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**

^{1,2,3}Professor Joe West*, ^{1,2,3}Colin Crooks, ⁴Harmony Otete, ^{1,2,3}David Humes. ¹Division of Epidemiology and Public Health, University Of Nottingham, Nottingham, UK; ²NIHR Nottingham Biomedical Research Centre, Nottingham, UK; ³Nottingham Digestive Diseases Centre, Nottingham, UK; ⁴School of Pharmacy, University of Nottingham, Nottingham, UK

10.1136/gutjnl-2018-BSGAbstracts.411

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**

^{1,2}Monika Widlak*, ³Matthew Neal, ⁴Emma Daulton, ⁵Claire Thomas, ⁵Claudia Tomkins, ⁶Baljit Singh, ⁷Chris Harmston, ⁴Alfian Wicaksono, ⁷Charles Evans, ^{5,8}Steve Smith, ³Richard Savage, ⁴James Covington, ^{1,2,9}Ramesh Arasaradnam. ¹Department of Gastroenterology, University Hospitals Coventry and Warwickshire NHS Trust, Coventry, UK; ²Medical School, University of Warwick, Coventry, UK; ³Department of Statistics, University of Warwick, Coventry, UK; ⁴School of Engineering, University of Warwick, Coventry, UK; ⁵Department of Biochemistry, University Hospitals Coventry and Warwickshire NHS Trust, Coventry, UK; ⁶Department of Colorectal Surgery, Leicester General Hospital, Leicester, UK; ⁷Department of Colorectal Surgery, University Hospitals Coventry and Warwickshire NHS Trust, Coventry, UK; ⁸Midlands and North West Bowel Cancer Screening Programme Hub, Rugby, UK; ⁹Applied Biological and Experimental Sciences, University of Coventry, Coventry, UK

10.1136/gutjnl-2018-BSGAbstracts.412

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?**

^{1,2}Georgia Woodfield*, ¹Ilaria Belluomo, ¹Gengping Lin, ^{1,2}Piers Boshier, ¹Andrea Romano, ²John Martin, ³Chris Groves, ⁴Laura Marelli, ⁵Brian Saunders, ¹Wendy Atkin, ^{1,2}George B Hanna. ¹Imperial College, London, UK; ²Imperial College Healthcare NHS Trust, London, UK; ³St George's Healthcare NHS Trust, London, UK; ⁴Homerton University Hospital NHS Foundation Trust, London, UK; ⁵St Mark's Hospital, London, UK

10.1136/gutjnl-2018-BSGAbstracts.413

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