

A whole healthcare economy approach to antimicrobial resistance

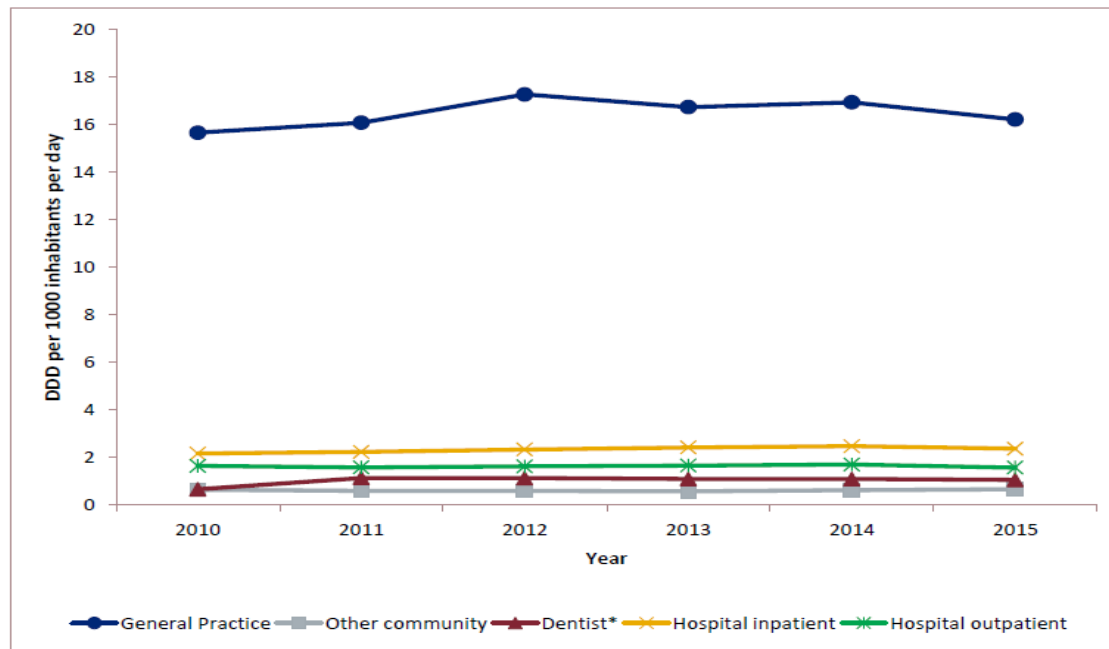


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Disclaimer



Total antibiotic consumption (in DDD) per 1000 inhabitants/day England, 2010-2015



Source: ESPAUR report, 2016

Syndrome specific prescribing

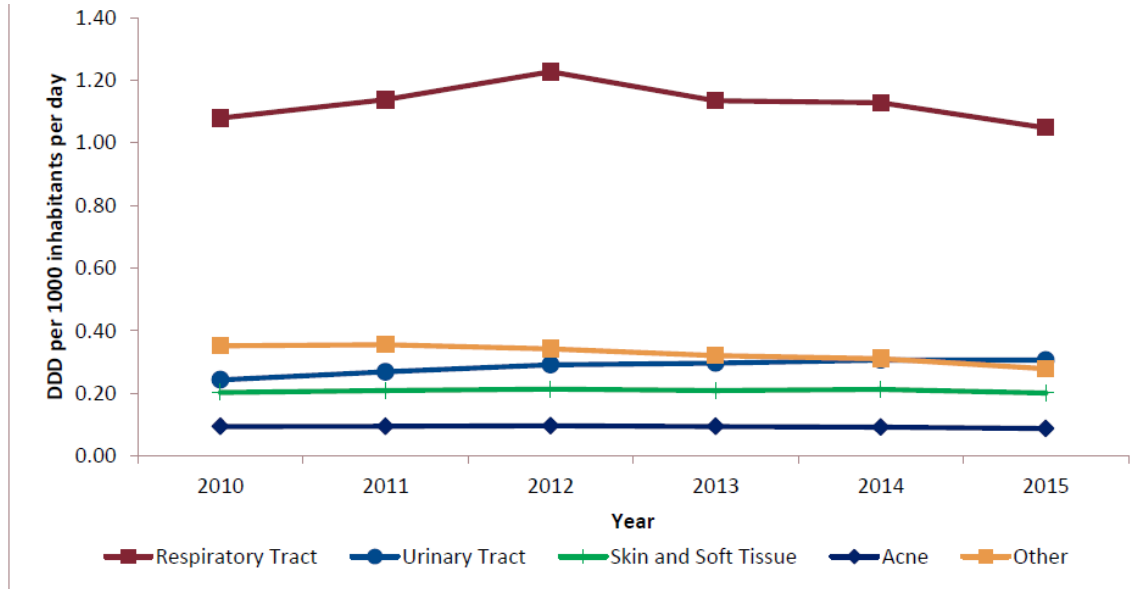
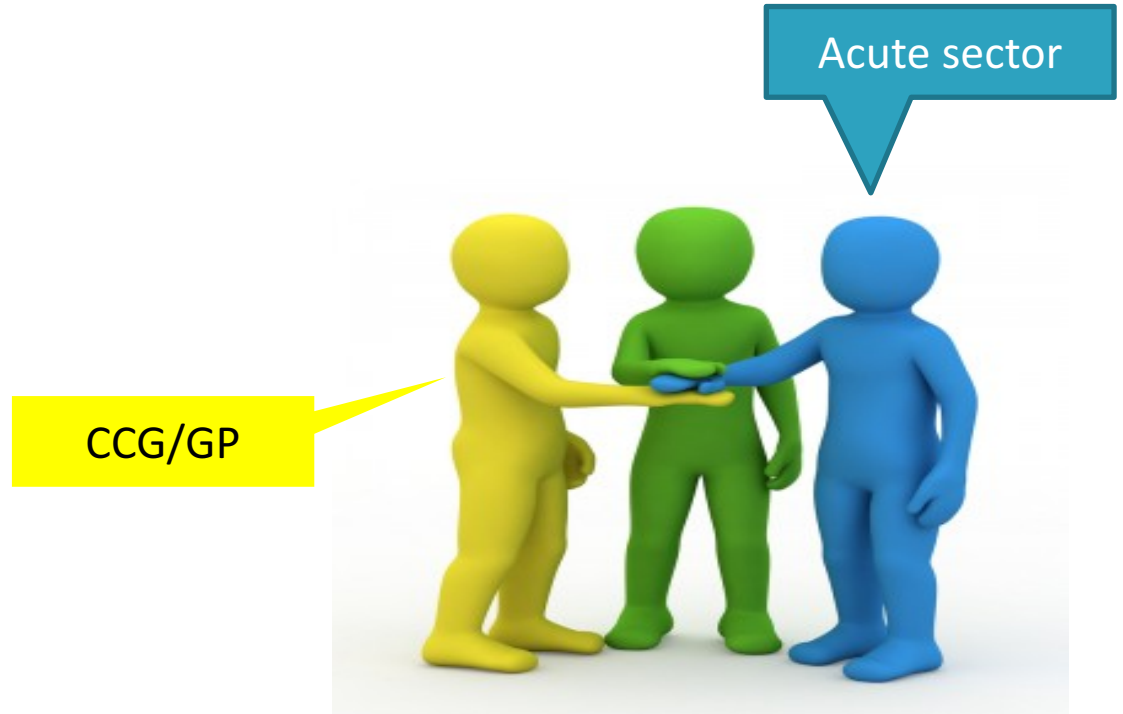
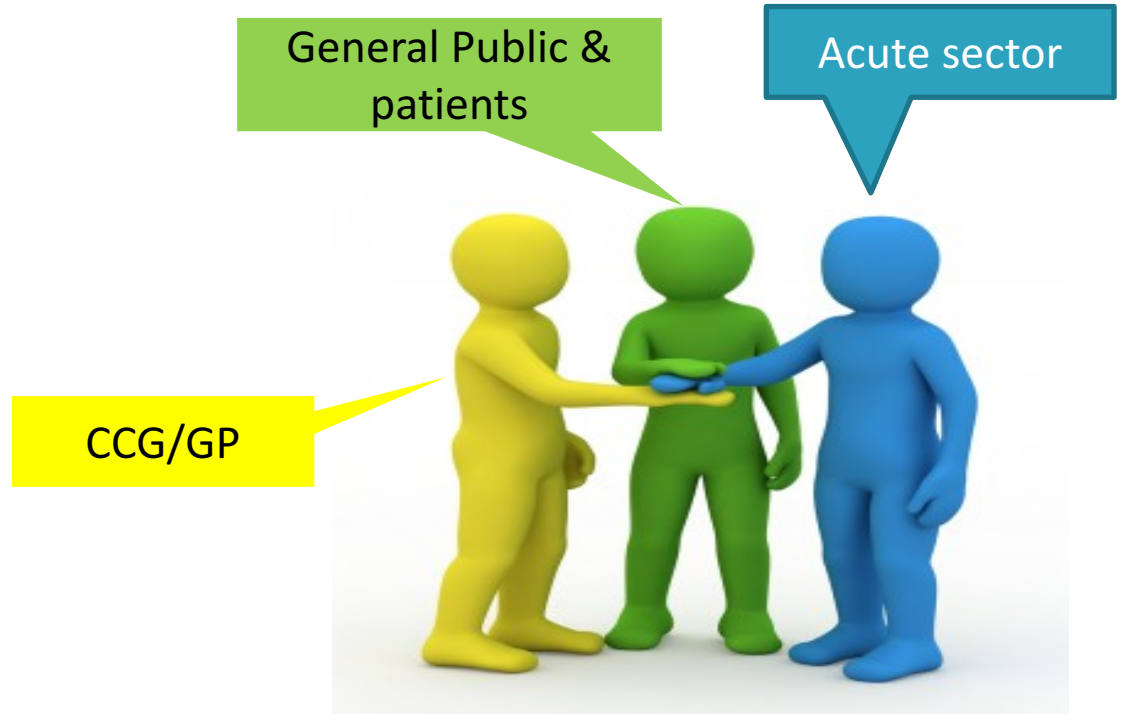


Figure 3.21 Syndrome specific prescribing; items per 1000 inhabitants per day, England; 2010-2015

Whole healthcare economy?



Whole healthcare economy?



Antibiotic

NHS Hospital Targets Veterinary Farming GP STICKS XDR0 RESISTANCE European ESBL CQUIN Promotor Growth indicators Guardian CPE Healthcare Economy SOCIAL Acute Surveillance Prescribing 2017/2018 CCG Reporting PANRESISTANT pharmacist Day indicator report MDRO Awareness Reduction O'Neill AmpC Performance stewardship competencies bacteriaemia Gram-negative CARROTS ANTIMICROBIAL

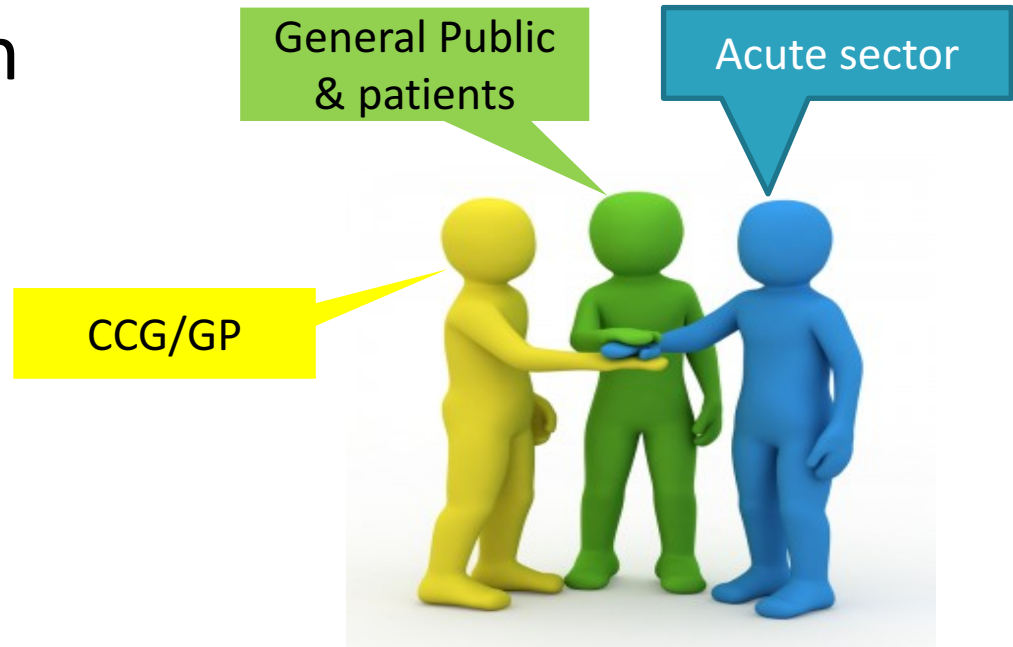
Eh?

- What could we do?
- What *should* we do?
- How *would* we do it?
- How will we know if we're making a real difference?



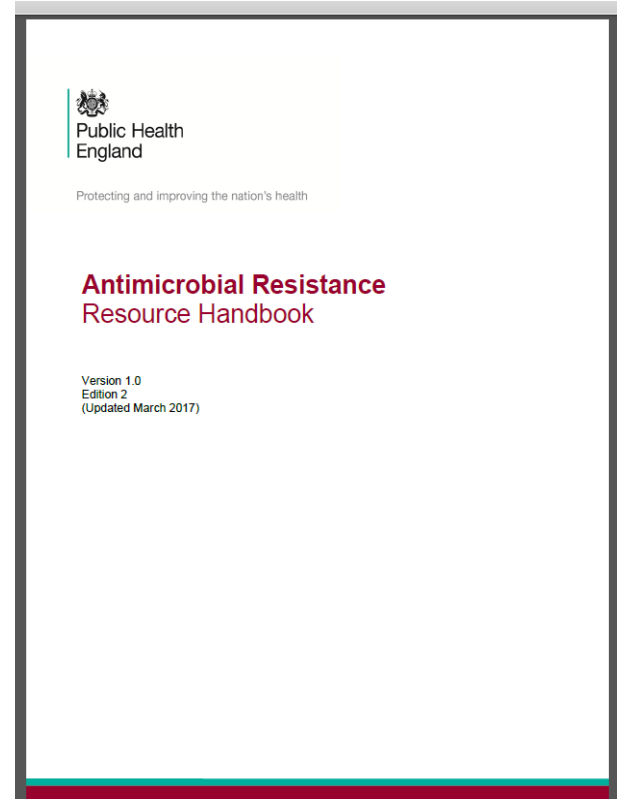
Antimicrobial resistance

- Antimicrobial stewardship
- Infection prevention
- Infection control
- Hearts & minds



Useful stuff

- Start Smart, then Focus
- TARGET Toolkit
- ESPAUR report 2016
- PHE Fingertips tool



One bite at a time



What works?



ORGANISATIONAL CULTURE

Journal of Hospital Infection 86 (2014) 1–6



Available online at www.sciencedirect.com

Journal of Hospital Infection

journal homepage: www.elsevierhealth.com/journals/jhin



Review

Organizational culture and its implications for infection prevention and control in healthcare institutions

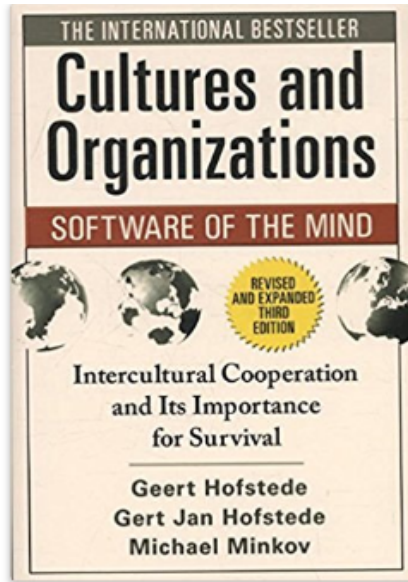
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Organisational culture



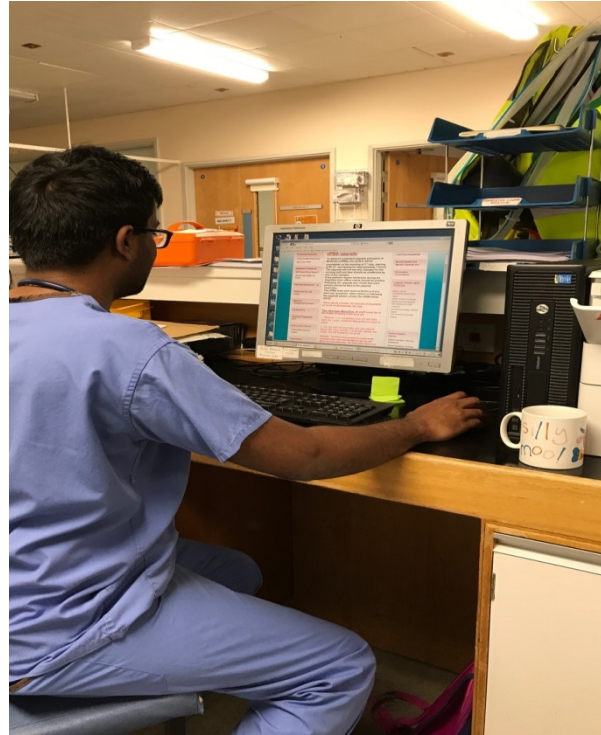
- What works well in Lisbon won't necessarily work in
- Leeds
- (Or Los Angeles)
- (Or Harrogate)

Make it easy for prescribers to do the right thing

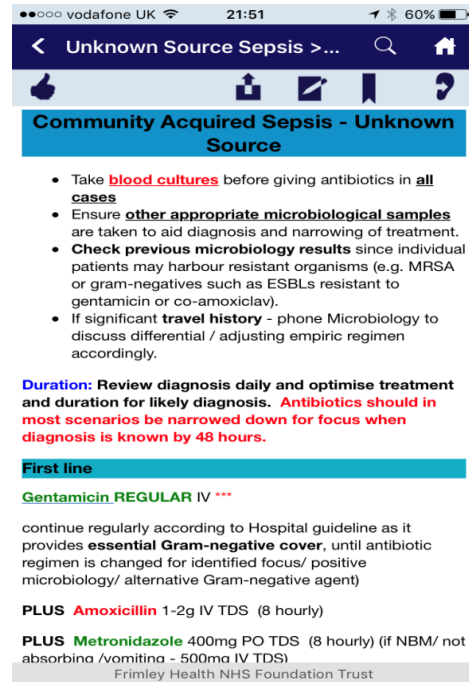
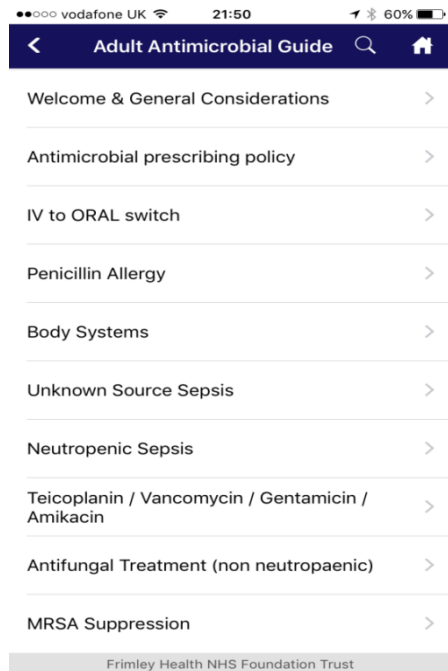
Prescribing guidelines

- Easily accessible
- Relevant
- Comprehensive
- Simple
- Clear
- Up to date

The locum med reg test



Smart phone app (e.g. Micro Guide)

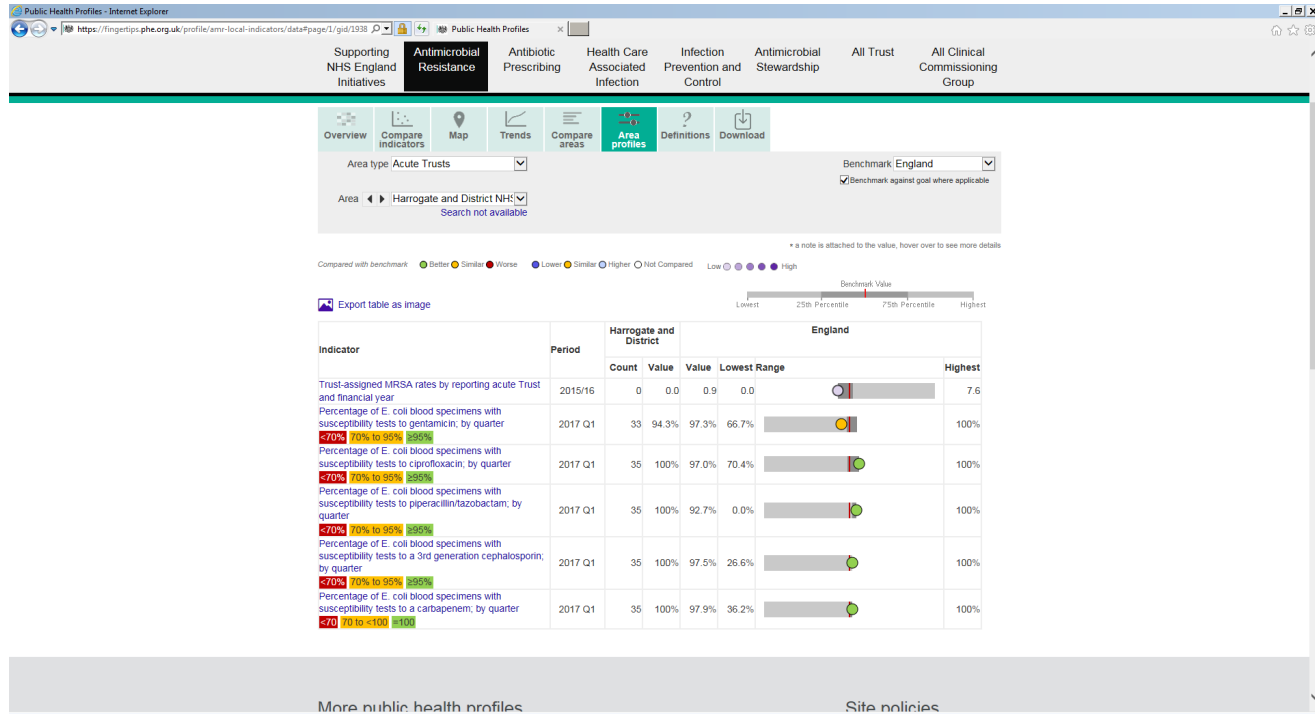


How will we know if we're making a difference?

- Sputum isolates?
- Urinary isolates?
- Blood-culture isolates?
- *C. difficile* as a surrogate marker

PHE Fingertips

HDFT *E. coli* BSI isolates



<http://fingertips.phe.org.uk>

HaRD CCG urinary coliforms trimethoprim susceptibility

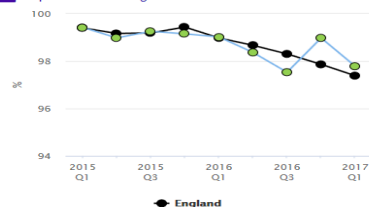
England

Percentage of community E. coli (or coliform) urine specimens with susceptibility tests to trimethoprim; by quarter
NHS Harrogate And Rural District CCG

Proportion - %

Export chart as image

Show confidence intervals



Benchmarking against goal: <70% 70% to 95% ≥95%

Period	Count	Value	Lower CI	Upper CI	Yorkshire and Humber	England
2015 Q1	1,043	99.4	-	-	99.5	99.4
2015 Q2	877	99.0	-	-	99.3	99.2
2015 Q3	940	99.3	-	-	99.3	99.2
2015 Q4	822	99.2	-	-	99.5	99.4
2016 Q1	711	99.0	-	-	99.1	99.0
2016 Q2	483	98.4	-	-	98.6	98.7
2016 Q3	752	97.5	-	-	98.1	98.3
2016 Q4	583	99.0	-	-	97.9	97.9
2017 Q1	619	97.8	-	-	97.3	97.4

Source: Routine voluntary laboratory surveillance reports to Public Health England via the second generation surveillance system (SGSS); Antimicrobial testing data module

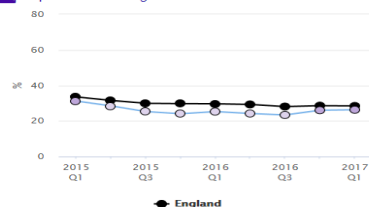
Percentage of community E. coli (or coliform) urine specimens non-susceptible to trimethoprim; by quarter NHS

Harrogate And Rural District CCG

Proportion - %

Export chart as image

Show confidence intervals



Period	Count	Value	Lower CI	Upper CI	Yorkshire and Humber	England
2015 Q1	326	31.3	-	-	33.3	33.6
2015 Q2	250	28.5	-	-	32.0	31.6
2015 Q3	238	25.3	-	-	30.7	30.0
2015 Q4	198	24.1	-	-	30.3	29.8
2016 Q1	180	25.3	-	-	28.9	29.7
2016 Q2	117	24.2	-	-	28.8	29.3
2016 Q3	176	23.4	-	-	27.7	28.1
2016 Q4	152	26.1	-	-	29.0	28.6
2017 Q1	163	26.3	-	-	29.1	28.5

Source: Routine voluntary laboratory surveillance reports to Public Health England via the second generation surveillance system (SGSS); Antimicrobial testing data module

Fingertips tool: mean no. prescribed antibiotic items per STAR PU

Compared with benchmark

Better Similar Worse
Lower Similar Higher
Low High Not compared

Indicator	Period	England	Yorkshire and Humber NHS region	NHS Harrogate And Rural District...	NHS Vale Of York CCG	NHS Hambleton, Richmondshire And...	NHS Leeds West CCG	NHS Leeds North CCG	NHS Airedale, Wharfedale And Crave...	NHS Sheffield CCG	NHS East Riding Of Yorkshire CCG	NHS North East Lincolnshire CCG	NHS Bassettlaw CCG	NHS Barnsley CCG	NHS Leeds South And East CCG	NHS North Lincolnshire CCG	NHS Hull CCG	NHS Bradford Districts CCG	NHS Greater Huddersfield CCG	NHS Wakefield CCG	NHS Bradford City CCG	NHS Scarborough And Ryedale CCG	NHS Doncaster CCG	NHS Calderdale CCG	NHS North Kirklees CCG	NHS Rotherham CCG
Twelve month rolling total number of prescribed antibiotic items per STAR-PU	Dec 2016																									
≤ mean England prescribing (2013/14)		1.08	1.13	0.92	0.96	0.98	1.02	1.04	1.04	1.11	1.12	1.13	1.14	1.15	1.15	1.17	1.18	1.19	1.19	1.20	1.21	1.21	1.22	1.22	1.23	1.23
> mean England prescribing (2013/14)																										
Twelve month rolling percentage of prescribed antibiotic items from cephalosporin, quinolone and amoxiclav class	Dec 2016	8.95	6.65	6.27	4.39	9.47	6.13	6.20	6.70	9.82	6.46	8.35	4.88	6.52	7.06	9.56	4.59	5.85	6.72	5.85	5.32	5.22	5.86	5.94	6.90	7.15
All C. difficile rates by CCG and financial year	2015/16	26.0	28.3	33.0	25.2	36.8	35.1	32.5	28.3	36.5	25.3	20.6	21.0	22.2	44.4	18.3	27.9	34.4	16.9	27.1	16.8	28.9	23.9	18.3	20.0	30.3
All E. coli bacteraemia rates by CCG and financial year	2015/16	70.0	80.1	82.5	76.3	83.3	63.6	64.4	68.0	98.8	74.6	86.2	93.5	85.2	88.8	86.1	81.3	64.4	70.6	80.4	57.6	95.8	86.6	70.7	79.5	89.4
Twelve month rolling proportion of trimethoprim class prescribed antibiotic items as a ratio of trimethoprim to nitrofurantoin	Dec 2016	57.0	57.1	58.8	64.3	60.2	35.8	36.3	59.1	66.5	67.6	70.0	52.7	37.3	40.1	68.7	71.4	61.5	60.0	61.6	57.1	65.7	62.4	57.6	62.7	36.6

Source: Public Health England Fingertips

<http://fingertips.phe.org.uk>

reaching the right spot



If I was Lord Sugar...

**Develop affordable POC diagnostics for
respiratory viruses in general practice**

Back a social media campaign





**Role of microbes
in health as well as
disease**

Antibiotic stewardship

Infection prevention



In Summary

Pick 1-2 things to target

Don't let culture, systems & processes get in the way

Don't let the perfect become the enemy of the good

Make doing the right thing easy

NEVER GIVE UP!



Thank you

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