unadjusted PCCRC and PEUGIC rate calculations.

4.4. Patient eligibility

Patients must fulfil all of the following criteria to be included in the study:

- Adult patients diagnosed with malignant neoplasm of the colon, rectosigmoid, rectum and anus (ICD-10 C18-21) or upper gastrointestinal malignancy including gastric cancer (ICD-10 C16), duodenal cancer (ICD-10 C17.0), oesophageal cancer including oesophagogastric junctional cancers (ICD-10 C15) and oesophageal high grade-dysplasia in Barrett's oesophagus (ICD-10K22. 7 ± ICD-O 8148/2), **Jan 2010 to Dec 2022.**
- Have a prior colonoscopy (for colorectal adenocarcinoma) within the last 6 to 48 months and upper GI endoscopy (for upper gastrointestinal malignancy) within the last **6 to 48** months without a diagnosis of malignancy as per the recommendations of the World Endoscopy Organisation.
- No restriction on underlying pathology or reason for endoscopy/colonoscopy (both surveillance and symptoms)

The exclusion criteria is as follows:

- Paediatric patients (below 18 years of age)
- Colonoscopy exclusions: Appendiceal cancers (C18.1), neuroendocrine tumours (C7A), squamous cell cancers of the anus (C44.52), primary colorectal lymphomas (C81- 96) will be excluded

4.5. Data sources

Patients will be sourced from the NZ Cancer Registry (NZCR) and matched with NHIs from the Ministry of Health or from local district data.

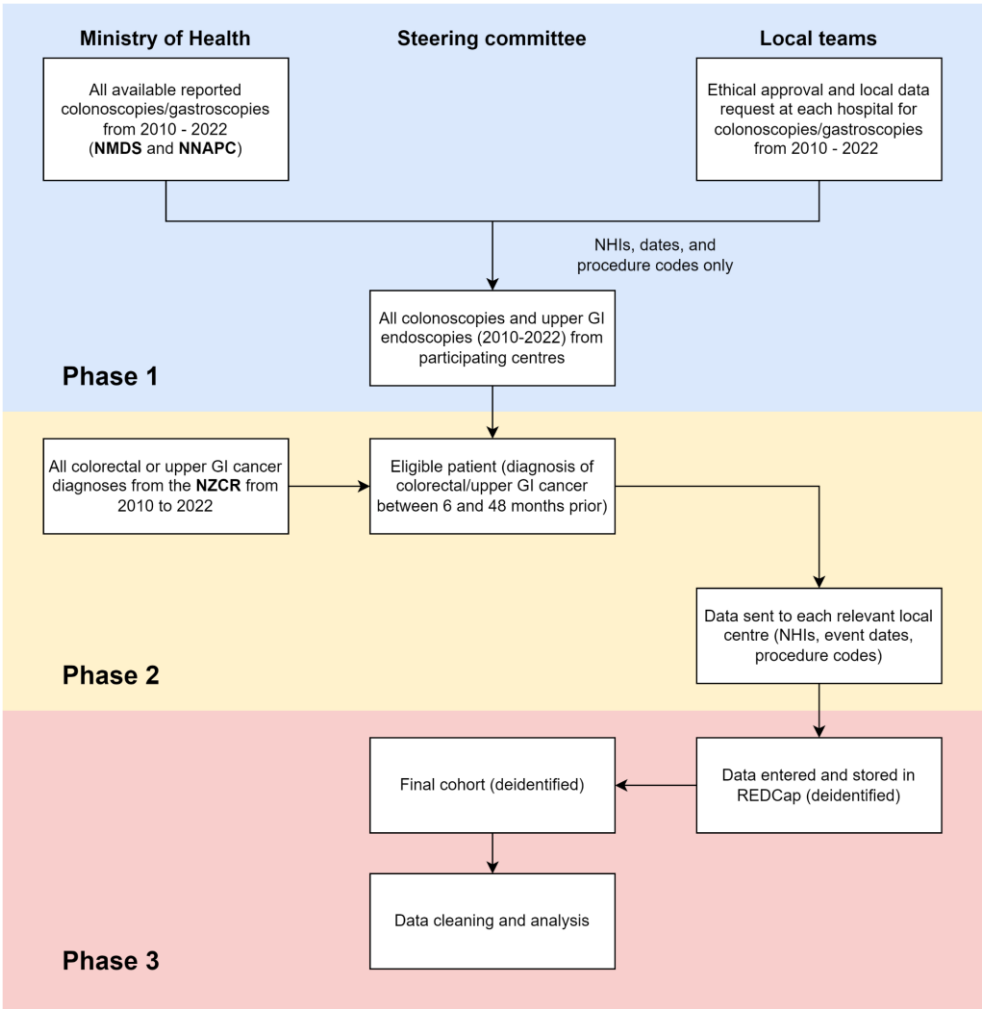
Patients fulfilling inclusion criteria of having a new diagnosis of colorectal adenocarcinoma or upper gastrointestinal cancer with a prior colonoscopy or upper GI endoscopy respectively between 6 and 48 months prior will be included. Confirmation of patient histology will be completed on case review.

Data reporting to the Ministry of Health of colonoscopies and gastroscopies is variable nationwide, with only some districts reporting outpatient endoscopies to the National Non-Admitted Patient Collection.

Therefore to identify all eligible patients, a combined strategy will be used using both national collections and locally requested data. The screened population are all patients undergoing colonoscopy/gastroscopy from 2010 to 2022 (**Figure 1**). Patients will be identified via data from the National Minimum Dataset (NMDS), National Non-Admitted Patient Collection (NNAPC) and local data (Figure 1, Phase 1). From this population, eligible patients will be identified via data linkage with the NZCR (**Figure 1, Phase 2**). This eligible cohort will be identified and sent to collaborators at each participating hospital for data collection (**Figure 1, Phase 2**). Data collaborators will then upload de-identified data to REDCap for data analysis (**Figure 1, Phase 3**).

Furthermore, in order to calculate a PCCRC-3y rate, all colonoscopies from 2010 to **2022 (Figure 1)** will be queried in publicly funded hospitals in AoNZ. Each colonoscopy is labelled as either a true-positive (CRC detected at procedure or new diagnosis of CRC within 6 months defined by a new entry in the NZ), false-negative (CRC detected between 6 and 36 months after procedure, i.e. a PCRC) or a true-negative colonoscopy (no CRC detected within 36 months of the procedure) to determine a denominator of all endoscopies performed.

Figure 1: Patient identification and workflow



4.6. Required data

Further detail is detailed in the case report forms and data dictionary outlined in **Appendix A.**

4.7. Follow up

Following completion of the retrospective portion of this study, ongoing audits will be instigated at each site with yearly review of additional PCCRC and PEUGIC cases using the above methodology.

4.8. Statistical analysis

The rate of PCCRC and PEUGIC will be calculated using predefined definitions as described in the outcomes. Descriptive statistics will be used to characterise the causes underlying PCCRC and PEUGIC. Presenting symptoms and tumour characteristics will be described. Age-, sex- and ethnicity-adjusted rates of post-endoscopy cancers will be calculated and changes over time will be described.

No identifiable individual endoscopist details will be collected.

De-identified centre-level comparisons will be done to describe variations in practice and to evaluate quality improvement needs. On publication and presentation of results, no centres will be named to maintain privacy. Funnel plots adjusted patient age, sex, comorbidity, year of endoscopy, NZ deprivation index, inflammatory bowel disease, diverticular disease, previous colorectal cancer, and previous colonoscopy will be built to assess for centre level variation.

Pending data availability, multilevel, mixed-effects cox proportional hazards models will be constructed to compare differences in survival between post-endoscopy cancers and non-post-endoscopy cancers at a population level. Exploratory analyses will be performed to investigate factors associated with post-endoscopy cancers. Also pending data availability, associations between adenoma detection rate and rates of PCCRC, and rates of positive upper GI endoscopy with rates of PEUGIC will be investigated.

No power analysis is required as the primary aim is to complete a nation-wide observational study. Analysis will be completed in R (R 4.2.2 for Statistical Computing, Vienna, Austria). P-value < 0.05 will be considered significant.

5. Ethical considerations

This study will take the form of a retrospective cohort study. There will be no change to the management of patients and no advice or guidelines given to the data collectors/clinical team.

The aim will be to collect information on the routine practise of different hospitals around New Zealand. There is no foreseen impact on standard patient care and therefore no risk to patients involved in this study. There will be no contact with patients and follow-up data will be collected from routine clinical notes; NO phone calls will be made.

5.1. Data storage

Data will be collected and stored online via the Research Electronic Data Capture (REDCap) web application (19,20), hosted and managed by the University of Auckland, New Zealand. No patient identifiable data will be uploaded or stored on the REDCap database.

5.2. Ethical approval

HDEC approval will be applied for. Each participating centre will be required to apply for locality ethical or audit approval as appropriate to their centre.

5.3. Local governance and ethical approval

The hospital lead with supervision from a consultant/ attendant supervisor is responsible for obtaining necessary local approvals (e.g. audit approval, service evaluation, research ethics committee or institutional review board approval) at each site. This is an investigator-led, non-commercial study, which requires no changes to normal patient care and only routinely available non-identifiable data will be collected. No patient identifiable data will be uploaded or stored on the REDCap database.

In New Zealand, Health and Disability Ethics Committees (HDEC) will be approached for national ethical approval with locality assessments and approvals at each DHB prior to the commencement of the study.

5.4. Māori health directorate

The Whangārei Hospital Māori Health Directorate and Te Aka Whai Ora offered guidance and advice in the conceptualisation stages of this project. Māori are known to present later with colorectal cancer with poorer outcomes,(21) however rates of PCCRC and PEUGIC rates between Māori and non-Māori are unknown. Furthermore, gastric cancers disproportionately affect Māori in Ao NZ. Ethnicity data will be collected and its impact on outcomes investigated. If a disparity in outcomes is found it will be imperative that this is reported with the aim of improving outcomes for our Māori patients. How that is to be achieved will be fully discussed with our Māori iwi and advisors. Preliminary findings of the study will be discussed early with the Māori Health directorate to determine strategies for dissemination and future steps.

6. Authorship and mini-teams

The analysis and write-up will be completed by the principal investigator and central steering committee. Prior to publication all hospital leads will be invited to be involved in reviewing drafts of the manuscripts, abstracts, press releases and any other publications arising from the study.

All research outputs from the POET study will be authored as per the National Research Collaborative (NRC) authorship guidelines (22). A local supervising consultant/attending, local lead, and a maximum of 4 additional collaborators will be identified per site, making a total of maximum 6 collaborators at each participating site. To be credited with authorship, all collaborators must provide a valid ORCID identifier (https://orcid.org/register) which will be used to generate authorship lists for all papers.

Criteria for site inclusion within POET

- Successful in obtaining all relevant local approvals for conduct of the POET Study
- Completed the site survey
- Individual sites must also ensure
    1. They obtain **>95% data completeness** for all required fields
    2. All data has been uploaded by the specified database closure deadline
    3. Have collected data on all eligible patients within the study period

Should these criteria not be met, the contributing mini-team and any data they contribute may not be included in the final study, and they may be removed from any authorship lists. You are advised to get in touch with us as soon as possible so we may support you with ensuring your site is able to successfully collect data towards the POET Study.

7. Funding

Funding will be applied through the Health and Research Council NZ

8. Expected outputs

Unit level data for comparison will be fed back to collaborators to support local service improvement. This project will be submitted for presentation at national and international conferences. Manuscript(s) will be prepared following close of the project.

Appendix A: Required data

For colorectal cancers:

Variable	Details
Patient details	
Age	Integer (years)
Sex	Male Female
Ethnicity	European Māori Pacific islander Asian MELA Other
Smoking status	Never smoker Ex smoker Current smoker Unknown
Diverticular disease	Yes No
Inflammatory bowel disease	Yes No
Hereditary cancer syndrome (Lynch syndrome or familial adenomatous polyposis, other hereditary condition	Yes No Unknown
Previous colorectal cancer diagnosis	Yes No
Cancer details	
Date of diagnosis	Date (dd-mm-yyyy)
Diagnosed within 30 days of an emergency department admission	Yes No

Mode of diagnosis	1, Upper GI endoscopy 2, Colonoscopy - bowel cancer screening 3, Colonoscopy - non bowel cancer screening 4, Flexible sigmoidoscopy 5, Proctoscopy 6, Examination under anaesthetic 7, Clinical examination 8, Post mortem 9, CT colonography 10, CT abdomen 11, MRI 12, PET scan 13, Incidental finding on non-GI investigation 14, Not known 15, Other
Reason for above investigation	1, Symptoms (PR bleeding, dysphagia, abdominal pain or bloating, weight loss, anaemia, bowel habit change, haematemasis, melena, reflux, etc) 2, Surveillance (i.e. high risk for gastric/oesophageal/bowel cancer on surveillance) 3, Screening (no symptoms and part of cancer screening) 4, Other
Was the cancer diagnosed within 30 days of an emergency department presentation for similar symptoms?	Yes No
Are there synchronous tumours? i.e. involving more than one segment of GI tract	Yes No
Site of cancer	Caecum Ascending colon Hepatic flexure Transverse colon Splenic flexure Descending colon Sigmoid Rectosigmoid junction Rectum Anastomosis of previous colonic resection Other - specify
Size (mm)	(mm)
T stage	T1 - Invades submucosa T2 - Invades muscularis propria T3 - Beyond muscularis propria T4 - Adjacent organs or peritoneum

N stage	NX (cannot be assessed) N0 N1 N2
M stage	MX (cannot be assessed) M0 (no distant metastases) M1 (distant metastases)
Histological type of PCCRC	Adenocarcinoma Squamous cell carcinoma Other (specify)
Was the lower GI cancer pathological specimen genetically tested?	1, Positive - Lynch - MLH1 2, Positive - Lynch MSH2 3, Positive - Lynch MSH6 4, Positive - Lynch PMS2 5, Positive - Lynch-like 6, Positive - FAP 7, Positive - MUTYH 8, Positive - SMAD4/BMPR1A 9, Negative - no genetic markers found 10, Not tested
Details of index colonoscopy in the 6 to 48 months prior	
Date of most recent previous colonoscopy within 6-48 months prior to diagnosis of cancer (use most recent)	Date (dd-mm-yyyy)
Indication of scope of interest (tick one)	Symptoms (PR bleeding, weight loss, anaemia, bowel habit change, other) Surveillance (i.e. high risk for bowel cancer on surveillance) Screening (no symptoms and part of bowel cancer screening) Other - specify
Quality of bowel preparation	Adequate Inadequate/suboptimal Not documented
Endoscopist level	1, Gastro consultant 2, Surg consultant 3, Gastro fellow 4, Surg fellow 5, Gastro trainee 6, Surg trainee 7, Nurse endoscopist

	8, Locum 9, Non-consultant permanent grade (MOSS) 10, GP 11, Other 12, Not known
Was this a training episode	1, Yes 2, No 3, Unknown/not recorded
Withdrawal time of colonoscopy	Recorded Not recorded If recorded – duration in minutes
Caecal intubation achieved and documented	Yes - with photos Yes - documented but no photos No - not recorded *Note photo documentation must include 2 of 3 cecal hallmarks: appendiceal orifice, ileocecal valve, terminal ileum*
Rectal retroflexion completed and documented	Yes - with photos Yes - documented but no photos No - not recorded
Colonoscopy completed	Yes - completed No - aborted due to inadequate prep No - aborted due to impassable stricture/obstruction No - aborted as technically difficult No - aborted due to pain No - aborted due to other - specify
Technical data - use of dye spray for IBD (only if IBD box ticked)	Yes No Unknown/not recorded
Technical data - use of enhanced imaging techniques such as chromoendoscopy, narrow band imaging	Yes No Unknown/not recorded
Technical data - use of high definition white light endoscope	Yes No Unknown/not recorded
Technical data - use of AI recognition software	Yes No Unknown/not recorded

Results of endoscopy	
Results of endoscopy (tick all that apply)	Normal (no findings of note) Polyps/adenoma Diverticula Stricture Inflammatory bowel disease Other - specify
If polyps, What was the total number of polyps found throughout the colon? exclude small recto-sigmoid hyperplastic polyps If >10 - please enter '>10' If unknown - please enter 'NA'	Integer
What was founds in the section of the colon with subsequent cancer	1, Normal 2, Polyps/adenoma 3, Diverticuli 4, Stricture 5, Colitis 6, Other (please specify)
Polyp details (if polyp/adenoma ticked above)	
How many polyps were there at the site of the subsequent PCCRC? *exclude small recto-sigmoid hyperplastic polyps* *If >10 - please enter '>10'* *If unknown - please enter 'NA'*	Integer
What was the size of the largest adenoma in mm? If unknown, enter 'NA'	
If polyp present in the same segment of subsequent PCCRC: Where was the lesion?	Caecum Ascending colon Hepatic flexure Transverse colon

	Splenic flexure Descending colon Sigmoid Rectosigmoid junction Rectum Anastomosis of previous colonic resection Other - specific
Were the polyps/adenoma in the segment of the eventual PCCRC excised endoscopically at time of colonoscopy?	1, Yes 2, Not excised/biopsied 3, Not known
What was the method of excision	Cold snare Hot snare Endoscopic mucosal resection Cold biopsy Hot biopsy Endoscopic submucosal dissection
What was the histology of the colorectal polyp/biopsied lesion	Hyperplastic polyp Inflammatory Tubulovillous adenoma Tubular adenoma Villous adenoma Sessile serrated lesion Other Not known
What was the grade of dysplasia? Take the most severe grade	Low High Malignant Not known Other
Completeness of excision (according to endoscopist)	Complete Incomplete Not recorded
Completeness of excision (according to pathologist)	Complete Incomplete Not recorded
Free text summary of additional colonoscopy details if needed	
Endoscopy follow up details *Details to be taken of the nearest colonoscopy in the 6-48 months prior to diagnosis*	

Subsequent follow up endoscopy scheduled	Yes (specify time interval to nearest month) No
Subsequent follow up scan (i.e. CT colonography) scheduled	Yes (specify time interval to nearest month) No
Deviation from planned management	Yes - lost to follow up Yes - subsequent follow up delayed Yes - other reason - specify No
Treatment intent	Curative Palliative
Treatment plan of cancer *(determined from what is documented in the plan at time of diagnosis from MDT meeting/clinic letter)* *tick all that apply*	Surgery Endoscopic resection Radiotherapy Chemotherapy No treatment
If yes to surgery, date of first surgery after diagnosis	Date (dd-mm-yyyy)
Death at follow up	Yes No
If dead, date of death	Date (dd-mm-yyyy)
Cause of death	Malignancy related death (including complications of malignancy) Non-malignancy related death Unknown

Alternative datapoints for upper GI cancers:

Variable	Details
Patient details	
Age	Integer (years)
Sex	Male/female
Ethnicity	European Māori Pacific islander Asian MELA Other
Smoking status	Never smoker Ex smoker Current smoker Unknown
Barrett's oesophagus	Yes No
H.pylori +ve	Yes No Unknown
Familial GI cancer (hereditary diffuse gastric cancer, HNPCC, FAP, gastric adenoma and proximal polyposis of the stomach, other hereditary condition)	Yes No Unknown
Previous upper GI cancer diagnosis	Yes No
Cancer details	
Date of diagnosis	Date (dd-mm-yyyy)
Diagnosed within 30 days of an emergency department admission	Yes No
Mode of diagnosis	1, Upper GI endoscopy 2, Colonoscopy - bowel cancer screening

	3, Colonoscopy - non bowel cancer screening 4, Flexible sigmoidoscopy 5, Proctoscopy 6, Examination under anaesthetic 7, Clinical examination 8, Post mortem 9, CT colonography 10, CT abdomen 11, MRI 12, PET scan 13, Incidental finding on non-GI investigation 14, Not known 15, Other
Reason for above investigation	1, Symptoms (PR bleeding, dysphagia, abdominal pain or bloating, weight loss, anaemia, bowel habit change, haematemasis, melena, reflux, etc) 2, Surveillance (i.e. high risk for gastric/oesophageal/bowel cancer on surveillance) 3, Screening (no symptoms and part of cancer screening) 4, Other
Site of cancer	Upper ⅓ oesophagus Mid ⅓ oesophagus Lower ⅓ oesophagus Gastroesophageal junction/cardia Gastric fundus Gastric body - anterior wall Gastric body - greater curvature Gastric body - posterior wall Gastric body - lesser curvature Gastric antrum Gastric pylorus Other - specify
Size (mm)	Available - specify Not available
T stage	T1 - Invades submucosa T2 - Invades muscularis propria T3 - Beyond muscularis propria T4 - Adjacent organs or peritoneum
N stage	NX (cannot be assessed) N0 N1 N2

M stage	MX (cannot be assessed) M0 (no distant metastases) M1 (distant metastases)
Histological type	Adenocarcinoma Squamous cell carcinoma Other (specify)
Was the upper GI cancer pathological specimen genetically tested?	Positive - specify Negative - no genetic markers found Not tested
Details of most recent gastroscopy in the 6 to 48 months prior	
Date of previous upper GI endoscopy within 6-48 months prior (use most recent)	Date (dd-mm-yyyy)
Indication of scope of interest (tick one)	Symptoms (dysphasia, anaemia, weight loss, anorexia, vomiting, abdominal mass, haematemesis, melena, reflux) Surveillance of Barrett's oesophagus Surveillance of another condition Screening Other
Endoscopist level	1, Gastro consultant 2, Surg consultant 3, Gastro fellow 4, Surg fellow 5, Gastro trainee 6, Surg trainee 7, Nurse endoscopist 8, Locum 9, Non-consultant permanent grade (MOSS) 10, GP 11, Other 12, Not known

Was this a training episode	Yes No Unknown/not recorded
Duration of endoscopy	minutes
Procedure visualised the upper oesophagus, GOJ, fundus, body, gastric antrum, duodenal bulb and D2 of duodenum	Yes - with photos of all areas listed Yes - documented but no photos/incomplete photos No /not recorded
Fundus inspected by retroflexion	Yes - with photos Yes - documented but no photos No / not recorded
Upper GI endoscopy completed	Yes - completed No - specify reason for incompletion
Technical data - use of mucolytics	Yes No Unknown/not recorded
Technical data - chromo-endoscopy/enhanced imaging used	Yes No Unknown/not recorded
Technical data - use of high definition white light endoscope	Yes No Unknown/not recorded
Technical data - use of AI recognition software	Yes No Unknown/not recorded
Results of endoscopy	
Results of endoscopy (tick all that apply)	Normal Barrett's oesophagus Chronic gastritis/gastric atrophy Hypertrophic gastritis

	Intestinal metaplasia Polyp or suspicious lesion Gastric ulcer Esophageal stricture *Other suspicious findings*
Lesion details (if Poly or suspicious lesion/gastric ulcer/oesophageal stricture/other suspicious findings ticked above)	
If lesion present in the same segment of subsequent PEUGIC: Where was the suspicious lesion? *Tick one*	Upper ⅓ oesophagus Mid ⅓ oesophagus Lower ⅓ oesophagus Gastroesophageal junction/cardia Gastric fundus Gastric body - anterior wall Gastric body - greater curvature Gastric body - posterior wall Gastric body - lesser curvature Gastric antrum Gastric pylorus
If lesion present in the same segment of subsequent PEUGIC Was a biopsy taken of the lesion where the subsequent cancer was found?	Yes No
If biopsy taken What was the result of the biopsy?	Normal mucosa Gastritis/inflammatory changes Intestinal metaplasia Low grade dysplasia High grade dysplasia Adenocarcinoma Other - specify
Barrett's oesophagus details (if Barrett's oesophagus ticked above)	
If yes to Barrett's oesophagus, Were biopsies taken?	Yes - per the Seattle protocol (4 quadrant biopsies at levels of Barrett's changes at least 2cm apart + additional targeted biopsies/resections) Yes - (> 4 biopsies but not consistent with the Seattle

	protocol + additional targeted biopsies/resections of suspicious areas) Yes - (<4 biopsies or targeted biopsies only) No
If yes to biopsies above, What were the results of the biopsies? *(tick the most severe grade of disease)*	Intestinal metaplasia Indefinite for dysplasia Low grade dysplasia High grade dysplasia Adenocarcinoma
Premalignant stomach details (if Chronic gastric atrophy/atrophic gastritis/ Hypertrophic gastritis/Intestinal metaplasia ticked above)	
If yes to Chronic gastric atrophy/atrophic gastritis/ Hypertrophic gastritis/Intestinal metaplasia Were biopsies taken of the gastric area?	Yes – per the updated Sydney protocol (in antrum, incisura, lesser curve and greater curve per the Attached diagram + additional targeted biopsies/resections of suspicious areas) Yes – (> 4 biopsies but not consistent with the Sydney protocol + additional targeted biopsies/resections of suspicious areas) Yes – (<4 biopsies or targeted biopsies only) No
If yes to biopsies above, What were the results of the biopsies? *(tick the most severe grade of disease)*	Normal mucosa Gastritis/inflammatory changes Intestinal metaplasia Low grade dysplasia High grade dysplasia Adenocarcinoma Other - specify
Free text details of endoscopy if needed	
Endoscopy follow up details *Details to be taken of the nearest colonoscopy in the 6-48 months prior to diagnosis*	

Subsequent follow up endoscopy scheduled	Yes (specify time interval to nearest month) No (why – pathology treated or no further treatment indicated)
Subsequent follow up scan scheduled	Yes (specify time interval to nearest month) No
Deviation from planned management	Yes - lost to follow up Yes - subsequent follow up delayed Yes - other reason - specify No
Treatment details	
Treatment intent	Curative Palliative
Treatment plan of cancer *(determined from what is documented in the plan at time of diagnosis from MDT meeting/clinic letter)* *tick all that apply*	Surgery Endoscopic mucosal resection Radiotherapy Chemotherapy No treatment
If yes to surgery, date of first surgery after diagnosis	Date (dd-mm-yyyy)
Death at follow up	Yes No
If dead, date of death	Date (dd-mm-yyyy)
Cause of death	Cancer-related Cancer-unrelated Unknown

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