

Supplementary appendix**Appendix 1. Catchment area GP Practices with populations**

PRACTICE CODE	PRACTICE NAME	POSTCODE	PRACTICE POPULATION
L83002	HONITON SURGERY	EX14 2NY	16783
L83007	SEATON & COLYTON MEDICAL PRACTICE	EX12 2DU	7777
L83009	BAMPTON SURGERY	EX16 9NB	3998
L83011	BUDLEIGH SALTERTON MEDICAL PRACTICE	EX9 6LS	8036
L83016	ST THOMAS MEDICAL GROUP	EX4 1HJ	36415
L83020	AXMINSTER MEDICAL PRACTICE	EX13 5AG	11700
L83023	MID DEVON MEDICAL PRACTICE	EX16 8EZ	4974
L83024	BARNFIELD HILL SURGERY	EX1 1SR	7217
L83025	WALLINGBROOK HEALTH CENTRE	EX18 7DL	6837
L83036	TOPSHAM SURGERY	EX3 0EN	10400
L83040	PINHOE SURGERY	EX1 3SY	11490
L83041	WESTBANK PRACTICE	EX6 8PZ	8501
L83042	ST LEONARDS PRACTICE	EX1 1SB	9095
L83044	BLACKDOWN PRACTICE	EX15 3SF	7487
L83049	MORETONHAMPSTEAD HEALTH CENTRE	TQ13 8LW	3082
L83052	CASTLE PLACE PRACTICE	EX16 6NP	15302
L83053	ROLLE MEDICAL PARTNERSHIP	EX8 2JF	11892
L83054	TOWNSEND HOUSE MEDICAL CENTRE	EX12 2RY	6103
L83056	CLAREMONT MEDICAL PRACTICE	EX8 2JW	11450
L83058	SOUTHERNHAY HOUSE SURGERY	EX1 1RX	8065
L83065	CHIDDENBROOK SURGERY	EX17 3JJ	7278
L83066	MOUNT PLEASANT HEALTH CENTRE	EX4 7BW	16042
L83067	SID VALLEY PRACTICE	EX10 8ET	14557
L83077	HEAVITREE PRACTICE	EX1 2RX	7359
L83079	IDE LANE SURGERY	EX2 8UP	7557
L83082	CHAGFORD HEALTH CENTRE	TQ13 8BW	3076
L83084	SOUTH LAWN MEDICAL PRACTICE	EX1 2RX	7469
L83085	AMICUS HEALTH	EX16 6NJ	10800
L83087	OKEHAMPTON MEDICAL CENTRE	EX20 1AY	14328
L83092	COLLEGE SURGERY PARTNERSHIP	EX15 1FE	15103
L83095	COLERIDGE MEDICAL CENTRE	EX11 1EQ	15969
L83098	CHERITON BISHOP SURGERY	EX6 6JA	4925
L83099	ISCA MEDICAL PRACTICE	EX1 2DW	5227
L83115	WHIPTON SURGERY	EX4 8EG	4007
L83116	WOODBURY SURGERY	EX5 1NZ	3945
L83120	CHANNEL VIEW SURGERY	TQ14 8AY	8182
L83127	NEW VALLEY PRACTICE	EX17 2AR	8765
L83128	BRAMBLEHAIES SURGERY	EX15 1TZ	6654
L83134	WYNDHAM HOUSE SURGERY	EX5 4HZ	3625
L83136	HALDON HOUSE SURGERY	EX8 1DQ	5919
L83143	HILL BARTON SURGERY	EX1 3EN	3856
L83627	RALEIGH SURGERY	EX8 5NH	3929
L83628	IMPERIAL SURGERY	EX8 1DQ	4705
L83647	HATHERLEIGH MEDICAL CENTRE	EX20 3JT	3840
L83655	WONFORD GREEN SURGERY	EX2 6NF	5392
L83663	BLACK TORRINGTON SURGERY	EX21 5QE	2359
L83673	CLOCK TOWER SURGERY	EX4 6PD	556
Y04662	CRANBROOK MEDICAL PRACTICE	EX5 7DR	1719
Y00568	FOXHAYES PRACTICE (DECLINED TO PARTICIPATE)	EX4 2BH	3384
Y02633	BOW MEDICAL PRACTICE (DECLINED TO PARTICIPATE)	EX17 6FB	3102
	TOTAL IN AREA		410233
	TOTAL PARTICIPATING		403747

Appendix 2. IBD free text search terms

inflammatory bowel disease, colitis, proctitis, crohns, crohns disease, ulcerative colitis, CD, UC, IBDU, microscopic colitis, collagenous colitis

Appendix 3. ICD-10 diagnostic codes for GP search

K50.0 Crohn's disease of small intestine;

K50.1 Crohn's disease of large intestine;

K50.8 Other Crohn's disease;

K50.9 Crohn's disease, unspecified;

K51.0 Ulcerative (chronic) pan colitis;

K51.2 Ulcerative (chronic) proctitis;

K51.3 Ulcerative (chronic) rectosigmoiditis;

K51.4 Inflammatory polyps;

K51.5 Left sided colitis;

K51.8 Other ulcerative colitis;

K51.9 Ulcerative colitis, unspecified;

K52.3 Indeterminate colitis;

K52.9 Noninfective gastroenteritis and colitis, unspecified

Appendix 4. Summary of available characteristics/variables available from primary and secondary care databases.

	Extracted variables	
Secondary care databases		
Hospital database (Dendrite Clinical Systems LTD)	NHS number Hospital number Date of birth Sex Smoking status GP Postcode Admissions Outpatient appointments	
Endoscopy database (Unisoft Medical Systems)	Freetext key terms Number and dates of procedures Confirmation of diagnosis	
Histology database (Swift Integrated Healthcare Solutions DXC Technology Company)	Freetext key terms Confirmation of diagnosis	
IBD Database (Chameleon Information Management Services)	Montreal classification Date of diagnosis Medication exposure Surgical history	
Clinical Documentation Manager (electronic notes, in-house development)	For reference and verification only: Migration in / out Confirmation of diagnosis Confirmation of followup, discharge or loss-to-followup	
Mortuary systems	Date of death Cause of death	
Primary care databases		
EMIS Health, Leeds, UK and/or SystmONE	NHS number Date of birth Sex GP Postcode Smoking status ICD-10 diagnostic code Montreal phenotype data Date of diagnosis Medication exposure Surgical history	
Electronic primary care records	(as above)	
Lloyd-George primary care records	(as above)	

Appendix 5. Age-standardized incidence 2008-2016

Age	New IBD cases	East Devon population	Age-specific rate	UK reference population	Age-standardized rate
0-9	9	40,867	22.02265887	12,244	269,645.435
10-19	146	44,592	327.4129889	11,278	3,692,563.68
20-29	247	52,013	474.8812797	13,267	6,300,249.938
30-39	228	44,832	508.5653105	13,199	6,712,553.533
40-49	204	50,241	406.0428734	13,093	5,316,319.341
50-59	194	55,273	350.9851103	13,424	4,711,624.12
60-69	167	52,404	318.6779635	10,724	3,417,502.481
70-79	92	42,035	218.8652314	8,019	1,755,080.29
80-89	34	22,386	151.8806397	4,015	609,800.7683
90-99	4	5,590	71.55635063	737	52,737.03041
	1325	410,233		100,000	32,838,076.63
			Observed Rate (per 100,000 person-years)		35.887
			Standardized Rate (per 100,000 person-years)		36.481
			Upper limit		36.597
			Lower limit		36.374

Appendix 6. Age-standardized mortality table for IBD vs UK background population

Age	UK Population 2016	UK Deaths 2016	UK Age-specific death rate	IBD population 2016	Expected IBD deaths	Observed IBD deaths	Observed IBD age-specific death rate
0-9	8074187	3596	0.00044537	5	0.002227	0	0
10-19	7437621	1158	0.000155695	55	0.008563	0	0
20-29	8749222	3631	0.000415008	271	0.112467	1	8.891476736
30-39	8704486	6495	0.000746167	442	0.329806	0	0
40-49	8634298	15308	0.001772929	512	0.90774	0	0
50-59	8852429	33127	0.003742137	558	2.088112	4	1.915605772
60-69	7072262	68509	0.009687	563	5.453781	2	0.366718073
70-79	5288000	122135	0.023096634	416	9.6082	13	1.353011012
80-89	2647948	191267	0.072232159	231	16.68563	17	1.018840846
90+	486009	115013	0.236647881	71	16.802	6	0.357100355
TOTAL	65946462	560239		3124	51.99852	43	
					SMR		0.82694655

