

SUPPLEMENTARY MATERIAL

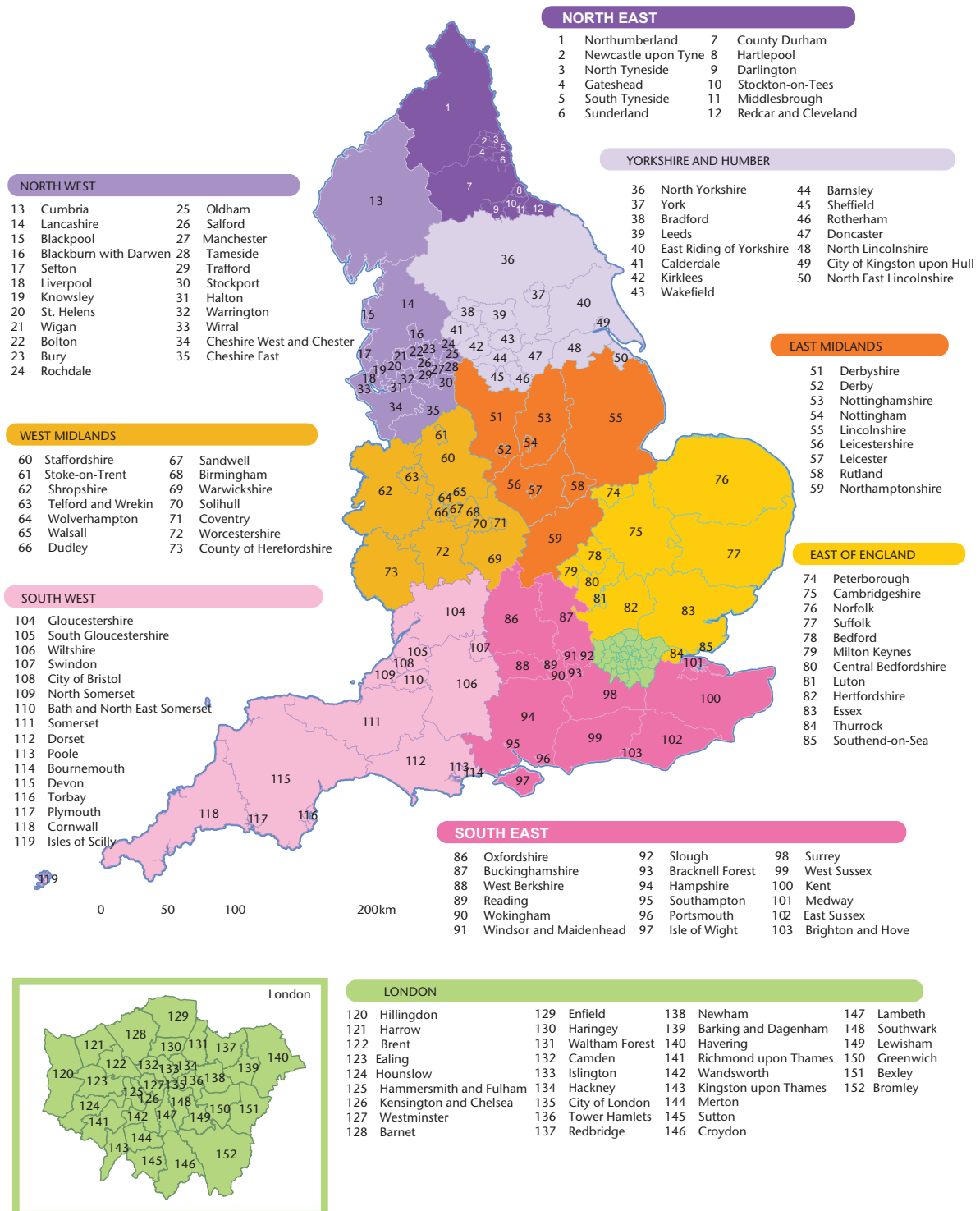


Fig. 1

Map of Public Health England ‘super regions’ and centres. N. B. There are four PHE super regions in England (North of England, Midlands and East of England, South of England and London). North of England comprises: North West, North East and Yorkshire and Humber PHE centres (purple); Midlands and East of England comprises: West Midlands, East Midlands and East of England PHE centres (blue); South of England comprises South West and South East PHE centres (pink); London is an integrated region and PHE centre (green).

Table i. Prophylaxis regimens in which flucloxacillin is administered with gentamicin

Regimen	Mode	Median	Range	IQR	No. of Trusts
Flucloxacillin and gentamicin					57
Induction dose					
Flucloxacillin	1 g	1 g	500 mg to 2 g	1 g to 2 g	57
Gentamicin	160 mg	160 mg	120 mg to 240 mg	120 mg to 160 mg	24
Gentamicin	2 mg/kg	2 mg/kg	1.5 mg/kg to 5 mg/kg	2 mg/kg to 3 mg/kg	33
No. of Trusts administering post-operative doses	0 doses	1 dose	2 doses	3 doses	
Flucloxacillin	20	1	8	28	57
Gentamicin	57	0	0	0	57
Most frequently used regimen					
Flucloxacillin 1 g and gentamicin 2 mg/kg on induction plus flucloxacillin 1 g at 6, 12 and 18 hrs					8

Table ii. Prophylaxis regimens utilising cefuroxime alone

Regimen	Mode	Median	Range	IQR	No. of Trusts
Cefuroxime					44
Induction dose					
Cefuroxime	1.5 g	1.5 g	1.5 g to 1.5 g	-	44
No. of Trusts administering post-operative doses	0 doses	1 doses	2 doses	3 doses	
Cefuroxime	21	0	20	3	44
Most frequently used regimen					
Cefuroxime 1.5g on induction only					21

Routine prophylaxis regimens

Flucloxacillin with gentamicin. Table i gives a breakdown of prophylaxis regimens where flucloxacillin is used in combination with gentamicin.

All Trusts using post-operative doses of flucloxacillin administered these at 6 hourly intervals - with the exception of one Trust (three, 12, 18 hours). No Trust continued antibiotic prophylaxis beyond 24 hours. In all but four Trusts the post-operative dose of flucloxacillin was 1g.

The majority of Trusts employing single dose flucloxacillin at induction stipulated that for prolonged surgery or for surgery resulting in excessive blood loss, a second dose should be given intra-operatively or in the immediate post-operative period. One Trust guideline stated that post-operative doses of flucloxacillin were given at the discretion of the operating surgeon.

Most Trusts specified modified doses of gentamicin either for the extremes of age and weight, or in the presence of impaired renal function. The method by which this modification was carried out varied from Trust to Trust.

Cefuroxime. Table ii shows a breakdown of prophylaxis regimens where cefuroxime alone is employed.

All Trusts using post-operative doses administered these at 8 hourly intervals with the exception of one Trust (12 and 24 hours). All Trusts with the exception of one kept the duration of antibiotic prophylaxis to less than or equal to 24 hours. A single Trust, gave three doses of cefuroxime 1.5g at 8, 16 and 24 hours prior to surgery, plus 1.5g at induction followed by 750mg at 8 and 16 hours post-operation.

A total of 18 of 23 (78%) Trusts using post-operative doses of cefuroxime used a post-operative dose of

Table iii. Prophylaxis regimens in which teicoplanin is administered with gentamicin

Regimen	Mode	Median	Range	IQR	No. of Trusts
Teicoplanin and gentamicin					25
Induction dose					
Teicoplanin	400 mg	400 mg	400 mg to 800 mg	400 mg to 600 mg	20
Teicoplanin	10 mg/kg	10 mg/kg	10 mg/kg to 10 mg/kg	-	5
Gentamicin	160 mg	160mg	120 mg to 160 mg	120 mg to 160 mg	8
Gentamicin	3 mg/kg	3mg/kg	2 mg/kg to 7 mg/kg	3 mg/kg to 5 mg/kg	17
No. of Trusts administering post-operative doses	0 doses	1 doses	2 doses	3 doses	
Teicoplanin	18	6	1	0	25
Gentamicin	25	0	0	0	25
Most frequently used regimen					
No common regimen was used in more than two Trusts					

Table iv. Prophylaxis regimens for penicillin-allergic patients utilising teicoplanin alone

Regimen	Mode	Median	Range	IQR	No. of Trusts
Teicoplanin					36
Induction dose					
Teicoplanin	400 mg	400 g	400 mg to 800 mg	400mg to 400g	33
Teicoplanin	6 mg/kg	6 mg/kg	6 mg/kg to 10 mg/kg	-	3
No. of Trusts administering post-operative doses	0 doses	1 doses	2 doses	3 doses	
Teicoplanin	32	2	3	0	34
Most frequently used regimen					
Teicoplanin 400mg induction only					
					22

750mg; the remaining five Trusts (22%) using post-operative doses used a post-operative dose of 1.5g.

Teicoplanin with gentamicin. Table iii gives a breakdown of prophylaxis regimens where teicoplanin is used in combination with gentamicin.

Post-operative doses of teicoplanin were 400mg in six out of seven of the Trusts administering post-operative doses in addition to a dose on induction.

Two Trusts employing single dose teicoplanin at induction stipulated that for prolonged surgery or for surgery resulting in excessive blood loss, a second dose should be given intra-operatively or in the immediate post-operative period.

Prophylaxis for patients with penicillin allergy

Figure 2 in the main paper illustrates the spread of prophylactic antibiotic regimens employed throughout England for patients with penicillin allergy.

Teicoplanin. Table iv shows a breakdown of prophylaxis regimens where teicoplanin alone is employed in the presence of penicillin allergy.

The decision to administer post-operative doses was left to the discretion of the surgeon in two Trusts.

Teicoplanin with gentamicin. Table v gives a breakdown of prophylaxis regimens where teicoplanin is used in combination with gentamicin in the presence of penicillin allergy.

Table v. Prophylaxis regimens for penicillin-allergic patients in which teicoplanin is administered with gentamicin

Regimen	Mode	Median	Range	IQR	No. of Trusts
Teicoplanin and gentamicin					90
Induction dose					
Teicoplanin	400 mg	400 mg	400 mg to 800 mg	400 mg to 600 g	84
Teicoplanin	10 mg/kg	10 mg/kg	10 mg/kg to 10 mg/kg	-	6
Gentamicin	160 mg	160 mg	120 mg to 240 mg	120 mg to 160 mg	33
Gentamicin	2 mg/kg	3 mg/kg	1.5 mg/kg to 7 mg/kg	2 mg/kg to 5 mg/kg	57
No. of Trusts administering post-operative doses	0 doses	1 doses	2 doses	3 doses	
Teicoplanin	71	16	3	0	90
Gentamicin	90	0	0	0	90
Most frequently used regimen					
Teicoplanin 400mg and gentamicin 2 mg/kg on induction only					10

Post-operative doses of teicoplanin were 400mg in 16/19 of the Trusts administering post-operative doses.

Five Trusts not routinely using post-operative doses stated that for prolonged surgery a single post-operative dose should be administered. Three Trusts not routinely using post-operative doses stated that a single additional dose should be administered if intra-operative loss of blood exceeds 1.5 litres.

Prophylaxis in patients with MRSA colonisation/infection

Figure 3 from the main text illustrates the spread of prophylactic antibiotic regimens employed throughout England for patients at high risk of developing MRSA SSI infection.

These regimens were almost identical to those used in the penicillin allergy category.