

# *S. aureus* bacteraemia surveillance

## Quarterly report

### April – June 2017

#### Key points

- Overall *S. aureus* (SA) rates for Northern Ireland (MRSA plus MSSA bacteraemias) decreased by approximately 20% during April – June 2017 compared to January-March 2017.
- MRSA rates decreased by approximately 24% during April – June 2017 compared to January-March 2017.
- MRSA reports during 2016/17 fell by 25% compared to 2015/16.
- MSSA rates decreased by approximately 20% during April – June 2017 compared to January-March 2017.
- MSSA reports during 2016/17 increased by 13% compared to 2015/16.

For further information or clarification on HCAI definitions, please refer to previous reports or contact [hcaini@hscni.net](mailto:hcaini@hscni.net)

# S. aureus bacteraemia surveillance

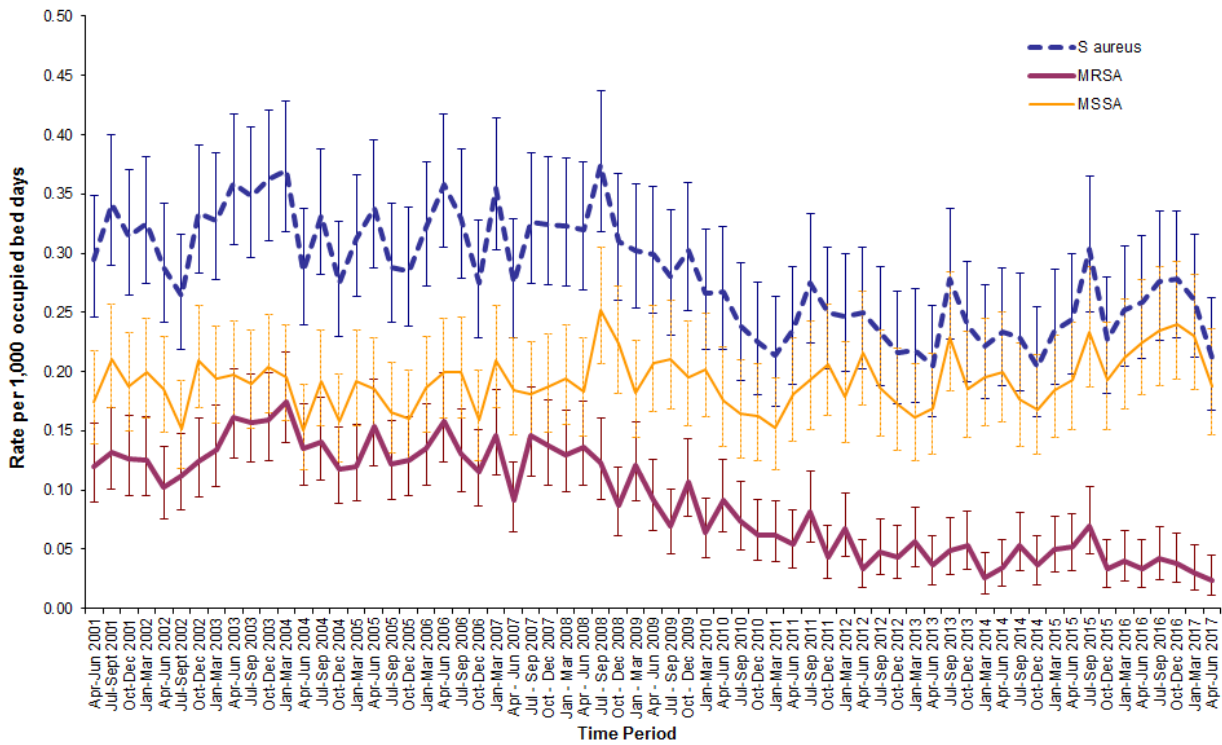


Figure 1: MSSA, MRSA and *S. aureus* rates in Northern Ireland by quarter, with 95% confidence intervals, April 2001 – June 2017 (see Appendix 3)

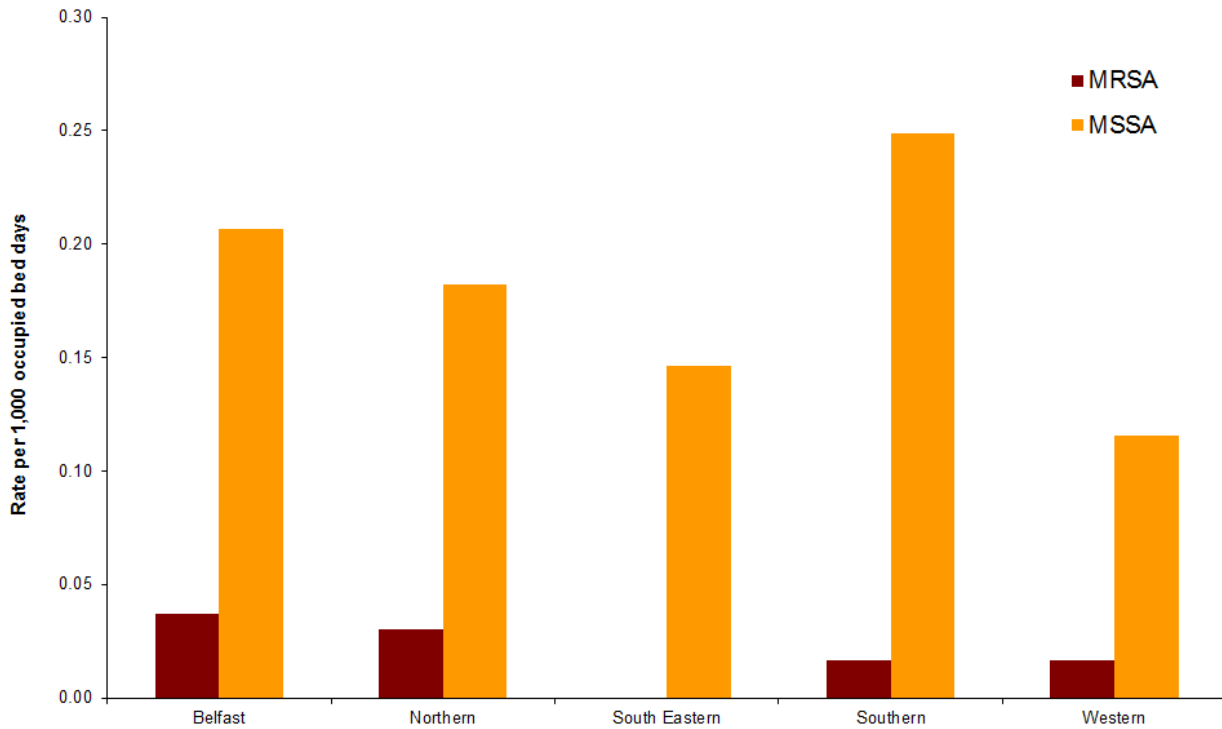


Figure 2: MRSA and MSSA rates per 1,000 occupied bed days, by HSCT, April – June 2017

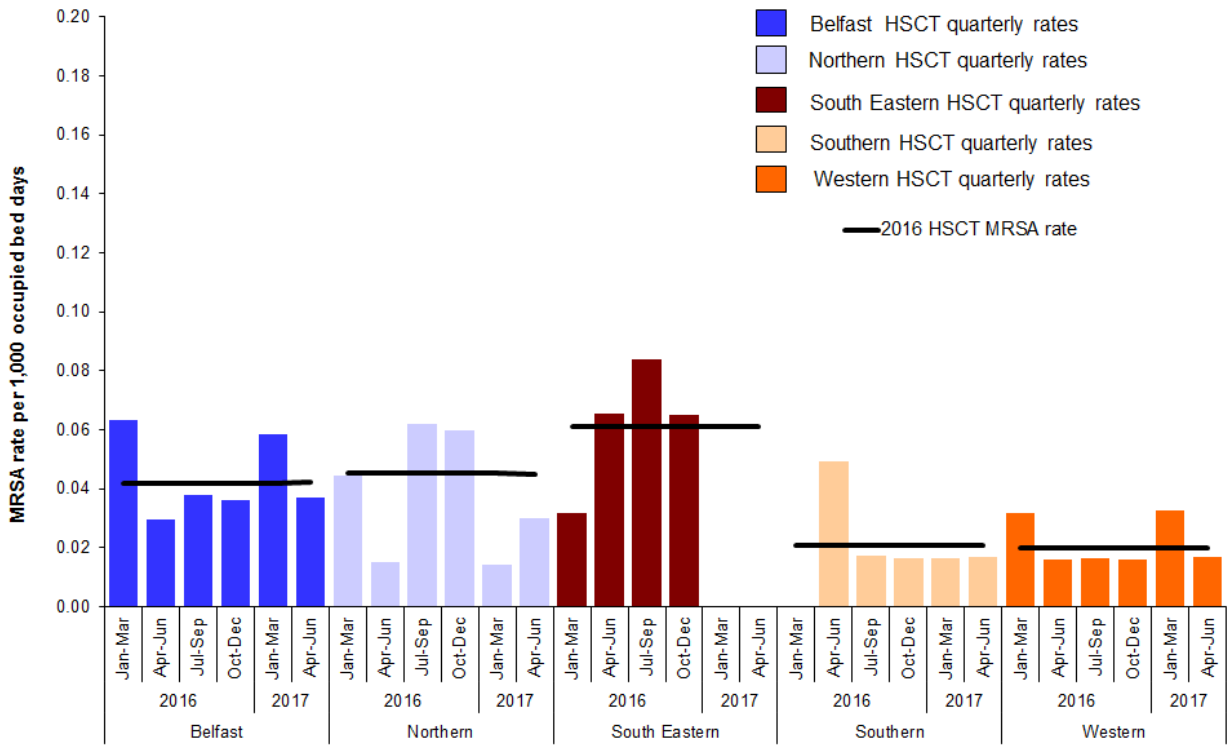


Figure 3: MRSA quarterly rate January 2016 – June 2017, by HSCT, with 2016 HSCT MRSA rate

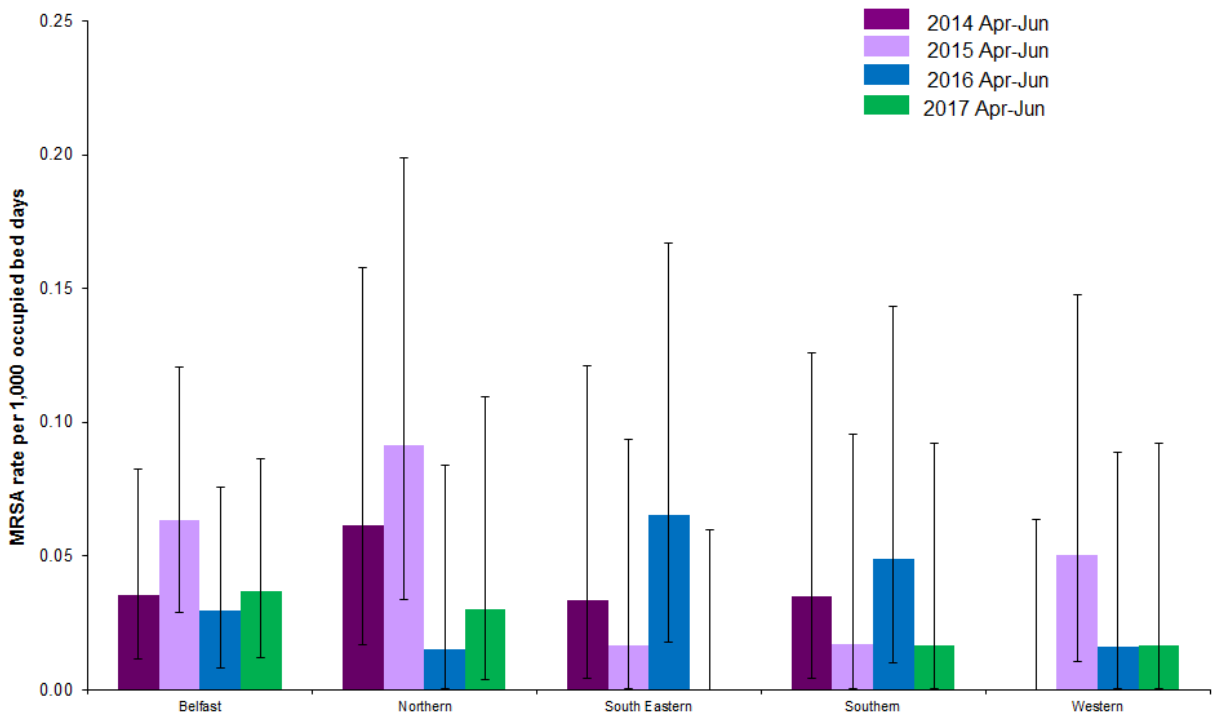


Figure 4: MRSA rate during April-June, by HSCT, from 2014–2017, with 95% confidence intervals

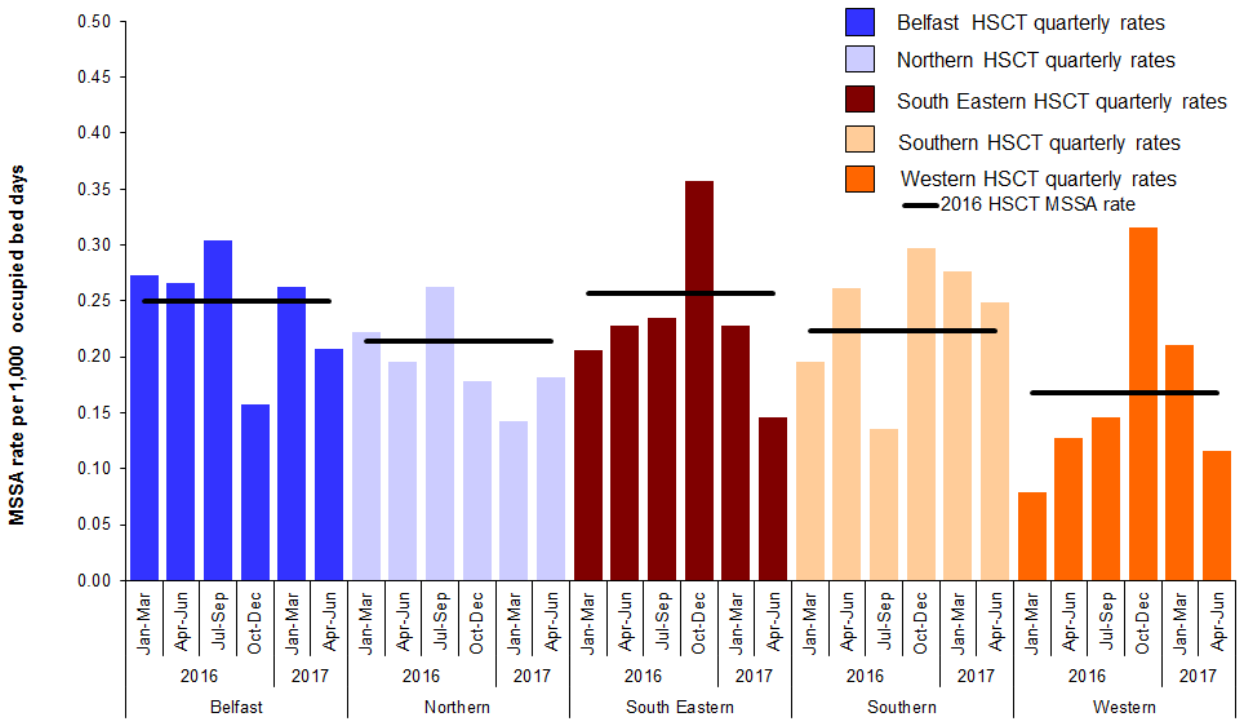


Figure 5: MSSA quarterly rate January 2016 – June 2017, by HSCT, with 2016 HSCT MSSA rate

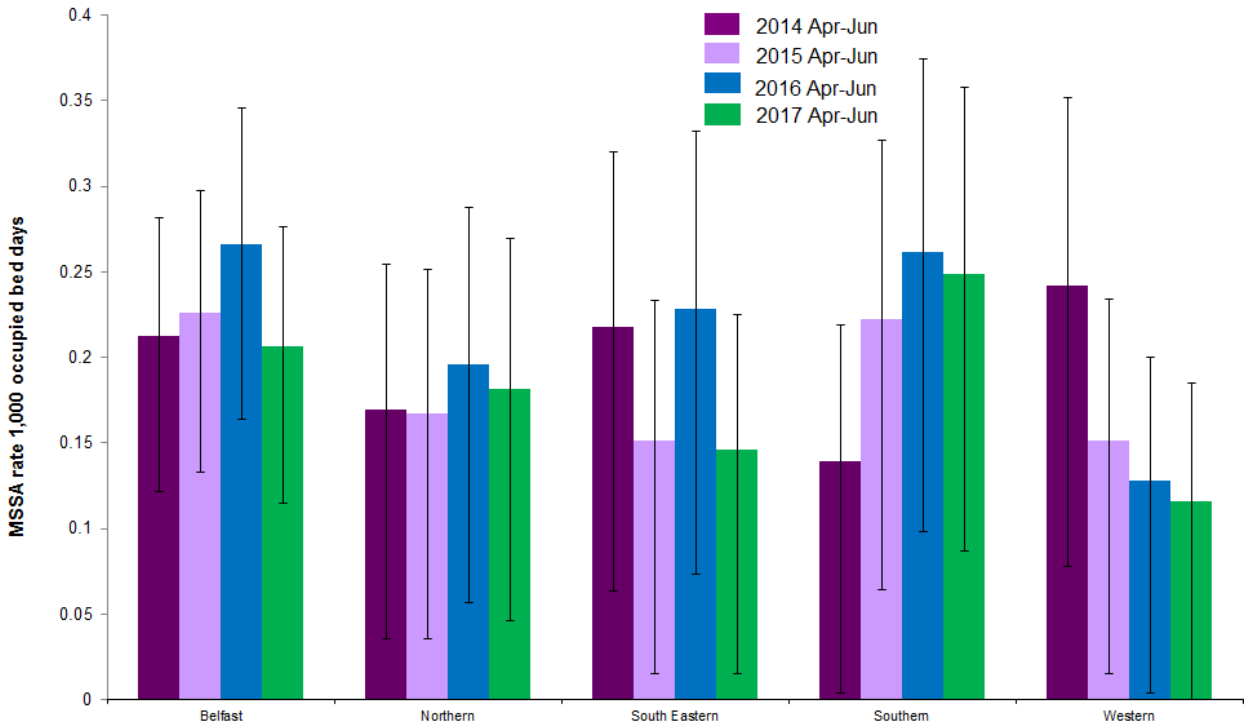


Figure 6: MSSA rate during April - June, by HSCT, from 2014–2017, with 95% confidence intervals

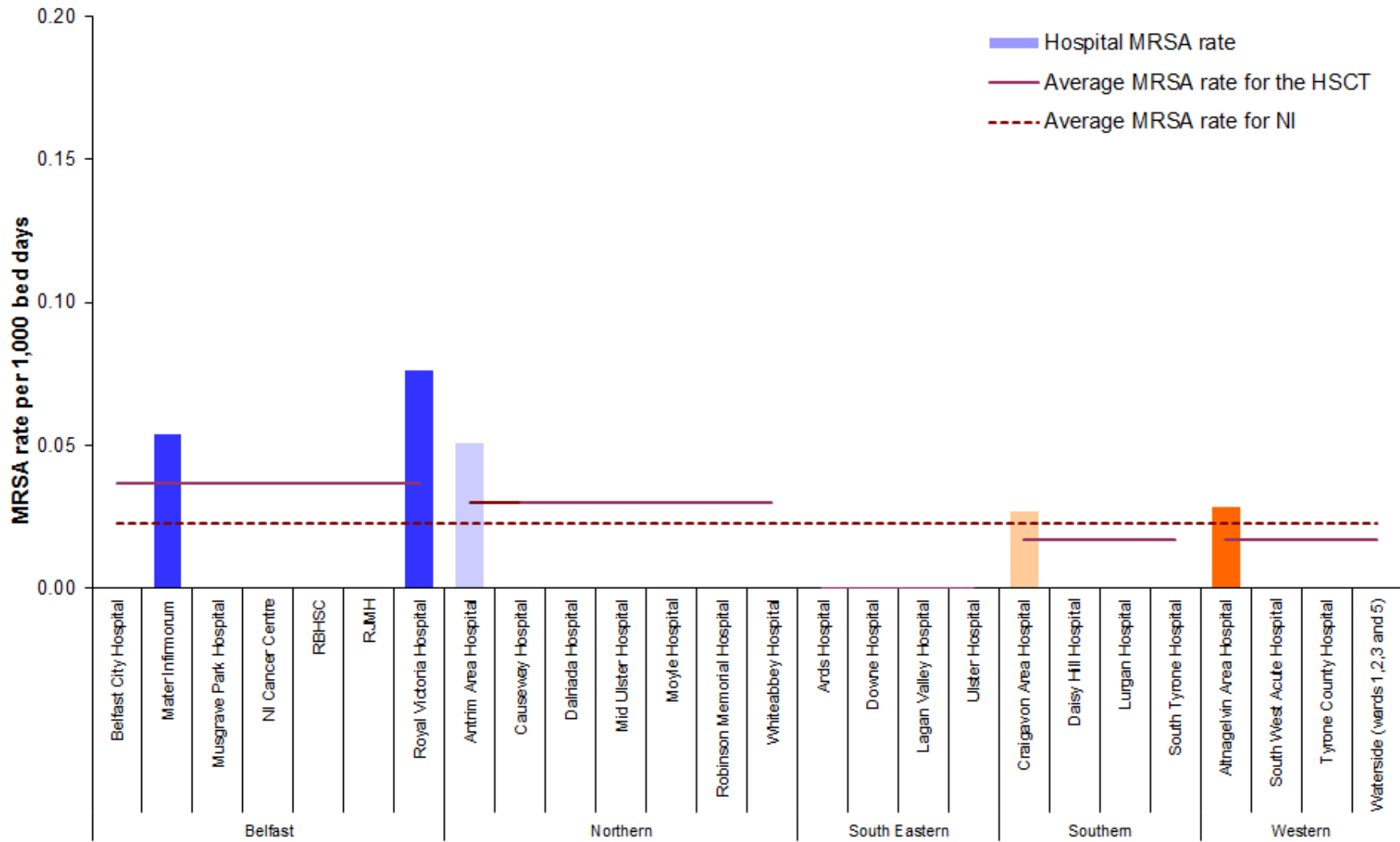


Figure 7: Rates of MRSA, April - June 2017 by individual hospitals, (gaps represent zero episodes), compared to April - June 2017 average rates for Northern Ireland and HSCTs

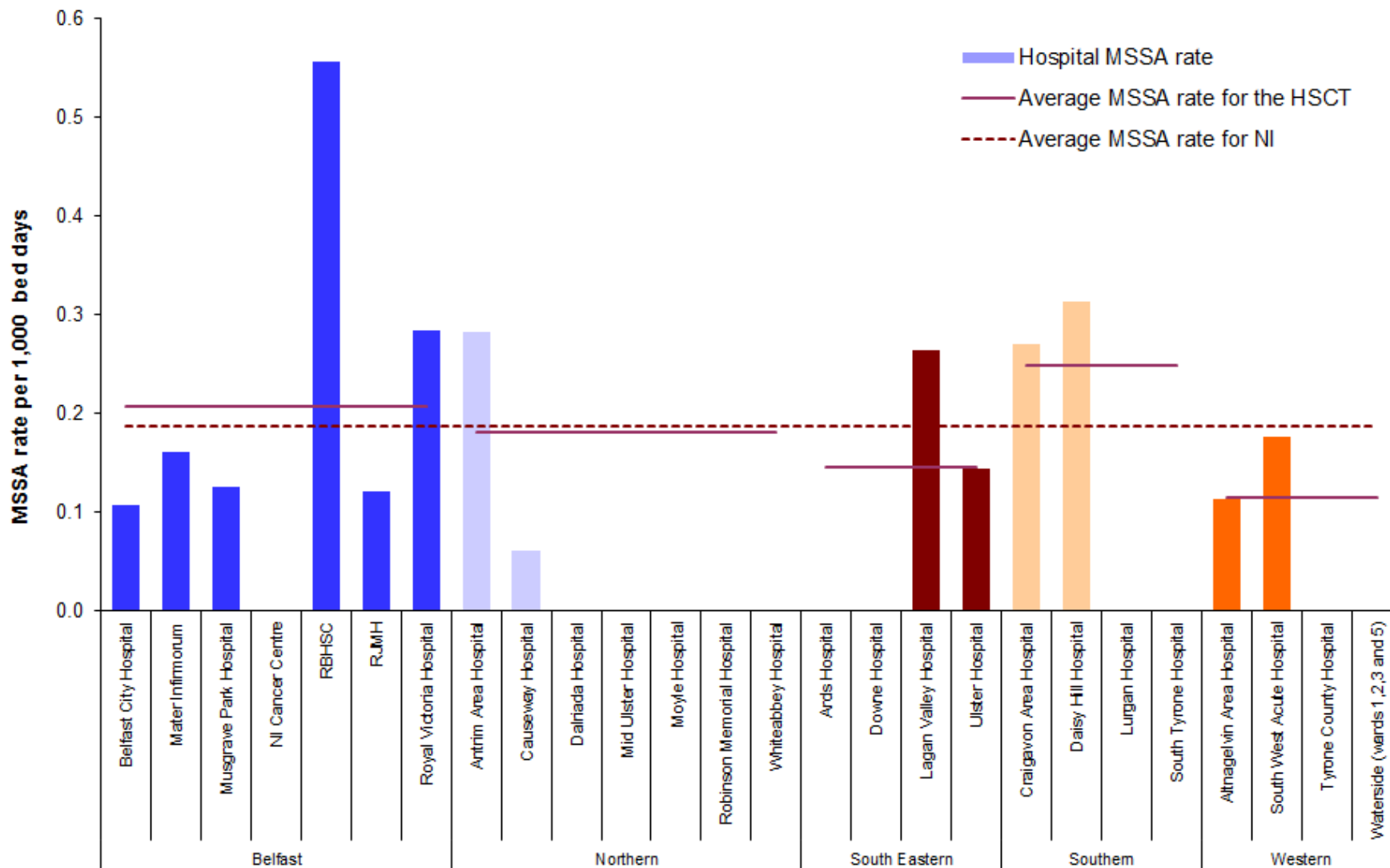


Figure 8: Rates of MSA, April - June 2017 by individual hospitals, (gaps represent zero episodes), compared to April - June 2017 average rates for Northern Ireland and HSCTs

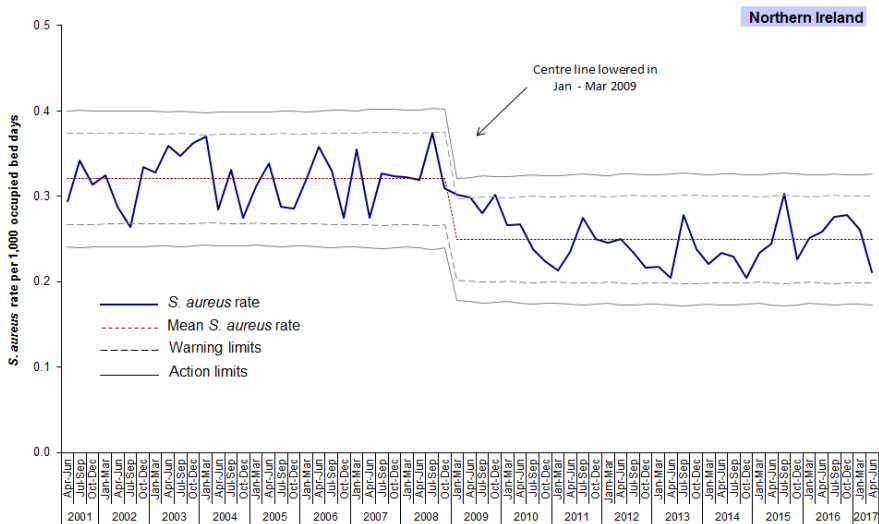


Figure 9a: Statistical process control chart for quarterly *S. aureus* rates in Northern Ireland

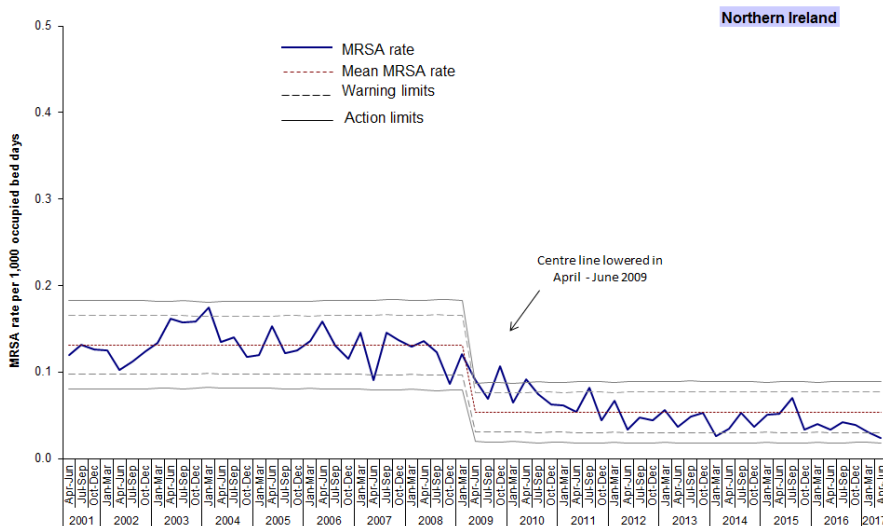


Figure 9b: Statistical process control chart for quarterly MRSA rates in Northern Ireland

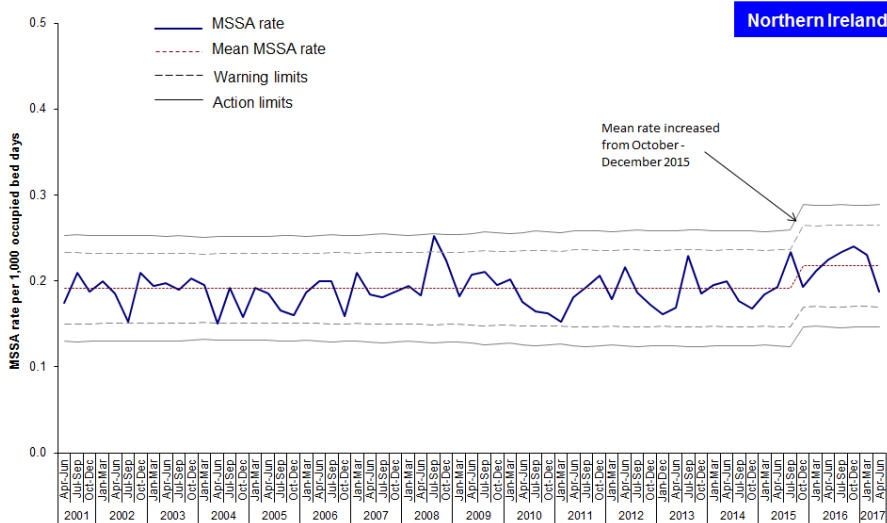


Figure 9c: Statistical process control chart for quarterly MSSA rates in Northern Ireland

## Appendix 1

**Table 1: Quarterly rate of MRSA patient episodes, by hospital, Jul 2016 – Jun 2017**

| Hospital                          | Jul - Sept 2016 | Oct - Dec 2016 | Jan - Mar 2017 | Apr - Jun 2017 |
|-----------------------------------|-----------------|----------------|----------------|----------------|
|                                   | Rate            | Rate           | Rate           | Rate           |
| Belfast City Hospital             | 0.075           | 0.037          | 0.073          | 0.000          |
| Mater Infirmorum                  | 0.077           | 0.052          | 0.053          | 0.054          |
| Musgrave Park Hospital            | 0.000           | 0.000          | 0.000          | 0.000          |
| NICCO (formerly at Belvoir Park)  | 0.000           | 0.000          | 0.000          | 0.000          |
| RBHSC                             | 0.000           | 0.000          | 0.000          | 0.000          |
| RJMH                              | 0.000           | 0.000          | 0.000          | 0.000          |
| Royal Victoria Hospital           | 0.037           | 0.056          | 0.092          | 0.076          |
| <b>Belfast HSCT</b>               | <b>0.038</b>    | <b>0.036</b>   | <b>0.060</b>   | <b>0.037</b>   |
| Antrim Area Hospital              | 0.107           | 0.075          | 0.024          | 0.051          |
| Causeway Hospital                 | 0.000           | 0.060          | 0.000          | 0.000          |
| Dalriada Hospital                 | 0.000           | 0.000          | 0.000          | 0.000          |
| Mid Ulster Hospital               | 0.000           | 0.000          | 0.000          | 0.000          |
| Moyle Hospital                    | 0.000           | 0.000          | 0.000          | 0.000          |
| Robinson Memorial Hospital        | 0.000           | 0.000          | 0.000          | 0.000          |
| Whiteabbey Hospital               | 0.000           | 0.000          | 0.000          | 0.000          |
| <b>Northern HSCT</b>              | <b>0.062</b>    | <b>0.060</b>   | <b>0.010</b>   | <b>0.030</b>   |
| Ards Hospital                     | 0.000           | 0.000          | 0.000          | 0.000          |
| Downe Hospital                    | 0.000           | 0.000          | 0.000          | 0.000          |
| Lagan Valley Hospital             | 0.141           | 0.132          | 0.000          | 0.000          |
| Ulster Hospital                   | 0.084           | 0.062          | 0.000          | 0.000          |
| <b>South Eastern HSCT</b>         | <b>0.084</b>    | <b>0.065</b>   | <b>0.000</b>   | <b>0.000</b>   |
| Craigavon Area Hospital           | 0.027           | 0.027          | 0.026          | 0.027          |
| Daisy Hill Hospital               | 0.000           | 0.000          | 0.000          | 0.000          |
| Lurgan Hospital                   | 0.000           | 0.000          | 0.000          | 0.000          |
| South Tyrone Hospital             | 0.000           | 0.000          | 0.000          | 0.000          |
| <b>Southern HSCT</b>              | <b>0.017</b>    | <b>0.016</b>   | <b>0.020</b>   | <b>0.017</b>   |
| Altnagelvin Area Hospital         | 0.000           | 0.028          | 0.029          | 0.029          |
| South West Acute Hospital         | 0.057           | 0.000          | 0.055          | 0.000          |
| Tyrone County Hospital            | 0.000           | 0.000          | 0.000          | 0.000          |
| Waterside Hospital (Wards 1-3, 5) | 0.000           | 0.000          | 0.000          | 0.000          |
| <b>Western HSCT</b>               | <b>0.016</b>    | <b>0.016</b>   | <b>0.030</b>   | <b>0.017</b>   |
| <b>Northern Ireland total</b>     | <b>0.043</b>    | <b>0.038</b>   | <b>0.030</b>   | <b>0.023</b>   |

**Table 2: Quarterly MRSA patient episodes, by Trust, Jul 2016 – Jun 2017**

| Trust                                    | Jul - Sept 2016 | Oct - Dec 2016 | Jan - Mar 2017 | Apr - Jun 2017 |
|------------------------------------------|-----------------|----------------|----------------|----------------|
|                                          | Episodes        | Episodes       | Episodes       | Episodes       |
| Belfast Health & Social Care Trust       | 5               | 5              | 8              | 5              |
| Northern Health & Social Care Trust      | 4               | 4              | 1              | 2              |
| South Eastern Health & Social Care Trust | 5               | 4              | 0              | 0              |
| Southern Health & Social Care Trust      | 1               | 1              | 1              | 1              |
| Western Health & Social Care Trust       | 1               | 1              | 2              | 1              |
| <b>NI TOTAL</b>                          | <b>16</b>       | <b>15</b>      | <b>12</b>      | <b>9</b>       |



## Appendix 1

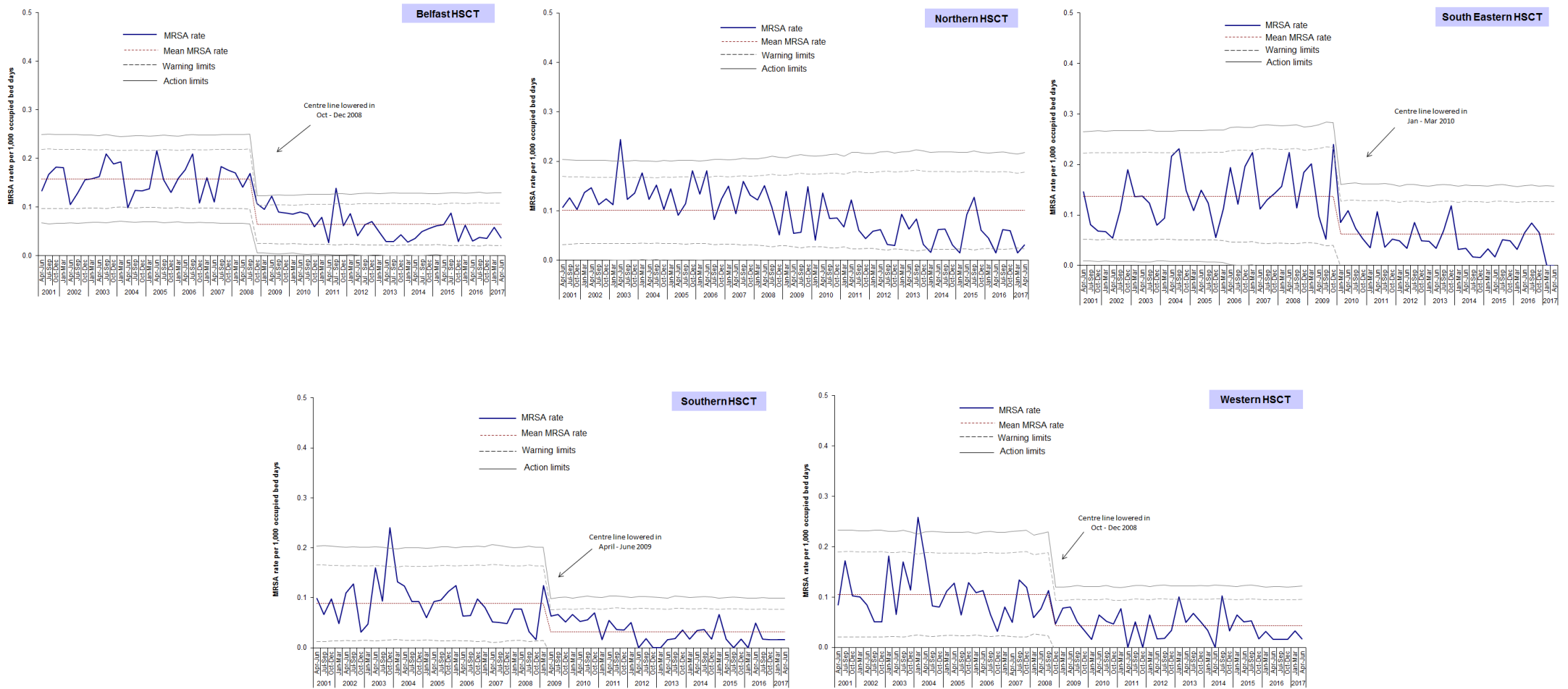
**Table 3: Quarterly rate of MSSA patient episodes, by hospital, Jul 2016 – Jun 2017**

| Hospital                          | Jul - Sep 2016 | Oct - Dec 2016 | Jan - Mar 2017 | Apr-Jun 2017 |
|-----------------------------------|----------------|----------------|----------------|--------------|
|                                   | Rate           | Rate           | Rate           | Rate         |
| Belfast City Hospital             | 0.264          | 0.037          | 0.181          | 0.108        |
| Mater Infirmorum                  | 0.308          | 0.104          | 0.368          | 0.161        |
| Musgrave Park Hospital            | 0.060          | 0.176          | 0.000          | 0.126        |
| NICCO (formerly at Belvoir Park)  | 0.177          | 0.191          | 0.000          | 0.000        |
| RBHSC                             | 1.221          | 0.559          | 0.421          | 0.557        |
| RJMH                              | 0.000          | 0.105          | 0.120          | 0.122        |
| Royal Victoria Hospital           | 0.350          | 0.185          | 0.370          | 0.285        |
| <b>Belfast HSCT</b>               | <b>0.304</b>   | <b>0.158</b>   | <b>0.260</b>   | <b>0.207</b> |
| Antrim Area Hospital              | 0.348          | 0.226          | 0.245          | 0.283        |
| Causeway Hospital                 | 0.241          | 0.181          | 0.000          | 0.062        |
| Dalriada Hospital                 | 0.000          | 0.000          | 0.000          | 0.000        |
| Mid Ulster Hospital               | 0.000          | 0.000          | 0.000          | 0.000        |
| Moyle Hospital                    | 0.000          | 0.000          | 0.000          | 0.000        |
| Robinson Memorial Hospital        | 0.000          | 0.000          | 0.000          | 0.000        |
| Whiteabbey Hospital               | 0.000          | 0.000          | 0.000          | 0.000        |
| <b>Northern HSCT</b>              | <b>0.263</b>   | <b>0.179</b>   | <b>0.140</b>   | <b>0.182</b> |
| Ards Hospital                     | 0.000          | 0.000          | 0.000          | 0.000        |
| Downe Hospital                    | 0.285          | 0.271          | 0.516          | 0.000        |
| Lagan Valley Hospital             | 0.423          | 0.132          | 0.131          | 0.265        |
| Ulster Hospital                   | 0.211          | 0.411          | 0.229          | 0.144        |
| <b>South Eastern HSCT</b>         | <b>0.235</b>   | <b>0.358</b>   | <b>0.230</b>   | <b>0.146</b> |
| Craigavon Area Hospital           | 0.082          | 0.376          | 0.286          | 0.270        |
| Daisy Hill Hospital               | 0.254          | 0.248          | 0.377          | 0.376        |
| Lurgan Hospital                   | 0.000          | 0.000          | 0.000          | 0.000        |
| South Tyrone Hospital             | 0.357          | 0.000          | 0.000          | 0.000        |
| <b>Southern HSCT</b>              | <b>0.136</b>   | <b>0.297</b>   | <b>0.280</b>   | <b>0.265</b> |
| Altnagelvin Area Hospital         | 0.170          | 0.361          | 0.286          | 0.114        |
| South West Acute Hospital         | 0.170          | 0.321          | 0.165          | 0.117        |
| Tyrone County Hospital            | 0.000          | 0.345          | 0.000          | 0.000        |
| Waterside Hospital (Wards 1-3, 5) | 0.000          | 0.000          | 0.000          | 0.000        |
| <b>Western HSCT</b>               | <b>0.147</b>   | <b>0.316</b>   | <b>0.210</b>   | <b>0.116</b> |
| <b>Northern Ireland total</b>     | <b>0.234</b>   | <b>0.240</b>   | <b>0.230</b>   | <b>0.185</b> |

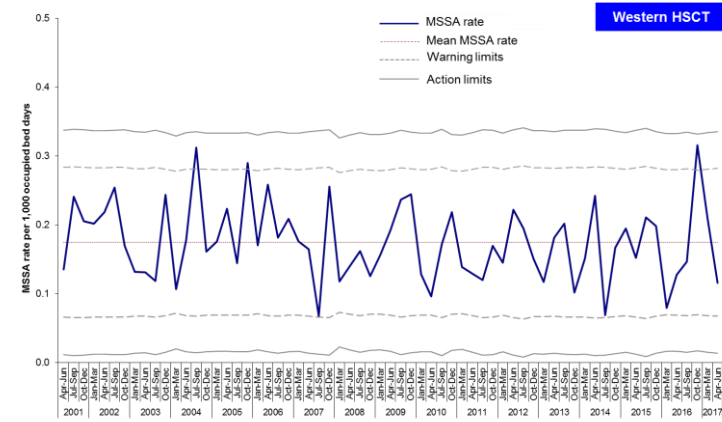
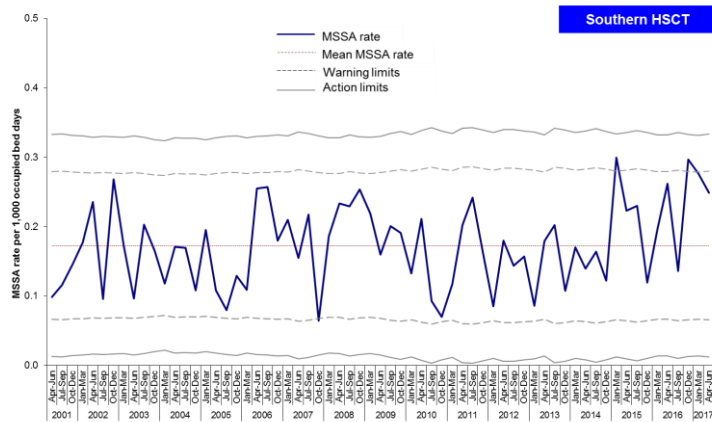
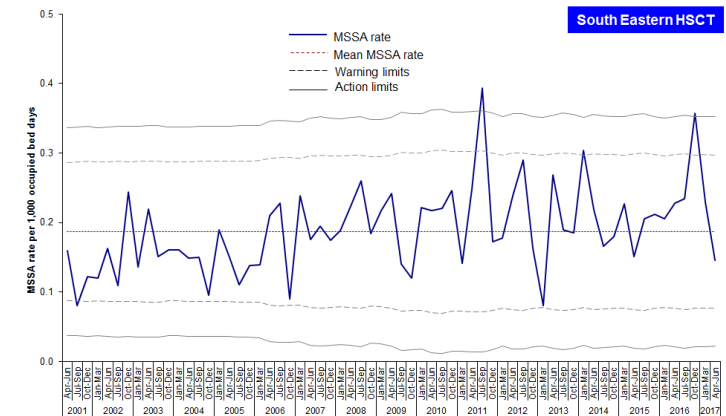
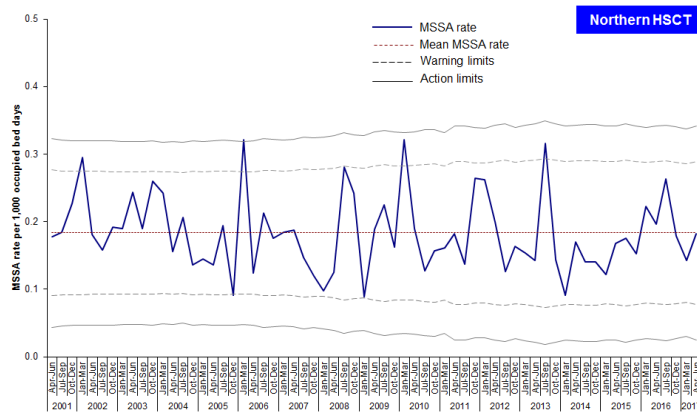
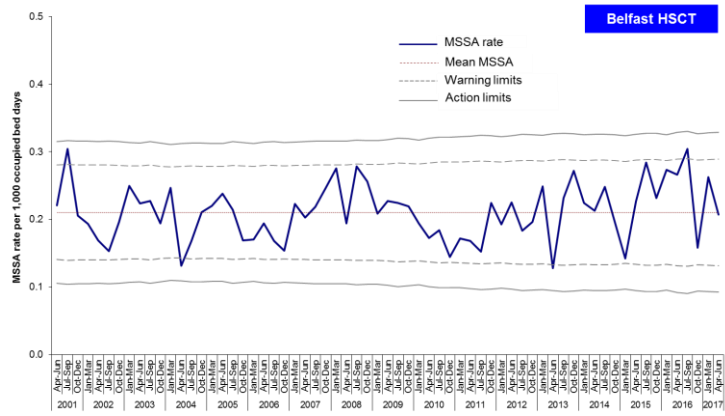
**Table 4: Quarterly MSSA patient episodes, by Trust, Jul 2016 – Jun 2017**

| Trust                                    | Jul - Sep 2016 | Oct - Dec 2016 | Jan - Mar 2017 | Apr-Jun 2017 |
|------------------------------------------|----------------|----------------|----------------|--------------|
|                                          | Episodes       | Episodes       | Episodes       | Episodes     |
| Belfast Health & Social Care Trust       | 40             | 22             | 36             | 27           |
| Northern Health & Social Care Trust      | 17             | 12             | 10             | 12           |
| South Eastern Health & Social Care Trust | 14             | 22             | 14             | 9            |
| Southern Health & Social Care Trust      | 8              | 18             | 17             | 16           |
| Western Health & Social Care Trust       | 9              | 20             | 13             | 8            |
| <b>NI TOTAL</b>                          | <b>88</b>      | <b>94</b>      | <b>90</b>      | <b>72</b>    |

## Appendix 2: Trends in MRSA rates, by HSCT and quarter, 2001–2017



## Appendix 2: Trends in MSSA rates, by HSCT and quarter, 2001–2017



### Appendix 3

**Table 3: MSSA, MRSA and total *S. aureus* patient episode rates, and the percentage of *S. aureus* reported as MRSA, in Northern Ireland, Apr 2007 – Jun 2017**

| Quarter      | MSSA rate | MRSA rate | All <i>S. aureus</i> rate | % MRSA |
|--------------|-----------|-----------|---------------------------|--------|
| Apr-Jun 2007 | 0.183     | 0.091     | 0.274                     | 33.2   |
| Jul-Sep 2007 | 0.181     | 0.146     | 0.326                     | 44.8   |
| Oct-Dec 2007 | 0.187     | 0.137     | 0.324                     | 42.3   |
| Jan-Mar 2008 | 0.194     | 0.129     | 0.323                     | 39.9   |
| Apr-Jun 2008 | 0.184     | 0.136     | 0.320                     | 42.5   |
| Jul-Sep 2008 | 0.252     | 0.122     | 0.375                     | 32.5   |
| Oct-Dec 2008 | 0.223     | 0.087     | 0.310                     | 28.1   |
| Jan-Mar 2009 | 0.182     | 0.120     | 0.302                     | 39.7   |
| Apr-Jun 2009 | 0.207     | 0.092     | 0.299                     | 30.8   |
| Jul-Sep 2009 | 0.206     | 0.069     | 0.275                     | 25.1   |
| Oct-Dec 2009 | 0.195     | 0.107     | 0.302                     | 35.4   |
| Jan-Mar 2010 | 0.202     | 0.064     | 0.266                     | 24.1   |
| Apr-Jun 2010 | 0.175     | 0.091     | 0.267                     | 34.1   |
| Jul-Sep 2010 | 0.164     | 0.074     | 0.239                     | 31.0   |
| Oct-Dec 2010 | 0.160     | 0.062     | 0.222                     | 27.9   |
| Jan-Mar 2011 | 0.152     | 0.061     | 0.214                     | 28.5   |
| Apr-Jun 2011 | 0.181     | 0.054     | 0.235                     | 23.0   |
| Jul-Sep 2011 | 0.193     | 0.082     | 0.275                     | 29.8   |
| Oct-Dec 2011 | 0.206     | 0.044     | 0.250                     | 17.6   |
| Jan-Mar 2012 | 0.179     | 0.067     | 0.246                     | 27.3   |
| Apr-Jun 2012 | 0.216     | 0.034     | 0.250                     | 13.6   |
| Jul-Sep 2012 | 0.186     | 0.048     | 0.234                     | 20.5   |
| Oct-Dec 2012 | 0.173     | 0.044     | 0.216                     | 20.4   |
| Jan-Mar 2013 | 0.162     | 0.056     | 0.218                     | 25.7   |
| Apr-Jun 2013 | 0.169     | 0.036     | 0.205                     | 17.6   |
| Jul-Sep 2013 | 0.230     | 0.049     | 0.278                     | 17.6   |
| Oct-Dec 2013 | 0.188     | 0.053     | 0.241                     | 22.0   |
| Jan-Mar 2014 | 0.195     | 0.026     | 0.221                     | 11.8   |
| Apr-Jun 2014 | 0.200     | 0.034     | 0.234                     | 14.5   |
| Jul-Sep 2014 | 0.177     | 0.053     | 0.229                     | 23.1   |
| Oct-Dec 2014 | 0.168     | 0.036     | 0.204                     | 17.6   |
| Jan-Mar 2015 | 0.184     | 0.050     | 0.234                     | 21.4   |
| Apr-Jun 2015 | 0.193     | 0.052     | 0.245                     | 21.2   |
| Jul-Sep 2015 | 0.234     | 0.070     | 0.304                     | 23.0   |
| Oct-Dec 2015 | 0.193     | 0.034     | 0.226                     | 15.0   |
| Jan-Mar 2016 | 0.211     | 0.040     | 0.252                     | 15.9   |
| Apr-Jun 2016 | 0.225     | 0.034     | 0.259                     | 13.1   |
| Jul-Sep 2016 | 0.234     | 0.043     | 0.277                     | 15.5   |
| Oct-Dec 2016 | 0.240     | 0.038     | 0.278                     | 13.7   |
| Jan-Mar 2017 | 0.230     | 0.031     | 0.260                     | 11.9   |
| Apr-Jun 2017 | 0.185     | 0.023     | 0.208                     | 11.3   |

## Appendix 4

**Table 4: MRSA patient episodes for each financial year, by HSCT**

| <b>HSCT</b>             | <b>Financial Year</b> |            |            |            |            |           |           |           |           |           |           |
|-------------------------|-----------------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                         | 2006/07               | 2007/08    | 2008/09    | 2009/10    | 2010/11    | 2011/12   | 2012/13   | 2013/14   | 2014/15   | 2015/16   | 2016/17   |
| Belfast                 | 115                   | 109        | 86         | 62         | 48         | 46        | 32        | 18        | 28        | 34        | 22        |
| Northern                | 47                    | 42         | 35         | 22         | 27         | 19        | 14        | 12        | 11        | 21        | 10        |
| South Eastern           | 49                    | 34         | 46         | 28         | 15         | 14        | 13        | 15        | 7         | 9         | 13        |
| Southern                | 19                    | 14         | 16         | 15         | 11         | 10        | 1         | 5         | 9         | 2         | 6         |
| Western                 | 18                    | 22         | 20         | 11         | 15         | 7         | 10        | 12        | 12        | 9         | 5         |
| <b>Northern Ireland</b> | <b>248</b>            | <b>221</b> | <b>203</b> | <b>138</b> | <b>116</b> | <b>96</b> | <b>70</b> | <b>62</b> | <b>67</b> | <b>75</b> | <b>56</b> |

**Table 5: MSSA patient episodes for each financial year, by HSCT**

| <b>HSCT</b>             | <b>Financial Year</b> |            |            |            |            |            |            |            |            |            |            |
|-------------------------|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                         | 2006/07               | 2007/08    | 2008/09    | 2009/10    | 2010/11    | 2011/12    | 2012/13    | 2013/14    | 2014/15    | 2015/16    | 2016/17    |
| Belfast                 | 130                   | 161        | 157        | 138        | 103        | 109        | 115        | 121        | 112        | 142        | 134        |
| Northern                | 60                    | 46         | 57         | 66         | 46         | 57         | 42         | 43         | 37         | 47         | 52         |
| South Eastern           | 51                    | 46         | 56         | 43         | 46         | 57         | 54         | 57         | 50         | 47         | 64         |
| Southern                | 56                    | 38         | 59         | 40         | 28         | 38         | 32         | 38         | 42         | 45         | 59         |
| Western                 | 51                    | 37         | 37         | 49         | 39         | 34         | 40         | 38         | 40         | 38         | 50         |
| <b>Northern Ireland</b> | <b>348</b>            | <b>328</b> | <b>366</b> | <b>336</b> | <b>262</b> | <b>295</b> | <b>283</b> | <b>297</b> | <b>281</b> | <b>319</b> | <b>359</b> |