

**Supplementary Table 1: Antibiotic groupings**

Nitrofurantoin	Nitrofurantoin
Penicillin, narrow	Phenoxymethylpenicillin Pivmecillinam Dicloxacillin Flucloxacillin Benzylpenicillin Cloxacillin Methicillin Procaine penicillin
Penicillin, extended	Amoxicillin +/- enzyme-inhibitor Pivampicillin Ampicillin Bacampicillin Mecillinam Piperacillin +/- enzyme-inhibitor Meropenem
Sulfonamides	Sulfamethizol Trimethoprim Sulfamethoxazole +/- Trimethoprim
Tetracyclines	Doxycycline Tetracycline Lymecycline Oxytetracycline Chlortetracycline
Macrolides	Roxithromycin Azithromycin Erythromycin Clarithromycin Spiramycin
Nitroimidazoles	Metronidazole
Fluoroquinolones	Ciprofloxacin Oxofloxacin Moxifloxacin Fleroxacin Grepafloxacin Norfloxacin Trovfloxacin

	Levofloxacin
Other	Clindamycin Methenamine Cefuroxime Cefalexin Ceftriaxone Cefpodoxime Ceftazidime Cefotaxime Fusidinsyre Nalidixinsyre Colistin Linezolid Vancomycin Gentamicin Tobramycin Fosfomycin Chloramphenicol Tigecycline Netilmicin Teicoplanin

**Supplementary Table 2: Antiviral and antifungal agents adjusted for**

<b><u>Antifungal</u></b>	<b>Azoles</b> Ketoconazole Itraconazole Fluconazole Voriconazole Posaconazole Isavuconazole Oteseconazole  <b>Polyene</b> Amphotericin B  <b>Echinocandin</b> Capsfungin Micafungin Anidulafungin
<b><u>Antiviral</u></b>	<b><u>Pathogens:</u></b> <b>Herpes Simplex Virus</b> Valacyclovir Acyclovir Famciclovir  <b>Influenza</b> Oseltamivir Peramivir Zanamivir Laninamivir Baloxavir  <b>Cytomegalovirus</b> Ganciclovir

**Supplementary Table 3:** Incidence rate ratios of IBD, UC and CD, including a two-year lag after antibiotic exposure

Age group	IRR*, IBD	IRR lower bound, IBD	IRR upper bound, IBD	IRR*, CD	IRR lower bound, CD	IRR upper bound, CD	IRR*, UC	IRR lower bound, UC	IRR upper bound, UC
10-40 years	1.20	1.16	1.24	1.27	1.21	1.34	1.16	1.11	1.21
40-60 years	1.36	1.30	1.41	1.42	1.31	1.54	1.33	1.27	1.40
≥60 years	1.32	1.26	1.37	1.32	1.21	1.44	1.32	1.25	1.39

\*Adjusted for sex, calendar time, antiviral and antifungal exposure, PPI exposure, SEI and population density

**Supplemental Table 4:** Interaction between sex and number of antibiotic doses

Age group	Sex	Number of antibiotic doses	Person-years	Number of IBD cases	IRR*	IRR lower bound	IRR upper bound
10-40 years	Female	0	5,410,564	2,687	1.000	.	.
10-40 years	Female	1	4,255,639	2,683	1.178	1.116	1.242
10-40 years	Female	2	2,863,030	2,103	1.285	1.213	1.361
10-40 years	Female	3	1,849,036	1,575	1.417	1.331	1.509
10-40 years	Female	4	1,176,246	1,112	1.510	1.407	1.620
10-40 years	Female	5+	2,036,676	2,309	1.683	1.590	1.782
10-40 years	Male	0	8,675,210	4,389	1.000	.	.
10-40 years	Male	1	4,950,134	2,875	1.125	1.073	1.179
10-40 years	Male	2	2,387,095	1,491	1.183	1.115	1.254
10-40 years	Male	3	1,130,735	791	1.291	1.197	1.393
10-40 years	Male	4	547,969	431	1.427	1.293	1.576
10-40 years	Male	5+	635,646	604	1.643	1.508	1.789
40-60 years	Female	0	4,267,089	1,631	1.000	.	.
40-60 years	Female	1	3,381,304	1,641	1.223	1.142	1.310
40-60 years	Female	2	2,227,315	1,321	1.448	1.346	1.557
40-60 years	Female	3	1,406,730	907	1.530	1.411	1.660
40-60 years	Female	4	886,195	629	1.642	1.497	1.800
40-60 years	Female	5+	1,689,196	1,710	2.194	2.048	2.349
40-60 years	Male	0	6,234,746	2,392	1.000	.	.
40-60 years	Male	1	3,718,138	1,939	1.313	1.237	1.395
40-60 years	Male	2	1,890,876	1,104	1.430	1.332	1.536
40-60 years	Male	3	947,651	657	1.660	1.522	1.809
40-60 years	Male	4	490,764	382	1.809	1.623	2.016
40-60 years	Male	5+	674,263	606	2.003	1.832	2.190
60+ years	Female	0	3,847,849	1,711	1.000	.	.
60+ years	Female	1	2,895,592	1,582	1.184	1.106	1.268

Age group	Sex	Number of antibiotic doses	Person-years	Number of IBD cases	IRR*	IRR lower bound	IRR upper bound
60+ years	Female	2	1,921,692	1,296	1.415	1.317	1.521
60+ years	Female	3	1,252,271	915	1.496	1.381	1.622
60+ years	Female	4	823,685	724	1.754	1.608	1.914
60+ years	Female	5+	1,989,662	2,122	2.010	1.885	2.144
60+ years	Male	0	4,111,990	1,861	1.000	.	.
60+ years	Male	1	2,661,174	1,562	1.244	1.163	1.331
60+ years	Male	2	1,523,269	1,078	1.453	1.348	1.566
60+ years	Male	3	868,932	661	1.518	1.389	1.659
60+ years	Male	4	507,786	440	1.695	1.528	1.881
60+ years	Male	5+	976,182	977	1.866	1.726	2.017

\*Adjusted for calendar time, antiviral and antifungal exposure, PPI exposure, SEI and population density

**Supplementary Table 5:** Increase in incidence rate ratio per antibiotic course

Description	Age group	IRR*, IBD	IRR lower bound, IBD	IRR upper bound, IBD	IRR*, CD	IRR lower bound, CD	IRR upper bound, CD	IRR*, UC	IRR lower bound, UC	IRR upper bound, UC
Increase in IRR per course	10-40 years	1.1072	1.0984	1.1159	1.1460	1.1315	1.1607	1.0814	1.0705	1.0924
Increase in IRR per course	40-60 years	1.1510	1.1404	1.1617	1.2005	1.1802	1.2212	1.1324	1.1199	1.1449
Increase in IRR per course	60+ years	1.1374	1.1274	1.1474	1.1541	1.1346	1.1739	1.1330	1.1214	1.1447

\*Adjusted for sex, calendar time, antiviral and antifungal exposure, PPI exposure, SEI and population density