

Swedres 2008

Figures and tables

Use of antimicrobials

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TABLE 3.1.1. Total sales of antibacterial drugs for systemic use in Sweden 2000-2008, DDD/1000 inhabitants/day. Methenamine is an antiseptic and therefore of no interest regarding antibiotic resistance.

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|----------------------|------|------|------|------|------|------|------|------|------|
| J01 excl methenamine | 15.2 | 15.3 | 14.8 | 14.6 | 14.3 | 14.8 | 15.2 | 15.6 | 15.4 |
| Methenamine | 1.6 | 1.5 | 1.6 | 1.7 | 1.9 | 1.9 | 1.9 | 1.8 | 1.6 |
| Total J01 | 16.8 | 16.8 | 16.4 | 16.3 | 16.2 | 16.6 | 17.1 | 17.4 | 17.0 |

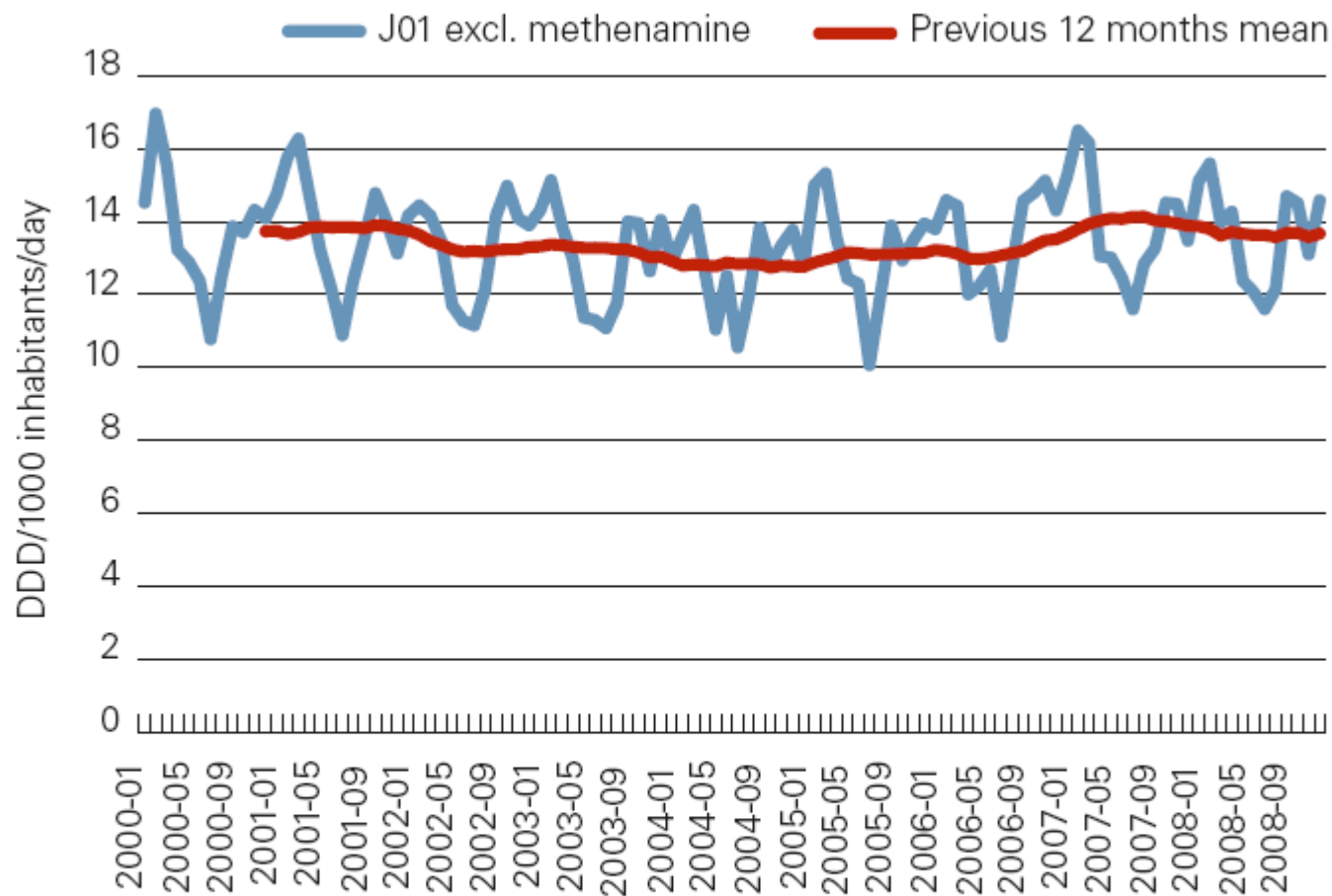


FIGURE 3.1.1. Antibiotics in primary health care 2000–2008, DDD/1000 inhabitants/day. Monthly sales and 12 months mean.

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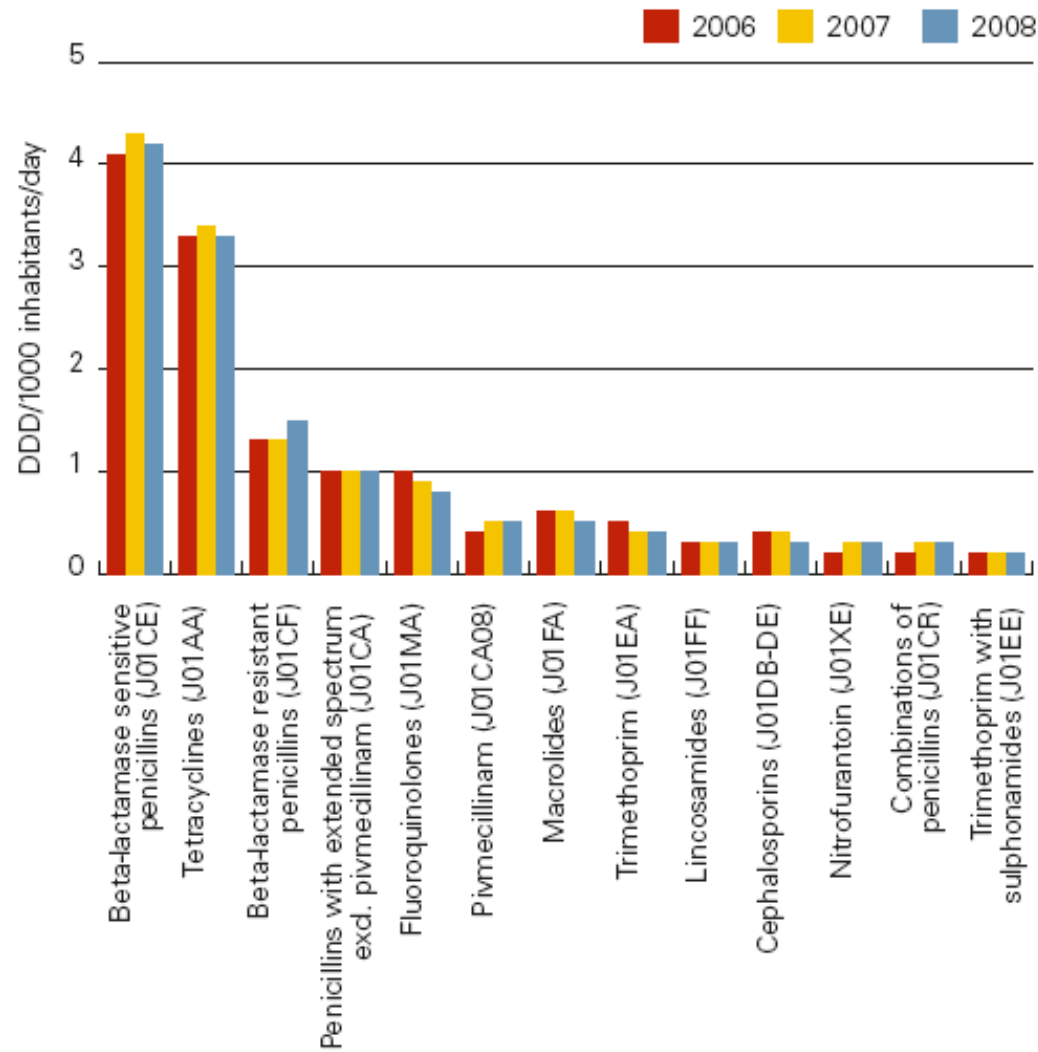


FIGURE 3.1.2. Antibiotics in primary health care 2006–2008, DDD/1000 inhabitants/day.

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TABLE 3.1.2. Antibiotics in primary health care, classes of antibiotics and age groups. DDD/1000 inhabitants/day and prescriptions/1000 inhabitants/year. 2004-2008. Users/1000 inhabitants/year. 2006-2008.

| Age group (years) | DDD/1000 inhabitants/day | | | | | Prescriptions/1000 inhabitants/year | | | | | Users/1000 inhabitants/year | | |
|--|--------------------------|------|------|------|------|-------------------------------------|-------|-------|-------|-------|-----------------------------|-------|-------|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2004 | 2005 | 2006 | 2007 | 2008 | 2006 | 2007 | 2008 |
| Tetracyclines (J01AA) | | | | | | | | | | | | | |
| 0-6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 7-19 | 2.36 | 2.71 | 3.12 | 3.23 | 3.26 | 25.4 | 28.9 | 32.7 | 33.9 | 32.0 | 20.4 | 21.5 | 19.6 |
| 20-59 | 3.36 | 3.52 | 3.56 | 3.68 | 3.50 | 62.9 | 67.2 | 66.3 | 68.3 | 61.3 | 51.8 | 53.4 | 47.6 |
| 60-79 | 3.90 | 4.15 | 4.11 | 4.29 | 4.05 | 91.7 | 99.7 | 96.3 | 99.3 | 90.1 | 71.6 | 74.4 | 67.2 |
| 80- | 2.83 | 3.04 | 2.89 | 2.93 | 2.78 | 75.8 | 82.6 | 76.4 | 77.8 | 71.7 | 60.1 | 62.0 | 56.8 |
| All age groups | 3.06 | 3.26 | 3.33 | 3.44 | 3.29 | 58.6 | 63.2 | 62.6 | 64.3 | 58.3 | 46.9 | 48.6 | 43.7 |
| Penicillins with extended spectrum (J01CA) excl. pivmecillinam | | | | | | | | | | | | | |
| 0-6 | 1.25 | 1.41 | 1.59 | 1.74 | 1.71 | 84.7 | 85.0 | 86.9 | 95.2 | 90.8 | 64.6 | 70.5 | 66.7 |
| 7-19 | 0.32 | 0.38 | 0.45 | 0.46 | 0.43 | 10.8 | 12.5 | 14.1 | 14.5 | 13.6 | 12.4 | 12.8 | 11.5 |
| 20-59 | 0.64 | 0.72 | 0.72 | 0.77 | 0.75 | 16.8 | 18.3 | 18.4 | 19.4 | 18.7 | 16.0 | 16.7 | 15.1 |
| 60-79 | 1.43 | 1.56 | 1.59 | 1.62 | 1.63 | 39.3 | 41.2 | 41.4 | 42.0 | 41.3 | 32.3 | 32.9 | 29.9 |
| 80- | 1.65 | 1.80 | 1.81 | 1.79 | 1.83 | 45.3 | 47.5 | 47.3 | 46.8 | 46.5 | 38.3 | 38.0 | 32.9 |
| All age groups | 0.84 | 0.94 | 0.98 | 1.02 | 1.02 | 27.4 | 29.0 | 29.6 | 31.0 | 30.5 | 23.4 | 24.5 | 22.5 |
| Pivmecillinam (J01CA08) | | | | | | | | | | | | | |
| 0-6 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.3 | 0.4 | 0.5 | 0.5 | 0.7 | 0.4 | 0.5 | 0.6 |
| 7-19 | 0.14 | 0.15 | 0.17 | 0.19 | 0.24 | 7.4 | 8.7 | 10.7 | 12.4 | 15.5 | 9.6 | 11.0 | 13.6 |
| 20-59 | 0.32 | 0.31 | 0.34 | 0.36 | 0.43 | 15.4 | 16.9 | 20.1 | 22.2 | 26.9 | 17.3 | 19.0 | 22.5 |
| 60-79 | 0.72 | 0.70 | 0.71 | 0.74 | 0.84 | 33.4 | 36.2 | 40.3 | 43.0 | 49.5 | 31.2 | 33.1 | 37.3 |
| 80- | 2.05 | 1.90 | 1.84 | 1.84 | 1.95 | 97.4 | 100.0 | 106.7 | 109.3 | 116.6 | 80.1 | 81.8 | 85.1 |
| All age groups | 0.43 | 0.42 | 0.43 | 0.46 | 0.53 | 20.5 | 22.3 | 25.5 | 27.6 | 32.2 | 20.7 | 22.3 | 25.6 |
| Bet lactamase-sensitive penicillins (J01CE) | | | | | | | | | | | | | |
| 0-6 | 3.32 | 3.35 | 3.59 | 4.03 | 4.14 | 307.9 | 310.5 | 327.3 | 350.7 | 343.7 | 230.8 | 244.3 | 235.9 |
| 7-19 | 2.92 | 3.01 | 3.38 | 3.68 | 3.64 | 120.6 | 121.5 | 135.0 | 142.5 | 135.0 | 113.1 | 117.3 | 110.2 |
| 20-59 | 4.16 | 4.18 | 4.28 | 4.49 | 4.42 | 105.5 | 105.2 | 107.9 | 112.8 | 108.4 | 91.6 | 95.2 | 90.9 |
| 60-79 | 4.33 | 4.27 | 4.46 | 4.57 | 4.51 | 104.8 | 102.9 | 107.0 | 109.0 | 106.1 | 88.0 | 89.4 | 87.0 |
| 80- | 3.32 | 3.39 | 3.33 | 3.36 | 3.51 | 86.8 | 87.1 | 84.2 | 84.2 | 85.7 | 71.4 | 72.2 | 72.4 |
| All age groups | 3.90 | 3.92 | 4.09 | 4.30 | 4.26 | 122.6 | 122.5 | 128.1 | 134.3 | 130.0 | 104.0 | 108.1 | 103.7 |

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TABLE 3.1.2. Antibiotics in primary health care, classes of antibiotics and age groups. DDD/1000 inhabitants/day and prescriptions/1000 inhabitants/year. 2004-2008. Users/1000 inhabitants/year. 2006-2008.

| Age group (years) | DDD/1000 inhabitants/day | | | | | Prescriptions/1000 inhabitants/year | | | | | Users/1000 inhabitants/year | | |
|---|--------------------------|------|------|------|------|-------------------------------------|-------|-------|-------|-------|-----------------------------|------|------|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2004 | 2005 | 2006 | 2007 | 2008 | 2006 | 2007 | 2008 |
| Betalactamase-resistant penicillins (J01CF) | | | | | | | | | | | | | |
| 0-6 | 0.33 | 0.31 | 0.35 | 0.33 | 0.33 | 34.3 | 32.2 | 35.6 | 32.9 | 32.8 | 26.7 | 25.2 | 24.8 |
| 7-19 | 0.67 | 0.65 | 0.70 | 0.69 | 0.80 | 32.0 | 30.7 | 33.6 | 31.9 | 31.9 | 27.5 | 26.4 | 26.2 |
| 20-59 | 0.88 | 0.88 | 0.95 | 0.96 | 1.14 | 31.7 | 31.7 | 33.5 | 33.3 | 33.2 | 26.9 | 26.7 | 26.5 |
| 60-79 | 1.94 | 1.91 | 2.04 | 2.04 | 2.37 | 54.5 | 54.4 | 57.4 | 56.3 | 56.9 | 37.7 | 37.1 | 37.3 |
| 80- | 4.47 | 4.38 | 4.44 | 4.40 | 5.01 | 124.2 | 122.0 | 123.4 | 122.6 | 122.1 | 68.7 | 67.9 | 66.8 |
| All age groups | 1.18 | 1.18 | 1.25 | 1.25 | 1.46 | 40.9 | 40.5 | 42.9 | 42.2 | 42.3 | 31.2 | 30.7 | 30.5 |
| Combinations of penicillins (J01CR) | | | | | | | | | | | | | |
| 0-6 | 0.68 | 0.73 | 0.73 | 0.75 | 0.67 | 48.5 | 51.8 | 51.2 | 52.7 | 46.4 | 34.4 | 35.2 | 30.9 |
| 7-19 | 0.17 | 0.20 | 0.22 | 0.21 | 0.20 | 5.1 | 6.0 | 6.4 | 6.4 | 6.0 | 5.1 | 4.9 | 4.5 |
| 20-59 | 0.15 | 0.17 | 0.18 | 0.20 | 0.21 | 3.3 | 3.8 | 3.9 | 4.4 | 4.6 | 3.5 | 3.9 | 4.0 |
| 60-79 | 0.17 | 0.20 | 0.22 | 0.25 | 0.27 | 3.5 | 4.2 | 4.5 | 5.1 | 5.5 | 3.6 | 4.1 | 4.4 |
| 80- | 0.11 | 0.15 | 0.15 | 0.17 | 0.20 | 2.4 | 3.0 | 3.0 | 3.4 | 4.1 | 2.3 | 2.7 | 3.2 |
| All age groups | 0.19 | 0.22 | 0.24 | 0.26 | 0.26 | 6.9 | 7.8 | 8.0 | 8.5 | 8.3 | 6.1 | 6.5 | 6.3 |
| Cephalosporins (J01DB-DE) | | | | | | | | | | | | | |
| 0-6 | 0.53 | 0.50 | 0.52 | 0.52 | 0.46 | 49.7 | 46.4 | 49.0 | 49.7 | 43.6 | 37.6 | 38.0 | 33.9 |
| 7-19 | 0.30 | 0.29 | 0.30 | 0.29 | 0.27 | 20.9 | 19.6 | 20.6 | 20.2 | 18.4 | 17.4 | 17.2 | 15.7 |
| 20-59 | 0.30 | 0.30 | 0.29 | 0.28 | 0.25 | 16.9 | 16.6 | 16.8 | 16.2 | 14.5 | 14.2 | 13.7 | 12.2 |
| 60-79 | 0.48 | 0.47 | 0.46 | 0.40 | 0.36 | 23.6 | 23.1 | 22.6 | 20.2 | 17.7 | 17.1 | 15.5 | 13.5 |
| 80- | 0.79 | 0.77 | 0.73 | 0.65 | 0.54 | 42.6 | 42.3 | 40.5 | 35.4 | 29.4 | 30.9 | 27.4 | 22.9 |
| All age groups | 0.40 | 0.38 | 0.37 | 0.35 | 0.31 | 23.4 | 22.5 | 22.5 | 21.5 | 19.0 | 17.9 | 17.2 | 15.3 |

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TABLE 3.1.2. Antibiotics in primary health care, classes of antibiotics and age groups. DDD/1000 inhabitants/day and prescriptions/1000 inhabitants/year. 2004-2008. Users/1000 inhabitants/year. 2006-2008.

| Age group (years) | DDD/1000 inhabitants/day | | | | | Prescriptions/1000 inhabitants/year | | | | | Users/1000 inhabitants/year | | |
|---|--------------------------|------|------|------|------|-------------------------------------|-------|-------|-------|------|-----------------------------|------|------|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2004 | 2005 | 2006 | 2007 | 2008 | 2006 | 2007 | 2008 |
| Trimethoprim (J01EA) | | | | | | | | | | | | | |
| 0-6 | 0.12 | 0.11 | 0.12 | 0.12 | 0.10 | 15.6 | 14.8 | 16.0 | 15.4 | 14.0 | 11.1 | 10.6 | 9.8 |
| 7-19 | 0.21 | 0.20 | 0.21 | 0.18 | 0.15 | 12.4 | 11.9 | 12.4 | 10.9 | 8.9 | 10.8 | 9.5 | 7.8 |
| 20-59 | 0.36 | 0.33 | 0.33 | 0.29 | 0.24 | 18.7 | 17.3 | 17.4 | 14.6 | 11.8 | 14.7 | 12.4 | 9.9 |
| 60-79 | 0.92 | 0.86 | 0.84 | 0.76 | 0.64 | 44.6 | 41.7 | 40.7 | 35.2 | 29.2 | 29.7 | 25.6 | 21.0 |
| 80- | 2.48 | 2.28 | 2.19 | 1.91 | 1.58 | 136.0 | 125.6 | 120.1 | 104.5 | 84.7 | 73.3 | 61.6 | 49.1 |
| All age groups | 0.53 | 0.49 | 0.49 | 0.43 | 0.36 | 28.2 | 26.4 | 26.3 | 22.8 | 18.8 | 19.8 | 16.9 | 13.8 |
| Trimethoprim with sulphonamides (J01EE) | | | | | | | | | | | | | |
| 0-6 | 0.15 | 0.15 | 0.16 | 0.16 | 0.14 | 18.4 | 18.1 | 18.1 | 18.8 | 16.7 | 13.2 | 13.5 | 12.0 |
| 7-19 | 0.09 | 0.10 | 0.10 | 0.10 | 0.11 | 4.0 | 4.1 | 4.0 | 4.1 | 4.2 | 2.7 | 2.6 | 2.7 |
| 20-59 | 0.12 | 0.12 | 0.13 | 0.14 | 0.14 | 2.7 | 2.8 | 2.9 | 3.0 | 3.1 | 1.9 | 1.9 | 2.0 |
| 60-79 | 0.33 | 0.34 | 0.36 | 0.39 | 0.44 | 8.2 | 8.4 | 8.8 | 9.2 | 10.1 | 5.8 | 6.1 | 6.8 |
| 80- | 0.35 | 0.34 | 0.36 | 0.39 | 0.43 | 11.8 | 11.5 | 11.7 | 12.2 | 13.1 | 8.8 | 9.1 | 9.9 |
| All age groups | 0.18 | 0.18 | 0.19 | 0.20 | 0.21 | 6.2 | 6.2 | 6.3 | 6.4 | 6.5 | 4.0 | 4.1 | 4.3 |
| Macrolides (J01FA) | | | | | | | | | | | | | |
| 0-6 | 0.73 | 0.80 | 0.80 | 0.85 | 0.68 | 34.5 | 37.4 | 37.3 | 38.1 | 29.9 | 29.6 | 30.4 | 23.3 |
| 7-19 | 0.62 | 0.72 | 0.76 | 0.74 | 0.54 | 18.1 | 21.0 | 22.1 | 21.7 | 15.4 | 17.9 | 17.2 | 11.8 |
| 20-59 | 0.54 | 0.56 | 0.54 | 0.55 | 0.49 | 16.3 | 16.8 | 16.3 | 16.5 | 14.3 | 13.0 | 13.2 | 11.3 |
| 60-79 | 0.49 | 0.51 | 0.50 | 0.50 | 0.47 | 14.1 | 14.8 | 14.5 | 14.6 | 13.0 | 11.0 | 11.0 | 9.6 |
| 80- | 0.31 | 0.34 | 0.34 | 0.32 | 0.30 | 9.7 | 9.8 | 9.3 | 8.7 | 8.4 | 7.2 | 6.8 | 6.4 |
| All age groups | 0.55 | 0.59 | 0.58 | 0.59 | 0.50 | 17.3 | 18.4 | 18.2 | 18.4 | 15.3 | 14.4 | 14.4 | 11.7 |

TABLE 3.1.2. Antibiotics in primary health care, classes of antibiotics and age groups. DDD/1000 inhabitants/day and prescriptions/1000 inhabitants/year. 2004-2008. Users/1000 inhabitants/year. 2006-2008.

| Age group (years) | DDD/1000 inhabitants/day | | | | | Prescriptions/1000 inhabitants/year | | | | | Users/1000 inhabitants/year | | |
|--------------------------|--------------------------|------|------|------|------|-------------------------------------|-------|-------|-------|------|-----------------------------|------|------|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2004 | 2005 | 2006 | 2007 | 2008 | 2006 | 2007 | 2008 |
| Lincosamides (J01FF) | | | | | | | | | | | | | |
| 0-6 | 0.02 | 0.02 | 0.02 | 0.03 | 0.02 | 4.1 | 4.5 | 5.0 | 5.3 | 5.0 | 3.6 | 3.9 | 3.7 |
| 7-19 | 0.09 | 0.10 | 0.11 | 0.12 | 0.12 | 6.5 | 6.9 | 7.8 | 8.3 | 8.4 | 6.2 | 6.7 | 6.9 |
| 20-59 | 0.24 | 0.25 | 0.28 | 0.29 | 0.30 | 12.6 | 13.0 | 14.3 | 15.6 | 15.6 | 11.1 | 12.2 | 12.2 |
| 60-79 | 0.51 | 0.53 | 0.55 | 0.55 | 0.57 | 21.1 | 22.1 | 23.7 | 24.4 | 24.6 | 15.3 | 15.9 | 16.3 |
| 80 - | 0.71 | 0.77 | 0.75 | 0.74 | 0.76 | 30.0 | 32.2 | 32.6 | 32.8 | 33.2 | 18.1 | 18.6 | 19.2 |
| All age groups | 0.27 | 0.29 | 0.31 | 0.32 | 0.33 | 13.5 | 14.1 | 15.4 | 16.3 | 16.4 | 10.9 | 11.7 | 11.9 |
| Fluoroquinolones (J01MA) | | | | | | | | | | | | | |
| 0-6 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 0.4 | 0.8 | 0.8 | 0.8 | 0.7 | 0.4 | 0.4 | 0.4 |
| 7-19 | 0.12 | 0.12 | 0.12 | 0.13 | 0.12 | 5.5 | 5.5 | 5.5 | 5.5 | 4.8 | 4.7 | 4.4 | 3.9 |
| 20-59 | 0.81 | 0.81 | 0.80 | 0.76 | 0.69 | 33.1 | 31.9 | 30.2 | 27.8 | 23.8 | 22.0 | 20.3 | 17.3 |
| 60-79 | 2.07 | 2.08 | 2.05 | 1.93 | 1.75 | 88.0 | 84.6 | 80.2 | 73.7 | 63.9 | 52.7 | 48.7 | 42.7 |
| 80 - | 3.14 | 3.13 | 3.00 | 2.74 | 2.41 | 158.4 | 149.4 | 136.8 | 119.7 | 98.5 | 92.5 | 81.5 | 68.1 |
| All age groups | 0.98 | 0.99 | 0.98 | 0.93 | 0.84 | 42.5 | 41.0 | 39.0 | 35.7 | 30.6 | 27.0 | 24.9 | 21.5 |
| Nitrofurantoin (J01XE) | | | | | | | | | | | | | |
| 0-6 | 0.07 | 0.07 | 0.07 | 0.07 | 0.06 | 6.9 | 6.4 | 6.3 | 6.3 | 6.2 | 4.2 | 4.2 | 4.2 |
| 7-19 | 0.11 | 0.12 | 0.12 | 0.14 | 0.13 | 4.9 | 5.3 | 5.2 | 6.7 | 6.6 | 4.4 | 5.8 | 5.8 |
| 20-59 | 0.17 | 0.19 | 0.20 | 0.24 | 0.23 | 7.4 | 8.5 | 8.5 | 11.0 | 10.6 | 7.0 | 9.1 | 8.8 |
| 60-79 | 0.29 | 0.34 | 0.36 | 0.46 | 0.47 | 11.7 | 14.1 | 14.6 | 19.4 | 20.6 | 10.7 | 14.3 | 15.2 |
| 80 - | 0.68 | 0.78 | 0.78 | 0.97 | 0.95 | 31.0 | 36.5 | 37.2 | 46.7 | 47.7 | 24.0 | 30.3 | 31.2 |
| All age groups | 0.20 | 0.23 | 0.24 | 0.30 | 0.29 | 9.0 | 10.3 | 10.5 | 13.5 | 13.6 | 8.0 | 10.3 | 10.4 |

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TABLE 3.1.2. Antibiotics in primary health care, classes of antibiotics and age groups. DDD/1000 inhabitants/day and prescriptions/1000 inhabitants/year. 2004-2008. Users/1000 inhabitants/year. 2006-2008.

| Age group (years) | DDD/1000 inhabitants/day | | | | | Prescriptions/1000 inhabitants/year | | | | | Users/1000 inhabitants/year | | |
|------------------------------------|--------------------------|-------|-------|-------|-------|-------------------------------------|-------|-------|-------|-------|-----------------------------|-------|-------|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2004 | 2005 | 2006 | 2007 | 2008 | 2006 | 2007 | 2008 |
| All agents (J01 excl. methenamine) | | | | | | | | | | | | | |
| 0-6 | 7.23 | 7.49 | 7.98 | 8.62 | 8.34 | 605.9 | 608.8 | 634.7 | 666.8 | 630.8 | 335.6 | 348.5 | 330.3 |
| 7-19 | 8.13 | 8.76 | 9.79 | 10.18 | 10.02 | 274.1 | 283.4 | 311.1 | 319.8 | 301.4 | 204.5 | 208.1 | 195.8 |
| 20-59 | 12.09 | 12.37 | 12.63 | 13.04 | 12.82 | 344.2 | 350.9 | 357.6 | 366.1 | 348.0 | 223.9 | 228.7 | 217.8 |
| 60-79 | 17.66 | 18.02 | 18.34 | 18.58 | 18.46 | 541.0 | 550.0 | 554.5 | 553.7 | 531.0 | 288.8 | 289.6 | 279.0 |
| 80- | 23.01 | 23.20 | 22.74 | 22.33 | 22.37 | 856.3 | 854.2 | 833.3 | 807.9 | 765.1 | 379.4 | 372.5 | 356.2 |
| All age groups | 12.77 | 13.13 | 13.51 | 13.87 | 13.70 | 418.2 | 425.6 | 436.1 | 443.8 | 423.1 | 249.8 | 254.1 | 242.5 |

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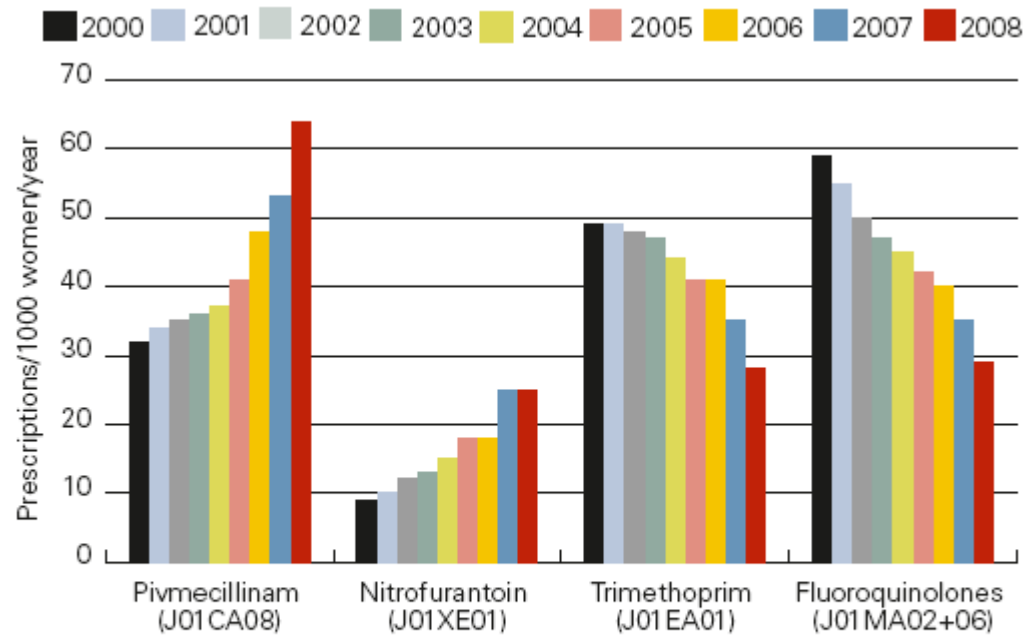


FIGURE 3.1.3. Antibiotics commonly used to treat lower urinary tract infections in women, 2000–2008, prescriptions/1000 women/year.

Users / 1000 inhabitants

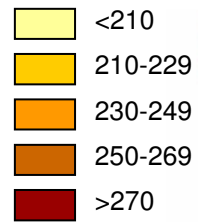
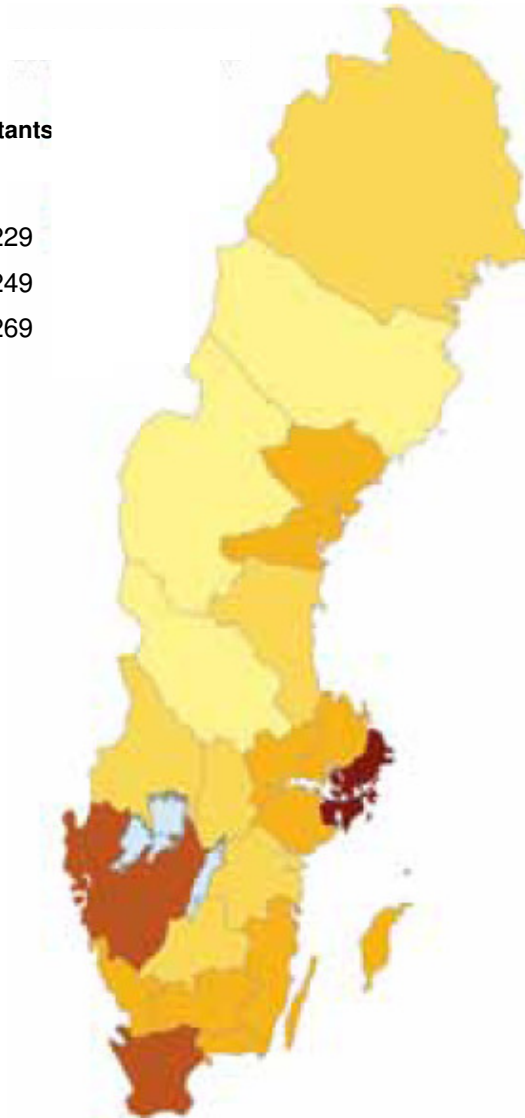


FIGURE 3.1.4. Fraction of people treated with at least one course of antibiotics (J01 excl. methenamine) in 2008, users/1000 inhabitants. Age and gender standardized data.



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Users/1000 inhabitants

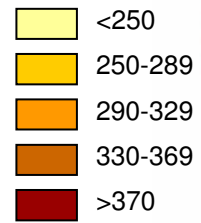


FIGURE 3.1.5. Fraction of children aged 0 to 6 years treated with at least one course of antibiotics (J01 excl. methenamine) in 2008, users /1000 children.

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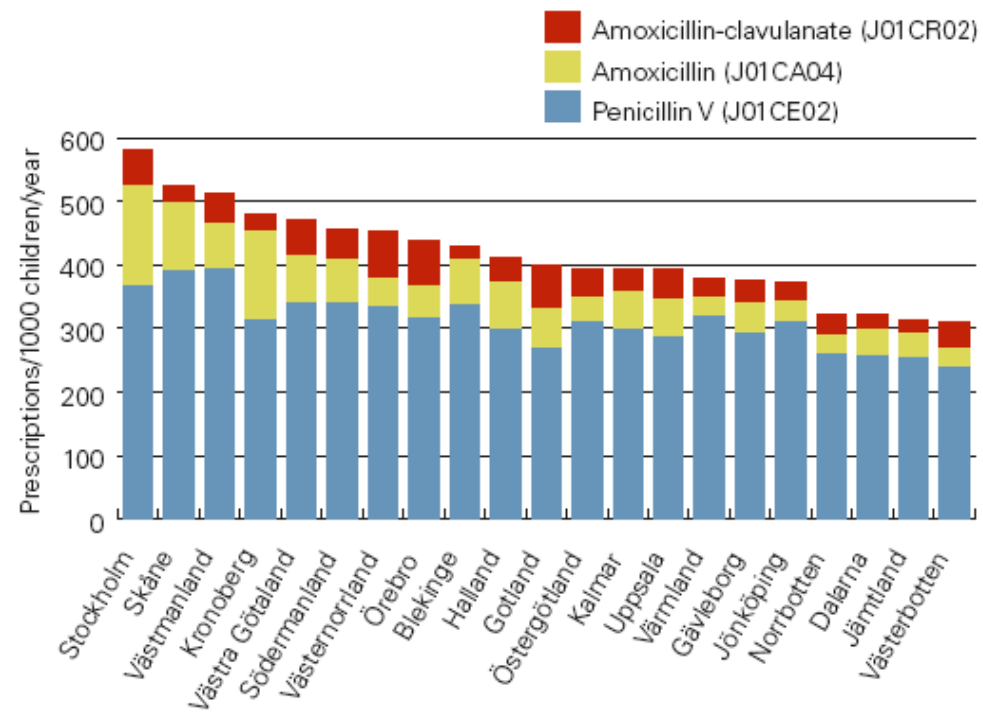


FIGURE 3.1.6. Penicillins to children aged 0–6 years, per county. Prescriptions/1000 children/year.

TABLE 3.1.3. Antibiotic use in hospital care 2000-2008, DDD/1000 inhabitants/day.

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|----------------------|------|------|------|------|------|------|------|------|------|
| J01 excl methenamine | 1.26 | 1.26 | 1.27 | 1.33 | 1.37 | 1.43 | 1.50 | 1.55 | 1.52 |
| Methenamine | 0.03 | 0.03 | 0.03 | 0.05 | 0.07 | 0.07 | 0.07 | 0.07 | 0.05 |
| Total J01 | 1.30 | 1.29 | 1.30 | 1.38 | 1.44 | 1.50 | 1.57 | 1.62 | 1.57 |

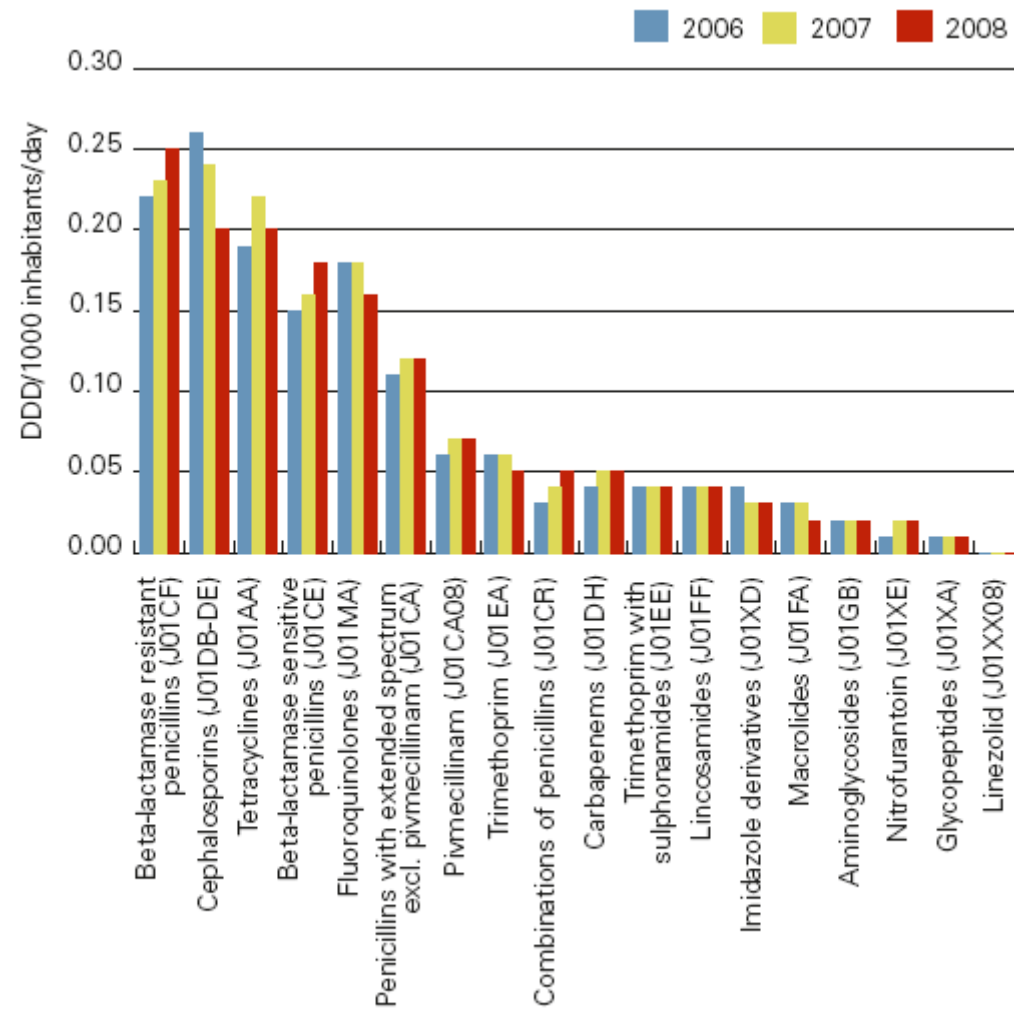


FIGURE 3.1.7. Antibiotics in hospital care 2006–2008, DDD/1000/day.

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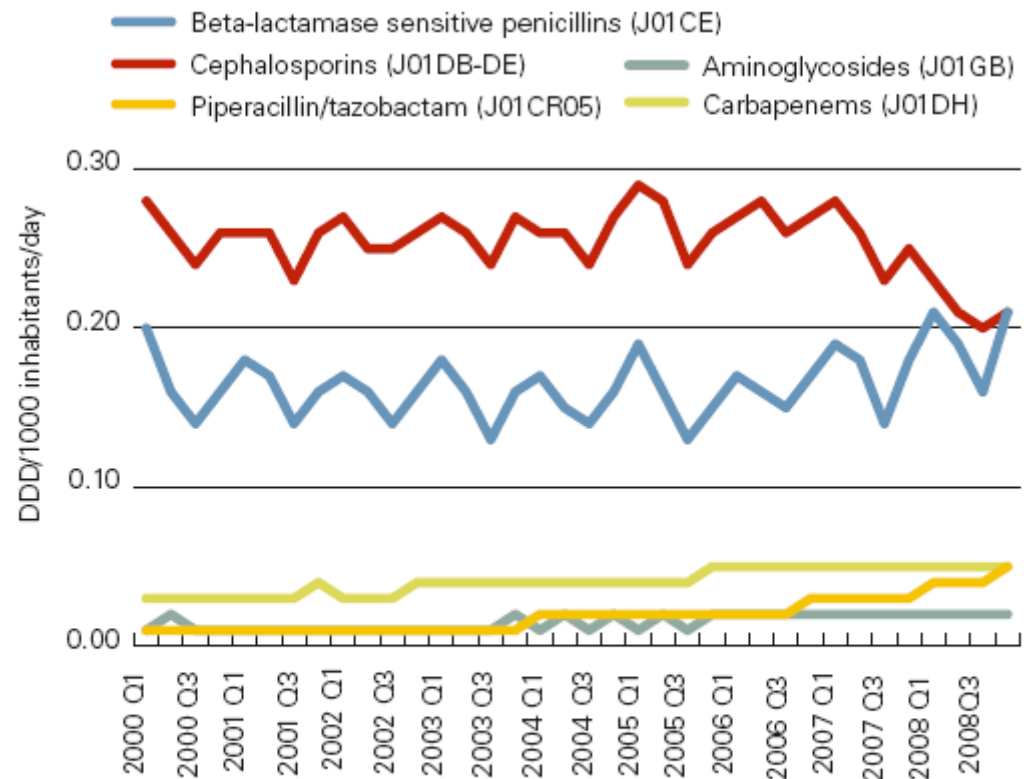


FIGURE 3.1.8. The use of some antibiotic groups within hospital care, per quarter 2000–2008, DDD/1000/day.

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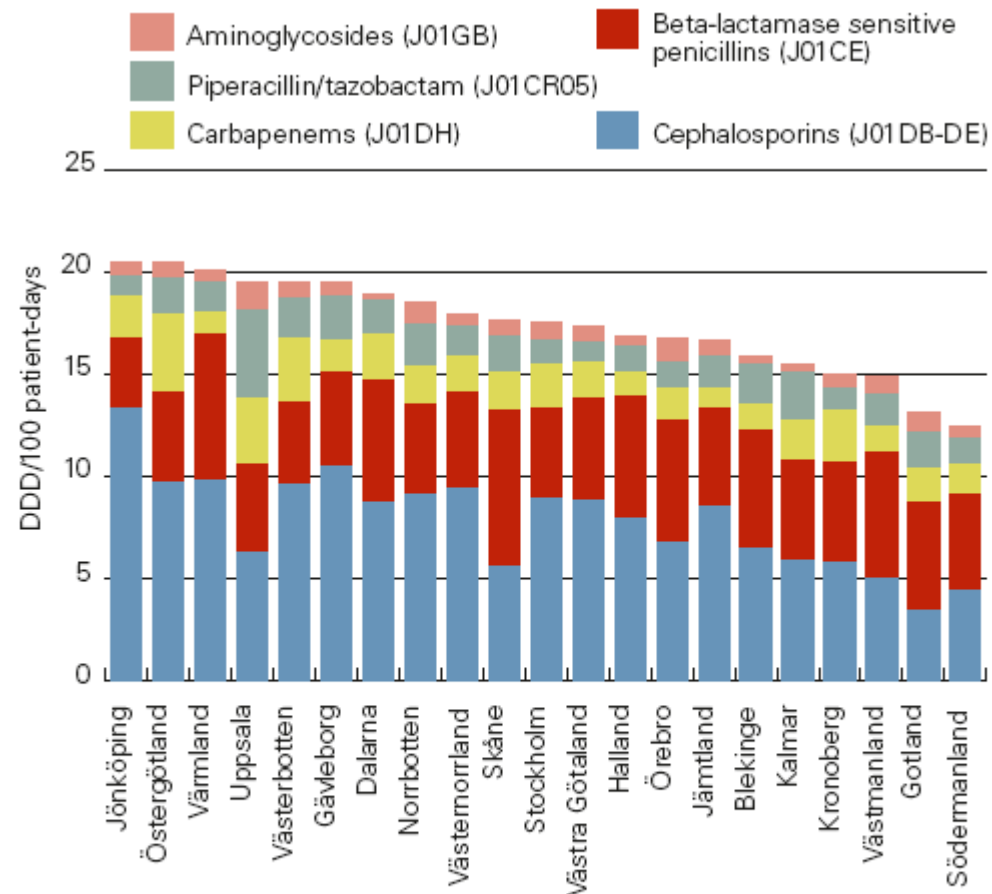


FIGURE 3.1.9. The use of some antibiotic groups within Swedish hospitals, all counties 2008 (denominator data from 2007), DDD/100-patient days.

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TABLE 3.1.4. Antibiotics in Swedish hospitals 2006-2008, DDD/100 admissions within somatic care.

| | 2006 | 2007 | 2008* |
|---|-------|-------|-------|
| Tetracyclines (J01AA) | 28.8 | 29.9 | 26.5 |
| Penicillins with extended spectrum (J01CA) | 26.2 | 27.1 | 28.3 |
| Betalactamase-sensitive penicillins (J01CE) | 24.2 | 25.2 | 30.1 |
| Betalactamase-resistant penicillins (J01CF) | 40.3 | 41.8 | 46.5 |
| Combinations of penicillins (J01CR) | 6.7 | 8.2 | 11.0 |
| Cephalosporins (J01DB-DE) | 57.2 | 53.9 | 45.9 |
| Carbapenems (J01DH) | 10.6 | 10.8 | 11.3 |
| Trimethoprim (J01EA) | 6.7 | 6.3 | 5.8 |
| Trimethoprim with sulphonamides (J01EE) | 7.7 | 8.3 | 9.1 |
| Macrolides (J01FA) | 5.4 | 5.3 | 4.7 |
| Lincosamides (J01FF) | 7.8 | 8.0 | 8.2 |
| Aminoglycosides (J01GB) | 3.8 | 3.8 | 4.3 |
| Fluoroquinolones (J01MA) | 33.9 | 32.5 | 29.5 |
| Glycopeptides (J01XA) | 3.4 | 3.4 | 3.4 |
| Imidazole derivatives (J01XD) | 8.4 | 7.9 | 7.5 |
| Methenamine (J01XX05) | 4.7 | 4.5 | 3.8 |
| Linezolid (J01XX08) | 0.3 | 0.3 | 0.3 |
| All agents (J01) | 278.4 | 279.8 | 278.9 |

*Denominator data from 2007.

Swedres 2008

TABLE 3.1.5. Antibiotics in Swedish hospitals 2006-2008, DDD/100 patient-days within somatic care.

| | 2006 | 2007 | 2008* |
|---|------|------|-------|
| Tetracyclines (J01AA) | 5.5 | 5.7 | 5.1 |
| Penicillins with extended spectrum (J01CA) | 5.0 | 5.2 | 5.4 |
| Betalactamase-sensitive penicillins (J01CE) | 4.6 | 4.8 | 5.8 |
| Betalactamase-resistant penicillins (J01CF) | 7.7 | 8.0 | 8.9 |
| Combinations of penicillins (J01CR) | 1.3 | 1.6 | 2.1 |
| Cephalosporins (J01DB-DE) | 10.9 | 10.4 | 8.8 |
| Carbapenems (J01DH) | 2.0 | 2.1 | 2.2 |
| Trimethoprim (J01EA) | 1.3 | 1.2 | 1.1 |
| Trimethoprim with sulphonamides (J01EE) | 1.5 | 1.6 | 1.8 |
| Macrolides (J01FA) | 1.0 | 1.0 | 0.9 |
| Lincosamides (J01FF) | 1.5 | 1.5 | 1.6 |
| Aminoglycosides (J01GB) | 0.7 | 0.7 | 0.8 |
| Fluoroquinolones (J01MA) | 6.5 | 6.3 | 5.7 |
| Glycopeptides (J01XA) | 0.6 | 0.6 | 0.7 |
| Imidazole derivatives (J01XD) | 1.6 | 1.5 | 1.4 |
| Methenamine (J01XX05) | 0.9 | 0.9 | 0.7 |
| Linezolid (J01XX08) | 0.1 | 0.1 | 0.1 |
| All agents (J01) | 53.2 | 53.8 | 53.6 |

*Denominator data from 2007.

Swedres 2008

TABLE 3.1.6. Most reported antibiotic agents to the Swedish Medical Products Agency 2004–2008

| Antibiotic | Total number of ADR reports 2004 to 2008 | Number of 'serious' reports | Number of fatal cases (causal relationship possible) |
|---------------------------------|---|------------------------------------|---|
| Ciprofloxacin | 210 | 111 | 3 |
| Flucloxacillin | 114 | 76 | 3 |
| Nitrofurantoin | 105 | 53 | 1 |
| Clindamycin | 86 | 36 | 1 |
| Fenoxymethylpenicillin | 82 | 37 | 0 |
| Trimethoprim | 81 | 35 | 0 |
| Doxycylin | 71 | 26 | 3 |
| Sulphamethoxazol + trimethoprim | 66 | 41 | 2 |
| Cefuroxime | 55 | 30 | 1 |
| Norfloxacin | 45 | 20 | 2 |

Swedres 2008

TABLE 3.1.7. Number of most frequently spontaneously reported adverse events for fluoroquinolones and nitrofurantoin, during the period 2004–2008

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2004–2008 |
|-------------------------------|------|------|------|------|------|-----------|
| Fluoroquinolones | | | | | | |
| Total no of reports | 69 | 56 | 45 | 55 | 35 | 260 |
| Number of reactions | | | | | | |
| Musculoskeletal | 34 | 24 | 19 | 22 | 9 | 108 |
| tendinitis | 15 | 13 | 11 | 10 | 2 | 51 |
| tendon rupture | 12 | 5 | 3 | 6 | 5 | 31 |
| Skin- and subcutaneous tissue | 7 | 11 | 6 | 17 | 4 | 45 |
| Psychiatric disorders | 4 | 10 | 8 | 4 | 2 | 28 |
| Nitrofurantoin | | | | | | |
| Total no of reports | 24 | 15 | 20 | 22 | 24 | 105 |
| Number of reactions | | | | | | |
| Respiratory system | 10 | 8 | 12 | 3 | 7 | 40 |
| dyspnoea | 3 | 2 | 4 | 0 | 1 | 10 |
| interstitial pneumonia | 2 | 2 | 2 | 2 | 2 | 10 |
| pulmonary fibrosis | 1 | 0 | 2 | 0 | 0 | 3 |
| Skin- and subcutaneous tissue | 7 | 1 | 7 | 8 | 7 | 30 |
| General disorders | 11 | 7 | 8 | 7 | 6 | 39 |
| fever | 6 | 6 | 4 | 3 | 4 | 23 |

Swedres 2008

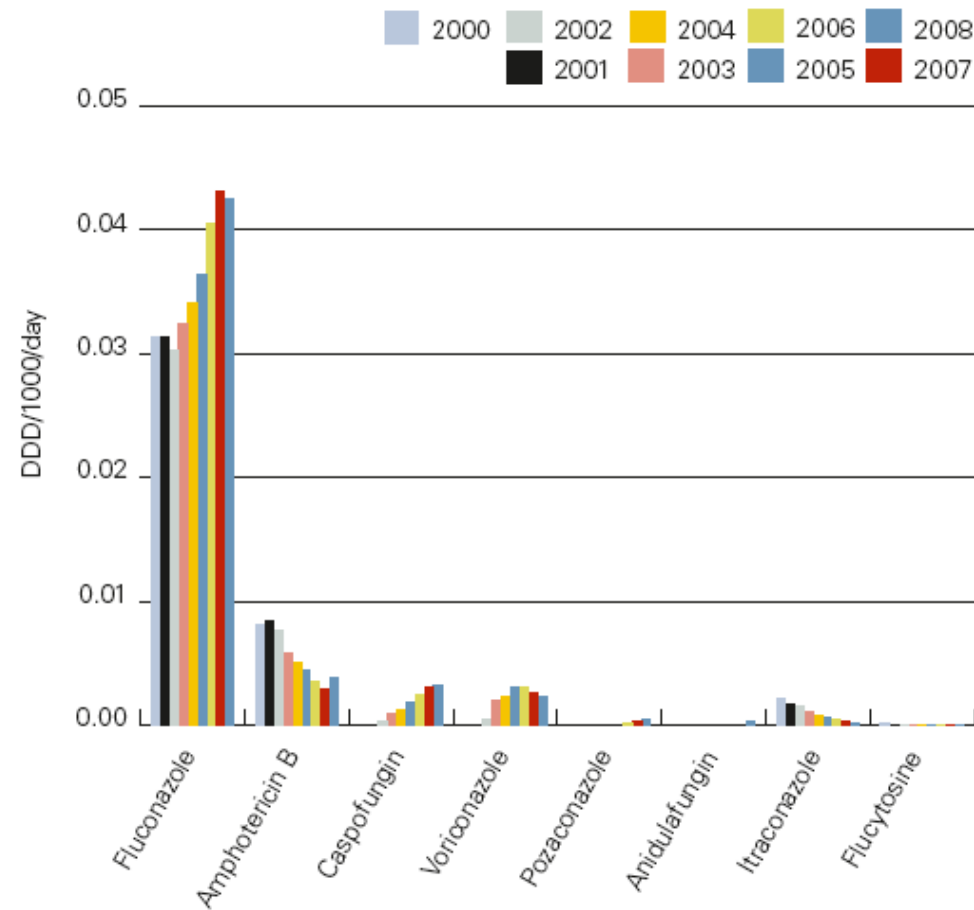


FIGURE 3.2.1. Use of antifungals in hospital care, 2000–2008.

Swedres 2008

Antimicrobial resistance

Swedres 2008

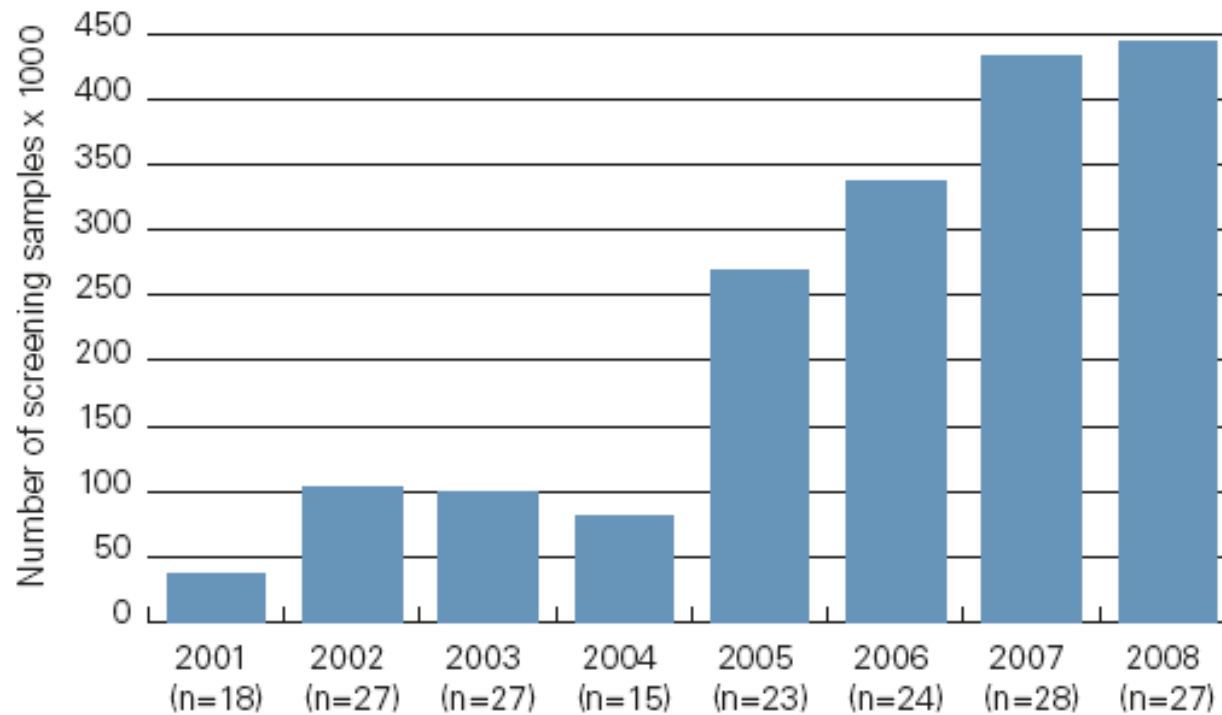


FIGURE 4.1. Annual number of recorded screening samples for multiresistant bacteria, 2001–2008. n refers to the number of participating laboratories

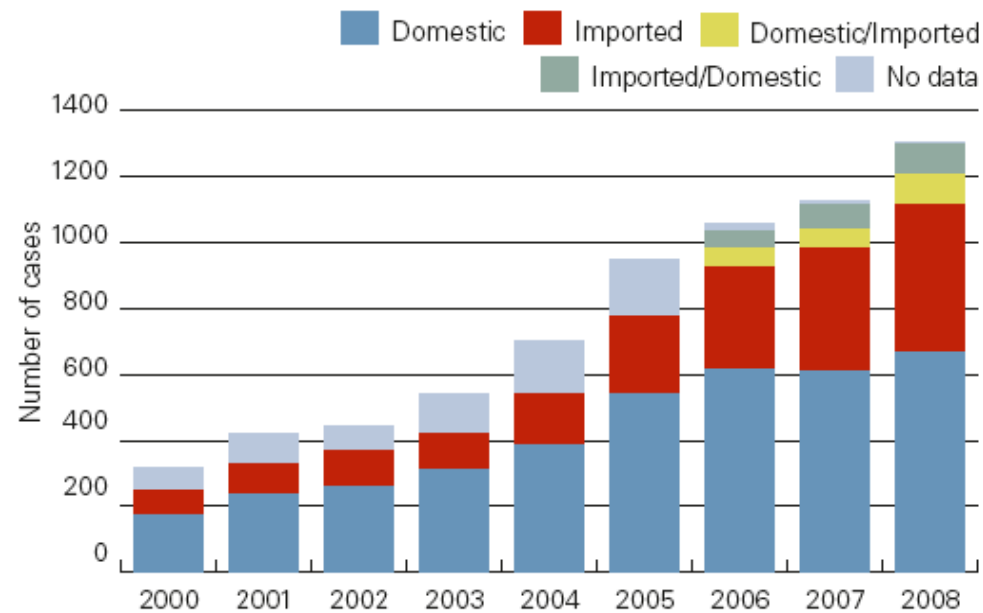


FIGURE 4.2. Number of MRSA notified annually by country of infection, Sweden 2000–2008. “Domestic/Imported” and “Imported/Domestic” indicate several mentioned countries of infection with the most likely mentioned first.

Swedres 2008

TABLE 4.1. MRSA notified in 2000-2008 by county according to the Communicable Disease Act

| County | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | 2005 | | 2006 | | 2007 | | 2008 | |
|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | No | Inc* | No | Inc* | No | Inc* | No | Inc* | No | Inc* | No | Inc* | No | Inc* | No | Inc* | No | Inc* |
| Stockholm | 97 | 5.3 | 166 | 9.0 | 205 | 11.1 | 228 | 12.3 | 277 | 14.8 | 315 | 17.1 | 356 | 18.9 | 351 | 18.0 | 342 | 17.3 |
| Uppsala | 19 | 6.5 | 17 | 5.7 | 10 | 3.3 | 12 | 4.0 | 26 | 8.6 | 28 | 9.2 | 24 | 7.9 | 33 | 10.2 | 40 | 12.2 |
| Södermanland | 2 | 0.8 | 1 | 0.4 | 4 | 1.5 | 2 | 0.8 | 8 | 3.1 | 11 | 3.8 | 9 | 3.4 | 26 | 9.8 | 20 | 7.5 |
| Östergötland | 2 | 0.5 | 7 | 1.7 | 7 | 1.7 | 14 | 3.4 | 14 | 3.4 | 101 | 24.3 | 48 | 11.5 | 49 | 11.6 | 43 | 10.2 |
| Jönköping | 7 | 2.1 | 6 | 1.5 | 5 | 1.5 | 24 | 7.3 | 14 | 4.3 | 40 | 12.1 | 44 | 13.0 | 17 | 5.1 | 20 | 6.0 |
| Kronoberg | 1 | 0.6 | 0 | 0.0 | 4 | 2.3 | 5 | 2.8 | 17 | 9.5 | 11 | 6.1 | 14 | 7.8 | 13 | 7.2 | 19 | 10.4 |
| Kalmar | 3 | 1.3 | 5 | 0.9 | 5 | 2.1 | 6 | 2.6 | 16 | 6.8 | 23 | 9.7 | 26 | 11.1 | 36 | 15.4 | 29 | 12.4 |
| Gotland | 1 | 1.8 | 10 | 17.5 | 3 | 5.3 | 2 | 3.5 | 1 | 1.7 | 10 | 17.3 | 4 | 6.9 | 8 | 14.0 | 6 | 10.5 |
| Blekinge | 7 | 4.7 | 1 | 0.7 | 3 | 2.0 | 2 | 1.3 | 3 | 2.0 | 9 | 5.9 | 4 | 2.7 | 16 | 10.5 | 10 | 6.6 |
| Skåne | 22 | 1.9 | 76 | 6.7 | 68 | 5.9 | 104 | 9.1 | 128 | 11.3 | 162 | 13.9 | 179 | 15.5 | 166 | 13.8 | 273 | 22.5 |
| Halland | 10 | 3.6 | 26 | 9.4 | 13 | 4.7 | 13 | 4.6 | 9 | 3.2 | 21 | 7.4 | 23 | 8.1 | 18 | 6.2 | 16 | 5.5 |
| Västra Götaland | 114 | 7.6 | 56 | 3.7 | 48 | 3.2 | 63 | 4.2 | 118 | 7.8 | 125 | 8.1 | 177 | 11.6 | 178 | 11.5 | 245 | 15.7 |
| Värmland | 9 | 3.3 | 7 | 2.6 | 6 | 2.2 | 11 | 4.0 | 18 | 6.6 | 9 | 3.2 | 13 | 4.8 | 32 | 11.7 | 22 | 8.0 |
| Örebro | 8 | 2.9 | 7 | 2.6 | 16 | 5.9 | 8 | 2.9 | 11 | 4.0 | 16 | 5.8 | 35 | 12.8 | 25 | 9.1 | 46 | 16.6 |
| Västmanland | 3 | 1.2 | 8 | 3.1 | 6 | 2.3 | 11 | 4.2 | 12 | 4.6 | 35 | 13.4 | 48 | 18.4 | 54 | 21.7 | 23 | 9.2 |
| Dalarna | 0 | 0.0 | 5 | 1.8 | 1 | 0.4 | 2 | 0.7 | 3 | 1.1 | 6 | 2.1 | 11 | 4.0 | 15 | 5.4 | 23 | 8.3 |
| Gävleborg | 2 | 0.7 | 1 | 0.4 | 12 | 4.3 | 5 | 1.8 | 5 | 1.8 | 24 | 8.6 | 17 | 6.1 | 12 | 4.4 | 26 | 9.4 |
| Västernorrland | 14 | 5.7 | 12 | 4.9 | 7 | 2.9 | 10 | 4.1 | 5 | 2.0 | 4 | 1.6 | 9 | 3.7 | 22 | 9.0 | 35 | 14.4 |
| Jämtland | 0 | 0.0 | 0 | 0.0 | 2 | 1.6 | 5 | 3.9 | 1 | 0.8 | 8 | 6.2 | 4 | 3.1 | 24 | 18.9 | 31 | 24.4 |
| Västerbotten | 3 | 1.2 | 17 | 6.7 | 10 | 3.9 | 13 | 5.1 | 16 | 6.2 | 10 | 3.8 | 7 | 2.7 | 23 | 8.9 | 22 | 8.5 |
| Norrbottn | 3 | 1.2 | 5 | 2.0 | 7 | 2.8 | 9 | 3.6 | 7 | 2.8 | 8 | 3.1 | 5 | 2.0 | 10 | 4.4 | 16 | 6.4 |
| Total | 327 | 3.7 | 429 | 4.8 | 442 | 4.9 | 549 | 6.1 | 709 | 7.8 | 975 | 10.8 | 1057 | 11.7 | 1128 | 12.3 | 1307 | 14.1 |

* = Incidence (cases/100 000 inhabitants)

Swedres 2008

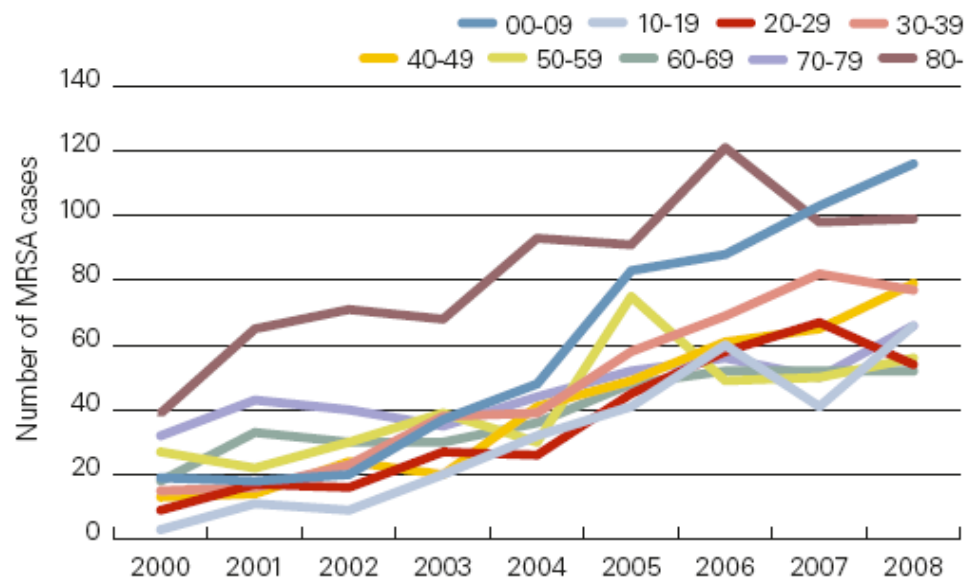


FIGURE 4.3. Age distribution of notified domestic cases of MRSA, Sweden 2000–2008.

Swedres 2008

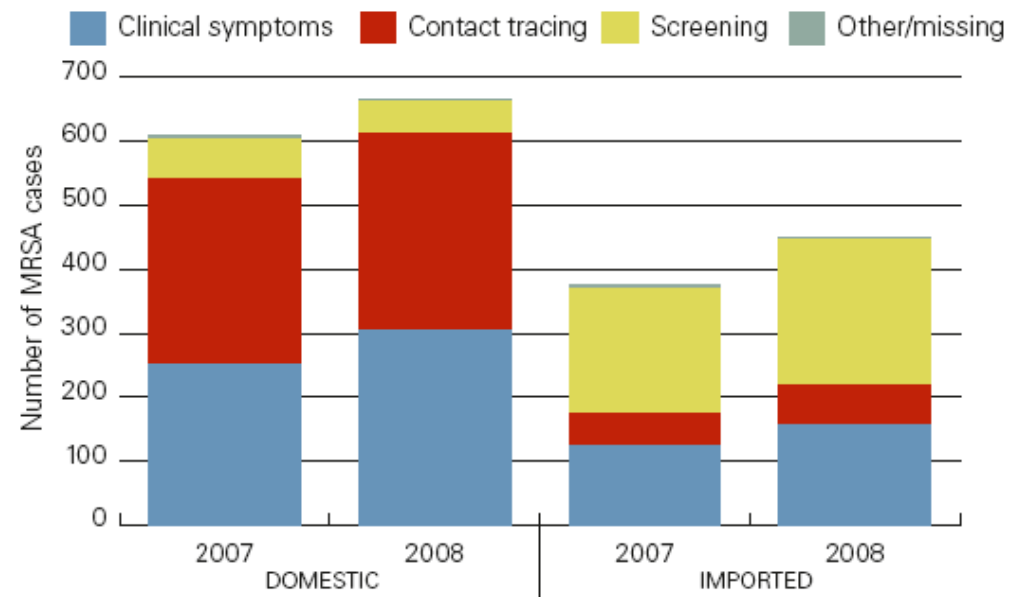


FIGURE 4.4. The reason for detection of domestic and imported MRSA cases in Sweden 2007–2008.

Swedres 2008

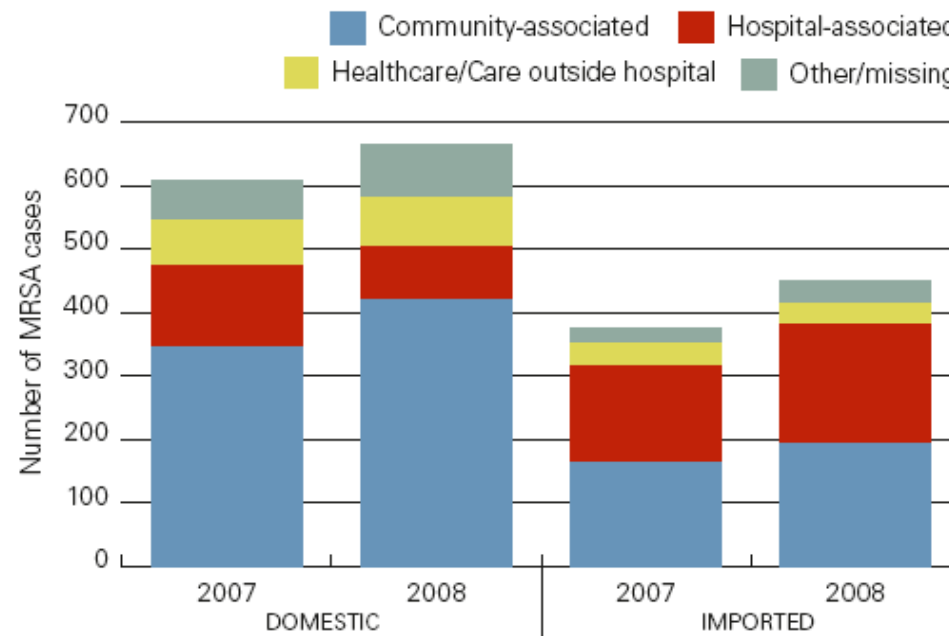


FIGURE 4.5. Epidemiological classification of the acquisition of domestic and imported MRSA, Sweden 2007–2008

Swedres 2008

TABLE 4.2. Numbers and rates of resistance to indicated antibiotics among MRSA isolates 2000-2008

| Year/Antibiotic | Erythromycin | Clindamycin | Ciprofloxacin | Fusidic acid | Gentamicin | Mupirocin | Rifampicin |
|------------------------|---------------------|--------------------|----------------------|---------------------|-------------------|------------------|-------------------|
| 2000 | 179 (55.9) | nt | 187 (58.4) | 74 (23.1) | 76 (23.8) | 8 (2.5) | 42 (13.1) |
| 2001 | 208 (50.5) | nt | 252 (61.2) | 89 (21.6) | 87 (21.1) | 30 (7.3) | 44 (10.7) |
| 2002 | 220 (50.3) | nt | 280 (64.1) | 128 (29.3) | 80 (18.3) | 48 (11) | 27 (6.2) |
| 2003 | 220 (40.4) | nt | 278 (51.1) | 156 (28.7) | 91 (16.7) | 47 (8.6) | 25 (4.6) |
| 2004 | 229 (33.3) | nt | 270 (39.3) | 135 (19.7) | 97 (14.1) | 24 (3.5) | 24 (3.5) |
| 2005 | 374 (39.2) | 326 (34.1) | 318 (33.3) | 155 (16.2) | 183 (19.2) | 21 (2.2) | 34 (3.6) |
| 2006 | 371 (37.1) | 308 (30.8) | 322 (32.2) | 162 (16.2) | 140 (14.0) | 20 (2.0) | 40 (4.0) |
| 2007 | 433 (39.6) | 343 (31.4) | 401 (36.7) | 159 (14.6) | 207 (19.0) | 20 (1.8) | 47 (4.3) |
| 2008 | 425 (33.7) | 317 (25.2) | 338 (26.8) | 155 (12.3) | 152 (12.1) | 18 (1.4) | 20 (1.6) |

Swedres 2008

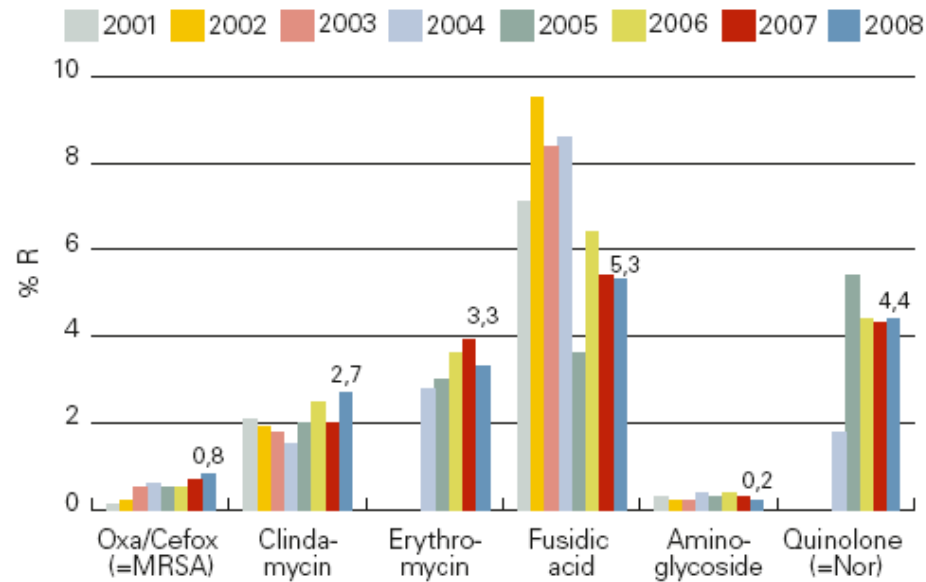


FIGURE 4.6. Resistance rates for *Staphylococcus aureus* 2001–2008 (data from the annual RSQC programme, approximately 3000 isolates per year). In 2005 resistance rates were recorded in *S.aureus* isolated from wounds and secretions from elderly (> 65 years) people only,

TABLE 4.3. *Staphylococcus aureus* susceptibility results (number of strains and percentage) in blood isolates by the disk diffusion method and by confirmation of the *mecA* gene. Data reported from SMI to EARSS.

| Year | S | I | R |
|-------------|--------------|----------|-----------|
| 2001 | 1618 (99.1%) | 0 | 14 (0.9%) |
| 2002 | 1830 (99.4%) | 0 | 12 (0.6%) |
| 2003 | 1839 (99.1%) | 0 | 16 (0.9%) |
| 2004 | 1891 (99.3%) | 0 | 14 (0.7%) |
| 2005 | 1756 (99%) | 0 | 18 (1.0%) |
| 2006 | 1849 (99.1%) | 0 | 16 (0.9%) |
| 2007 | 2162 (99.5%) | 0 | 11 (0.5%) |
| 2008 | 2408 (99.3%) | 0 | 16 (0.7%) |

Swedres 2008

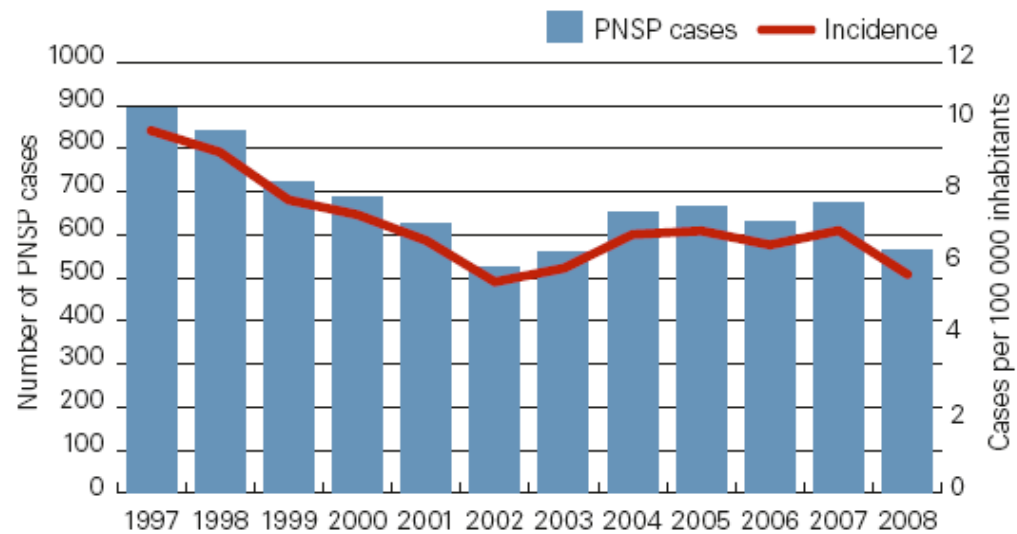


FIGURE 4.7. Number of cases of *S. pneumoniae* with reduced susceptibility to penicillin, MIC \geq 0.5 mg/L (PNSP in Sweden 1997–2008).

Swedres 2008

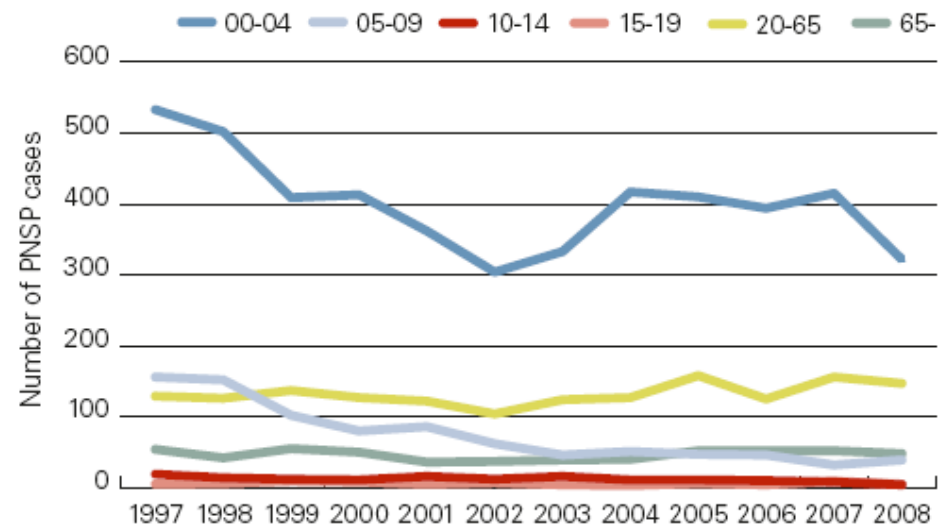


FIGURE 4.8. Age-group distribution among all cases reported with PNSP in Sweden 1997–2008.

Swedres 2008

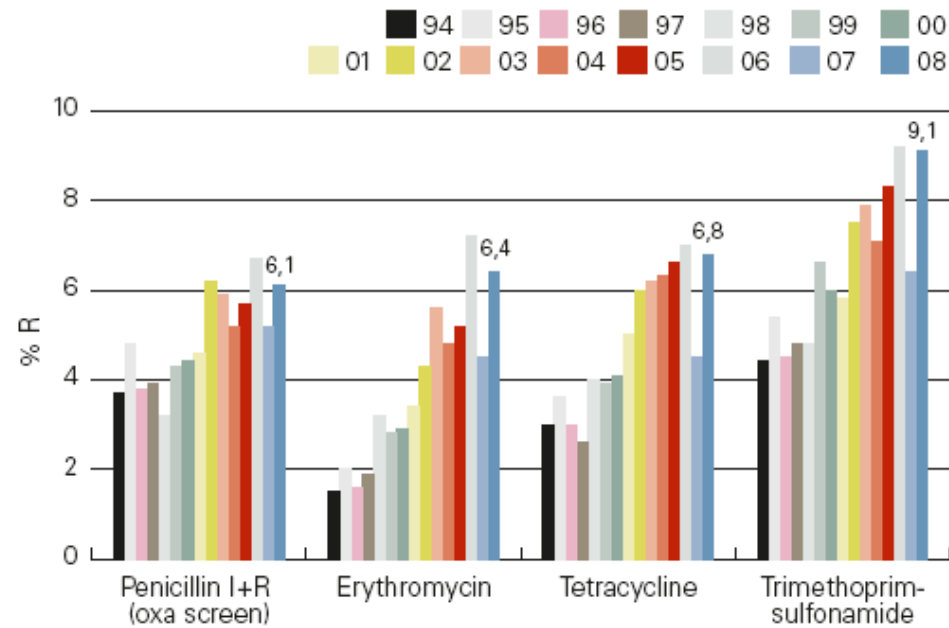


FIGURE 4.9. Resistance rates for *Streptococcus pneumoniae* 1994–2008 (data from the annual RSQC programme, approximately 3000 isolates per year).

Swedres 2008

TABLE 4.4. Invasive isolates of *Streptococcus pneumoniae* reported to EARSS.

| Penicillin * (I+R = PNSP) | | | | |
|----------------------------------|-------------|------------|------------|--------------|
| Year | S% | I% | R% | Total |
| 2001 | 97.2 | 2.3 | 0.5 | 788 |
| 2002 | 97.5 | 2.4 | 0.1 | 783 |
| 2003 | 95.0 | 5.0 | 0 | 920 |
| 2004 | 96.8 | 2.8 | 0.4 | 955 |
| 2005 | 96.4 | 3.1 | 0.5 | 1017 |
| 2006 | 97.9 | 2.1 | 0 | 936 |
| 2007 | 97.1 | 2.9 | 0.1 | 1029 |
| 2008 | 98.0 | 1.6 | 0.4 | 1213 |
| Erythromycin | | | | |
| Year | S% | I% | R% | Total |
| 2001 | 95.4 | 0.2 | 4.4 | 653 |
| 2002 | 94.7 | 0.1 | 5.2 | 700 |
| 2003 | 94.9 | 0.1 | 5.0 | 736 |
| 2004 | 94.7 | 0.1 | 5.2 | 869 |
| 2005 | 94.3 | 0.3 | 5.4 | 924 |
| 2006 | 94.8 | 0.4 | 4.8 | 813 |
| 2007 | 94.9 | 0.1 | 5.2 | 926 |
| 2008 | 94.4 | 0.4 | 5.2 | 1123 |

* S <0.12 mg/L; I 0.12-1.0 mg/L; R > 1.0 mg/L

Swedres 2008

TABLE 4.5. Resistance among invasive isolates of *Enterococcus faecalis* reported to EARSS 2001-2008

| Year | Vancomycin-R (%) | HLAGR (%) | Total number (number tested for HLAGR by GEN) |
|-------------|-------------------------|------------------|--|
| 2001 | 0 | 12.7 | 395 (212) |
| 2002 | 0 | 17 | 430 (235) |
| 2003 | 0 | 17.5 | 593 (440) |
| 2004 | 0 | 15.4 | 592 (533) |
| 2005 | 0 | 18.7 | 567 (492) |
| 2006 | 0.4 | 19.9 | 579 (563) |
| 2007 | 0 | 16.1 | 651 (632) |
| 2008 | 0 | 20.1 | 720 (703) |

Swedres 2008

TABLE 4.6. Resistance among invasive isolates of *Enterococcus faecium* reported to EARSS 2001-2008

| Year | Vanco- mycin-R (%) | HLAGR (%) | Total number (number test- ed for HLAGR by GEN) |
|-------------|-------------------------------|------------------|--|
| 2001 | 0 | 9.1 | 169 (99) |
| 2002 | 0 | 6.3 | 181 (96) |
| 2003 | 2.2 | 11.2 | 231 (170) |
| 2004 | 1.2 | 7 | 260 (227) |
| 2005 | 0 | 4.3 | 253 (211) |
| 2006 | 0.3 | 14 | 286 (286) |
| 2007 | 1.1 | 14.4 | 279 (263) |
| 2008 | 1.5 | 24.8 | 333 (331) |

Swedres 2008

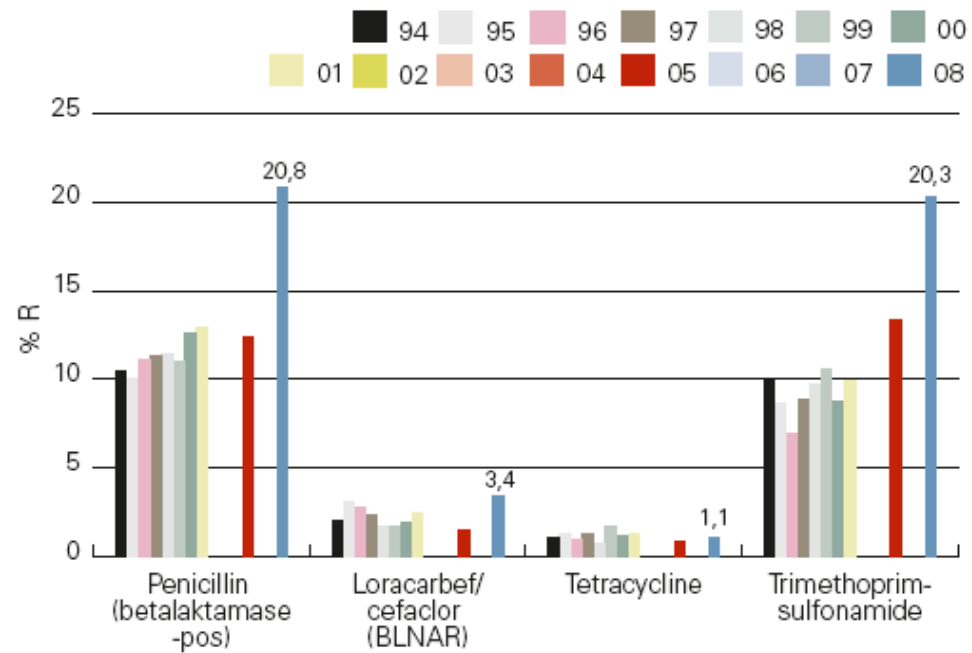


FIGURE 4.10. Resistance rates (resistant isolates in percent of all *Haemophilus influenzae* isolates) for four groups of antibiotics 1994–2008. No data available for 2002–2004 and 2006–2007.

Swedres 2008

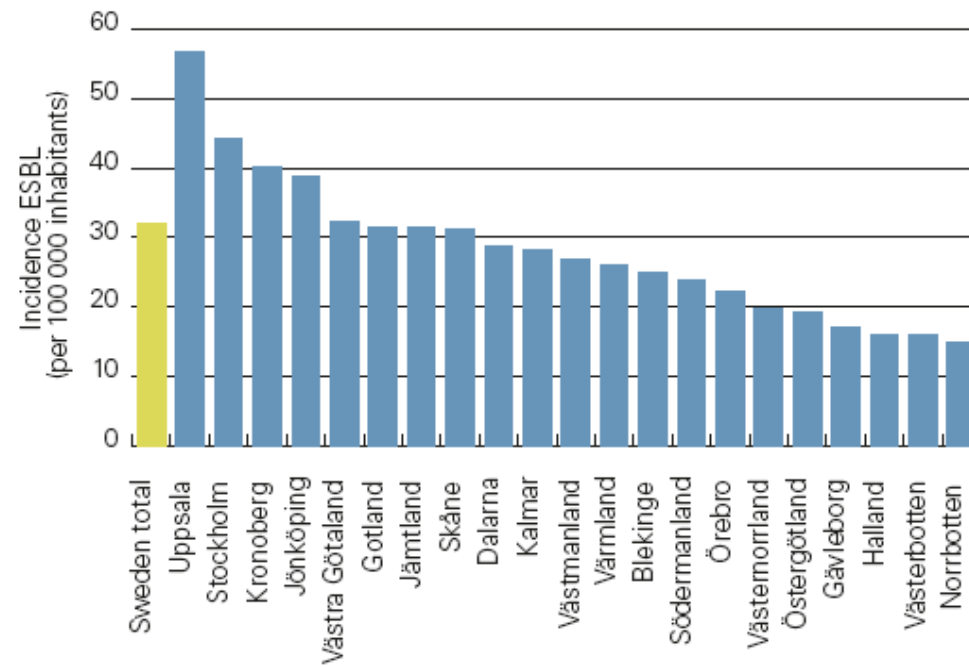


FIGURE 4.11. The incidence of ESBL in Swedish counties 2008.

Swedres 2008

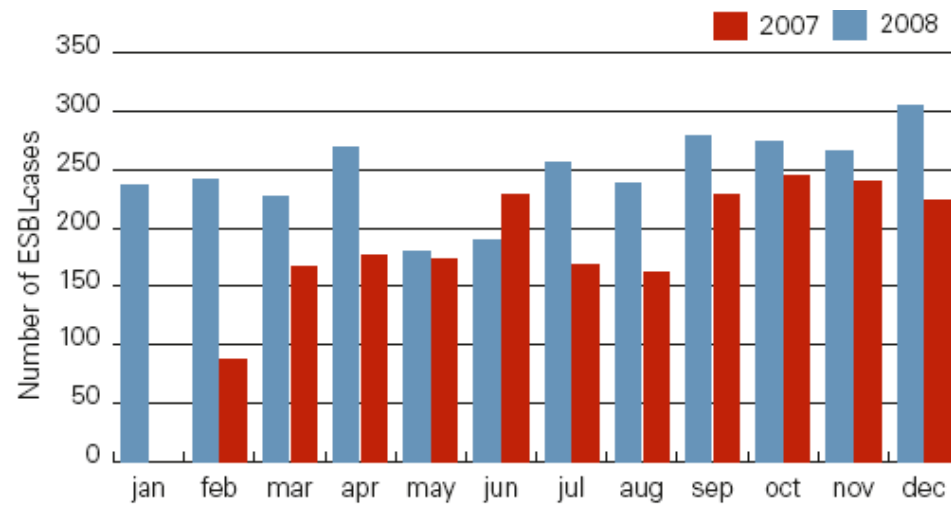


FIGURE 4.12. The number of reported ESBL cases per month, for 2007 and 2008.

Swedres 2008

TABLE 4.7. Distribution of species among cases with ESBL-producing bacteria 2008.

| | |
|---|---------------|
| <i>Escherichia coli</i> | 2 512 |
| <i>Klebsiella pneumoniae</i> | 269 |
| <i>Proteus mirabilis</i> | 16 |
| <i>Citrobacter</i> species | 16 |
| <i>Salmonella</i> species | 5 |
| Other <i>Enterobacteriaceae</i> | 57 |
| Species not reported | 161 |
| Total number of reported species | 3 036* |

* In 65 cases two different ESBL-producing species were reported and 7 cases had notifications with three different species resulting in a higher number of isolates than number of cases reported.

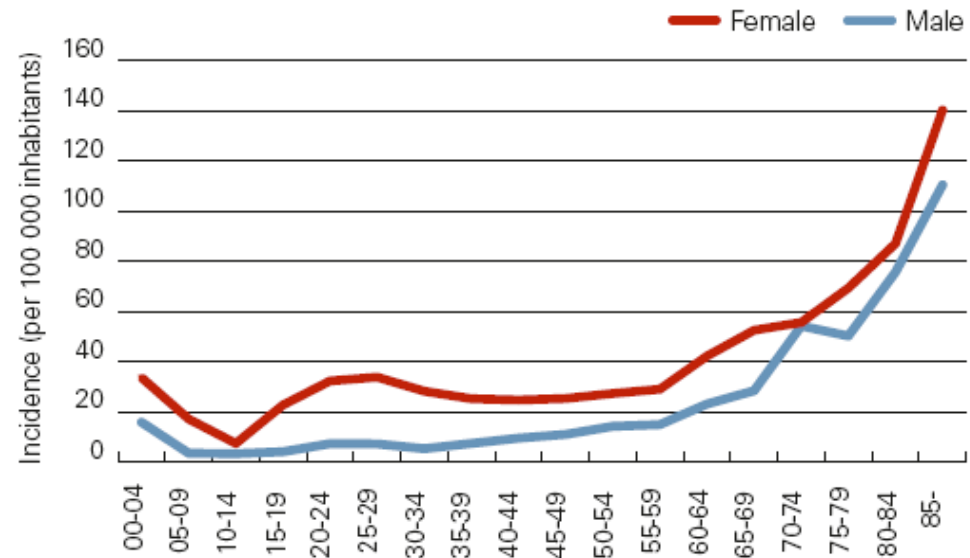


FIGURE 4.13. Age and gender distribution of *E. coli* ESBL cases 2008.

Swedres 2008

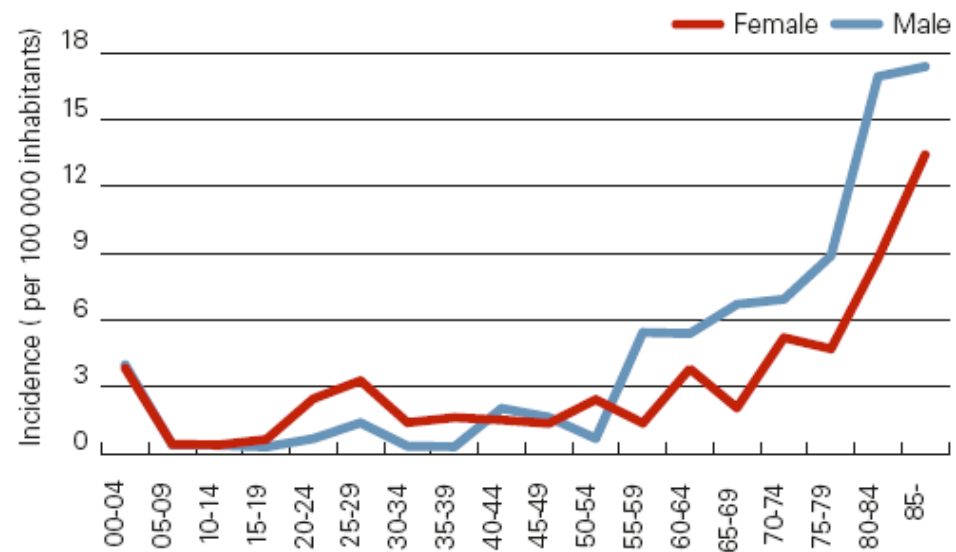


FIGURE 4.14. Age- and gender distribution of *K. pneumoniae* ESBL cases 2008.

Swedres 2008

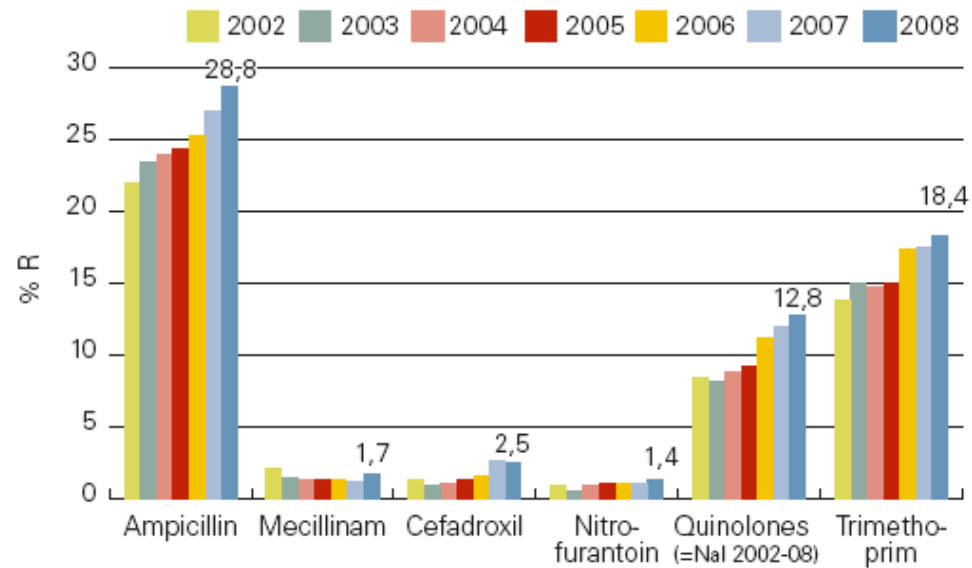


FIGURE 4.15. Resistance rates (resistant isolates in percent of all *Escherichia coli* isolates) for six antibiotics 2002–2008. Fluoroquinolone resistance was detected with nalidixic acid.

TABLE 4.8. *Escherichia coli* from blood cultures in Sweden 2001-2008, reported to EARSS.

| Year | Ampicillin-R (%) * | Cefotaxime-R (%; ESBL / other mechanism) | Aminoglycoside-R (%) ** | Fluoroquinolone-I/R (%) *** | Total number of isolates |
|------|--------------------|--|-------------------------|-----------------------------|--------------------------|
| 2001 | 26.5 | 0.5 | 1 | 5.5 | 2 627 |
| 2002 | 24.9 | 0.5 | 0.6 | 7.1 | 3 062 |
| 2003 | 28.5 | 0.4 | 1 | 8.3 | 3 300 |
| 2004 | 23 | 0.5 / 0.6 | 1.5 | 11.1 | 3 336 |
| 2005 | 26 | 0.9 / 0.4 | 1.5 | 8.9 | 3 212 |
| 2006 | 28.1 | 1.3 / 0.1 | 1.7 | 8.7 | 3 514 |
| 2007 | 32.9 | 1.6 / 0.6 | 2.3 | 13.3 | 3 745 |
| 2008 | 31.9 | 1.9 / 0.4 | 2.2 | 14.3 | 4 028 |

* Only 55–60% of isolates were tested against ampicillin; ** gentamicin or tobramycin, *** ciprofloxacin

Swedres 2008

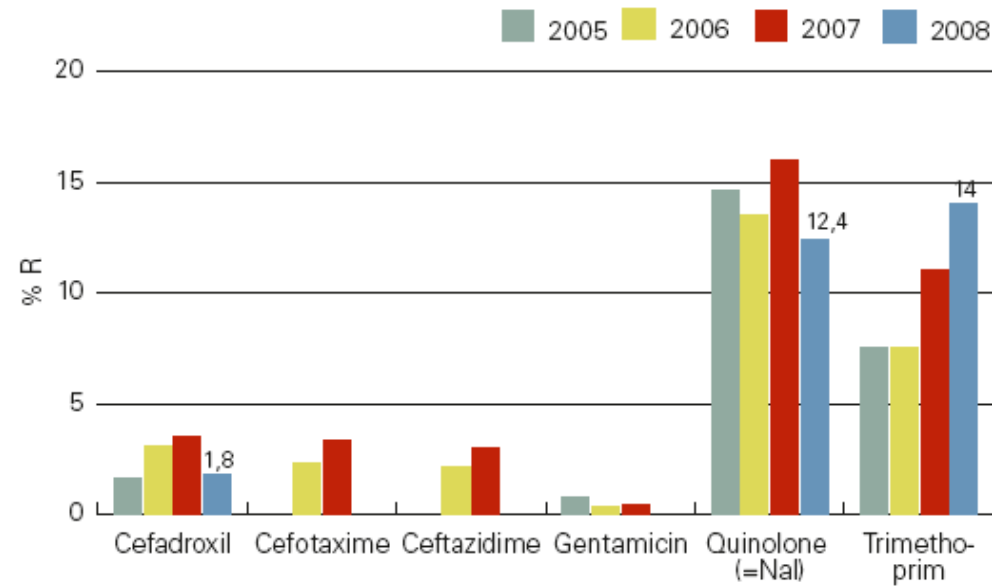


FIGURE 4.16. Resistance rates (resistant isolates in percent of all *Klebsiella pneumoniae* Isolates) for four groups of antibiotics 2005–2008.

Swedres 2008

TABLE 4.9. *Klebsiella pneumoniae* from blood cultures in Sweden 2005-2008, reported to EARSS.

| Year | Cefotaxime-R (%; ESBL/other mechanism) | Aminogly- coside-R (%) * | Fluoro-qui- nolone-I/R (%) ** | Total number of isolates |
|-------------|---|---|--|---|
| 2005 | 0.7 / 0.7 | 1.4 | 9.8 | 281 |
| 2006 | 1.0 / 0.5 | 0.3 | 8.5 | 610 |
| 2007 | 1.1 / 0.3 | 1.1 | 10.8 | 649 |
| 2008 | 2.3 / 0 | 1.1 | 12.9 | 826 |

*gentamicin or tobramycin, ** ciprofloxacin

The data for 2005 represent six months from 20 laboratories. From 2006 and onwards the data represent the whole years from 20 laboratories.

Swedres 2008

TABLE 4.10. *Pseudomonas aeruginosa* from blood cultures in Sweden 2005–2008, reported to EARSS.

| Year | Ceftazidime-R (%) | Carbapenem-R (%) * | Aminoglycoside-R (%) ** | Fluoroquinolone-I/R (%) *** | Total number of isolates |
|------------------|-------------------|--------------------|-------------------------|-----------------------------|--------------------------|
| 2005 (half year) | 4.7 | Insufficient data | 0 | 9.0 | 149 |
| 2006 | 2.6 | 4.4 | 0.5 | 10.4 | 296 |
| 2007 | 4.5 | 7.0 | 0 | 10.4 | 342 |
| 2008 | 5.2 | 4.0 | 0.3 | 7.6 | 315 |

* imipenem, meropenem, ** gentamicin, tobramycin, *** ciprofloxacin

Swedres 2008

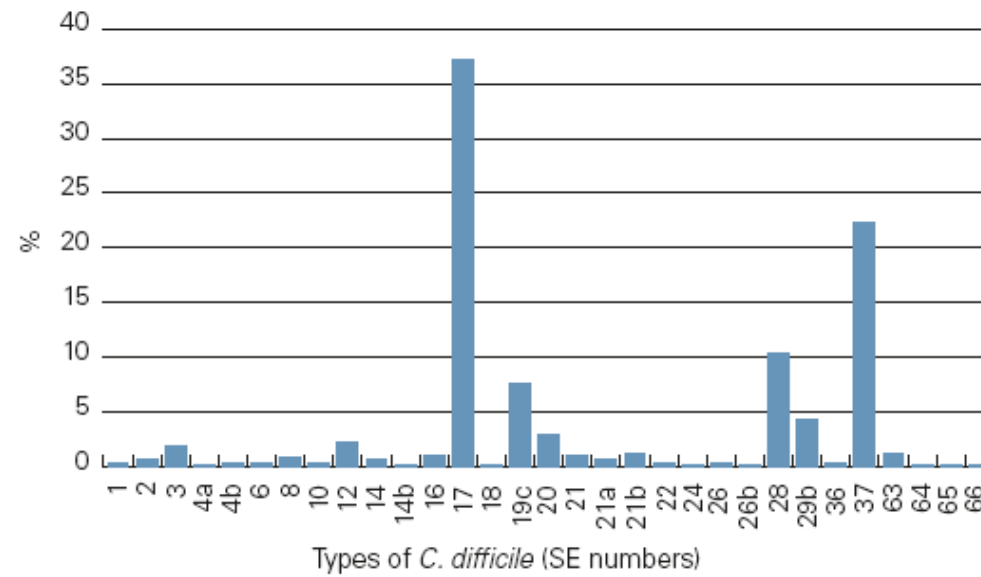


FIGURE 4.17. Moxifloxacin-resistant *C. difficile* according to PCR ribotype.

Swedres 2008

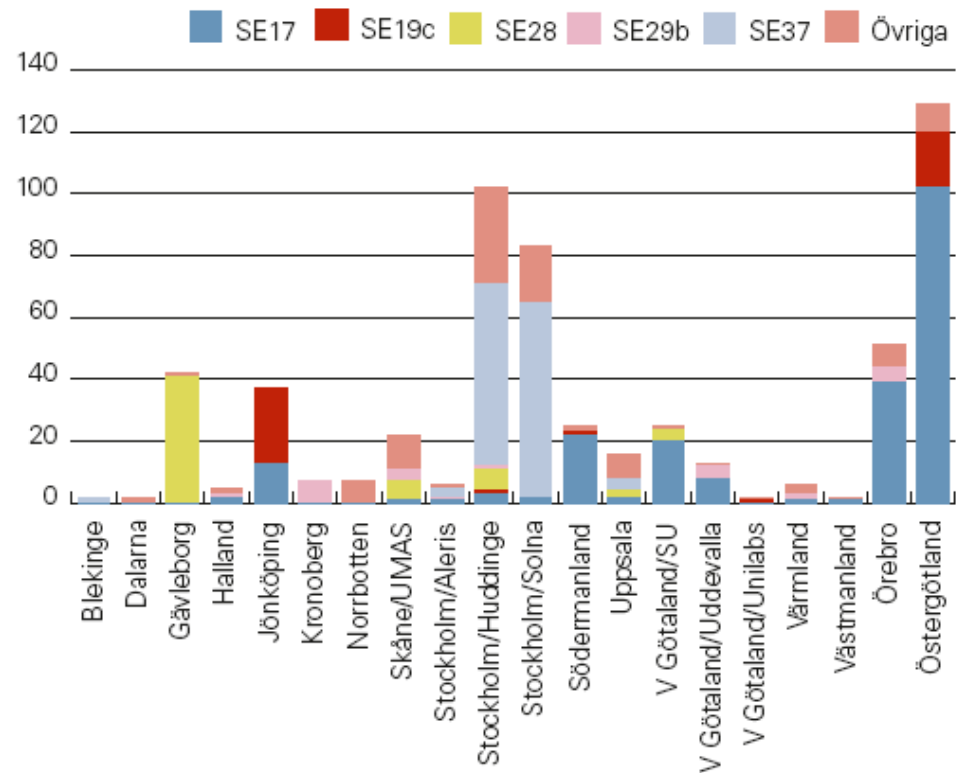


FIGURE 4.18. Distribution per county of the most common PCR ribotypes.

Swedres 2008

TABLE 4.11. *Helicobacter pylori* University Hospital MAS, Malmö, Sweden 1996-2008, %R

| Year | Total number | Clarithromycin %R | Metronidazole %R |
|-------------|---------------------|--------------------------|-------------------------|
| 1994 | 536 | 1.0 | 29.0 |
| 1995 | 588 | 2.9 | 32.1 |
| 1996 | 381 | 3.9 | 35.2 |
| 1997 | 331 | 7.7 | 39.8 |
| 1998 | 116 | 6.7 | 34.3 |
| 1999 | 149 | 6.1 | 33.1 |
| 2000 | 216 | 7.8 | 30.5 |
| 2001 | 188 | 8.8 | 40.2 |
| 2002 | 124 | 9.0 | 44.1 |
| 2003 | 112 | 7.2 | 42.6 |
| 2004 | 151 | 11.6 | 41.0 |
| 2005* | 217 | 11.2 | nt |
| 2006 | 257 | 16.0 | nt |
| 2007 | 375 | 9.8 | nt |
| 2008 | 156 | 5.2 | nt |

* Molecular biology technique from 2005

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TABLE 4.12. *Campylobacter jejuni/coli* University Hospital MAS, Malmö, Sweden 1995-2008

| Year | Nalidixic acid %R | Ciprofloxacin %R | Tetra-cycline %R | Erythro-mycin %R |
|-------------|--------------------------|-------------------------|-------------------------|-------------------------|
| 1995 | | 22 | 27 | 4 |
| 1997 | | 23 | 30 | 3 |
| 1998 | | 34 | 33 | 2 |
| 1999 | | 45 | 35 | 1 |
| 2000 | | 55 | 45 | 1 |
| 2001 | 32 | 30 | 28 | 1 |
| 2002 | 29 | 28 | 30 | 0,5 |
| 2003 | 48 | 46 | 22 | 0 |
| 2004 | 50 | 47 | 29 | 2 |
| 2005 | 57 | 52 | 18 | 1 |
| 2006 | 50 | 44 | 21 | 4 |
| 2007 | 49 | 45 | 31 | 7 |
| 2008 | 65 | 69 | 36 | 7 |

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TABLE 4.13. Antibiotic resistance rates (%) and β -lactamase production of Swedish *Neisseria gonorrhoeae* strains from 2002 to 2008.

| | 2002 (n=120) | 2003 (n=130) | 2004 (n=149) | 2005 (n=497)* | 2006 (n=352)* | 2007 (n=406)* | 2008 (n=447)* |
|-------------------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|
| β -lactamase pos. | 39 | 22 | 26 | 23 | 30 | 30 | 28 |
| Penicillin G | 48 | - | - | - | - | - | - |
| Ampicillin | 39 | 22 | 26 | 23 | 30 | 30 | 28 |
| Cefuroxime | 4 | - | - | - | - | - | - |
| Cefixime | 0 | 0 | 0** | 0 | 0 | 0 | 0 |
| Ceftriaxone | 0 | 0 | 0 | 0 | 0 | 0 | <1 |
| Azithromycin | 0 | <1 | 0** | 0 | 1 | 1 | 3 |
| Tetracycline | 54 | - | - | - | - | - | - |
| Ciprofloxacin | 58 | 56 | 51 | 49 | 61 | 70 | 63 |
| Spectinomycin | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

(- = not analysed)

* Data from the Swedish Reference Laboratory for Pathogenic Neisseria, Department of Laboratory Medicine, Clinical Microbiology, Örebro University Hospital and the Division of Clinical Bacteriology, Department of Laboratory Medicine, Karolinska University Hospital Huddinge. From 2001 to 2004, only data from the Swedish Reference Laboratory were reported.

** *N. gonorrhoeae* strains resistant to azithromycin (n=14) and to cefixime (n=2) were identified in Stockholm, Sweden during 2004 (Personal communication, Bengt Wretling, Karolinska University Hospital Huddinge).

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TABLE 4.14. Drug resistant tuberculosis in Sweden. Resistance among initial isolates of *Mycobacterium tuberculosis* or *africanum* against at least one of the four drugs: isoniazid, rifampicin, ethambutol or pyrazinamid.

| Year of diagnosis | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | 2005 | | 2006 | | 2007 | | 2008 | |
|--|-------------|------|-------------|------|-------------|------|-------------|-----|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|
| Culture confirmed <i>M. tuberculosis</i> or <i>M. africanum</i> (N=) | 366 | | 354 | | 346 | | 345 | | 368 | | 448 | | 395 | | 361 | | 434 | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Any resistance Total (%) | 45 | 12.3 | 38 | 10.7 | 36 | 10.4 | 32 | 9.3 | 43 | 11.7 | 52 | 11.6 | 43 | 10.9 | 49 | 13.6 | 57 | 13.1 |
| Isoniazid | 37 | 10.1 | 31 | 8.8 | 34 | 9.8 | 26 | 7.5 | 35 | 9.5 | 46 | 10.3 | 38 | 9.6 | 46 | 12.7 | 51 | 11.8 |
| Rifampicin | 5 | 1.4 | 6 | 1.7 | 4 | 1.2 | 10 | 2.9 | 6 | 1.6 | 5 | 1.1 | 6 | 1.5 | 15 | 4.2 | 15 | 3.5 |
| Ethambutol | 2 | 0.5 | 3 | 0.8 | 1 | 0.3 | 5 | 1.4 | 3 | 0.8 | 3 | 0.7 | 1 | 0.3 | 7 | 1.9 | 6 | 1.4 |
| Pyrazinamid | 11 | 3.0 | 6 | 1.7 | 4 | 1.2 | 7 | 2.0 | 12 | 3.3 | 6 | 1.3 | 6 | 1.5 | 11 | 3.0 | 18 | 4.1 |
| Isoniazid + rifampicin (MDR) | 5 | 1.4 | 4 | 1.1 | 4 | 1.2 | 8 | 2.3 | 5 | 1.4 | 4 | 0.9 | 3 | 0.8 | 15 | 4.2 | 14 | 3.2 |

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Highlighted areas

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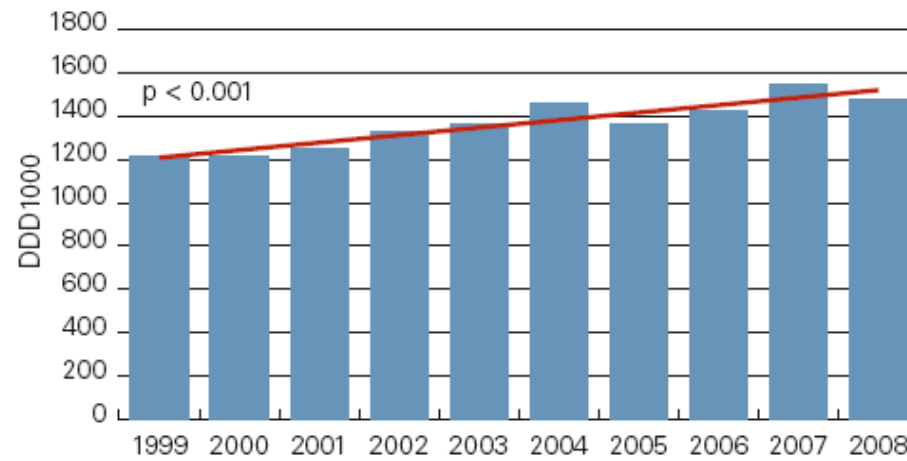


FIGURE 5.1.1. Trends in total antibiotic consumption in Swedish intensive care units, DDD₁₀₀₀. Trend analysis performed by linear regression.

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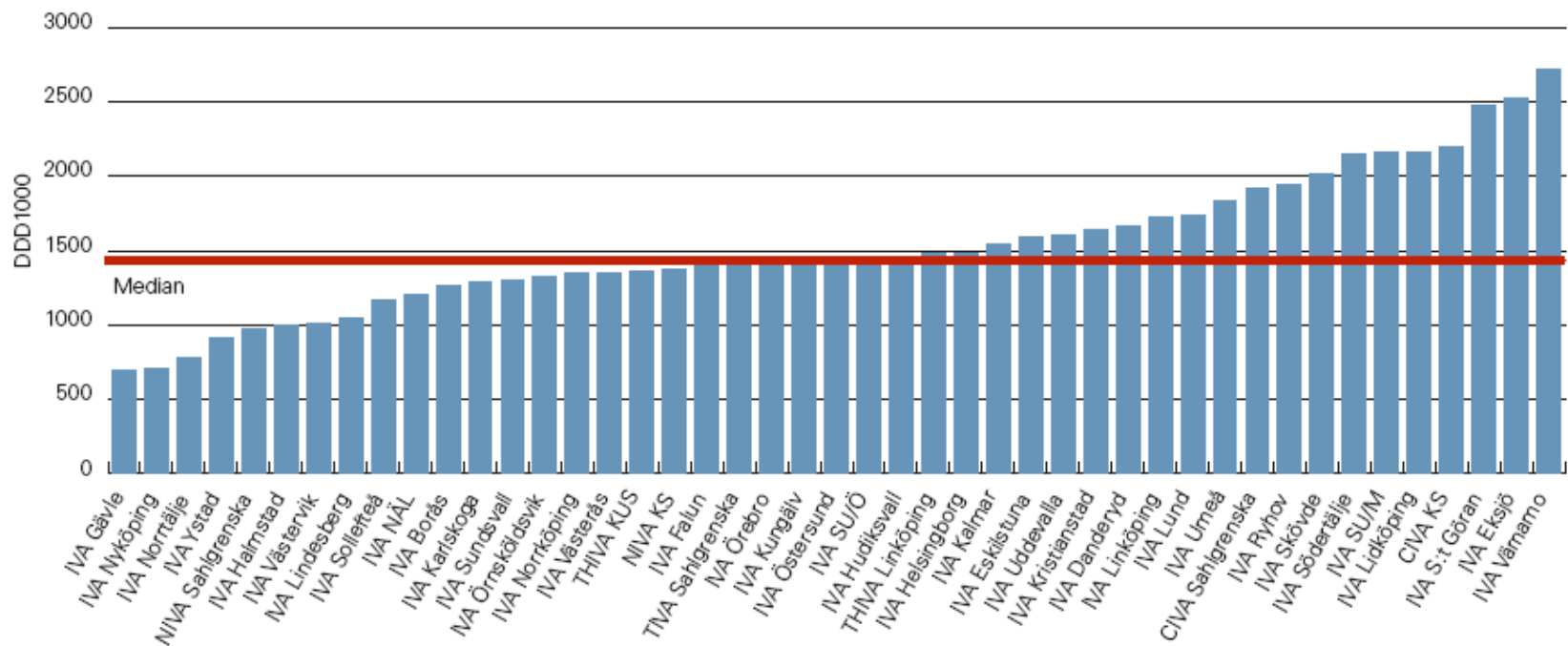


FIGURE 5.1.2. Median antibiotic consumption (DDD₁₀₀₀) for individual ICUs during 2008.

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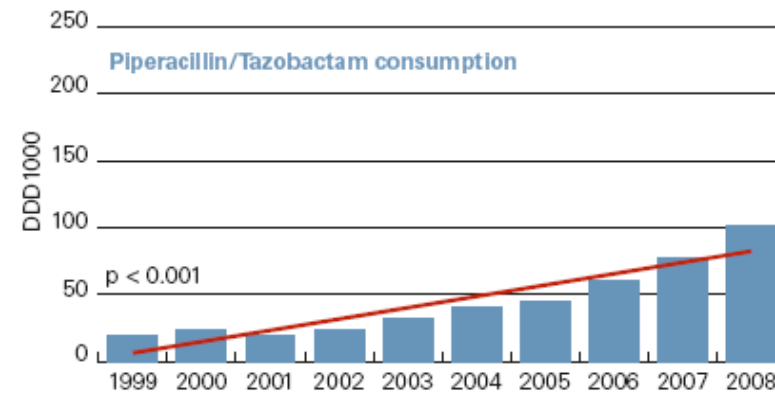
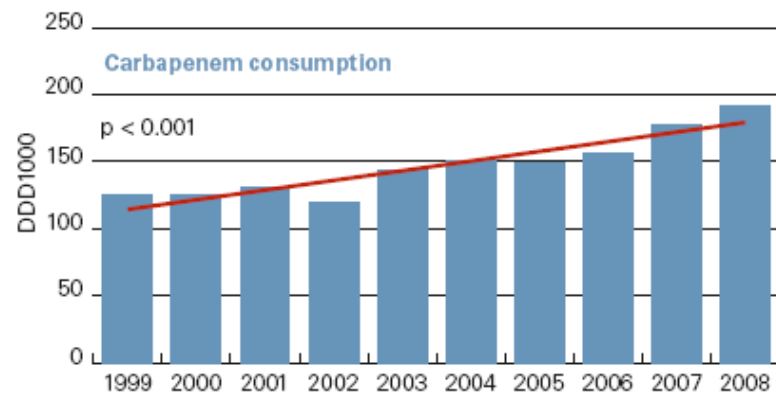
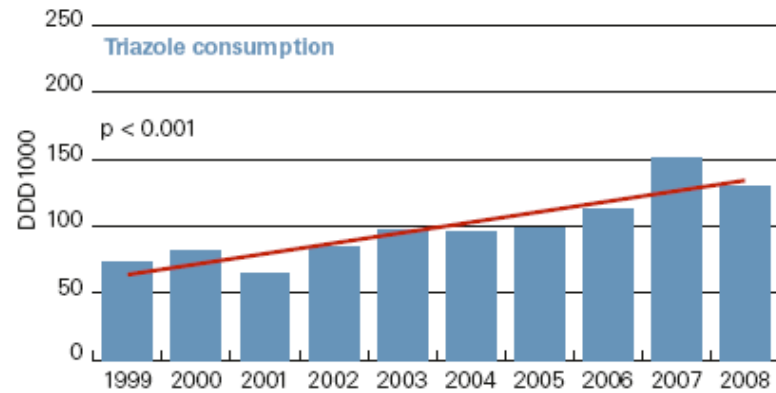


FIGURE 5.1.3. Trends in Triazole (a), Carbapenem (b) and Piperacillin-Tazobactam (c) consumption, DDD₁₀₀₀. Trend analysis performed by linear regression.

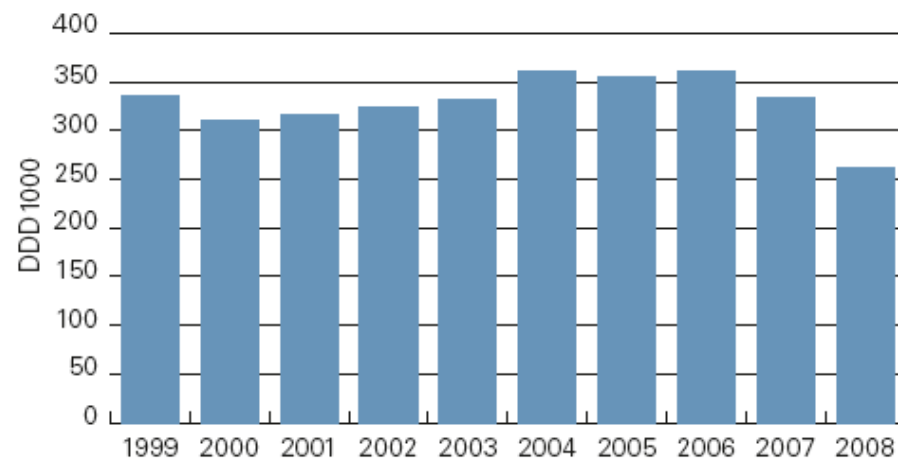


FIGURE 5.1.4. Yearly cephalosporin consumption, DDD₁₀₀₀.

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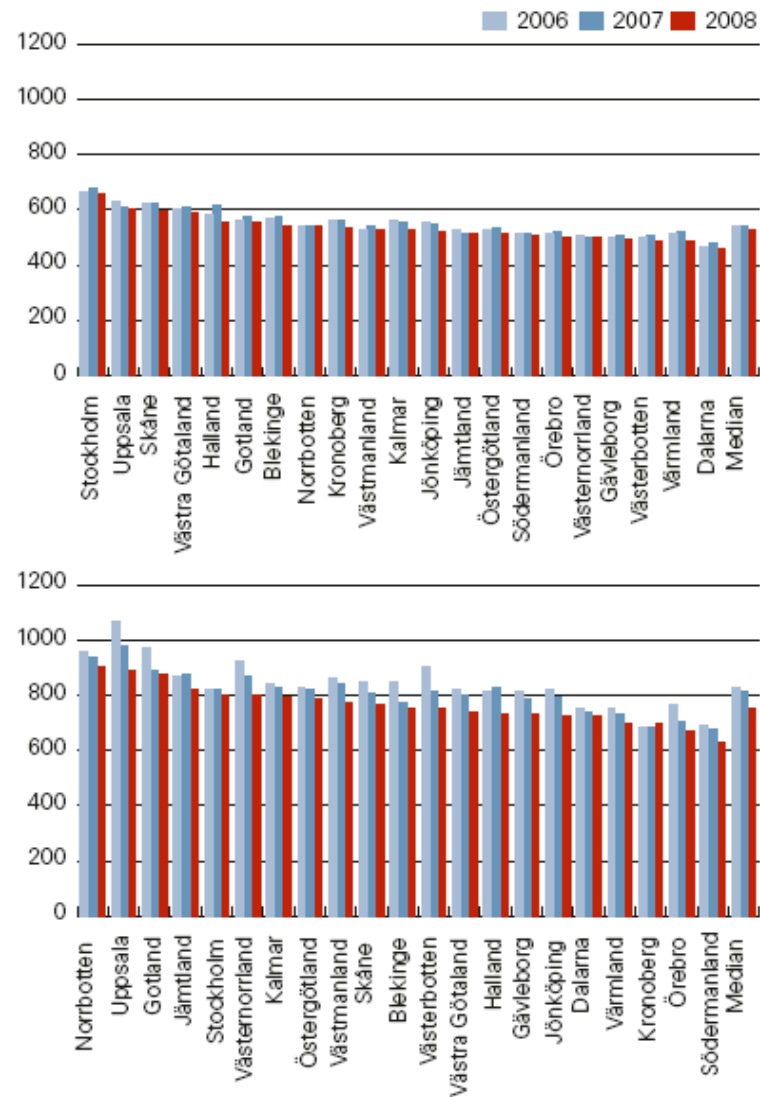


FIGURE 5.2.1. Number of prescriptions per 1000 inhabitants/ year (age adjusted data) is shown for the age groups 65–79 (a, top) and 80+ (b, bottom).

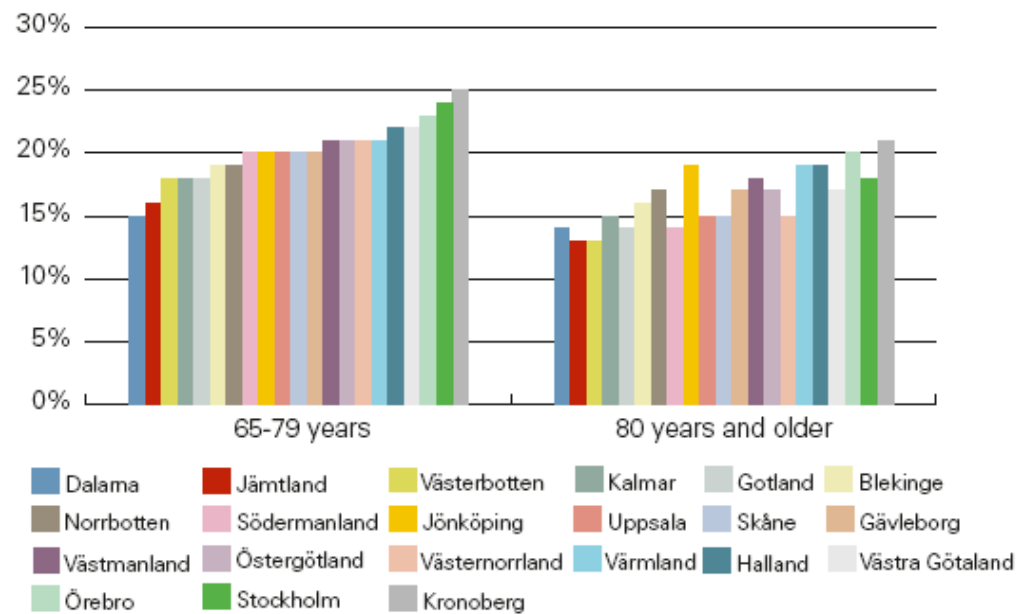


FIGURE 5.2.2. The proportion of fluoroquinolones among antibiotics predominantly used for lower urinary tract infections (UTI) is shown for women in the age groups 65–79 and 80+, respectively. Prescriptions/1000 inhabitants and year, 2008.

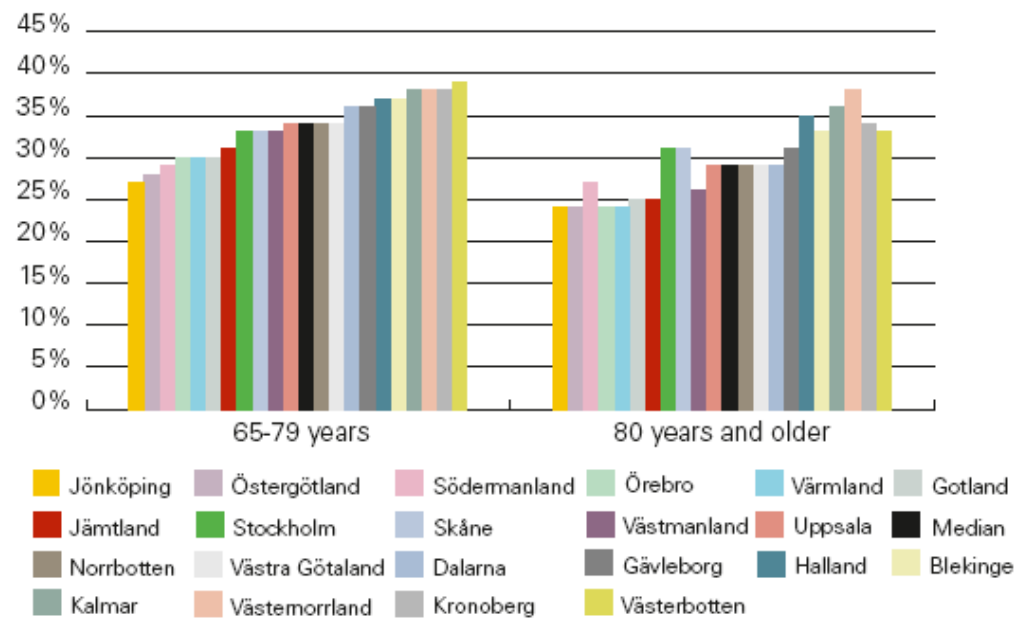


FIGURE 5.2.3. Proportion of tetracyclines among antibiotics most frequently prescribed for respiratory tract infections (penicillin V, amoxicillin and macrolides). Prescriptions/1000 inhabitants and year, 2008.

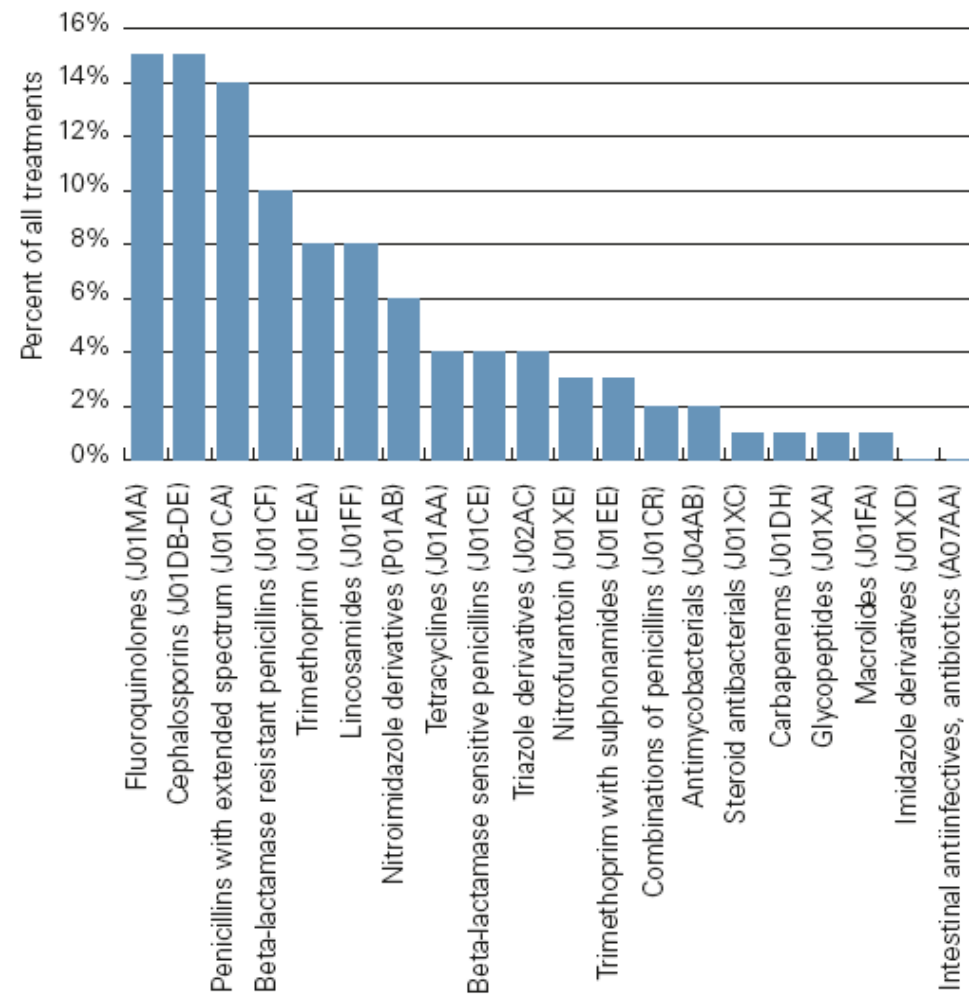


FIGURE 5.2.4. Distribution of antibiotic use in geriatric clinics during Stramas four Point Prevalence studies 2003–2008.

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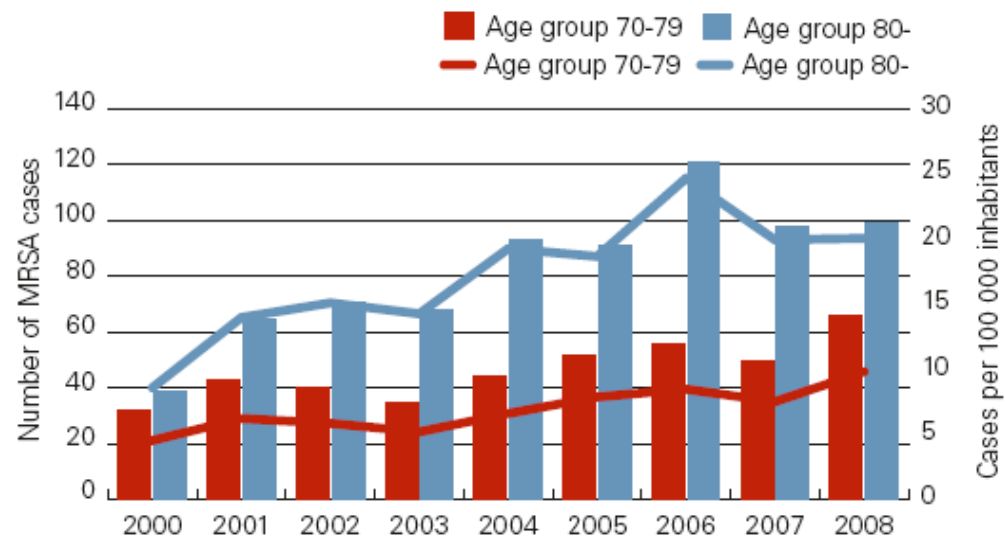


FIGURE 5.2.5. Number of reported domestic MRSA cases and incidence in age groups 70–79 and 80+.

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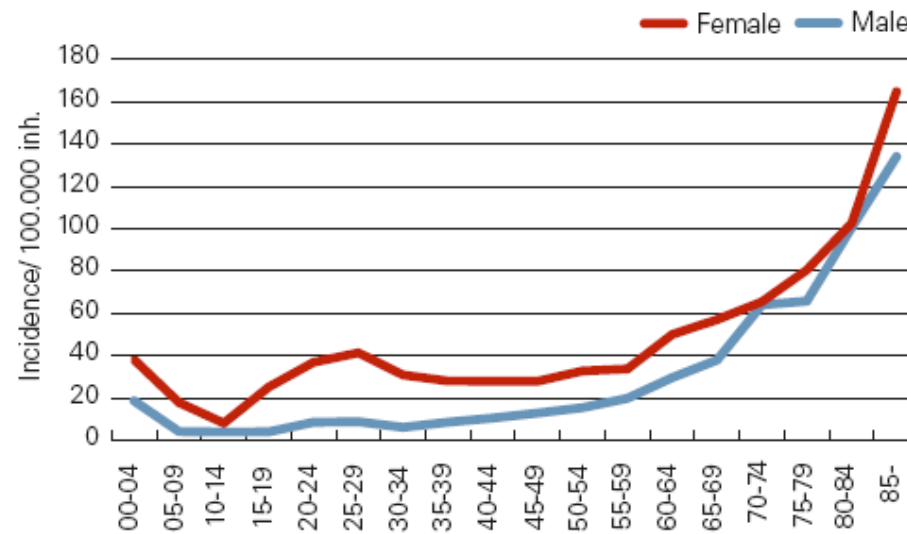


FIGURE 5.2.6. Age-adjusted incidence of notified cases 2008 of ESBL – Enterobacteriaceae producing extended spectrum betalactamases, in different age-groups.

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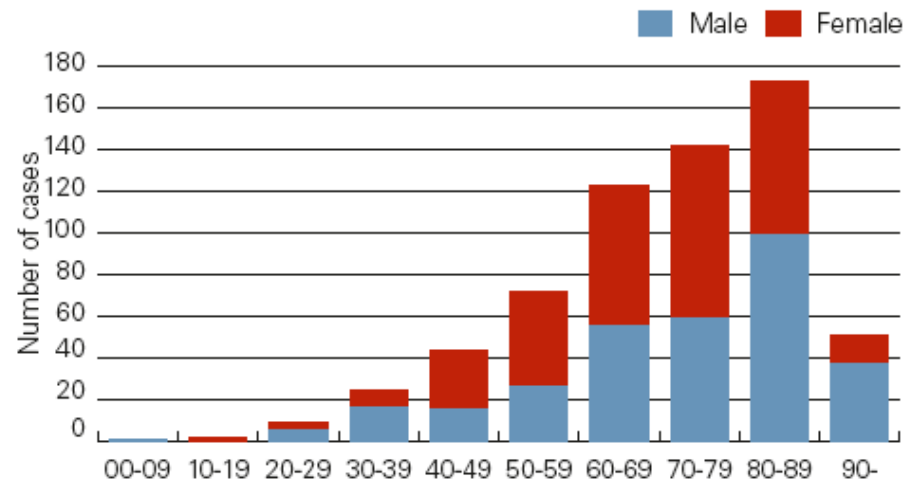


FIGURE 5.2.7. Age-distribution of all VRE-cases identified in Sweden after the detection of an outbreak of vancomycin-resistant *Enterococcus faecium* VanB in the fall of 2007.

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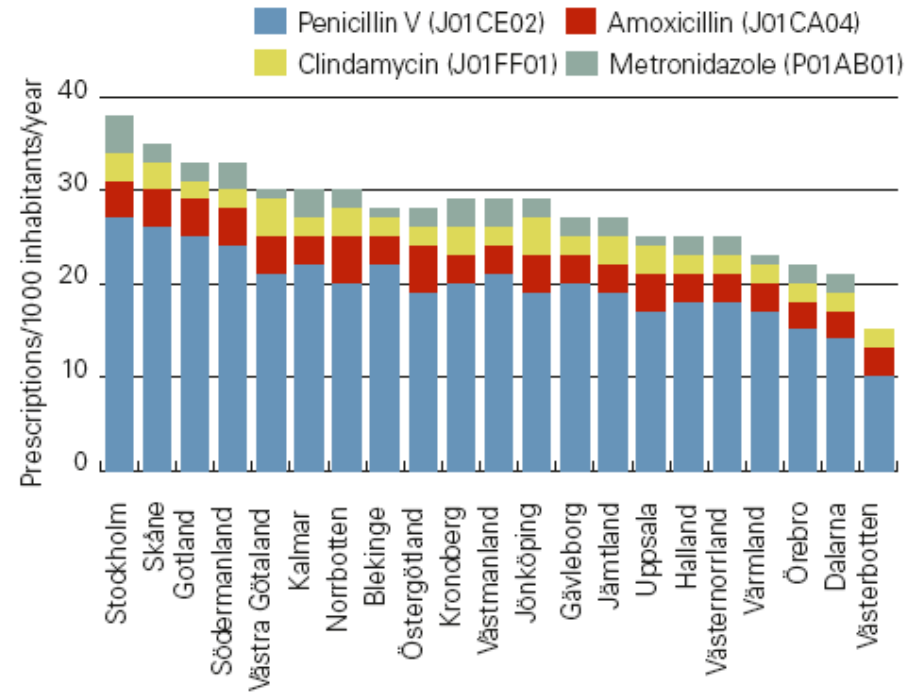


FIGURE 5.3.1. Antimicrobials prescribed by dentists, per county. Prescriptions/1000 inhabitants/year.

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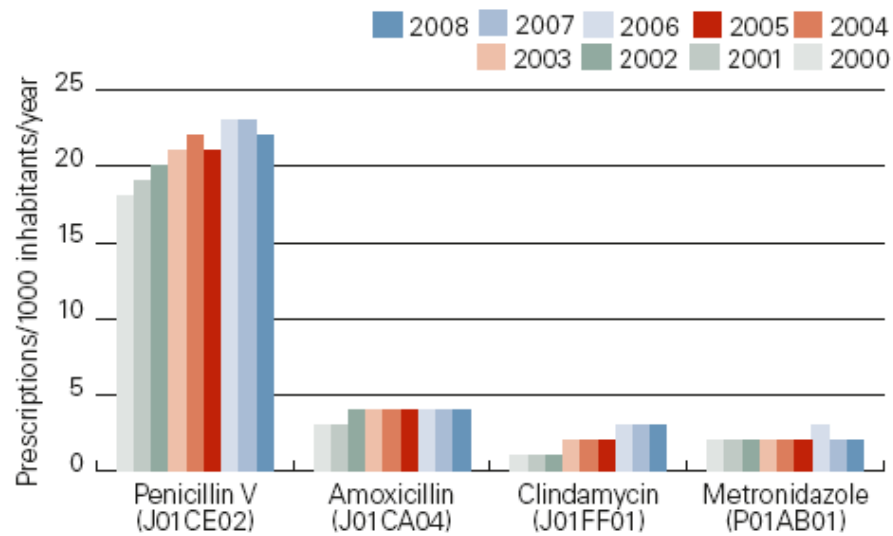


FIGURE 5.3.2. Antimicrobials prescribed by dentists. Prescriptions/1000 inhabitants/year, 2000–2008.

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TABLE 5.4.1. Species and genotype for the domestic VRE cases 2008?
 E.fm = *Enterococcus faecium*, E.fs = *Enterococcus faecalis*

| County | Number of cases | E.fm, vanA | E.fm, vanB | E.fs, vanA | E.fs, vanB |
|---------------|------------------------|-------------------|-------------------|-------------------|-------------------|
| Stockholm | 450 | 93 | 356 | 1 | - |
| Västmanland | 83 | 1 | 82 | - | - |
| Halland | 86 | - | 86 | - | - |
| Uppsala | 13 | - | 12 | - | - |
| Others (n=6) | 9 | - | 8 | - | - |

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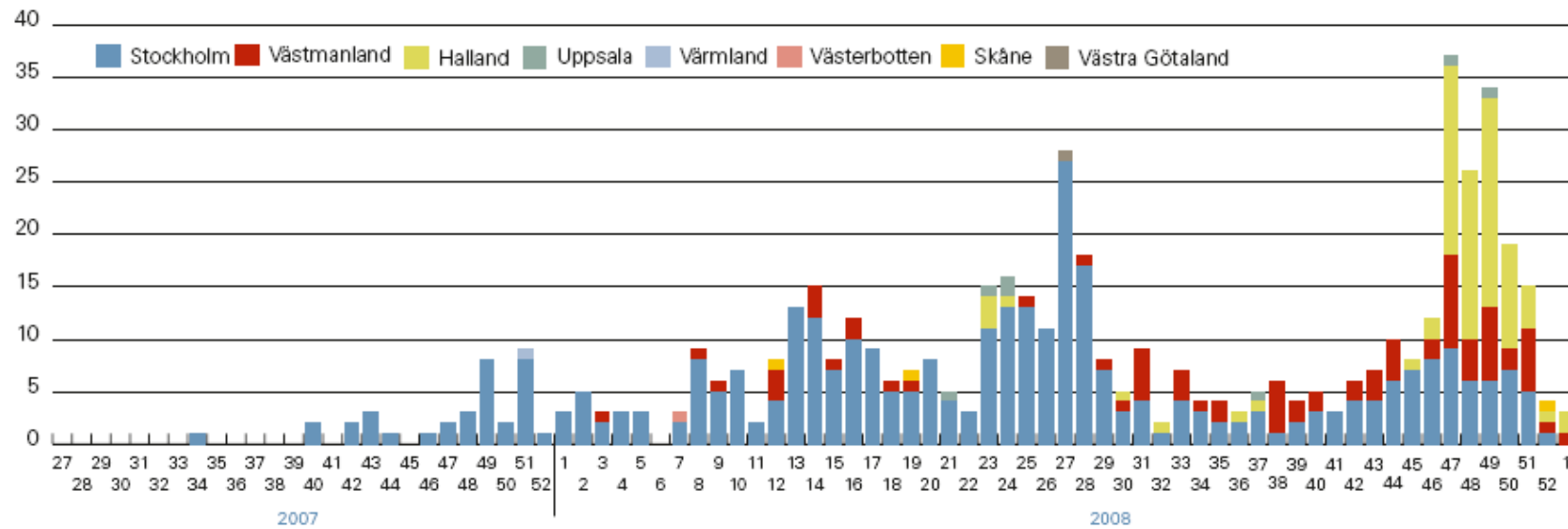


FIGURE 5.4.1. Epidemic curve for clonal spread of health-care related domestic *Enterococcus faecium* with *vanB*

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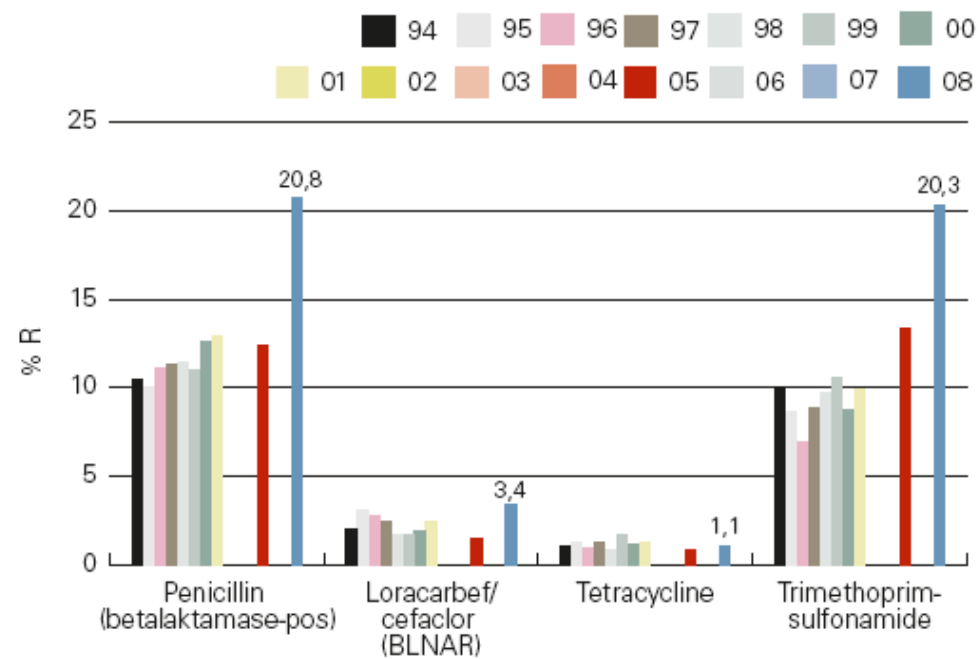


FIGURE 5.5.1. Resistance in *H. influenzae* collected in the annual RSQC programme (approximately 3000 isolates per year). No data available for 2002–2004 and 2006–2007.

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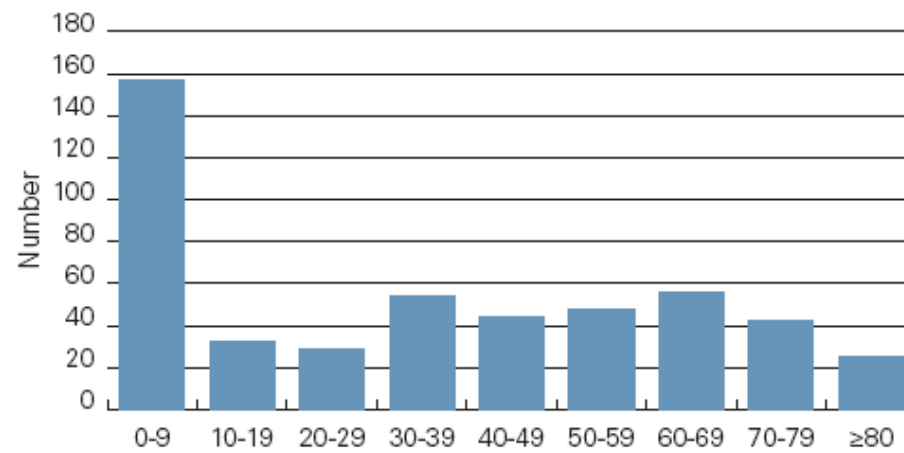


Figure 5.5.2. Age distribution of patients with betalactamase-producing *Haemophilus influenzae* in the RSQC survey 2008.

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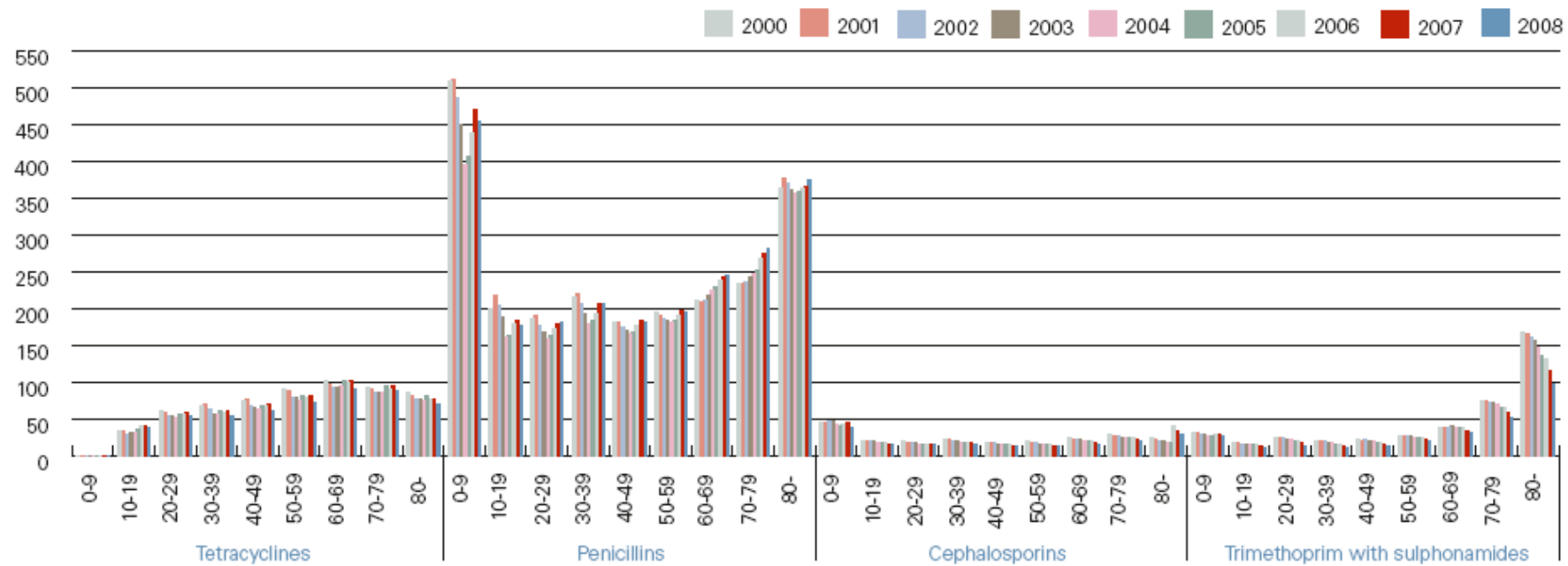


FIGURE 5.3. The use of antibiotics mainly used for respiratory tract infections in different age groups. Prescriptions/1000 inhabitants/year.

Swedres 2008

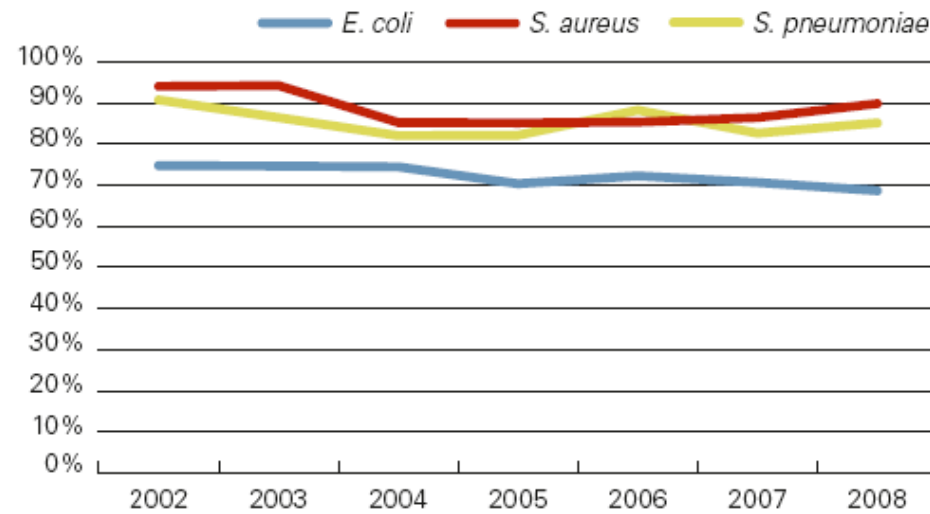


FIGURE 5.6.1. Prevalence of "wildtype" clones (% of isolates devoid of any resistance to a large number of antimicrobial agents) in Kronoberg County for some common pathogens.

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