



Figure 1. Participant flow. Includes number of participants opting out of further interventions, as indicated. One additional participant “opted out” after wave 3.

Table 1 - Practice baseline characteristics.

Measure	Timepoint	Control group (n=698)	Intervention group (n=703)	Intervention group breakdown	
				Behavioural impact (n=356)	Plain feedback (n=347)
Practice list size ¹ (mean)	Feb 2018	8,120	8,517	8,487	8,550
Small practices ² (%)	Feb 2018	7.7%	8.1%	9.4%	6.8%
Single-handed practices ³ (%)	Feb 2018	6.6%	5.4%	5.6%	5.2%
Number of GPs ⁴ (mean)	Feb 2018	6.0	6.2	6.3	6.1
Dispensing practices ⁵ (%)	Feb 2018	21%	22%	22%	22%
Index of Multiple Deprivation ⁶ (mean)	2015	20.0	19.9	20.1	19.6
Total antibiotics prescribed per STAR-PU ⁷ (mean)	Sept 2017-Feb 2018	0.50	0.51	0.50	0.51
Antibiotics prescribed as broad-spectrum ⁷ (%)	Sept 2017-Feb 2018	12.7%	12.7%	12.7%	12.6%
Practices having at least one dashboard view ⁸ (%)	15-week baseline	56.4%	60.9%	61.2%	60.5%
Page views per practice ⁸ (mean)	15-week baseline	1.4	1.5	1.4	1.6

² <3000 patients.

³ one GP.

⁵ at least one dispensing patient.

Data sources: ¹⁻⁵NHS Digital; ⁶Public Health England (Fingertips tool); ⁷OpenPrescribing data (from NHSBSA and NHS Digital); ⁸Google Analytics for OpenPrescribing.net usage for individual practice pages.

Table 2. Interventions delivered by each route, and links accessed as a result.

wave	group	Letters			Faxes			Emails					Any source
		Delivered	Links accessed		Delivered	Links accessed		Delivered	Opened		Links accessed		Links accessed
1	BI	356	12	3.4%	342	11	3.2%	351	94	26.8%	35	10.0%	54
	plain	343	14	4.1%	322	8	2.5%	329	61	18.5%	29	8.8%	47
	total	699	26	3.7%	664	19	2.9%	680	155	22.8%	64	9.4%	101
2	BI	353	8	2.3%	330	7	2.1%	339	86	25.4%	17	5.0%	30
	plain	343	5	1.5%	312	7	2.2%	314	61	19.4%	22	7.0%	34
	total	696	13	1.9%	642	14	2.2%	653	147	22.5%	39	6.0%	64
3	BI	349	7	2.0%	327	4	1.2%	329	57	17.3%	20	6.1%	30
	plain	342	2	0.6%	309	4	1.3%	309	47	15.2%	15	4.9%	20
	total	691	9	1.3%	636	8	1.3%	638	104	16.3%	35	5.5%	50
all	BI	1058	27	2.6%	999	22	2.2%	1019	237	23.3%	72	7.1%	114 (93)
	plain	1028	21	2.0%	943	19	2.0%	952	169	17.8%	66	6.9%	101 (85)
	all	2086	48 (45)	2.3%	1942	41 (38)	2.1%	1971	406	20.6%	138 (109)	7.0%	215 (178)

Figures shown in brackets represent results of distinct practice counts, ie. excluding where links are accessed by the same practice more than once. 'Emails Opened' figures are approximate, as this cannot be detected accurately. Seven letters were returned unopened (see Supplementary note 5).

BI=behavioural impact feedback group.

Table 3. Count of practices having dashboard pages viewed at least once, and mean page views per practice dashboard, for practices in the intervention and control groups, during the 15-week baseline and follow-up periods.

		Control group (n=698)		Intervention group (n=703)		Intervention group breakdown			
						Behavioural impact (n=356)		Plain feedback (n=347)	
Practices having at least one dashboard view	Baseline	394	(56.4%)	428	(60.9%)	218	(61.2%)	210	(60.5%)
	Follow-up	390	(55.9%)	462	(65.7%)	222	(62.4%)	240	(69.1%)
	(change)	-4		+34	(+4.8%)	+4		+30	
Page views per practice (mean +/- SD)	Baseline	1.44	+/-2.09	1.51	+/-1.99	1.40	+/-1.78	1.63	+/-2.18
	Follow-up	1.42	+/-2.11	1.75	+/-2.12	1.66	+/-2.12	1.84	+/-2.12
	(change)	-0.02		+0.24		+0.24		+0.21	

Figures representing the primary engagement outcome are shaded. SD, Standard Deviation.

Table 4. Number of links accessed from each method (email vs fax, email vs post, and fax vs post).

email			email			fax		
fax	0	1	post	0	1	post	0	1
0	622	62	0	617	60	0	661	16
1	17	2	1	22	4	1	23	3
Sensitivity analysis: filtered to practices only accessing links via all 3 methods								
email			email			fax		
fax	0	1	post	0	1	post	0	1
0	602	61	0	598	59	0	641	16
1	17	2	1	21	4	1	22	3

Numbers shown are counts of practices not accessing (0) vs accessing (1) a link from each source.

Table 5. Practice responses to the survey question “Did the information we sent give you new information about your prescribing?”

Group	Total practices	Any response	no	yes
behavioural impact	356	90 (25.3%)	28	62 (68.9%)
plain	347	82 (23.6%)	23	59 (72.0%)
total	703	172 (24.5%)	51	121 (70.3%)

Question was asked the first time any link was used for each practice. No response indicates that no link was accessed for a practice, but may include some practices who ceased attempting to interact with the site once faced with the question.

Table 6. Prescribing outcomes: percent of antibiotics prescribed as broad-spectrum for practices in the intervention vs control groups (**primary prescribing outcome**), and for behavioural impact vs plain feedback groups. Also showing secondary outcomes for each group: Antibiotics per STAR-PU, Urinary Tract Infection(UTI) antibiotic course duration (ADQs per item), and trimethoprim % of all nitrofurantoin & trimethoprim. Practices with zero denominator during the follow-up period were excluded.

		Control group (n=698)	Intervention group (n=703)	Intervention group breakdown	
				Behavioural impact (n=356)	Plain feedback (n=347)
Percent broad-spectrum	Baseline	12.71%	12.67%	12.70%	12.64%
	Follow-up	11.59%	11.25%	11.07%	11.44%
	change	-1.12%	-1.42%	-1.63%	-1.20%
Marginal benefit in the group with the greatest reduction: number of additional broad-spectrum items avoided (%)		-	3,500 (2.1%)	1,700 (2.1%)	-
Antibiotics per STAR-PU	Baseline	0.506	0.458	0.505	0.513
	Follow-up	0.509	0.464	0.458	0.471
	change	-0.048	-0.045	-0.047	-0.042
UTI Course duration (ADQs per item)	Baseline	6.17	6.12	6.14	6.11
	Follow-up	6.05	6.04	6.01	6.08
	change	-0.11	-0.08	-0.13	-0.03
Trimethoprim % of all nitrofurantoin & trimethoprim	Baseline	41.4	41.5	41.6	41.5
	Follow-up	32.4	32.6	32.7	32.5
	change	-9.0	-8.9	-8.8	-9.1