



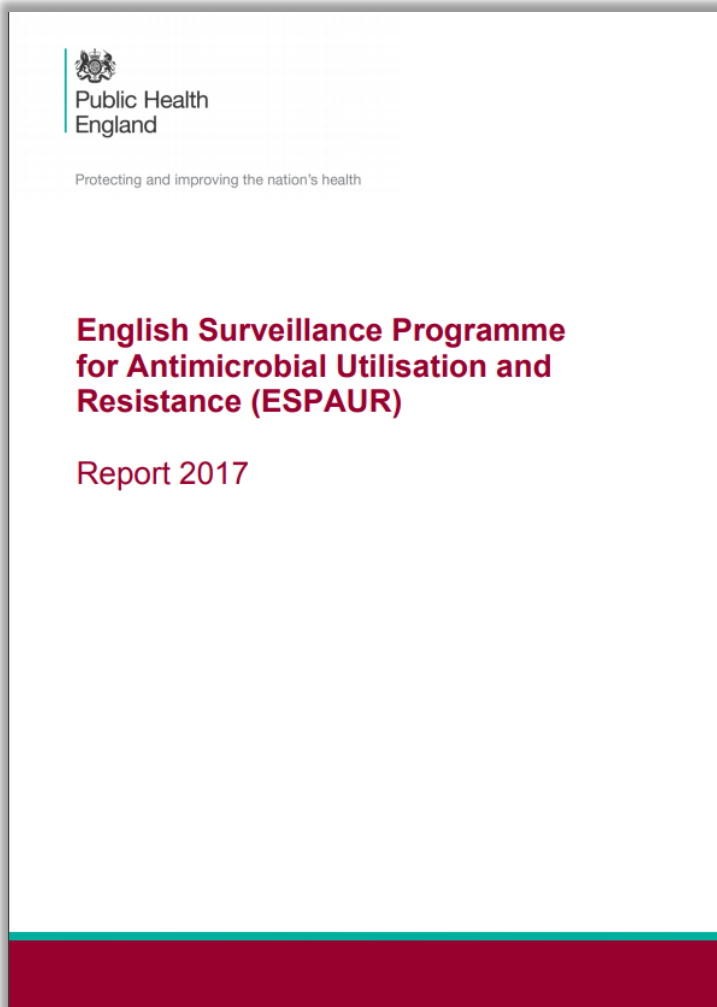
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Protecting and improving the nation's health

What surveillance do we have for AMR?

Dr Berit Muller-Pebody
AMR Section Lead, HCAI & AMR Department
National Infection Service, Public Health England

Better access and use of surveillance data



English surveillance programme for antimicrobial utilisation and resistance (ESPAUR)

Established as part of PHE's response to the Government's AMR Strategy in 2013

- Develop and improve surveillance systems to measure AMR and antimicrobial usage
- Measure the impact of resistance on safety of patients and the general public

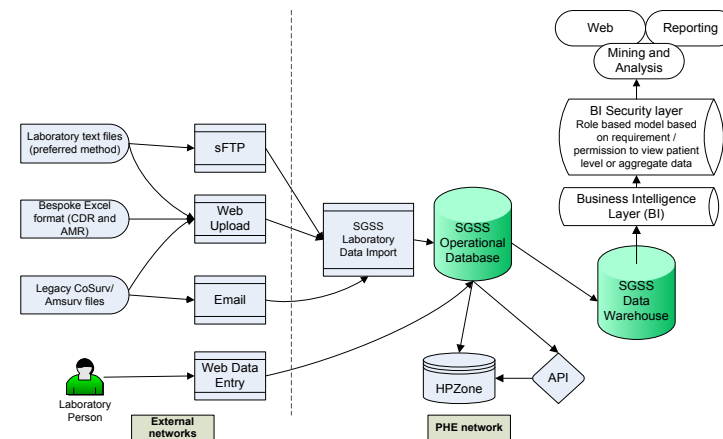


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AMR Surveillance

PHE's Voluntary laboratory surveillance Second Generation Surveillance System (SGSS)

- All clinically significant infections e.g. bacterial, viral, fungal, protozoan, helminthic
- From various specimen sites (e.g. blood, CSF, urine, sputum, stool)

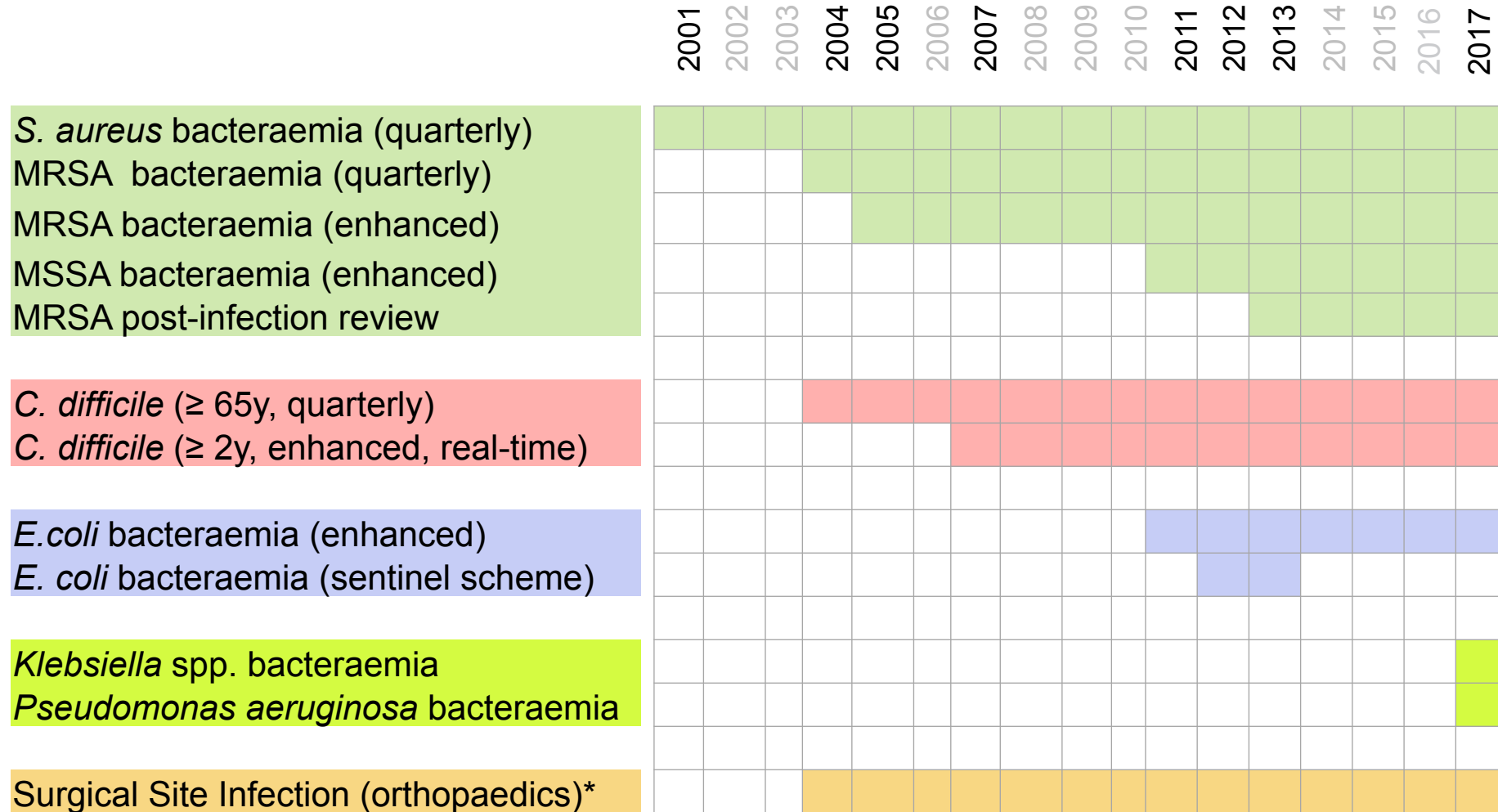


- 98% (121/124) of NHS laboratories reporting AMR
- 87% of laboratories daily reporting
- 84% of laboratories having fully automated feeds to SGSS

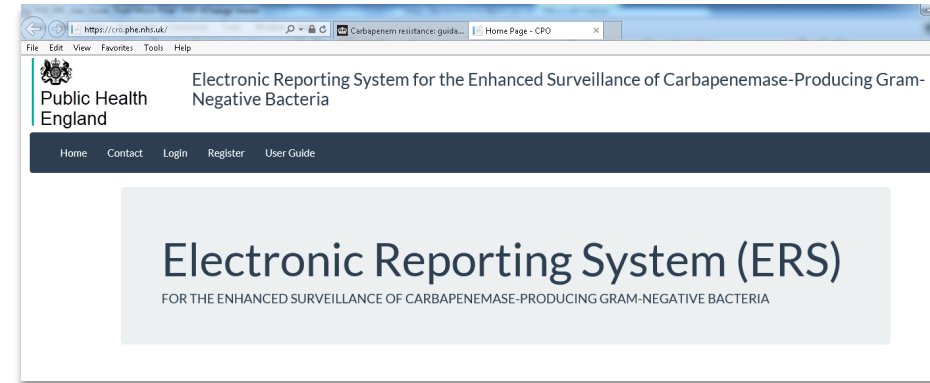
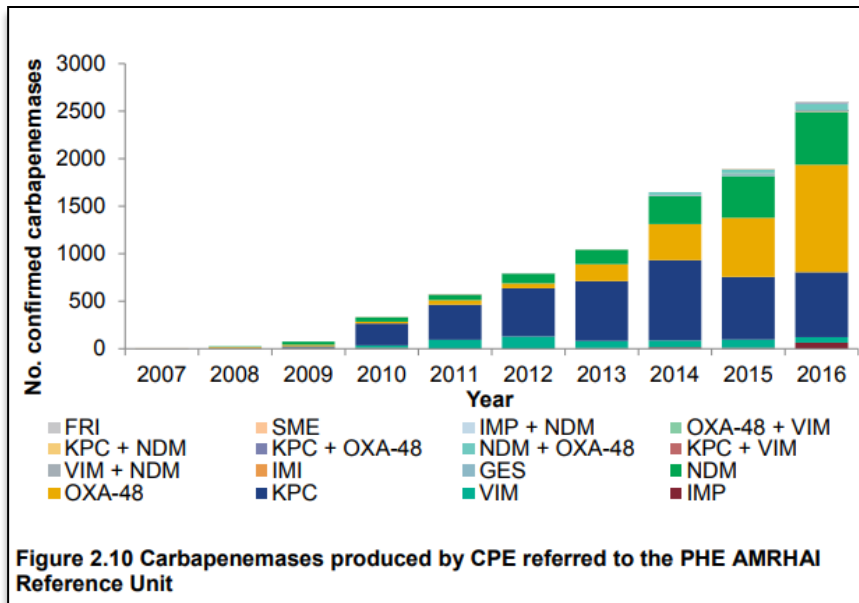
Monitoring of key drug-bacteria combinations

Pathogen	Antibiotic or antibiotic class
<i>Escherichia coli</i>	Ciprofloxacin
	Third-generation cephalosporins
	Gentamicin
	Imipenem/meropenem
	Piperacillin/tazobactam
	Co-amoxiclav
<i>Klebsiella pneumoniae</i>	Ciprofloxacin
	Third-generation cephalosporins
	Gentamicin
	Imipenem/meropenem
	Piperacillin/tazobactam
<i>Klebsiella oxytoca</i>	Ciprofloxacin
	Third-generation cephalosporins
	Gentamicin
	Imipenem/meropenem
	Piperacillin/tazobactam
<i>Pseudomonas spp.</i>	Ciprofloxacin
	Ceftazidime
	Gentamicin
	Imipenem/meropenem
	Piperacillin/tazobactam
<i>Streptococcus pneumoniae</i>	Penicillin
	Macrolides
	Tetracycline
<i>Staphylococcus aureus</i>	Meticillin
<i>Enterococcus spp.</i>	Vancomycin
<i>Acinetobacter spp.</i>	Colistin

PHE's mandatory surveillance schemes



Response to emerging threats



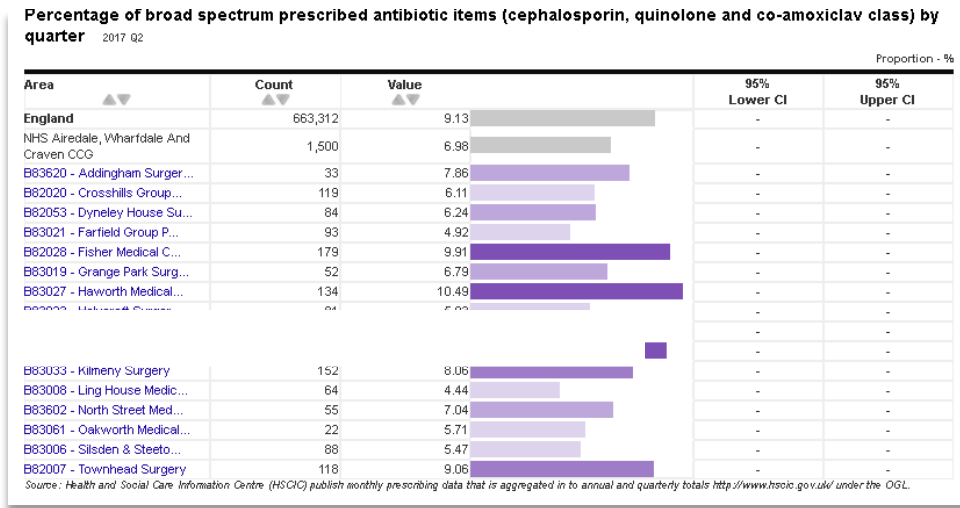
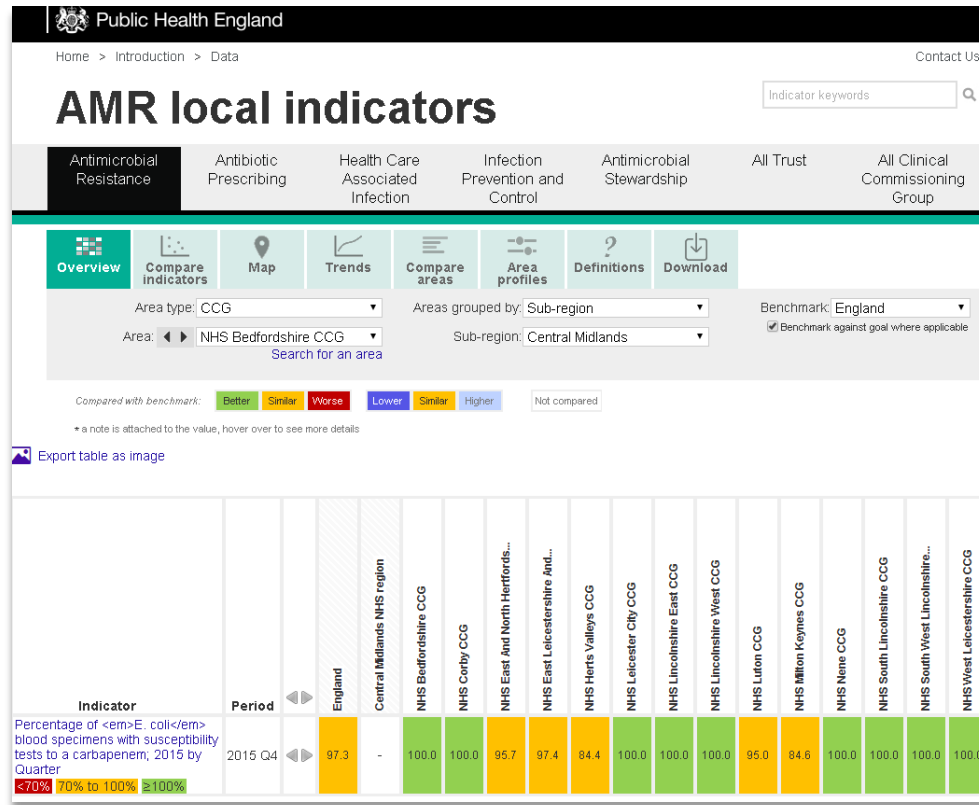
Title: Monthly counts of carbapenemase producing organisms by Acute Trust - admitted patients only! Return to front page						
Reporting Period:		Key:				
Jun 2016 - Jun 2017		No registered Trust users on ERS as at 18/07/2017				
No. of months: 13 months		No registered Trust users but local lab have submitted specimens electronically for this Trust				
Publication date: 11 August 2016		Registered Trust users on ERS and submitting isolates electronically				
		Registered on ERS, no isolates submitted for this Trust				
Trust code	Trust type	Region	Trust Name	Total no. isolates submitted on ERS since 5/5/15 (to 30/06/17)	Screening isolates submitted on ERS since 5/5/15 (to 30/06/17)	Positiv (Recorded on E) Enterobacteriaceae
RFS	FT	East Midlands	Chesterfield Royal Hospital			
RTG	FT	East Midlands	Derby Teaching Hospitals	26	9	5
RNQ	FT	East Midlands	Kettering General Hospital			
RNS	--	East Midlands	Northampton General Hospital	18	5	
RX1	--	East Midlands	Nottingham University Hospitals	32	21	9
RKS	FT	East Midlands	Sherwood Forest Hospitals	2	2	
RWD	--	East Midlands	United Lincolnshire Hospitals	35	1	
RWE	--	East Midlands	University Hospitals of Leicester	2	1	
RDD	FT	East of England	Basildon & Thurrock University Hospitals	77	10	
RC1	--	East of England	Bedford Hospital	7	5	3
RST	FT	East of England	Cambridge University Hospitals	24	21	10
RDE	FT	East of England	Colchester Hospital University	17	7	5
RWH	--	East of England	East & North Hertfordshire	8		6
RQQ	--	East of England	Hinchingbrooke Health Care	8	8	
RGQ	--	East of England	Ipswich Hospital			
RGP	FT	East of England	James Paget University Hospitals			
RC9	FT	East of England	Luton & Dunstable University Hospital			
RQ8	--	East of England	Mid Essex Hospital Services			
RH1	FT	East of England	Norfolk & Norwich University Hospitals	17	12	2
RGM	FT	East of England	Papworth Hospital	3	1	1
RGN	FT	East of England	Peterborough & Stamford Hospitals			
RAJ	FT	East of England	Southern University Hospital			
RQW	--	East of England	The Princess Alexandra Hospital	25	1	1
RCX	FT	East of England	The Queen Elizabeth Hospital, King's Lynn	7	1	
RWG	--	East of England	West Hertfordshire Hospitals	10	3	1
RLR	FT	East of England	West Suffolk			
RF4	--	London	Barking, Havering & Redbridge University Hospitals	1		2
RH	--	London	Barts Health	15	4	5
RQM	FT	London	Chelsea & Westminster Hospital	41	30	7
RJ6	--	London	Croydon Health Services			
RVR	--	London	Epsom & St Helier University Hospitals	11	5	3
RP4	FT	London	Great Ormond Street Hospital for Children	121	89	15



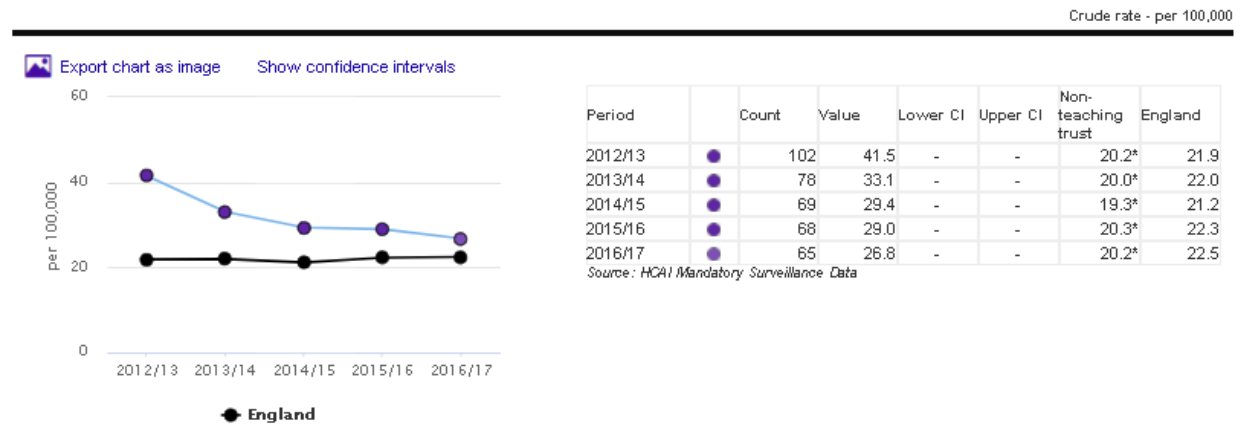
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Better access to AMR surveillance data

Information for action – PHE Fingertips



Hospital-onset E. coli bacteraemia counts and rates by NHS acute trust and financial year Aintree University Hospital NHS Foundation Trust



Information for action – reports and data appendices

Documents



[ESPAUR: report 2017](#)

Ref: PHE publications gateway number 2017491
PDF, 2.92MB, 189 pages

This file may not be suitable for users of assistive technology. [Request an accessible format.](#)



[ESPAUR: report 2017: chapter 2 data tables](#)

Ref: PHE publications gateway number 2017491
MS Excel Spreadsheet, 241KB

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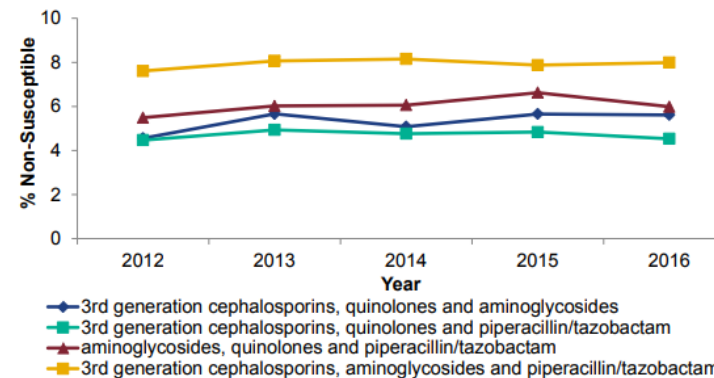


Figure 2.4 Proportions of bloodstream isolates of *K. pneumoniae* non-susceptible to indicated antibiotic combinations

Figure 2.4 Data Reference Table; Annual *K. pneumoniae* bacteraemia reports of tested and non-susceptible episodes to the indicated antibiotic combinations

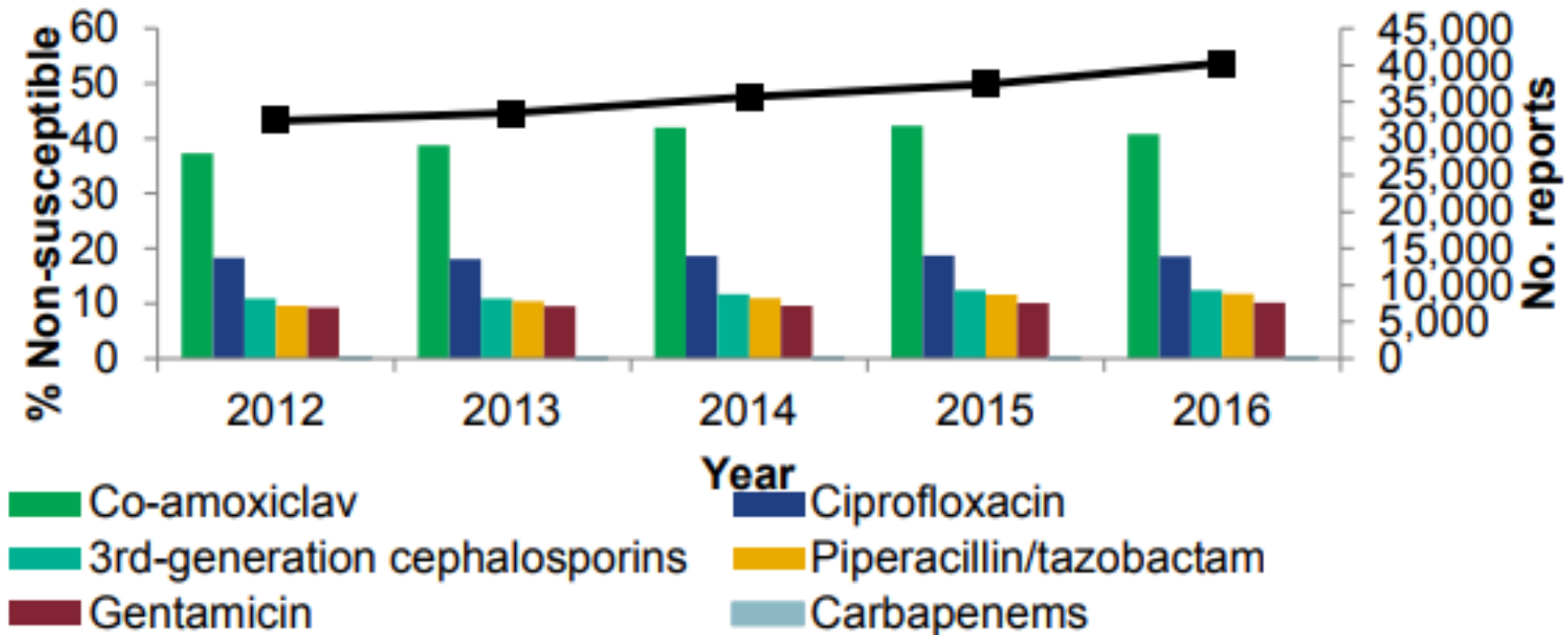
Antimicrobial Combination	ONS Area Code	Region/Country reference	Number of episodes reported as tested				
			2012	2013	2014	2015	2016
3rd generation cephalosporins*, quinolones [§] and aminoglycosides [†]	E40000001	North of England	1132	1037	1134	1365	1529
	E40000002	Midlands and East of England	1069	1037	1121	1429	1700
	E40000003	London	846	631	617	659	777
	E40000004	South of England	817	898	905	1053	1443
	E92000001	England	3684	3603	3777	4506	5448
3rd generation cephalosporins*, quinolones [§] and piperacillin/tazobactam	E40000001	North of England	1132	1038	1134	1365	1529
	E40000002	Midlands and East of England	1069	1037	1121	1429	1700
	E40000003	London	846	631	617	659	777
	E40000004	South of England	817	898	905	1053	1443
	E92000001	England	3684	3604	3777	4506	5448
aminoglycosides [†] , quinolones [§] and piperacillin/tazobactam	E40000001	North of England	1138	1017	1108	1360	1526
	E40000002	Midlands and East of England	1050	1047	1159	1411	1677
	E40000003	London	841	647	638	645	685
	E40000004	South of England	814	910	878	1051	1408
	E92000001	England	3643	3621	3779	4467	5296
3rd generation cephalosporins*, aminoglycosides [†] and piperacillin/tazobactam	E40000001	North of England	1105	985	1085	1350	1523
	E40000002	Midlands and East of England	1039	987	1080	1394	1662
	E40000003	London	838	624	603	621	689
	E40000004	South of England	769	865	838	1007	1353
	E92000001	England	3548	3471	3608	4368	5207



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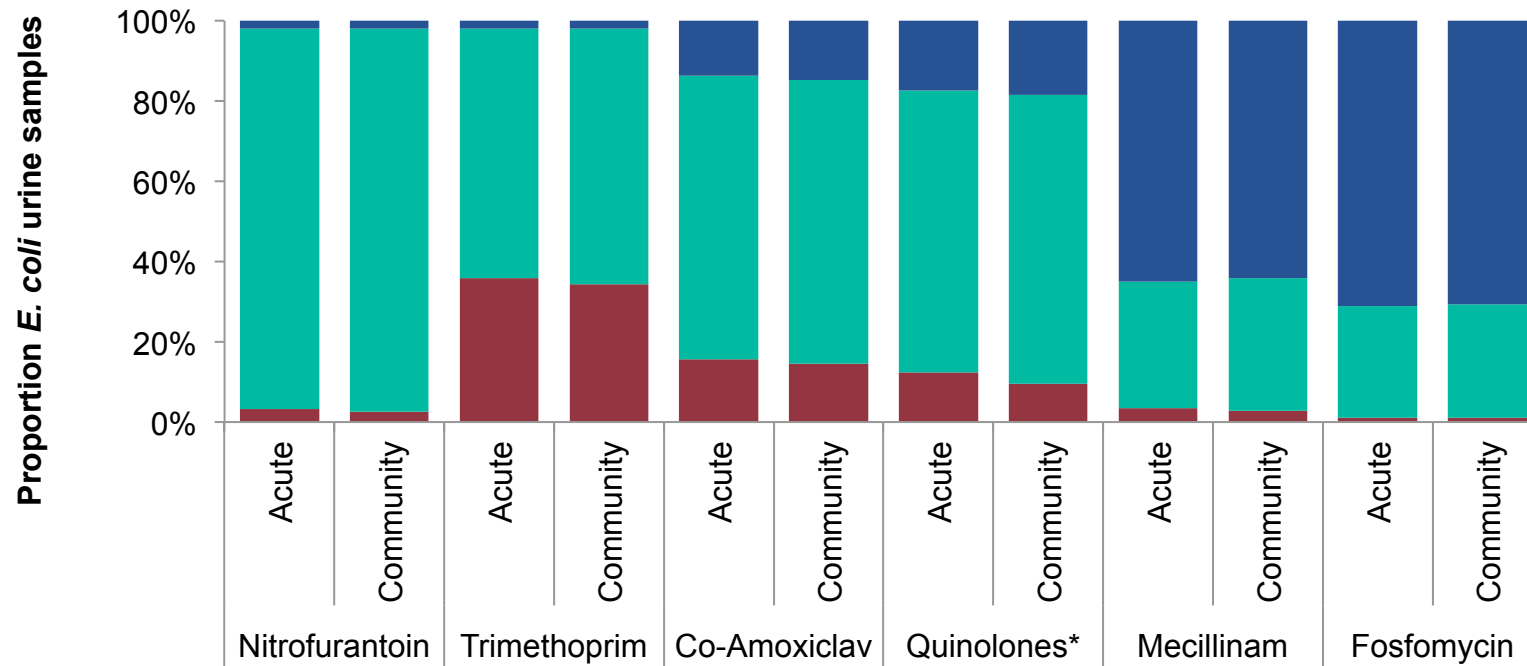
Better use of AMR surveillance data

Bloodstream isolates of *E. coli* (mandatory surveillance) and the proportions non-susceptible to indicated antibiotics (SGSS)



➔ **Need to investigate prescribing and resistance pattern in the community**

E. coli urine isolates susceptible or resistant to recommended UTI treatment options, England 2016 (ESPAUR Report 2017)



*99% ciprofloxacin

■ Not tested

■ Susceptible

■ Non-susceptible

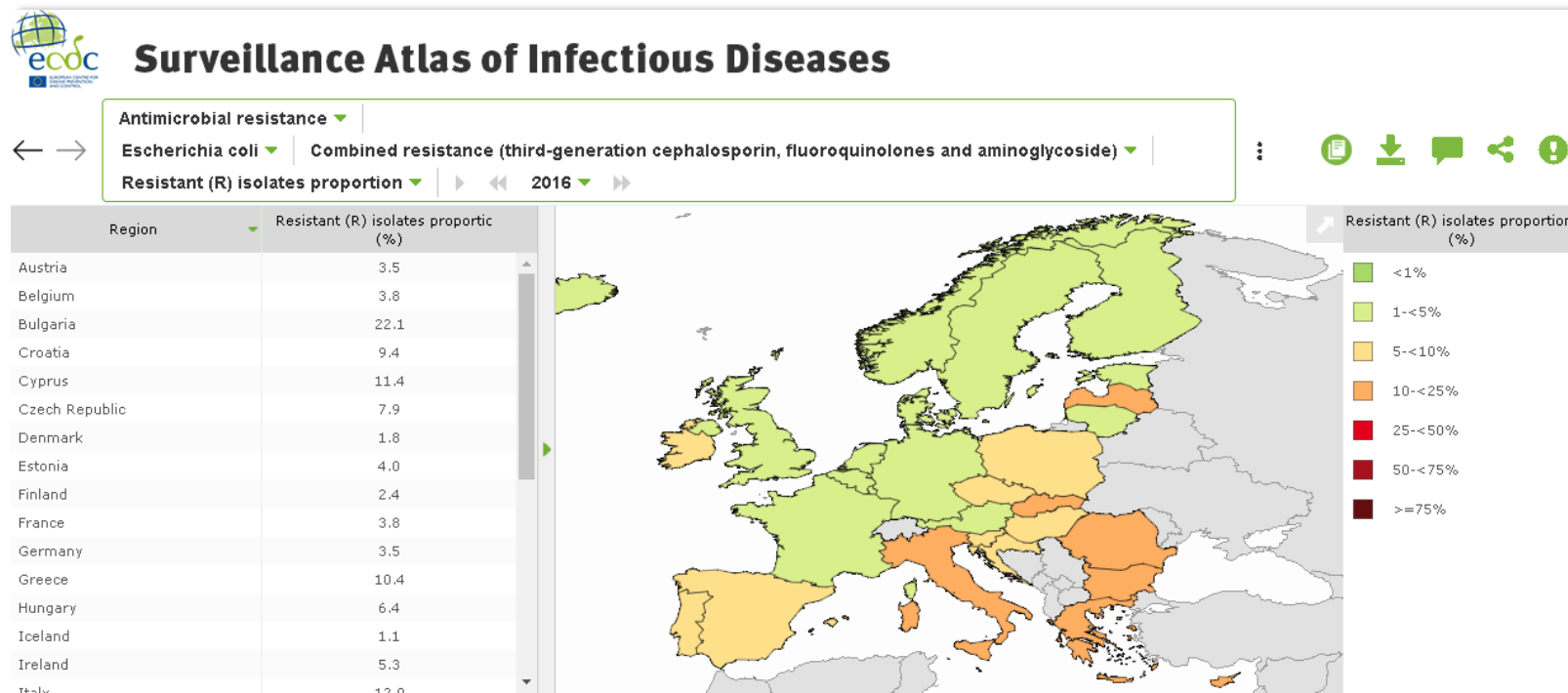


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International AMR surveillance networks

European AMR Surveillance (EARS-Net)

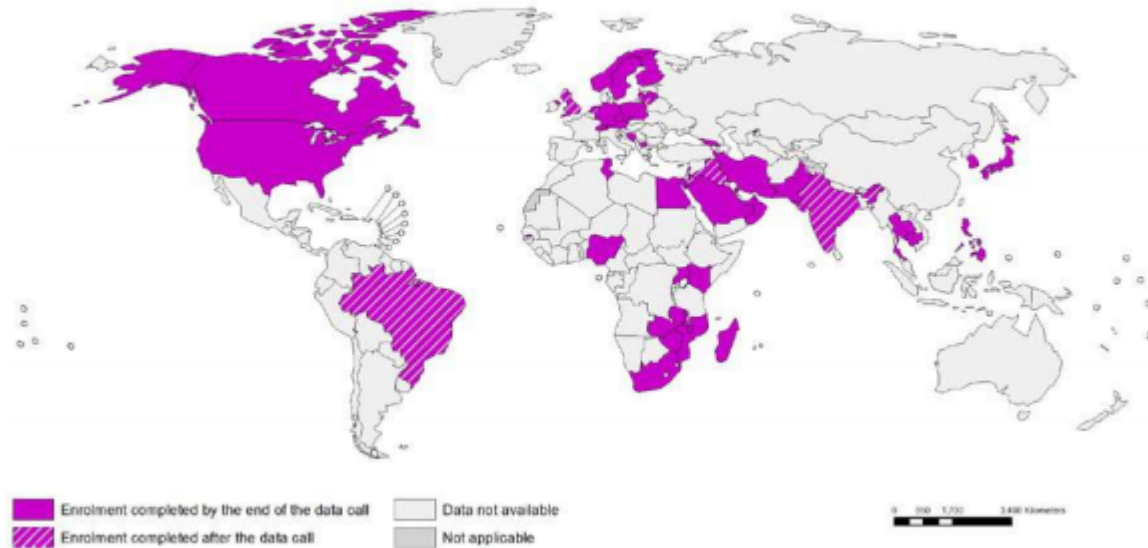
- *Escherichia coli*
- *Klebsiella pneumoniae*
- *Pseudomonas aeruginosa*
- *Acinetobacter species*
- *Streptococcus pneumoniae*
- *Staphylococcus aureus*
- *Enterococcus faecalis*
- *Enterococcus faecium*



Global AMR Surveillance System (GLASS)



Figure 2.1 GLASS Enrolment map (2017)



Global antimicrobial resistance surveillance system (GLASS) report Early implementation 2016-2017

Authors:
WHO



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Downloads

— Global antimicrobial resistance surveillance system (GLASS) report

Thank you
for listening

