CRC is known to be more common in males and in the BCSP engaged cohort the male to female ratio is 1.9:1. In the non-BCSP engaged cohort, the ratio is 1.2:1, $p \leq 0.0001$.

In the BCSP cohort, 57.8% of CRC cases were staged as Dukes' A or B (hence likely to be cured from CRC), in the non-BCSP cohort 55.5% of CRC cases were Dukes' C or D (likely non-curative/palliative), $p \leq 0.05$.

In the BCSP cohort, there were 20 CRC presentations via an emergency admission (6.5% of cases), 81 (21.6%) in non-BCSP cohort, $p \leq 0.001$. Of the surgeries undertaken, 173 (56.5% of CRC cases) were performed laparoscopically in the BCSP cohort, 167 (44.5%) in the non-BCSP cohort, $p \leq 0.05$.

Conclusions This data illustrates the protection engagement with BCSP (at any time – even previous FOBT negative returns) confers to the profile of CRC case presentation. CRC cases were significantly fewer from the screened cohort – which were significantly less likely to present as an emergency, significantly more likely to undergo laparoscopic surgery, and significantly more likely to be cured.

BCSP appears to protect female patients more than males with a significantly higher proportion of females diagnosed with CRC in the non-screened cohort when compared to the BCSP cohort.

PTU-068 LONG-TERM FOLLOW-UP DATA FOR A SERIES OF POLYP CANCERS RESECTED DURING BOWEL CANCER SCREENING COLONOSCOPY

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Introduction Since commencement of national bowel cancer screening programme (BCSP), malignant colorectal polyps (AKA polyp cancers) – adenomas resected with a focus of cancer – represent 9.8% of detected colorectal cancers (CRC). Optimal management remains unclear.

We previously presented a case series of 48 patients who had a polyp cancer managed by polypectomy alone, suggesting that those staged Haggitt 1 and 2 without adverse prognostic features are safe to be managed non-surgically, as can those with Haggitt 3 if confident of adequate resection margin. We revisit this cohort to assess long-term outcomes.

Methods 48 patients with polyp cancers resected by polypectomy alone (04/2008 – 11/2011) in Leicestershire and Northamptonshire BCSP have had their outcomes reviewed (12/2017).

Results Demographic data

Median age=66

Males/Females=33 (68.75%)/15

Location Rectum=5 (10.4%)/Sigmoid=41 (85.4%)/Descending colon=2 (4.2%)

Haggitt 1 Two patients with sigmoid Haggitt 1 polyp cancers have died. One with right sided CRC after 2 years 2 months, the other with sigmoid CRC after 7 years 10 months – both metachronous lesions. Another patient died of lung cancer after 6 years 3 months.

Haggitt 2 A patient died of dementia after 5 years 8 months, another died of Mesothelioma after 2 years 4 months.

Haggitt 3 A patient died of metachronous sigmoid CRC after 5 years, another died of pneumonia after 7 years 8 months.

Other polyp cancers Of 13 other polyp cancers, 5 were pedunculated but not assigned Haggitt stage due to incomplete excision or invasive cancer – one patient has died with liver metastases (recurrent CRC). There were 8 sessile polyp cancers with 1 recurrent sigmoid CRC and 1 COPD death – too small a group to draw meaningful conclusions.

Abstract PTU-068 Table 1

	Pedunculated polyp cancers				Other polyp cancers
	Haggitt 1	Haggitt 2	Haggitt 1 and 2	Haggitt 3	
Number	15	11	26	9	13
Recurrences	0	0	0	0	2
Mean follow-up post index polypectomy	7 years	7 years	7 years	7 years	See notes
	4 months	2 months	3 months	9 months	below

Conclusion There were 26 patients with Haggitt 1 or 2 polyp cancers without adverse prognostic features managed by polypectomy alone. Mean follow-up of 7 years 3 months has not identified recurrence (by way of metastases), however two patients developed metachronous CRC. This suggests that endoscopic polypectomy is curative.

9 patients with Haggitt 3 polyp cancers have 7 years 9 months mean follow-up (one developed metachronous CRC). Patients staged Haggitt 3 – where there is confidence of adequate resection margin – need to have a discussion around the option of surgery (with its associated risks) versus conservative management.

There are increased risks of adverse outcomes (lymph node metastasis/recurrence) from Haggitt 4 and sessile Kikuchi polyp cancers due to invasion into submucosa, surgery needs to be considered to reduce risk of recurrence.

PTU-069 INCIDENCE OF AND SURVIVAL FOLLOWING PERFORATED DIVERTICULAR DISEASE: A POPULATION-BASED COHORT STUDY FROM ENGLAND

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Background Previous studies suggesting the incidence of perforated diverticular disease is increasing are no longer contemporary and were unable to describe trends by age, sex and calendar year. We aimed to provide population based estimates of the incidence of perforated diverticular disease and assess variation by age, calendar time, treatment and sex.

Methods We undertook a historical cohort study using linked primary and secondary care data from 2000–2013 from England. We identified cases of perforated diverticular disease older than 18 years, calculated incidence rates, and modelled variation using Poisson regression along with estimating one year survival with life tables.

Results We identified 2347 cases with an overall incidence of 6.98 per 1 00 000 person years (pyrs) (interquartile range (IQR) 6.70–7.27 per 1 00 000 pyrs). There was an

interaction between calendar time, age and treatment (Likelihood Ratio Test $p < 0.0001$). Stratum specific estimates of the increase in incidence for each age group from 2000 to 2013 showed the greatest increase, 49%, in those aged under 45 years who were treated conservatively without surgery (Incidence Rate Ratio 1.49, 95% CI 1.36–1.61) adjusting for sex and region. This increase was seen in conjunction with an increased use of diagnostic imaging especially in the younger age groups. One year survival was highest in those under the age of 65 years who were treated conservatively (96.4%). In those over 65 years one year survival was lower and varied as to whether patients were treated operatively or not (71.4% vs. 50.7%).

Conclusions The incidence of perforated diverticular disease has increased from 2000 to 2013 with the greatest increase in younger age groups who also had the best survival. The increase in incidence in younger groups in part may be due to the identification of patients with localised perforations more frequently identified due to an increase in the use of CT scans.

PTU-070 **INCIDENCE OF AND SURVIVAL FOLLOWING DIVERTICULAR ABSCESS: A POPULATION-BASED COHORT STUDY FROM ENGLAND**

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Background Diverticular abscess represents a significant complication of diverticular disease. We aimed to provide population based estimates of the incidence of diverticular abscess and assess variation by age, calendar time, treatment and sex.

Methods We undertook a historical cohort study using linked primary and secondary care data from 2000–2013 from England. We identified cases of diverticular abscess older than 18 years, calculated incidence rates, and modelled variation using Poisson regression along with estimating one year survival with life tables.

Results We identified 622 cases with an overall incidence of 1.9 per 1 00 000 person years (pyrs) (interquartile range (IQR) 1.7–2.0 per 1 00 000 pyrs). Over the time period of the study there was a 1.5 fold increase in the incidence of diverticular abscess (adjusted IRR 1.5, 95% CI 1.0–2.5). This increase was seen in conjunction with an increased use of diagnostic imaging with 92.2% having a CT in 2013 compared to 60% in 2007 ($p = 0.003$). One year survival was 80.1% (95% CI, 76.7%–83.1%) overall and was lowest in those undergoing surgery 68.7% (95% CI 60.3%–75.7%).

Conclusions There has been a 1.5 fold increase in the incidence of diverticular abscess from 2000 to 2013. The condition is associated with a poor one year survival especially following surgery. This increase in incidence may in part be due to improved identification of cases due to an increased use of imaging.

PTU-071 **RISK STRATIFICATION OF SYMPTOMATIC PATIENTS USING FAECAL BIOMARKERS AND URINARY VOLATILE ORGANIC COMPOUNDS**

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Introduction There remains an urgent need for non-invasive, low cost methods for diagnosis of colorectal cancer (CRC). We undertook a diagnostic accuracy study using faecal haemoglobin (F-Hb), faecal calprotectin (FCP) and urinary volatile organic compounds (VOCs) in patients presenting with lower gastrointestinal symptoms referred via Two Week Wait colorectal pathway.

Methods Of 1850 patients approached, 1016 were recruited prospectively. Of these, 562 with complete colonic investigations returned matched urine and stool samples and were included in the final statistical analysis.

Results The sensitivity and specificity for CRC using F-Hb were 0.80 (95% confidence interval (CI): 0.66–0.93) and 0.93 (CI: 0.91–0.95) respectively. The negative predictive value (NPV) was 0.99 (CI: 0.98–1.0). Using urinary VOCs the sensitivity and specificity were 0.63 (CI: 0.46–0.79) and 0.63 (CI: 0.59–0.67) respectively and the NPV was 0.96 (CI: 0.94–0.98). For those with F-Hb negative CRC (false negatives), adding urinary VOCs revealed the sensitivity of 0.97 (CI: 0.90–1.0) and specificity of 0.72 (CI: 0.68–0.76) with the NPV of 1.0 (CI: 0.99–1.0).

Conclusions Urinary VOCs applied to a F-Hb negative group excludes CRC with the NPV of 1.0. Thus, the addition of urinary VOCs shows promise as a second stage test in investigating symptomatic population.

PTU-072 **BREATH TESTING FOR COLORECTAL POLYPS AND CANCER- A LOAD OF HOT AIR?**

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Introduction Colorectal cancer (CRC) is the 2nd most common UK cause of cancer death. The bowel cancer screening programme (BCSP) targets those aged 60–74, but is dependent upon uptake. Some colonoscopies may be unnecessary and are not without risk. A breath test could be a useful