tests for joinpoint regression with applications to cancer rates' Statistics in Medicine 2000; 19:335–351: (correction: 2001;20:655).

**Results** Austria, Croatia, the Czech Republic, England, Scotland and Wales all met our inclusion criteria. Of these none experienced the hypothesised rise and subsequent fall in incidence after CRC screening introduction. England, Scotland, Wales and Croatia all experienced a rise and fall, but in each case the rise commenced before the programme was introduced. In all nations other than Croatia CRC mortality declined over the period, but in none of them did the decline become significantly steeper after the introduction of screening. Figure 1 illustrates as an example the changing mortality from CRC in England either side of the initiation of screening in 2006.

**Conclusions** Though CRC screening has been widely implemented in Europe, and CRC mortality is declining, the reductions in mortality began before screening started. We have not therefore been able to demonstrate a clear effect of screening at the population level.

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P292 **PROTON PUMP INHIBITORS AND FAECAL IMMUNOCHEMICAL TESTS FOR THE DETECTION OF COLORECTAL NEOPLASIA IN SYMPTOMATIC-PATIENTS**

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**Introduction** The identification of the factors that are likely to influence the accuracy of the faecal immunochemical test (FIT) is of great importance for the colorectal cancer (CRC) screening programmes and for the screening of symptomatic patients. A study in Spanish cohort found that the proton pump inhibitors (PPI) therapy reduces the accuracy of FIT in detecting advanced neoplasia (AN) in symptomatic patients.[1] The aim of this study is to determine if these results can be reproduced in an independent population and can therefore be generalised.

**Methods** This is a prospective single centre study at the University Hospital of Coventry Warwickshire over a period of 14 months. Individuals who were referred for a diagnostic colonoscopy, on symptomatic pathway, were approached and were given a FIT prior to their colonoscopy. Their medication details were reviewed in-depth.

**Results** A total of 612 individuals were included in the study. The positivity threshold of FIT used was 10 μg Hb/g faeces and the main outcome was AN. AN was detected in 9% (55) of the patients. The accuracy of FIT for detecting AN in PPI users and non-PPI users were sensitivity 54% vs 81%, P = 0.05; specificity 91% vs 90%, P = 0.74; positive predictive value 29% vs 47%, P = 0.13; and negative predictive value 96% vs 98%, P = 0.41, respectively. The ROC curves for FIT for the detection of AN in PPI users and non-PPI users were 0.74 (CI 95% 0.58±0.91) and 0.92 (CI 95% 0.89 ±0.95) respectively.

**Conclusions** PPI therapy impairs the performance of FIT for the detection of AN in symptomatic patients. Given the widespread use of these drugs in the general population, the negative impact on the CRC screening programs could be substantial.

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P293 **EXTERNAL VALIDATION OF A FAECAL IMMUNOCHEMICAL TEST BASED-RISK SCORE FOR ADVANCED NEOPLASIA IN SYMPTOMATIC PATIENTS**

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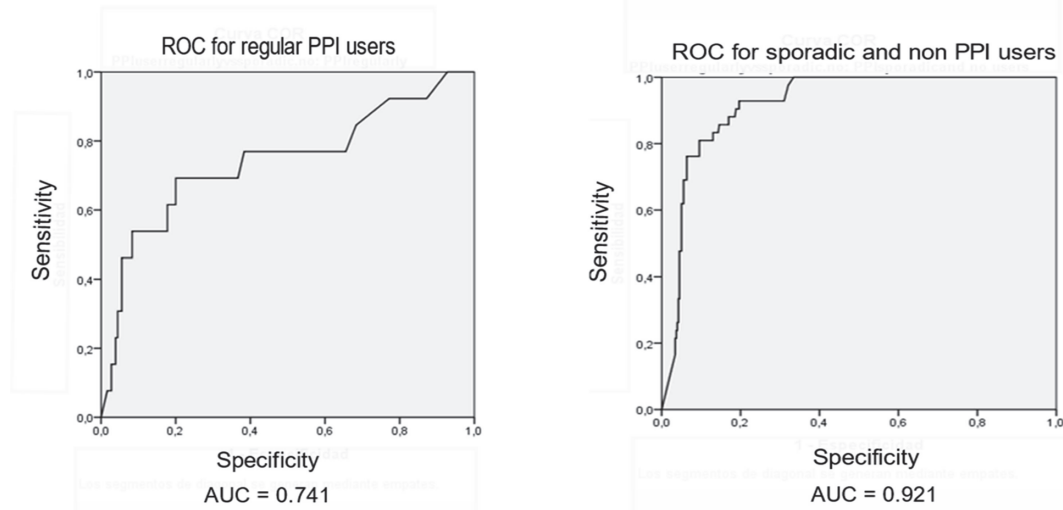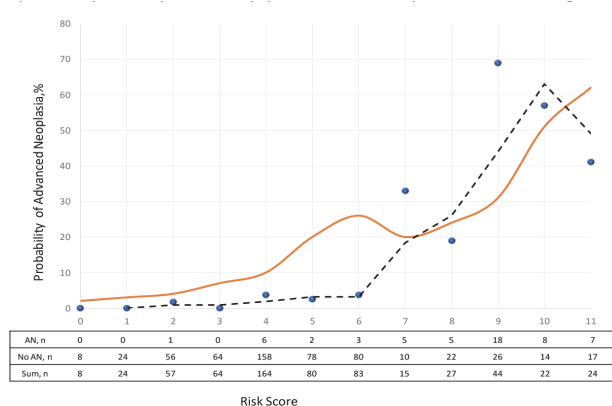
**Abstract P292 Figure 1** ROC curves for PPI and non-PPI users

**Introduction** It has been demonstrated that the quantitative Faecal immunochemical test (FIT) could be an accurate method for prioritizing symptomatic patients for the rapid detection of cancer. A quantitative FIT-based strategy performs better compared to the current high-risk symptoms-based strategies in fast tracking the suspected cancer referrals. A score, which combines quantitative FIT, age and sex to estimate the risk of advanced neoplasia (AN) in a symptomatic population, could help a physician in their decision-making process and in the proper allocation of endoscopic resources[1]. The aim of this study is to assess the performance of such a score in an independent British symptomatic patient cohort.

**Methods** Symptomatic individuals referred for a diagnostic colonoscopy at University Hospital Coventry & Warwickshire were included. Patients were given a FIT HM-JACKarc prior to their colonoscopy. The main outcome was AN. The risk score was assigned, ranging 0–11 points, according to the presence or absence of risk factors: sex (female=0, male= 2 points), age (<40 years = 0, 41–50 years = 1, 51–60 years = 2, 61–70 years = 3, >70 years = 4) and positivity of FIT ($< 10$ µg Hb/g faeces = 0, $\geq 10$ µg Hb/g faeces = 5). 10 µg Hb/g faeces was considered as the positivity threshold for FIT.

**Results** 612 individuals were included and 51% (310) of whom were women. The mean age of the study cohort was 68 years. [IQR 57–76]. AN was detected in 9% (55) of the patients. Figure 1 shows the observed probability (dotted line) and expected probability (continuous line) of AN, according to FIT based-risk score.



| Risk Score | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AN, n | 0 | 0 | 1 | 0 | 6 | 2 | 3 | 5 | 5 | 18 | 8 | 7 |
| No AN, n | 8 | 24 | 56 | 64 | 158 | 78 | 80 | 10 | 22 | 26 | 14 | 17 |
| Sum, n | 8 | 24 | 57 | 64 | 164 | 80 | 83 | 15 | 27 | 44 | 22 | 24 |

**Abstract P293 Figure 1** Expected (continuous) and observed (dotted) probability of AN by risk score. The table shows number of individuals with and without AN in each risk score category. The expected probability was calculated based on the equation, developed through a logistic regression model in the Spanish cohort. The observed probability is the prevalence of AN in our study sample

**Conclusion** A risk score, which combines quantitative FIT, age and sex can accurately estimate the risk of having AN in a symptomatic British population.

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## OVER-AGE SELF-REFERRALS IN THE ENGLISH BOWEL CANCER SCREENING PROGRAMME – ARE THEY THE WORRIED WELL?

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**Introduction** The English Bowel Cancer Screening Programme (BCSP) invites people aged 60–74 and registered with a GP, to complete a faecal occult blood test (FOBt) every two years. People with abnormal tests are then referred for further assessment, with most going on to have a colonoscopy.

Over the age of 75 individuals can 'self-refer' into the Programme. The size of this population is increasing and is more health conscious. We were therefore interested in understanding the demographics of this group of individuals.

**Methods** Data on subjects aged 75+ who requested guaiac FOBts between 2010 and 2017 was interrogated according to age, gender, positivity of the test, fitness for colonoscopy, cancers and adenomas detected.

**Results** During this time period 205,034 gFOB tests were completed by 185,637 subjects (aged 75–105). 54% of these individuals were male compared to 49% of those aged 60–74.

Numbers of people who self-refer are increasing annually but still represent <2% of all tests performed (1.3% in 2013 to 1.8% in 2019).

Positivity in the over 75's was 2.8% compared to 1.9% in the 60–74 age range. Of those positive 85% attended SSP appointments, with 95% fit for colonoscopy (89% and 97% in 60–74 year olds), however only 88% of those went on to have this procedure (compared to 95% of 60–74 year olds).

Cancer detection rates were higher, and normal colonoscopies lower in these individuals compared to those in the 60–74 age group (cancer:17.5% vs 8.7%; normal:9.6% vs 16.6%), with little difference in the adenoma detection rates.

Data release was funded by the Clinical Epidemiology Research Fund, NUH Charities.

**Conclusions** Whilst numbers of over-age referrals are on the increase they remain a small proportion of the subjects

**Abstract P294 Table 1**

| Demographics 2010–2017 | BCSP | | Over-age | |
|---|---|---|---|---|
| | 60–69 | 70–74 | 75–79 | 80+ |
| n | 24,750,813 | 7,055,159 | 163,064 | 49,954 |
| % male | 49 | 48 | 54 | 51 |
| % positive | 1.81 | 2.09 | 2.58 | 3.45 |
| % who attended SSP appt | 90 | 87 | 87 | 79 |
| % attended & fit for colonoscopy | 97 | 96 | 97 | 91 |
| % colonoscopies performed (of above) | 95 | 94 | 91 | 81 |
| cancers detected all% (n) | 8.0 (16,812) | 10.8 (7,375) | 16.0 (452) | 22.6 (184) |
| *cancers detected m/f%* | 9.1/6.5 | 12.1/9.1 | 16.8/14.8 | 24.6/20.2 |
| adenomas detected% | 44.6 | 47.3 | 47.0 | 41.8 |