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**Title:**
INFLAMMATORY BOWEL DISEASE IN UK PRIMARY CARE:
TEMPORAL TRENDS IN EPIDEMIOLOGY DURING THE EARLY 21$^{ST}$ CENTURY

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**Introduction:** Studies describing the epidemiology of inflammatory bowel disease (IBD) in the UK have been limited by inadequate statistical power. Here we aim to describe temporal trends in the incidence of IBD across the UK during the early 21$^{st}$ century.
**Data source:** The Health Improvement Network (THIN) database, a longitudinal general practice database containing electronic medical records for >17 million patients in the UK, which is broadly representative of the UK population.
**Methods:** We established a cohort of all individuals contributing data to THIN during the period 01/01/2000-31/12/2016. Diagnostic Read codes were used to identify the main outcomes of interest: Crohn's disease (CD), ulcerative colitis (UC) and any IBD (CD, UC, indeterminate colitis, microscopic colitis and unspecified IBD). Crude incidence rates per 100,000 person-years at risk (95% confidence interval [CI]) were calculated for each outcome. Multivariable mixed Poisson regression was used to estimate incident rate ratios (IRR) (95% CI) adjusting for sex, age, geographical location and Townsend Deprivation Score.
**Results:** 10,762,479 individuals were included. 26,457 incident cases of IBD, 9,312 of CD and 13,588 of UC were identified resulting in crude incidence estimates of 39.0 (38.5-39.5), 13.7 (13.4-14.0) and 20.0 (19.6-20.3)/100,000 person-years, respectively.
Overall, UC incidence dropped from 23.3 (21.4-25.4) to 17.3 (15.9-18.9)/100,000 person-years over the period 2000-2016 (IRR 0.76 (0.67-0.86) comparing 2016 to 2000), whereas there was minimal change in CD incidence (Fig.1). However, among the subgroup aged <18 years, incidence of IBD more than doubled over the same period (Fig.2), increasing from 7.9 (4.7-12.4) to 19.1 (14.6-24.5)/100,000 person-years (IRR 2.34 (1.38-3.97) comparing 2016 to 2000) in boys and from 5.5 (2.8-9.9) to 10.5 (7.2-14.8)/100,000 person-years (IRR 1.89 (0.95-3.76) comparing 2016 to 2000) in girls.
Among those aged 12-18 years, IBD incidence rose from 14.7 (9.0-22.7) to 33.3 (25.9-42.1)/100,000 person-years (IRR 2.23 (1.35-3.68) comparing 2016 to 2000), while the incidence rose from 3.1 (1.4-5.8) to 5.8 (3.7-8.6)/100,000 person-years (IRR 1.82 (0.84-3.94) comparing 2016 to 2000) in those under 12 years of age.
**Conclusion:** Internationally, this is one of the largest studies epidemiological studies ever undertaken to investigate trends in IBD incidence. We observed higher incidence of both CD and UC than previously described in UK literature. We observed a striking increase in UC and CD incidence among young people, particularly boys, over a seventeen-year period in the context of stable or falling incidence amongst adults. Further research is warranted to understand these trends.