Supplementary data

Table S1. Use of antibiotics in previous year and risk of resistance in *E. coli* UTIs

Antibiotic prescribed in previous year	Ampicillin resistance			Trimethoprim resistance		
	yes (resistant/susceptible)	no (resistant/susceptible)	OR (95% CI)	yes (resistant/susceptible)	no (resistant/susceptible)	OR (95% CI)
Amoxicillin	109/100	250/389	1.70 (1.24, 2.32)	43/100	111/389	1.51 (0.995, 2.28)
Trimethoprim	87/103	272/386	1.20 (0.87, 1.66)	60/103	94/386	2.39 (1.62, 3.53)
Augmentin	32/29	327/460	1.55 (0.92, 2.62)	13/29	141/460	1.46 (0.74, 2.89)
Cephalosporins	40/29	319/460	1.99 (1.21, 3.28)	18/29	136/460	2.10 (1.13, 3.90)
Flucloxacillin	25/29	334/460	1.19 (0.68, 2.06)	11/29	143/460	1.22 (0.60, 2.50)
Penicillin	18/18	341/471	1.38 (0.71, 2.69)	8/18	146/471	1.43 (0.61, 3.37)
β-Lactams	157/160	202/329	1.60 (1.21, 2.12)	62/160	92/329	1.39 (0.95, 2.01))
β-Lactams excluding amoxicillin and cephalosporins	62/67	297/422	1.32 (0.90, 1.92)	25/67	129/422	1.22 (0.74, 2.01)
Any	209/260	150/229	1.23 (0.93, 1.62)	94/260	60/229	1.38 (0.95, 2.00)

Table S2. Demographic and medical factors in patients with resistant compared with susceptible *E. coli* UTIs

Potential confounders		Amoxicillin				Trimethoprim			
Variable		risk factor present (resistant/ susceptible)	risk factor absent (resistant/ susceptible)	OR	95% CI	risk factor present (resistant/ susceptible)	risk factor absent (resistant/ susceptible)	OR	95% CI
Age	0-4	11/10		1.43	0.58-3.50	5/10		1.60	0.52-4.99
	5-15	13/30		0.56	0.28-1.14	5/30		0.54	0.19-1.47
	16-24	39/33		1.53	0.90-2.62	20/33		1.95	1.00-3.78
	25-44	94/122	ref			38/122	ref		
	45-64	102/148		0.89	0.62-1.29	53/148		1.15	0.71-1.86
	65-84	100/150		0.87	0.60-1.25	34/150		0.73	0.43-1.22
	85+	10/9		1.44	0.56-3.69	6/9		2.14	0.72-6.40
Gender	male	32/50	337/452	0.86	0.54-1.37	13/50	148/452	0.79	0.42-1.50
Social Class	1	7/9		0.86	0.31-2.37	8/9		2.35	0.86-6.42
	2	88/135		0.72	0.50-1.03	47/135		0.92	0.58-1.46
	3 non-manual	120/132	ref			50/132	ref		
	3 manual	34/67		0.56	0.35-0.90	6/67		0.24	0.10-0.58
	4	57/82		0.76	0.50-1.16	20/82		0.64	0.36-1.16
	5	21/24		0.96	0.51-1.82	11/24		1.21	0.55-2.65
	never employed	19/14		1.49	0.72-3.11	9/14		1.70	0.69-4.17
	child	23/39		0.65	0.37-1.15	10/39		0.68	0.31-1.46
Any previous infection	summary score	250/340	116/160	1.01	0.76-1.36	99/340	61/160	0.76	0.53-1.11
Previous UTI	yes/no	266/368	96/126	0.95	0.70-1.29	119/368	38/126	1.07	0.71-1.63
Catheter	yes/no	81/99	278/395	1.16	0.84-1.62	44/99	113/395	1.55	1.03-2.35
HRT	yes/no	64/92	255/326	0.89	0.62-1.27	27/92	113/326	0.85	0.52-1.37
Op on bladder	yes/no	40/36	325/460	1.57	0.98-2.52	22/36	137/460	2.05	1.17-3.60
Op on bowel	yes/no	16/17	350/483	1.30	0.65-2.61	8/17	152/483	1.50	0.63-3.53
Morbidities									
Malignancy	yes/no	20/31	349/471	0.87	0.49-1.55	12/31	149/471	1.22	0.61-2.44
Mental/behaviour	yes/no	36/51	333/451	0.96	0.61-1.50	15/51	146/451	0.91	0.50-1.66
Respiratory	yes/no	54/70	315/432	1.06	0.72-1.55	22/70	139/432	0.98	0.58-1.64
Skin problem	yes/no	13/24	356/478	0.73	0.36-1.45	4/24	157/478	0.51	0.17-1.48
Endocrine	yes/no	67/95	302/407	0.95	0.67-1.34	27/95	134/407	0.86	0.54-1.38
Circulatory	yes/no	98/142	271/360	0.92	0.68-1.24	37/142	124/360	0.76	0.50-1.15
Musculo-skeletal	yes/no	73/114	296/388	0.84	0.60-1.17	39/114	122/388	1.09	0.72-1.65
Bowel problem	yes/no	27/38	342/464	0.96	0.58-1.61	12/38	149/464	0.98	0.50-1.93
Genitourinary problem	yes/no	3/5	366/497	0.82	0.19-3.43	2/5	159/497	1.25	0.24-6.51
Autoimmune disease	yes/no	48/70	321/432	0.92	0.62-1.37	26/70	135/432	1.19	0.73-1.94
Hypothyroid	yes/no	19/33	350/469	0.77	0.43-1.38	9/33	152/469	0.84	0.39-1.80
COPD	yes/no	0/2	369/500	-	-	0/2	161/500	-	-

Table S3. Exposure to antibiotics from sources other than direct consumption in patients with resistant compared with susceptible *E. coli* UTIs

Potential confounders		Amoxicillin				Trimethoprim			
Variable		risk factor present (resistant/ susceptible)	risk factor absent (resistant/ susceptible)	OR	95% CI	risk factor present (resistant/ susceptible)	risk factor absent (resistant/ susceptible)	OR	95% CI
Exposure to antibiotics in work	yes/no	35/35	291/408	1.40	0.86-2.30	19/35	123/408	1.80	0.99-3.26
Exposure to long-term antibiotics (4 weeks or longer)	yes/no	62/59	295/426	1.52	1.03-2.23	33/59	120/426	1.99	1.24-3.18
Attitude to antibiotics	low	67/90	249/342	1.02	0.72-1.46	27/90	110/342	0.93	0.58-1.51
	medium	ref				110/342	ref		
	high	22/31	249/342	0.97	0.55-1.72	11/31	110/342	1.10	0.54-2.27
Antibiotic prescribed for household member in previous 12 months	yes/no	55/67	169/224	1.09	0.72-1.64	2/21	94/270	0.27	0.06-1.19
Number of household members	0	71/107	ref			32/107	ref		
	1-3	261/340		1.16	0.82-1.63	114/340		1.12	0.72-1.76
	4+	37/55		1.01	0.61-1.69	15/55		0.91	0.45-1.82
Household infectious illness	yes/no	96/143	196/241	0.82	0.60-1.14	38/143	93/241	0.69	0.46-1.06
Visit any hotspots of infection	summary score	237/338	127/160	0.88	0.66-1.18	106/338	52/160	0.96	0.66-1.41

Table S4. Studies of individuals relating previous antibiotic use to resistant infections (January 2001 to week 26 of 2005). For original systematic review of studies published prior to these dates please see: Hillier SL, Magee JT, Howard AJ *et al*. How strong is the evidence that antibiotic use is a risk factor for antibiotic-resistance, community-acquired urinary tract infection? *J Antimicrob Chemother* 2002; **50**: 241-7.

Study	Methods	Time period	Population	Inclusion criteria	Number in study	Antibiotic prescribed	Antibiotic resistance	Time period of previous antibiotic	Organism	Results
Steinke, 2001 (12)	nested case-control using record linkage	18 months (7/93-12/95)	resident in Tayside, Scotland, registered with general practitioner and submitted urine sample	incident urine sample with bacterial growth	3435 subjects	trimethoprim other antibiotic	trimethoprim	6 months – excluding previous 3 days	coliform bacilli. *E. coli*, *Klebsiella* spp., *Proteus* spp., *Pseudomonas* spp.	trimethoprim adjusted OR 4.35 (95% CI 3.03-5.73)
Brown, 2002 (13)	retrospective cohort	6 years 7 months (9/92-4/99)	women aged 18-65 years seen at a university health centre and primary care clinics in southeastern Michigan	acute uncomplicated UTI and positive urine culture	601 *E. coli* isolates (three different cohorts)	any antibiotic	SXT	2 weeks – excluding previous 1 day	*E. coli*	SXT OR 16.74 (95% CI 2.90-96.95)
Leflon-Guibout, 2002 (14)	case-series	4 months (11/97-2/98)	patients hospitalized in A. Paré Hospital, France	diagnosed *E. coli* lower UTI	106 patients	co-amoxiclav	co-amoxiclav	1 month	*E. coli*	co-amoxiclav RR 4.36 (95% CI 1.97-9.65)
Metlay, 2003 (15)	retrospective case-control using record linkage	3 years 6 months (7/96-12/99)	veterans presenting to ambulatory care clinics within the VA Medical Centre, Philadelphia	growth from a urine specimen for a Gram-negative bacterium	393 patients	any antibiotic	SXT	6 months – excluding 2 weeks previous to infection	Gram-negative bacterium	SXT OR 4.1 (95% CI 2.2-7.5)
Alos, 2005 (16)	case-series	11 months (3/02-1/03)	patients presenting to emergency service of Hospital de Mostoles (Madrid)	*E. coli* community-acquired UTI	164 patients	ampicillin, gentamicin, fosfomycin, nitrofurantoin, cefazolin, nalidixic acid, norfloxacin, ciprofloxacin, co-trimoxazole	ampicillin, gentamicin, fosfomycin, nitrofurantoin, cefazolin, nalidixic acid, norfloxacin, ciprofloxacin, co-trimoxazole	3 months	*E. coli*	nalidixic acid (P<0.001) and fluoroquinolones P 0.011
Donnan, 2004 (17)	repeated cross-sectional using record linkage	24 months (01/95-12/96)	166000 patients registered with 28 practices in Ninewells Hospital lab catchment area, Tayside	midstream urine specimens with Gram-negative bacteria	8833	trimethoprim, other antibiotic	trimethoprim	6 months	Gram-negative bacteria	trimethoprim 1.22 (95% CI 1.16-1.28)
Killgore, 2004 (18)	retrospective case-control	12 months (01/01-12/01)	patients presenting to outpatient or emergency clinic of University of California, San Francisco	community-acquired UTI due to ciprofloxacin-resistant UTI	40 cases and 80 controls	any antibiotic	ciprofloxacin	4 weeks	*E. coli*	any quinolone OR 30.3 (95% CI 5.82-158.42)

SXT, trimethoprim/sulfamethoxazole.