1 Corrigendum

Table 1. Patient demographic and clinical characteristics

$\begin{array}{c c c c c c c c c c c c c c c c c c c $				0077	
Male sex Age in years at infection or visit 776 (51) $813 (47)$ $1626 (49)$ $1626 (49)$ Age in years at infection or visit 59-9 24-2 42-0 42-0 <7 144 (10) 323 (19) 475 (14) 475 (14) 7 to <19 72 (5) 409 (24) 495 (15) 477 (15) 19 to <46 248 (16) 554 (32) 820 (25) 881 (16) 62 to <75 292 (19) 112 (6) 433 (13) 487 (14) ≥ 75 448 (29) 86 (5) 540 (16) 498 (15) Race Ethnicity White* 1461 (06) 1631 (04) 3199 (96) 3165 (05) Black 28 (2) 54 (3) 51 (2) 64 (2) 0ther Uhrkonow 4 (0) 1 (0) 0 3 (0) Adait BMI* n=2418 n=2418 Normal 328 (25) 292 (22) 601 (25) 523 (22) Or (29) Doese 533 (41) 466 (39) 372 (15) 819 (34) Missing 167 (13) 156 (15) 376 (11)	Characteristic	HA-MRSA $(n=1519)$	CA-MRSA (n=1734)	SSTI $(n = 3336)$	Control $(n=3336)$
Age in years at infection or visitSupportSupportSupportSupportMedian599242420420<7	Male sex	776 (51)	813 (47)	1626 (49)	1626 (49)
$\begin{array}{cccc} {\rm Median} & 99-9 & 24-2 & 42.0 & 42.0 \\ < 7 & 144 (10) & 332 (19) & 475 (14) & 475 (14) \\ 7 (16 < 19 & 72 (5) & 409 (24) & 495 (15) & 497 (15) \\ 19 (16 < 46 & 248 (16) & 554 (32) & 820 (25) & 816 (25) \\ 46 (16 < 62 & 315 (21) & 250 (14) & 583 (18) & 583 (18) \\ 62 (16 < 75 & 292 (19) & 112 (6) & 423 (13) & 487 (14) \\ \geqslant 75 & 448 (29) & 86 (5) & 540 (16) & 498 (15) \\ {\rm Race: Ethnicity} & \\ {\rm White}' & 160 (16) & 1631 (94) & 3199 (96) & 3165 (95) \\ {\rm Black} & 28 (2) & 54 (3) & 51 (2) & 64 (2) \\ {\rm Other} & 15 (1) & 35 (2) & 59 (2) & 64 (2) \\ {\rm Other} & 16 (1) & 13 (1) & 27 (1) & 42 (1) \\ {\rm Unknown} & 4 (0) & 10 & 0 & 3 (0) \\ {\rm Adult BM}^h & n = 1314 & n = 1038 & n = 2418 & n = 2418 \\ {\rm Normal} & 328 (25) & 229 (22) & 601 (25) & 533 (22) \\ {\rm Overweight} & 284 (22) & 247 (24) & 101 (242) & 697 (29) \\ {\rm Obese} & 535 (41) & 406 (39) & 372 (15) & 379 (16) \\ {\rm Child BM}^F & n = 102 & n = 583 & n = 805 & n = 918 \\ {\rm Normal} & 50 (49) & 239 (41) & 352 (44) & 488 (53) \\ {\rm Overweight} & 15 (15) & 109 (19) & 128 (16) & 107 (12) \\ {\rm Obese} & 28 (28) & 106 (18) & 124 (15) & 95 (10) \\ {\rm Missing} & 167 (17) & 1444 (83) & 1540 (90) & 3025 (91) \\ {\rm Saason}^e & & & & & & & & & & & & & & & & & & &$	Age in years at infection or visit				
<7 14 (10) 323 (19) 475 (14) 475 (14) 475 (14) 475 (15) 475 (15) 476 (15) 476 (15) 476 (15) 486 (15) 481 (25) 481 (29) 86 (5) 540 (16) 488 (15) Race/Ethnicity White* 1461 (96) 1631 (94) 3199 (96) 3165 (95) Black 28 (2) 54 (3) 51 (2) 64 (2) 44 (2) 44 (1) 13 (1) 27 (1) 42 (1) Unknown 4 (0) 10 (0) 372 (15) 819 (34) Mormal 328 (25) 29 (22) 60 (125) 533 (22) Overweight 284 (22) 247 (24) 1012 (42) 697 (29) Obese 55 (41) 406 (39) 372 (15) 819 (34) Missing 167 (13) 155 (15) 372 (15) 819 (34) Missing 167 (13) 155 (15) 372 (15) 819 (34) Missing 167 (13) 156 (15) 372 (15) 819 (34) Overweight 16 (13) 150 (19) 128 (16) 107 (12) Obese 28 (25) 166 (16) 124 (15) 95 (10) Missing 96 (9) 129 (22) 201 (25) 228 (25) Smoking^d Stord Winter 369 (24) 387 (22) 769 (23) 891 (27) Spring 334 (22) 307 (18) 753 (23) 845 (24) 307 (18) 753 (23) 845 (24) 307 (16) 1540 (90) 3025 (91) Stord Stord Winter 399 (36) 466 (27) 953 (29) 783 (24) 764 (43) 1774 (53) 1	Median	59.9	24.2	42.0	42.0
7 to <19	<7	144 (10)	323 (19)	475 (14)	475 (14)
19 to <46	7 to <19	72 (5)	409 (24)	495 (15)	497 (15)
46 to <62	19 to <46	248 (16)	554 (32)	820 (25)	816 (25)
62 to <75	46 to <62	315 (21)	250 (14)	583 (18)	583 (18)
≥75 448 (29) 86 (5) 540 (16) 498 (15) Race, Ethnicity White* 1461 (96) 1631 (94) 3199 (96) 3165 (95) Black 28 (2) 54 (3) 51 (2) 64 (2) Hispanic 15 (1) 35 (2) 59 (2) 64 (2) Other 11 (1) 13 (1) 27 (1) 42 (1) Unknown 4 (0) 1 (0) 0 3 (0) Adult BMI ^P n=1314 n=1038 n=2418 n=2418 Normal 228 (22) 227 (22) 601 (25) 523 (22) Overweight 284 (22) 247 (24) 1012 (42) 697 (29) Obese 535 (41) 406 (39) 372 (15) 819 (34) Missing 167 (13) 156 (15) 372 (15) 819 (34) Missing 167 (13) 156 (15) 372 (15) 819 (34) Missing 167 (13) 156 (15) 372 (15) 819 (34) Normal 50 (49) 239 (41) 352 (44) 488 (53) Overweight 15 (15) 109 (19) 128 (16) 107 (12) Obese 28 (28) 106 (18) 124 (15) 95 (10) Missing 9 (9) 129 (22) 201 (25) 228 (25) Smoking ^d Never 1078 (71) 1444 (83) 1540 (90) 3025 (91) Season ⁶ Winter 369 (24) 387 (22) 769 (23) 891 (27) Spring 334 (22) 307 (18) 753 (23) 891 (27) Spring 334 (22) 307 (18) 753 (23) 891 (27) Spring 394 (26) 548 (27) 953 (29) 783 (24) Fall Community type ^d City 239 (16) 256 (15) 376 (11) 327 (10) Borough 394 (26) 548 (12) 376 (11) 327 (10) Borough 705 (46) 743 (43) 1774 (53) 1802 (55) Missing ^d 181 (12) 187 (11) 414 (14) 353 (11) Socioeconomic deprivation ^h Median -4-1 -4-4 -5-0 -5-0 Any antibiotic prescriptions 188 (39) 817 (47) 1712 (51) 2228 (67) Carbapenems 8 (1) 0 2 (<1) 2241 (70) 1720 (52) Autibacterial prescriptions ⁴ Median -4-1 -4-4 -5-0 -5-0 Any antibiotic prescriptions 588 (39) 817 (47) 1712 (51) 2222 (67) Cithadympyin 68 (4) 36 (2) 64 (2) 20 (1) Linezolid 7 (<1) 12 (1) 12 (2) 234 (170) 1720 (52) Autibacterial prescriptions ⁴ Median -4-1 -4-4 -5-0 -5-0 Any antibiotic prescriptions ⁴ Median -4-1 -4-4 -5-0 -5-0 Any antibiotic prescriptions ⁴ Median -4-1 -4-4 -5-0 -5-0 Any antibiotic prescriptions ⁴ Median -4-1 -4-4 -5-0 -5-0 Cithadympyin 68 (4) 36 (2) 64 (2) 20 (1) Linezolid 7 (<1) 12 (2) 224 (77) Cithadympyin 25 (2) 220 (77) Cithadympyin 26 (6) 320 (18) 502 (15) 220 (77) Cithadympyin 27 (16) 75 (8) 433 (19) Penicillin 12 (1) 12 (4) 44 (4	62 to <75	292 (19)	112 (6)	423 (13)	487 (14)
Race/EthnicityWhite*1461 (96)1631 (94)3199 (96)3165 (95)Black28 (2)54 (3)51 (2)64 (2)Hispanic15 (1)35 (2)59 (2)64 (2)Other11 (1)13 (1)27 (1)42 (1)Unknown4 (0)1 (0)03 (0)Adult BMI* $n=1314$ $n=1038$ $n=2418$ $n=2418$ Normal282 (25)229 (22)601 (25)523 (22)Overweight284 (22)247 (24)1012 (42)697 (29)Obese555 (41)406 (39)372 (15)379 (16)Child BMI* $n=102$ $n=583$ $n=805$ $n=918$ Normal50 (49)239 (41)352 (44)488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smokingd1078 (71)1444 (83)1540 (90)3025 (91)Season* u v v v Winter369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (77)953 (29)783 (24)Fall417 (27)572 (33)861 (26)854 (26)Comunity typef v v v v City239 (16)	≥75	448 (29)	86 (5)	540 (16)	498 (15)
White1461 (96)1631 (94)3199 (96)3165 (95)Black28 (2)54 (3)51 (2)64 (2)Hispanic15 (1)35 (2)59 (2)64 (2)Other11 (1)13 (1)27 (1)42 (1)Unknown4 (0)1 (0)03 (0)Adult BMI ^h $n = 1314$ $n = 1038$ $n = 2418$ $n = 2418$ Normal328 (25)229 (22)601 (25)523 (22)Obese535 (41)406 (39)372 (15)819 (34)Missing167 (13)156 (15)372 (15)819 (34)Missing167 (13)156 (15)372 (15)819 (16)Obese535 (41)406 (39)352 (44)488 (33)Overweight0 (49)239 (41)352 (44)488 (33)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smoking ^d 769 (23)Never1078 (71)1444 (83)1540 (90)3025 (91)Season ⁴ 769 (23)Winter369 (24)387 (22)769 (23)881 (24)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (29)783 (24)Fall417 (27)572 (33)861 (26)847 (25)Comunity type ⁶ <	Race/Ethnicity				
Black 28 (2) 54 (3) 51 (2) 64 (2) Hispanic 15 (1) 35 (2) 59 (2) 64 (2) Other 11 (1) 13 (1) 27 (1) 42 (1) Unknown 4 (0) 1 (0) 0 3 (0) Adult BMI ^b n=1314 n=1038 n=2418 n=2418 Normal 328 (25) 229 (22) 601 (25) 523 (22) Overweight 284 (22) 247 (24) 1012 (42) 697 (29) Obese 355 (41) 406 (39) 372 (15) 379 (16) Child BMF $n=102$ $n=583$ $n=805$ $n=818$ Normal 50 (49) 239 (41) 352 (46) 448 (53) Overweight 15 (15) 109 (19) 128 (16) 107 (12) Obese 28 (28) 106 (18) 124 (15) 95 (10) Missing 9 (9) 129 (22) 201 (25) 228 (25) Smoking ^d	White ^a	1461 (96)	1631 (94)	3199 (96)	3165 (95)
Hispanic15 (1)35 (2)59 (2)64 (2)Other11 (1)13 (1)27 (1)42 (1)Unknown4 (0)1 (0)03 (0)Adult BMI ^b $n=1314$ $n=1038$ $n=2418$ $n=2418$ Normal328 (25)229 (22)601 (25)523 (22)Overweight284 (22)247 (24)1012 (42)697 (29)Obese355 (41)406 (39)372 (15)819 (34)Missing167 (13)156 (15)372 (15)819 (34)Normal50 (49)239 (41)352 (44)488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)20 (25)228 (25)Smoking ^d </td <td>Black</td> <td>28 (2)</td> <td>54 (3)</td> <td>51 (2)</td> <td>64 (2)</td>	Black	28 (2)	54 (3)	51 (2)	64 (2)
Other 11 (1) 13 (1) 27 (1) 42 (1) Unknown 4 (0) 1 (0) 0 3 (0) Adult BMI ^b n=1314 n=1038 n=2418 n=2418 Normal 328 (25) 229 (22) 601 (25) 523 (22) Overweight 284 (22) 247 (24) 1012 (42) 697 (29) Obese 355 (41) 406 (39) 372 (15) 379 (16) Child BMI ^e n=102 n=583 n=805 n=918 Normal 50 (49) 352 (44) 488 (53) Overweight 15 (15) 109 (19) 128 (16) 107 (12) Obese 28 (28) 106 (18) 124 (15) 95 (10) Missing 9 (9) 129 (22) 201 (25) 228 (25) Smoking ^d 342 (22) 307 (18) 540 (90) 3025 (91) Season ^e 342 (22) 376 (12) 376 (12) 376 (12) Spring 369 (24) 38	Hispanic	15 (1)	35 (2)	59 (2)	64 (2)
Unknown $4 (0)$ $1 (0)$ 0 $3 (0)$ Adult BMI ^b $n = 1314$ $n = 1038$ $n = 2418$ $n = 2418$ Normal $328 (25)$ $229 (22)$ $601 (25)$ $532 (22)$ Obese $355 (41)$ $406 (39)$ $372 (15)$ $819 (34)$ Missing $167 (13)$ $156 (15)$ $372 (15)$ $819 (34)$ Obese $355 (41)$ $406 (39)$ $372 (15)$ $819 (34)$ Normal $50 (49)$ $239 (41)$ $352 (44)$ $488 (53)$ Overweight $15 (15)$ $109 (19)$ $128 (16) (107 (12)$ Obese $28 (28)$ $106 (18)$ $124 (15)$ $95 (10)$ Missing $9 (9)$ $129 (22)$ $201 (25)$ $228 (25)$ Smoking ^d N N N N N Never $1078 (71)$ $1444 (83)$ $1540 (90)$ $3025 (91)$ Season ⁶ N N N N N Winter $369 (24)$ $387 (22)$ $769 (23)$ $891 (27)$ Spring $334 (22)$ $307 (18)$ $753 (23)$ $815 (24)$ Summer $399 (36)$ $468 (27)$ $953 (29)$ $783 (24)$ Fall $417 (27)$ $572 (33)$ $840 (25)$ $854 (26)$ Community type ^f N N N N N City $239 (16)$ $256 (15)$ $376 (11)$ $327 (10)$ Borough $94 (26)$ $548 (33)$ $177 (43)$ $1802 (55)$ Missing ⁸ $181 (12)$ $187 (17)$ $1720 (52)$ <tr< td=""><td>Other</td><td>11 (1)</td><td>13 (1)</td><td>27(1)</td><td>42 (1)</td></tr<>	Other	11 (1)	13 (1)	27(1)	42 (1)
Adult BMI ^b $n = 1314$ $n = 1038$ $n = 2418$ $n = 2418$ Normal328 (25)229 (22)601 (25)523 (22)Overweight234 (22)247 (24)1012 (42)697 (29)Obese535 (41)406 (39)372 (15)819 (34)Missing167 (13)156 (15)372 (15)819 (34)Missing167 (13)156 (15)372 (15)379 (16)Child BMI ^e $n = 102$ $n = 583$ $n = 805$ $n = 918$ Normal50 (49)239 (41)352 (44)488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smoting ^d </td <td>Unknown</td> <td>4 (0)</td> <td>1 (0)</td> <td>0</td> <td>3 (0)</td>	Unknown	4 (0)	1 (0)	0	3 (0)
Normal328 (25)229 (22)601 (25)523 (22)Overweight284 (22)247 (24)1012 (42)697 (29)Obese535 (41)406 (39)372 (15)379 (16)Child BMI° $n = 102$ $n = 583$ $n = 805$ $n = 918$ Normal50 (49)239 (41)352 (44)488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smoking ^d $Never$ 1078 (71)1444 (83)1540 (90)3025 (91)Season ⁴ $Never$ 369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (23)815 (24)Summer399 (36)468 (27)953 (23)815 (24)Summer399 (26)548 (32)840 (25)854 (26)Community type ^f $Cir372 (10)372 (10)372 (10)Borough394 (26)548 (32)840 (25)854 (26)Township705 (46)743 (43)1774 (53)1802 (55)Median-4-1-4-4-5-0-50Any attibiotic prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescriptions4N1001 < < 11 < < 1Median7 < 1001 < 11 < 1$	Adult BMI ^b	n = 1314	n = 1038	n = 2418	n = 2418
Normal126 (27)247 (24)1012 (42)697 (29)Obese535 (41)406 (39)372 (15)819 (34)Missing167 (13)156 (15)372 (15)379 (16)Child BMI° $n = 102$ $n = 583$ $n = 805$ $n = 918$ Normal50 (49)239 (41)352 (44)488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smoking ^d N N N N Never1078 (71)1444 (83)1540 (90)3025 (91)Season ⁶ N N N N N Winter369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (29)783 (24)Fall417 (27)572 (23)861 (26)847 (25)Community type ^d N N N N N City239 (16)256 (15)376 (11)327 (10)Borough394 (26)548 (32)840 (25)854 (26)Township 705 (46) 743 (43) 1774 (53)1802 (25)Missing ^e 181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivation ^h N N N N Median $-4-1$ $-4-4$ $-5-0$ -50 Any antibi	Normal	328 (25)	229 (22)	601 (25)	523 (22)
Obese535 (41)406 (39)372 (15)819 (34)Missing167 (13)156 (15)372 (15)379 (16)Child BMF $n = 102$ $n = 583$ $n = 805$ $n = 918$ Normal50 (49)239 (41)352 (44)488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smoking ^d </td <td>Overweight</td> <td>284 (22)</td> <td>247 (24)</td> <td>1012(42)</td> <td>697 (29)</td>	Overweight	284 (22)	247 (24)	1012(42)	697 (29)
Missing167 (13)156 (15)372 (15)379 (16)Child BMI* $n = 102$ $n = 583$ $n = 805$ $n = 918$ Normal50 (49)239 (41)352 (44)488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)SmokingdNever1078 (71)1444 (83)1540 (90)3025 (91)Season*Winter369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (29)783 (24)Fall417 (27)572 (33)861 (26)847 (25)Community typefCCC705 (46)847 (25)Community typef181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivation*-4-1-4-4-5-0-5-0Antibacterial prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescriptions396 (26)320 (18)502 (15)220 (7)Clindaymycin68 (4)36 (22)64 (2)20 (1)Linezolid7 (<1)	Obese	535 (41)	406 (39)	372 (15)	819 (34)
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Missing	167 (13)	156 (15)	372(15)	379 (16)
Clind BM1 $h = 102$ $h = 503$ $h = 503$ $h = 516$ Normal 50 (49) 239 (41) 352 (44) 488 (53)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smokingd </td <td>Child DMI^c</td> <td>n = 102</td> <td>n - 592</td> <td>n = 805</td> <td>n = 0.18</td>	Child DMI ^c	n = 102	n - 592	n = 805	n = 0.18
Normal30 (97)2.53 (41)3.52 (49)4.80 (35)Overweight15 (15)109 (19)128 (16)107 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)SmokingdNever1078 (71)1444 (83)1540 (90)3025 (91)Season ^e Winter369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (29)783 (24)Fall417 (27)572 (33)861 (26)847 (25)Community type ^f 239 (16)256 (15)376 (11)327 (10)Borough394 (26)548 (32)840 (25)854 (26)Township705 (46)743 (43)1774 (53)1802 (55)Missing ^g 181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivation ^h Median $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Antibacterial prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescriptionsi8 (1)02 (<1)	Normal	n = 102 50 (40)	n = 363 220 (41)	n = 803	n = 910
Over weight15 (15)109 (19)128 (15)109 (12)Obese28 (28)106 (18)124 (15)95 (10)Missing9 (9)129 (22)201 (25)228 (25)Smoking ^d </td <td>Normaight</td> <td>30(49)</td> <td>239 (41)</td> <td>128 (16)</td> <td>400(33) 107(12)</td>	Normaight	30(49)	239 (41)	128 (16)	400(33) 107(12)
Core $28 (26)$ $100 (16)$ $124 (13)$ $95 (10)$ Missing $9 (9)$ $129 (22)$ $201 (25)$ $228 (25)$ Smoking ^d	Obese	13(13) 28(28)	109(19) 106(19)	120(10) 124(15)	107(12) 05(10)
Missing9 (9)129 (22)201 (22)228 (23)SimokingdNever1078 (71)1444 (83)1540 (90)3025 (91)SeasoneWinter369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (29)783 (24)Fall417 (27)572 (33)861 (26)847 (25)Community typef239 (16)256 (15)376 (11)327 (10)Borough394 (26)548 (32)840 (25)854 (26)Township705 (46)743 (43)1774 (53)1802 (55)Missing ^g 181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivation ^h Median $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Any antibiotic prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescriptions ⁱ 588 (39)817 (47)1712 (51)2228 (67)Carbapenems8 (1)02 (<1)	Missing	20(20)	100 (18)	124(15)	228 (25)
Smoking" Never1078 (71)1444 (83)1540 (90)3025 (91)Season"Winter369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (29)783 (24)Fall417 (27)572 (33)861 (26)847 (25)Community typef </td <td>NIISSIIIg</td> <td>9 (9)</td> <td>129 (22)</td> <td>201 (23)</td> <td>228 (23)</td>	NIISSIIIg	9 (9)	129 (22)	201 (23)	228 (23)
Never1078 (11)1444 (83)1540 (90)3025 (91)SeasoneWinter369 (24)387 (22)769 (23)891 (27)Spring334 (22)307 (18)753 (23)815 (24)Summer399 (36)468 (27)953 (29)783 (24)Fall417 (27)572 (33)861 (26)847 (25)Community type ^f 239 (16)256 (15)376 (11)327 (10)Borough394 (26)548 (32)840 (25)854 (26)Township705 (46)743 (43)1774 (53)1802 (55)Missing#181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivationh1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescription is588 (39)817 (47)1712 (51)2228 (67)Carbapenems8 (1)02 (<1)	Smoking	1050 (51)	1444 (02)	1540 (00)	2025 (01)
SeasonWinter $369 (24)$ $387 (22)$ $769 (23)$ $891 (27)$ Spring $334 (22)$ $307 (18)$ $753 (23)$ $815 (24)$ Summer $399 (36)$ $468 (27)$ $953 (29)$ $783 (24)$ Fall $417 (27)$ $572 (33)$ $861 (26)$ $847 (25)$ Community type ^f $239 (16)$ $256 (15)$ $376 (11)$ $327 (10)$ Borough $394 (26)$ $548 (32)$ $840 (25)$ $854 (26)$ Township $705 (46)$ $743 (43)$ $1774 (53)$ $1802 (55)$ Missing ^g $181 (12)$ $187 (11)$ $414 (14)$ $353 (11)$ Socioeconomic deprivation ^h $Median$ $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Any antibiotic prescription in two years prior $1160 (76)$ $1267 (73)$ $2341 (70)$ $1720 (52)$ Antibacterial prescriptions ⁱ $8 (1)$ 0 $2 (<1)$ 0 Carbapenems $8 (1)$ 0 $2 (<1)$ 0 Carbapenems $8 (1)$ 0 $2 (<1)$ 0 Cindaynycin $68 (4)$ $36 (2)$ $64 (2)$ $20 (1)$ Linezolid $7 (<1)$ 0 $1 (<1)$ $1 (<1)$ Macrolides $221 (15)$ $241 (14)$ $460 (14)$ $215 (9)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillins $172 (1)$ $172 (1)$ $2(<1)$ $4(<1)$ $2(<1)$ Amino 217	Never	1078 (71)	1444 (83)	1540 (90)	3025 (91)
Witter 509 (24) 387 (22) 769 (23) 891 (27)Spring 334 (22) 307 (18) 753 (23) 815 (24)Summer 399 (36) 468 (27) 953 (29) 783 (24)Fall 417 (27) 572 (33) 861 (26) 847 (25)Community typef 239 (16) 256 (15) 376 (11) 327 (10)Borough 394 (26) 548 (32) 840 (25) 854 (26)Township 705 (46) 743 (43) 1774 (53) 1802 (55)Missing ^g 181 (12) 187 (11) 414 (14) 353 (11)Socioeconomic deprivation ^h $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Any antibiotic prescription in two years prior 1160 (76) 1267 (73) 2341 (70) 1720 (52)Antibacterial prescriptions 88 (39) 817 (47) 1712 (51) 2228 (67)Carbapenems 8 (1) 0 2 (<1) 0 Ciphalosporins 396 (26) 320 (18) 502 (15) 220 (7)Clindaymycin 68 (4) 36 (2) 64 (2) 20 (1)Linezolid 7 (<1) 0 1 (<1) 1 (<1)Macrolides 221 (15) 241 (14) 460 (14) 215 (9)Penicillins 362 (24) 446 (26) 741 (22) 531 (16)Penicillin 12 (1) 12 (1) 26 (1) $2(<1)$ Amino 217 (14) 351 (20) 553 (17) 404 (12)Antistaphylococcal 8 (1) 2 ($<$	Season	2(0,(24)	207 (22)	7(0,(02))	001 (27)
Spring $534 (22)$ $307 (18)$ $753 (23)$ $815 (24)$ Summer $399 (36)$ $468 (27)$ $953 (29)$ $783 (24)$ Fall $417 (27)$ $572 (33)$ $861 (26)$ $847 (25)$ Community type ^f $239 (16)$ $256 (15)$ $376 (11)$ $327 (10)$ Borough $394 (26)$ $548 (32)$ $840 (25)$ $854 (26)$ Township $705 (46)$ $743 (43)$ $1774 (53)$ $1802 (55)$ Missing ^g $181 (12)$ $187 (11)$ $414 (14)$ $353 (11)$ Socioeconomic deprivation ^h $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Any antibiotic prescription in two years prior $1160 (76)$ $1267 (73)$ $2341 (70)$ $1720 (52)$ Antibacterial prescriptions ⁱ $588 (39)$ $817 (47)$ $1712 (51)$ $2228 (67)$ Carbapenems $8 (1)$ 0 $2 (<1)$ 0 Cephalosporins $396 (26)$ $320 (18)$ $502 (15)$ $220 (7)$ Clindaymycin $68 (4)$ $36 (2)$ $64 (2)$ $20 (1)$ Linezolid $7 (<1)$ 0 $1 (<1)$ $1 (<1)$ Macrolides $221 (15)$ $241 (14)$ $460 (14)$ $215 (9)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillin $12 (1)$ $12 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamase inhibitors $178 (12)$ $112 (6)$ $242 (7)$ $167 (5)$ Quin	Winter	369 (24)	387 (22)	769 (23)	891 (27)
Summer399 (36)408 (27)953 (29)783 (24)Fall417 (27)572 (33)861 (26)847 (25)Community type ^f 239 (16)256 (15)376 (11)327 (10)Borough394 (26)548 (32)840 (25)854 (26)Township705 (46)743 (43)1774 (53)1802 (55)Missing ^g 181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivation ^h </td <td>Spring</td> <td>334 (22)</td> <td>307 (18)</td> <td>/53 (23)</td> <td>815 (24)</td>	Spring	334 (22)	307 (18)	/53 (23)	815 (24)
Fail417 (27) $372 (53)$ 861 (26) $847 (23)$ Community type ^f	Summer	399 (30) 417 (27)	408 (27)	955 (29)	785 (24) 847 (25)
Column (1)Column (1)	Fall Community type	41/(27)	572 (55)	801 (20)	847 (23)
City239 (10)230 (15)370 (11)327 (10)Borough394 (26)548 (32)840 (25)854 (26)Township705 (46)743 (43)1774 (53)1802 (55)Missing [§] 181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivation ^h 181 (12)187 (11)414 (14)Median $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Any antibiotic prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescriptions ^d $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ No prescription588 (39)817 (47)1712 (51)2228 (67)Carbapenems8 (1)02 (<1)	City	220 (16)	256 (15)	276 (11)	227 (10)
Lindugi $394 (20)$ $394 (20)$ $394 (20)$ $394 (20)$ $394 (20)$ Township $705 (46)$ $743 (43)$ $1774 (53)$ $1802 (55)$ Missing ^g $181 (12)$ $187 (11)$ $414 (14)$ $353 (11)$ Socioeconomic deprivation ^h $Median$ $-4\cdot 1$ $-4\cdot 4$ $-5\cdot 0$ $-5\cdot 0$ Any antibiotic prescription in two years prior $1160 (76)$ $1267 (73)$ $2341 (70)$ $1720 (52)$ Antibacterial prescriptions ⁱ No prescription $588 (39)$ $817 (47)$ $1712 (51)$ $2228 (67)$ Carbapenems $8 (1)$ 0 $2 (<1)$ 0 Cephalosporins $396 (26)$ $320 (18)$ $502 (15)$ $220 (7)$ Clindaymycin $68 (4)$ $36 (2)$ $64 (2)$ $20 (1)$ Linezolid $7 (<1)$ 0 $1 (<1)$ $1 (<1)$ Macrolides $221 (15)$ $241 (14)$ $460 (14)$ $215 (9)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillin $12 (1)$ $12 (1)$ $26 (1)$ $22 (1)$ Amino $217 (14)$ $351 (20)$ $553 (17)$ $404 (12)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamse inhibitors $178 (12)$ $161 (9)$ $267 (8)$ $153 (5)$ Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	Borough	239 (10)	548(32)	370 (11) 840 (25)	327 (10) 854 (26)
Invariant705 (40)745 (43)1774 (53)1602 (55)Missingg181 (12)187 (11)414 (14)353 (11)Socioeconomic deprivationh </td <td>Township</td> <td>705 (46)</td> <td>743(32)</td> <td>1774(53)</td> <td>1802 (55)</td>	Township	705 (46)	743(32)	1774(53)	1802 (55)
NumberInterventionInterventionInterventionSocioeconomic deprivation ^h Median $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Any antibiotic prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescription588 (39)817 (47)1712 (51)2228 (67)Carbapenems8 (1)02 (<1)	Missing	181 (12)	187 (11)	414(14)	353 (11)
Median $-4\cdot1$ $-4\cdot4$ $-5\cdot0$ $-5\cdot0$ Any antibiotic prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescriptions ⁱ $1160 (76)$ 1267 (73)2341 (70)1720 (52)No prescription588 (39)817 (47)1712 (51)2228 (67)Carbapenems8 (1)02 (<1)	Socioeconomic deprivation ^h	101 (12)	107 (11)	414 (14)	555 (11)
Any antibiotic prescription in two years prior1160 (76)1267 (73)2341 (70)1720 (52)Antibacterial prescriptionsi588 (39)817 (47)1712 (51)2228 (67)No prescription588 (39)817 (47)1712 (51)2228 (67)Carbapenems8 (1)02 (<1)	Median	-4.1	-4.4	-5.0	-5.0
Antibacterial prescriptionsState priorFile (16)File (16)File (16)Antibacterial prescription588 (39) $817 (47)$ $1712 (51)$ $2228 (67)$ Carbapenems8 (1)02 (<1)	Any antibiotic prescription in two years prior	1160 (76)	1267 (73)	2341 (70)	1720 (52)
No prescription588 (39) $817 (47)$ $1712 (51)$ $2228 (67)$ Carbapenems $8 (1)$ 0 $2 (<1)$ 0Cephalosporins $396 (26)$ $320 (18)$ $502 (15)$ $220 (7)$ Clindaymycin $68 (4)$ $36 (2)$ $64 (2)$ $20 (1)$ Linezolid $7 (<1)$ 0 $1 (<1)$ $1 (<1)$ Macrolides $221 (15)$ $241 (14)$ $460 (14)$ $215 (9)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillin $12 (1)$ $12 (1)$ $26 (1)$ $22 (1)$ Amino $217 (14)$ $351 (20)$ $553 (17)$ $404 (12)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamase inhibitors $178 (12)$ $161 (9)$ $267 (8)$ $153 (5)$ Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	Antibacterial prescriptions ⁱ	1100 (70)	1207 (70)	20.11 (70)	1/20 (02)
Carbapenems8 (1)02 (<1)0Cephalosporins396 (26)320 (18)502 (15)220 (7)Clindaymycin68 (4)36 (2)64 (2)20 (1)Linezolid7 (<1)	No prescription	588 (39)	817 (47)	1712 (51)	2228 (67)
Cephalosporins $396(26)$ $320(18)$ $502(15)$ $220(7)$ Clindaymycin $68(4)$ $36(2)$ $64(2)$ $20(1)$ Linezolid $7(<1)$ 0 $1(<1)$ $1(<1)$ Macrolides $221(15)$ $241(14)$ $460(14)$ $215(9)$ Penicillins $362(24)$ $446(26)$ $741(22)$ $531(16)$ Penicillin $12(1)$ $12(1)$ $26(1)$ $22(1)$ Amino $217(14)$ $351(20)$ $553(17)$ $404(12)$ Antistaphylococcal $8(1)$ $2(<1)$ $4(<1)$ $2(<1)$ β -lactam/ β -lactamase inhibitors $178(12)$ $161(9)$ $267(8)$ $153(5)$ Quinolones $340(22)$ $112(6)$ $242(7)$ $167(5)$ Tetracyclines $86(6)$ $81(5)$ $157(5)$ $84(3)$	Carbapenems	8 (1)	0	2(<1)	0
Clindaymycin $68 (4)$ $36 (2)$ $64 (2)$ $20 (1)$ Linezolid $7 (<1)$ 0 $1 (<1)$ $1 (<1)$ Macrolides $221 (15)$ $241 (14)$ $460 (14)$ $215 (9)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillin $12 (1)$ $12 (1)$ $26 (1)$ $22 (1)$ Amino $217 (14)$ $351 (20)$ $553 (17)$ $404 (12)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamase inhibitors $178 (12)$ $161 (9)$ $267 (8)$ $153 (5)$ Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	Cephalosporins	396 (26)	320 (18)	502 (15)	220 (7)
Linezolid $7 (< 1)$ 0 $1 (< 1)$ $1 (< 1)$ Macrolides $221 (15)$ $241 (14)$ $460 (14)$ $215 (9)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillin $12 (1)$ $12 (1)$ $26 (1)$ $22 (1)$ Amino $217 (14)$ $351 (20)$ $553 (17)$ $404 (12)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamase inhibitors $178 (12)$ $161 (9)$ $267 (8)$ $153 (5)$ Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	Clindavmycin	68 (4)	36 (2)	64 (2)	20 (1)
Macrolides $221 (15)$ $241 (14)$ $460 (14)$ $215 (9)$ Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillin $12 (1)$ $12 (1)$ $26 (1)$ $22 (1)$ Amino $217 (14)$ $351 (20)$ $553 (17)$ $404 (12)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamase inhibitors $178 (12)$ $161 (9)$ $267 (8)$ $153 (5)$ Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	Linezolid	7 (<1)	0	1 (<1)	1 (<1)
Penicillins $362 (24)$ $446 (26)$ $741 (22)$ $531 (16)$ Penicillin $12 (1)$ $12 (1)$ $26 (1)$ $22 (1)$ Amino $217 (14)$ $351 (20)$ $553 (17)$ $404 (12)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamase inhibitors $178 (12)$ $161 (9)$ $267 (8)$ $153 (5)$ Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	Macrolides	221 (15)	241 (14)	460 (14)	215 (9)
Penicillin12 (1)12 (1)26 (1)22 (1)Amino217 (14)351 (20)553 (17)404 (12)Antistaphylococcal8 (1)2 (<1)	Penicillins	362 (24)	446 (26)	741 (22)	531 (16)
Amino $217 (14)$ $351 (20)$ $553 (17)$ $404 (12)$ Antistaphylococcal $8 (1)$ $2 (<1)$ $4 (<1)$ $2 (<1)$ β -lactam/ β -lactamase inhibitors $178 (12)$ $161 (9)$ $267 (8)$ $153 (5)$ Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	Penicillin	12 (1)	12 (1)	26 (1)	22 (1)
Antistaphylococcal8 (1)2 (<1)4 (<1)2 (<1) β -lactam/ β -lactamase inhibitors178 (12)161 (9)267 (8)153 (5)Quinolones340 (22)112 (6)242 (7)167 (5)Tetracyclines86 (6)81 (5)157 (5)84 (3)	Amino	217 (14)	351 (20)	553 (17)	404 (12)
$\begin{array}{c ccccc} \beta - actam/\beta - lactamase inhibitors & 178 (12) & 161 (9) & 267 (8) & 153 (5) \\ Quinolones & 340 (22) & 112 (6) & 242 (7) & 167 (5) \\ Tetracyclines & 86 (6) & 81 (5) & 157 (5) & 84 (3) \end{array}$	Antistaphylococcal	8 (1)	2 (<1)	4 (<1)	2 (<1)
Quinolones $340 (22)$ $112 (6)$ $242 (7)$ $167 (5)$ Tetracyclines $86 (6)$ $81 (5)$ $157 (5)$ $84 (3)$	β -lactam/ β -lactamase inhibitors	178 (12)	161 (9)	267 (8)	153 (5)
Tetracyclines $86(6)$ $81(5)$ $157(5)$ $84(3)$	Quinolones	340 (22)	112 (6)	242 (7)	167 (5)
	Tetracyclines	86 (6)	81 (5)	157 (5)	84 (3)

Table 1 (Cont.)

Characteristic	HA-MRSA (<i>n</i> =1519)	CA-MRSA (<i>n</i> =1734)	SSTI (<i>n</i> =3336)	Control $(n=3336)$
TMP/SMX	170 (11)	175 (10)	225 (7)	136 (4)
Vancomycin	73 (5)	2 (<1)	19 (1)	9 (<1)
Antibacterial drug prescriptions ^j				
0	588 (39)	817 (47)	1705 (51)	2228 (67)
1	291 (19)	402 (23)	783 (23)	639 (19)
2–3	334 (22)	350 (20)	613 (18)	349 (10)
≥ 4	306 (20)	165 (10)	235 (7)	120 (4)

Data are no. (%) of patients, unless otherwise indicated. BMI, body mass index; CA-MRSA; community-associated methicillin-resistant *S. aureus*; HA-MRSA; healthcare-associated MRSA; IQR, interquartile range; SSTI, skin and soft tissue infection; TMP/SMX, Trimethoprim/sulfamethoxzole.

^a White, non-Hispanic.

^b Body mass index was categorized as normal ($<25 \text{ kg/m}^2$), overweight (25 to 29.9 kg/m²) and obese (30 kg/m² or greater) for persons 18 to 59.9 years of age, the most recent height and a weight within two years of the encounter/visit were used; for persons 60 and older the most recent height and weight, within one year of encounter/visit were used. Missing either due to the absolute value of the z-score being greater than 5 or if a height and weight were not recorded in the vitals table within 3 months prior to the diagnosis or visit.

^c Body mass index *z*-scores for children aged 2 to 18 were calculated using the 2000 CDC Growth Reference by implementing the zanthro function in Stata Version 11; Normal, *z*-score < 85^{th} percentile; Overweight, 85^{th} percentile $\leq z$ -score < 95^{th} percentile; Obese, *z*-score $\geq 95^{\text{th}}$ percentile.

^d Based on presence of ICD-9 codes 305.1 (tobacco use disorder), V15.82 (history of tobacco use), 649.0 (tobacco use complicating pregnancy) or CPT codes 99406 or 99407 (smoking cessation counseling).

^e Season of onset: spring (March – May), summer (June – August), autumn (September – November), winter (December – February).

^f Census tracts were assigned to patients in cities due to the large geographic area and heterogeneous community of some cities.

 g The overall geocoding rate was 88.6%, non-geocoding patients could not be assigned an community type or a community socioeconomic deprivation score and thus were omitted from multilevel analysis.

^h Community socioeconomic deprivation was assigned at the township, borough or census tract-level and it is based on six indicators (all percentages) derived from US Census 2000 data: combined less than high school education, not in the labor force, in poverty, on public assistance, civilian unemployment, and does not own a car; a higher score represents a more deprived community.

ⁱ Order for an antimicrobial prescription in the 30 to 365 days prior to infection or visit.

^j Count of antimicrobial prescription order in the 30 to 365 days prior to infection or visit.

	HA-MRSA		CA-MRSA		SSTI	
Characteristic	Crude OR (95% CI)	Adjusted OR ^b (95% CI)	Crude OR (95% CI)	Adjusted OR (95% CI)	Crude OR (95% CI)	Adjusted OR (95% CI)
Male sex	1.1 (1.0–1.2)	1.0 (0.9–1.2)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	1.0 (0.9–1.1)
Age in years at infection or visit						
<7	0.6 (0.4–0.7)	0.8 (0.6–1.0)	1.6 (1.3–1.9)	1.9 (1.6–2.4)	1.0 (0.8–1.2)	1.3 (1.1–1.5)
7 to <19	0.3 (0.2 - 0.4)	0.4 (0.3–0.5)	1.9 (1.6–2.3)	2.3 (1.8–2.8)	1.0(0.8-1.2)	1.2(1.0-1.5)
19 to <46	0.6 (0.5–0.7)	0.6 (0.5–0.7)	1.6 (1.3–1.9)	1.6 (1.3–1.9)	1.0 (0.9–1.2)	1.0 (0.9–1.2)
46 to <62	Reference	Reference	Reference	Reference	Reference	Reference
62 to <75	1.2 (0.9–1.4)	1.2 (1.0–1.5)	0.6 (0.4–0.7)	0.6 (0.4 - 0.7)	0.9 (0.8–1.1)	1.0(0.8-1.2)
≥75	1.7 (1.4–2.0)	2.0 (1.6-2.4)	0.4 (0.3–0.5)	0.4(0.3-0.6)	1.1 (0.9–1.3)	1.2(1.0-1.5)
Race/Ethnicity						
White ^c	Reference	Reference	Reference	Reference	Reference	Reference
Black	0.9(0.6-1.5)	1.4(0.9-2.2)	1.6(1.1-2.4)	1.3(0.9-1.8)	0.8(0.5-1.1)	0.8(0.5-1.1)
Hispanic	0.5 (0.3–0.9)	0.8(0.4-1.4)	1.1(0.7-1.7)	0.8(0.5-1.3)	0.9(0.7-1.4)	1.0(0.7-1.4)
Other	0.6 (0.3–1.1)	0.9 (0.5–1.8)	0.6(0.3-1.1)	0.5 (0.3–1.0)	0.6 (0.4–1.0)	0.7(0.4-1.1)
Adult BMI ^d			· · · ·	· · · ·	· · · ·	
Normal	Reference	Reference	Reference	Reference	Reference	Reference
Overweight	0.6 (0.5-0.7)	0.6 (0.5 - 0.8)	0.8 (0.7 - 0.9)	0.8 (0.7 - 1.0)	1.7(1.2-2.2)	1.5(1.1-2.1)
Obese	1.3(1.1-1.5)	1.1 (0.9 - 1.3)	1.3(1.1-1.5)	1.3(1.0-1.6)	$1 \cdot 7 (1 \cdot 2 \cdot 2 \cdot 2)$ $1 \cdot 8 (1 \cdot 3 - 2 \cdot 4)$	1.7(1.2-2.3)
Ch:14 DMIe	15(1115)	11(0)10)	15(1115)	15(1010)	10(1521)	1 / (1 2 2 3)
Normal	Deference	Deference	Deference	Defenence	Deference	Deference
Normaight	$\begin{array}{c} \text{Reference} \\ 0.8 & (0.5 & 1.5) \end{array}$	1.0(0.5, 1.0)	1.4(1.0, 1.9)	1.5 (1.1 - 2.1)	1.2 (0.0 1.6)	1.2 (0.0 - 1.7)
Obese	0.6 (0.3 - 1.3) 2.1 (1.2 - 2.5)	1.0(0.3-1.9) 2.2(1.2, 2.7)	1.4(1.0-1.8) 1.5(1.1,2.1)	1.3(1.1-2.1) 1.7(1.2,2.2)	1.2(0.9-1.0) 1.4(1.0, 1.8)	1.2(0.9-1.7) 1.4(1.0, 1.0)
Öbese	2.1 (1.3–3.3)	$2^{2}2(1^{2}-3^{2}7)$	1.3(1.1-2.1)	$1^{17}(1^{12}-2^{13})$	1.4 (1.0–1.8)	1.4 (1.0–1.9)
Smoking						
Ever	4.0 (3.4–4.7)	3.9 (3.3–3.6)	2.0 (1.6–2.3)	2.4 (2.0–2.8)	2.4 (2.0-2.7)	2.4(2.2-3.0)
Season ^f						
Winter	Reference	Reference	Reference	Reference	Reference	Reference
Spring	1.0(0.8-1.2)	1.0(0.8-1.2)	0.9 (0.7–1.0)	0.9(0.7-1.0)	1.1 (0.9–1.2)	1.1 (0.9–1.2)
Summer	1.2 (1.0–1.5)	1.3 (1.1–1.6)	1.4 (1.2–1.6)	1.3 (1.1–1.6)	1.4 (1.2–1.6)	1.4 (1.2–1.6)
Fall	1.2(1.0-1.4)	1.2 (1.0–1.5)	1.6 (1.3–1.8)	1.5 (1.3–1.8)	1.2 (1.0–1.3)	1.2(1.0-1.3)
Community type ^g						
Township	Reference	Reference	Reference	Reference	Reference	Reference
Borough	1.1 (0.9–1.3)	1.2(1.0-1.4)	1.5 (1.2–1.7)	1.4 (1.2–1.7)	1.1 (1.0-1.2)	1.1 (0.9–1.2)
Cityh	1.8 (1.3-2.5)	1.9 (1.4-2.6)	1.6(1.2-2.2)	1.7(1.2-2.3)	1.2(1.0-1.5)	1.2(1.0-1.4)
Socioeconomic deprivation	1.2(1.1-1.2)	1.2(1.1-1.2)	1.1(1.0-1.1)	1.1(1.1-1.2)	1.1(1.0-1.1)	1.1(1.0-1.1)
per quartile ⁱ	$1^{2}(1^{1}1^{-1}2)$	$1^{\circ}2(1^{\circ}1-1^{\circ}2)$	$1^{1}(1^{0}-1^{1})$	1 1 (1 1-1 2)	$1^{11}(1^{10}-1^{11})$	$1^{-1}(1^{-1})$
Any antibiotic prescription	3.0(2.7-3.5)	2.9(2.6-3.4)	2.5(2.2-2.9)	2.5(2.2-2.8)	2.2(2.0-2.4)	2.1(1.9-2.3)
in the two years prior	50(2755)	27(2057)	23(222)	25(2220)	22(2024)	21(1)23)

Table 2. Associations of demographic and clinical characteristics with MRSA and SSTI case status compared to controls, in multinomial and binomial logistic regression models, respectively^a

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	HA-MRSA		CA-MRSA		SSTI		
Characteristic	Crude OR (95% CI)	Adjusted OR ^b (95 % CI)	Crude OR (95% CI)	Adjusted OR (95% CI)	Crude OR (95% CI)	Adjusted OR (95% CI)	
Antibiotic prescription ^j							
No prescription	Reference	Reference	Reference	Reference	Reference	Reference	
Cephalosporins	5.0 (4.2-6.0)	4.9 (4.1-5.9)	3.2 (2.7-3.8)	3.2 (2.7-3.8)	2.9 (2.5-3.5)	2.1 (1.8-2.5)	
Clindamycin	7.8 (4.7–12.8)	7.4 (4.4–12.4)	3.5(2.0-6.1)	3.2 (1.8-5.6)	4.2 (2.5-6.9)	2.3(1.4-3.9)	
Macrolides	1.6 (1.4-2.0)	1.6 (1.3–1.9)	1.5 (1.3–1.9)	1.5 (1.2–1.8)	1.9 (1.6-2.2)	1.2(1.0-1.4)	
Penicillins	1.7 (1.4–1.9)	2.1(1.8-2.5)	1.8(1.6-2.1)	1.6 (1.3–1.8)	1.8(1.6-2.1)	1.4 (1.2–1.6)	
Penicillin	1.2(0.6-2.3)	2.1(1.0-4.4)	1.0(0.5-2.1)	0.8(0.4-1.7)	1.6(0.9-2.9)	0.9(0.5-1.7)	
Amino	1.2(1.0-1.4)	1.6 (1.3–1.9)	1.8(1.6-2.2)	1.6 (1.3–1.8)	1.8(1.5-2.0)	1.3(1.1-1.5)	
Antistaphylococcal	8.8 (1.9-42)	7.9 (1.6–39)	1.9 (0.3–13.7)	1.7 (0.2–12.4)	2.6(0.5-14.2)	1.1(0.2-7.0)	
β -lactam/ β -lactamase inhibitors	2.8 (2.2-3.5)	3.1 (2.4-3.9)	2.1(1.7-2.7)	1.9 (1.5-2.3)	2.3 (1.9-2.9)	1.5 (1.2–1.8)	
Quinolones	5.5 (4.5-6.7)	3.9 (3.1-4.7)	1.3(1.0-1.7)	1.8 (1.4-2.3)	1.9 (1.5-2.3)	1.1 (0.9–1.4)	
Tetracyclines	2.3 (1.7–3.2)	2.2 (1.6-3.0)	1.9 (1.4-2.6)	2.0 (1.6-2.5)	2.4 (1.8–3.2)	1.7 (1.3-2.2)	
TMP/SMX	3.0 (2.3-3.7)	2.9 (2.3-3.7)	2.6(2.1-3.3)	2.5(2.0-3.2)	2.2(1.7-2.7)	1.4(1.1-1.7)	
Vancomycin	18.7 (9.3–37)	13.3 (6.5–27)	0.4(0.1-2.0)	0.4(0.1-2.0)	2.7 (1.2-6.1)	1.1 (0.5–2.6)	
Antibiotic prescription ^k							
0	Reference	Reference	Reference	Reference	Reference	Reference	
1	1.7 (1.5–2.1)	1.7 (1.5-2.1)	1.7 (1.4-2.0)	1.7 (1.4-2.0)	1.6 (1.4–1.8)	1.5 (1.4–1.7)	
2–3	3.6 (3.1-4.3)	3.6 (3.0-4.4)	2.7 (2.3-3.2)	2.5(2.1-3.0)	2.2 (1.9-2.6)	2.1 (1.8–2.5)	
≥4	9.7 (7.7–12.2)	9.0 (7.1–11.5)	3.8 (2.9-4.8)	3.7 (2.9-4.8)	2.6 (2.1-3.3)	2.4 (1.9-3.1)	

Data are no. (%) of patients, unless otherwise indicated.

BMI, body mass index; CA-MRSA; community-associated methicillin-resistant *S. aureus*; HA-MRSA; healthcare-associated MRSA; SSTI, skin and soft tissue infection; TMP/SMX, trimethoprim/sulfamethoxzole.

^a SSTI cases and controls were frequency-matched to MRSA cases on age, sex, and year of diagnosis or outpatient encounter.

^b Adjusted for category (<7, 7 to <19, 19 to <45, 46 to <62 [ref], 62 to <75 and 75 and older), sex, race/ethnicity, ever-smoking status.

^c White, non-Hispanic.

^d Body mass index was categorized as normal ($<25 \text{ kg/m}^2$), overweight (25 to 29.9 kg/m²) and obese (30 kg/m² or greater) for persons 18 to 59.9 years of age, the most recent height and a weight within two years of the encounter/visit were used; for persons 60 and older the most recent height and weight, within one year of encounter/visit were used. Missing either due to the absolute value of the *z*-score being greater than 5 or if a height and weight were not recorded in the vitals table within 3 months prior to the diagnosis or visit.

^e Body mass index *z*-scores for children aged 2 to 18 were calculated using the 2000 CDC Growth Reference by implementing the zanthro function in Stata Version 11; Normal, *z*-score $< 85^{\text{th}}$ percentile; Overweight, 85^{th} percentile $\leq z$ -score $< 95^{\text{th}}$ percentile; Obese, *z*-score $\geq 95^{\text{th}}$ percentile.

^f Season of onset: spring (March – May), summer (June – August), autumn (September – November), winter (December – February).

^g The overall geocoding rate was 88.6%, non-geocoding patients could not be assigned a community type or a community socioeconomic deprivation score and thus were omitted from multilevel analysis.

^h Census tracts were assigned to patients in cities due to the large geographic area and heterogeneous community of some cities.

ⁱ ORs for socioeconomic deprivation are quartile increase in level; a higher quartile represents a more deprived community.

^j Order for an antimicrobial prescription in the 30 to 365 days prior to infection or visit, these are additionally adjusted for all other antibiotic classes in the table. Data on linezolid is not presented due to small cell sizes.

^k Count of antimicrobial prescription order in the 30 to 365 days prior to infection or visit.

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Unadjusted Analysis ^b							Adjusted Analysis ^c					
	CA-MRSA		SSTI		HA-MRSA		CA-MRSA		SSTI			
Condition	Crude OR (95% CI)	Р	Crude OR (95% CI)	Р	Crude OR (95% CI)	Р	Adjusted OR (95% CI)	Р	Adjusted OR (95% CI)	Р	Adjusted OR (95% CI)	Р
Respiratory tract												
Acute												
Bronchitis	1.9 (1.6–2.2)	< 0.001	1.4 (1.2–1.6)	< 0.001	1.4 (1.3–1.6)	< 0.001	1.1 (1.0–1.3)	0.17	1.0(0.9-1.2)	0.66	1.0 (0.9–1.2)	0.96
Otitis media	0.9 (0.7–1.2)	0.55	1.8 (1.5–2.2)	< 0.001	1.3 (1.0–1.5)	0.01	1.0(0.7-1.3)	0.80	1.0(0.8-1.2)	0.85	0.9 (0.8–1.1)	0.50
Pharyngitis	0.6 (0.5 - 0.8)	< 0.001	1.5 (1.3–1.8)	< 0.001	1.3 (1.2–1.5)	< 0.001	0.7 (0.6–0.9)	0.01	0.8 (0.7–0.9)	0.01	1.0 (0.9–1.2)	0.60
Rhinosinusitis	0.9 (0.7–1.0)	0.04	1.5 (1.3–1.7)	< 0.001	1.4 (1.3–1.6)	< 0.001	0.6 (0.5–0.7)	<0.001	0.8 (0.7–0.9)	0.01	0.9 (0.8–1.1)	0.40
Streptococcal sore throat	0.6 (0.4–1.0)	0.04	1.8(1.3-2.5)	<0.001	1.4(1.0-1.8)	0.03	0.9 (0.5–1.4)	0.63	0.9 (0.7–1.3)	0.65	1.1 (0.8 - 1.4)	0.72
Upper respiratory infection	1.1 (0.9–1.3)	0.40	1.6 (1.3–1.8)	< 0.001	1.3(1.2-1.5)	< 0.001	1.1 (0.9–1.3)	0.51	1.0(0.8-1.2)	0.82	1.1 (1.0–1.3)	0.15
Chronic												
Asthma	2.2 (1.8-2.6)	< 0.001	1.6 (1.3-2.0)	< 0.001	1.5 (1.3–1.8)	< 0.001	1.8 (1.5-2.3)	<0.001	1.2 (1.0–1.4)	0.14	1.2 (1.0–1.4)	0.04
COPD	4.0 (3.5-4.6)	< 0.001	1.1 (1.0–1.3)	0.20	1.5 (1.4–1.7)	< 0.001	2.7(2.3-3.1)	<0.001	1.0(0.8-1.1)	0.57	1.2(1.1-1.4)	0.002
Lung diseases	13.8 (11.3–16.8)	<0.001	0.8 (0.6–1.1)	0.10	1.6 (1.3-2.0)	<0.001	8.5 (6.9–10.6)	<0.001	0.9(0.7-1.3)	0.75	1.2(0.9-1.5)	0.22
Rhinosinusitis	3.2 (2.3-4.3)	< 0.001	1.2(0.8-1.8)	0.27	1.6 (1.2–2.2)	0.002	2.1 (1.5–2.9)	<0.001	0.9 (0.6–1.3)	0.63	1.2 (0.9–1.6)	0.24
Cardiac												
Heart diseases	5.6 (4.9-6.5)	<0.001	0.4(0.3-0.5)	< 0.001	1.3(1.1-1.5)	<0.001	3.9 (3.3-4.7)	<0.001	0.7(0.5-0.9)	< 0.01	1.2(1.0-1.4)	0.08
Hypertension	2.7(2.4-3.1)	<0.001	0.4(0.4-0.5)	<0.001	1.1 (1.0–1.3)	0.01	1.6(1.3-1.8)	<0.001	0.7(0.6-0.9)	<0.001	1.1 (1.0-1.3)	0.11
Lipid disorders	1.9(1.7-2.1)	< 0.001	0.5 (0.4–0.6)	< 0.001	1.2(1.1-1.3)	< 0.001	0.9(0.8-1.1)	0.22	0.7(0.6-0.8)	< 0.001	1.2(1.1-1.4)	0.002
Skin and soft tissue												
Carbuncle/furuncle ^d	5.9(4.0-8.8)	< 0.001	10.1(7.0-14.6)	< 0.001	3.8 (2.6-5.6)	< 0.001	4.7(3.1-7.0)	< 0.001	6.8(4.7-10.0)	< 0.001	2.5(2.1-3.0)	< 0.001
Cellulitis/abscess ^d	5.6(4.6-6.8)	< 0.001	3.4(2.8-4.2)	< 0.001	3.1(2.6-3.8)	< 0.001	3.5(2.8-4.3)	< 0.001	3.0(2.4-3.7)	< 0.001	2.7(1.8-3.9)	< 0.001
Chronic ulcer of skin	37.1 (23.9–57)	<0.001	$3.8(2\cdot 3-6\cdot 4)$	<0.001	2.9(1.7-4.9)	<0.001	23.6(15.1-36.9)	<0.001	5.7 (3.4-9.8)	< 0.001	2.1(1.3-3.7)	0.01
Chronic kidney disease	6.3 (4.9-8.0)	<0.001	0.3 (0.2 - 0.5)	<0.001	1.6(1.3-2.1)	<0.001	4.1 (3.1–5.3)	<0.001	0.5(0.3-0.8)	0.01	1.5(1.1-1.9)	0.01
Diabetes	3.9 (3.4-4.6)	< 0.001	0.6 (0.5–0.8)	< 0.001	1.6 (1.4–1.9)	<0.001	2.6 (2.2-3.1)	<0.001	1.0(0.8-1.3)	0.72	1.5 (1.3–1.8)	< 0.001
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Table 3. Associations of acute and chronic conditions in the two years preceding MRSA and skin and soft tissue infection with MRSA and SSTI case status compared to controls, in multinomial and binomial logistic regression models, respectively^a

CA-MRSA; community-associated methicillin-resistant S. aureus; COPD, chronic obstructive pulmonary disease; CI, confidence interval; HA-MRSA; healthcareassociated MRSA; OR, odds ratio; SSTI, skin and soft tissue infection.

^a SSTI cases and controls were frequency-matched to MRSA cases on age, sex, and year of diagnosis or outpatient encounter.

^b Models the association between the condition identified in inpatient, outpatient, or emergency department encounters, or on problem list or in medications table (excluding antibiotic prescriptions) in the two years preceding diagnosis or visit and case status.

^c Adjusted for age category (<7, 7 to <19, 19 to <45, 46 to <62 [REF], 62 to <75 and 75 and older), sex, race/ethnicity, ever-smoking status, and any antibiotic order in the prior two years.

^d The 30 days prior to infection or visit was excluded for carbuncle, furuncle, cellulitis or abscess to avoid protopathic bias.

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Table 4. Adjusted associations of antibiotic orders for acute and chronic conditions in the two years preceding MRSA and skin and soft tissue infection, compared to controls, in multinomial and binomial logistic regression models, respectively

	HA-MRSA		CA-MRSA		SSTI		
Condition	Adjusted OR ^a (95% CI)	Р	Adjusted OR (95% CI)	Р	Adjusted OR (95% CI)	Р	
Respiratory tract							
Acute							
Bronchitis	1.3 (1.1–1.6)	0.003	1.3 (1.1–1.6)	0.004	1.3(1.1-1.5)	< 0.001	
Otitis media	1.4(1.0-2.0)	0.03	1.4(1.1-1.8)	0.003	1.3(1.0-1.6)	0.06	
Pharyngitis	1.2(0.8-1.7)	0.29	1.0(0.7-1.3)	0.90	1.0(0.8-1.3)	0.71	
Rhinosinusitis	1.0(0.8-1.1)	0.58	1.3(1.1-1.5)	< 0.001	1.4(1.2-1.5)	< 0.001	
Streptococcal sore throat	1.0(0.6-1.8)	0.91	1.2(0.9-1.7)	0.23	1.5(1.1-2.0)	0.01	
Upper respiratory infection	1.7(1.2-2.4)	0.003	1.1 (0.8–1.6)	0.48	1.4(1.0-1.8)	0.01	
Chronic							
Asthma	4.3 (2.2-8.1)	< 0.001	1.4 (0.6–3.1)	0.41	2.1 (1.2-4.0)	0.01	
COPD	3.1 (2.2-4.5)	< 0.001	1.7 (1.2-2.6)	0.01	1.5(1.1-2.2)	0.01	
Lung diseases	2.7 (1.6-4.5)	< 0.001	1.8 (0.9-3.7)	0.10	1.1 (0.6–1.9)	0.18	
Rhinosinusitis	1.5 (0.9-2.7)	0.14	1.1 (0.6 - 2.0)	0.69	1.1 (0.6–1.7)	0.63	
Skin and soft tissue							
Carbuncle/furuncle ^b	9.0 (5.8–14.0)	< 0.001	18.0 (12.0-27)	< 0.001	4.7 (3.0-7.2)	< 0.001	
Cellulitis/abscess ^b	5.2 (4.2-6.6)	< 0.001	6.7 (5.4-8.3)	< 0.001	4.2 (3.4–5.2)	< 0.001	
Chronic ulcer of skin	16.5 (7.1–38.4)	< 0.001	7.0 (2.6–18.5)	< 0.001	3.4 (1.4–8.4)	0.003	

CA-MRSA; community-associated methicillin-resistant *S. aureus*; COPD, chronic obstructive pulmonary disease; CI, confidence interval; HA-MRSA; healthcare-associated MRSA; OR, odds ratio; SSTI, skin and soft tissue infection. ^a Models the association between any antibiotic order for the condition in the 2 years preceding diagnosis or visit and case status; adjusted for age category (<7,7 to <19,19 to <45,46 to <62 (ref.), 62 to <75 and ≥75 years], sex, race/ethnicity, ever-smoking status.

^b The 30 days preceding infection or visit were excluded for carbuncle, furuncle, cellulitis or abscess to avoid protopathic bias.