SUPPORTING INFORMATION

**Table S1** Number and rate of invasive GBS infection diagnoses by sex and maternity, England 2014

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **No.** | **(%)** |  | **(95% CI)** |
| Total no. cases | 1601 |  |  |  |  |  |
| Mid-year population estimate | 54,316,618 |  |  |  |  |  |
| Rate per 1000 population | 0.029 |  |  | (0.03 | - | 0.03) |
|  |  |  |  |  |  |  |
| No. cases in women 15-44y | 222 | (13.9%) |  |  |  |  |
| Mid-year population estimate women 15-44y  | 10,631,532 |  |  |  |  |  |
| Rate per 1000 women 15-44y | 0.021 |  |  | (0.02 | - | 0.02) |
|  |  |  |  |  |  |  |
| No. cases with hospital record | 1546 | (96.6%) |  |  |  |  |
| No. maternal cases | 185 | (12.0%) |  |  |  |  |
| No. maternities  | 638,863 |  |  |  |  |  |
| Rate per 1000 maternities | 0.290 |  |  | (0.25 | - | 0.33) |
|  |  |  |  |  |  |  |
| No. non-maternal cases 15-44y | 37 |  |  | (0.00 | - | 0.01) |
| Rate non-maternal women 15-44y | 0.004 |  |  | (0.00 | - | 0.01) |
|  |  |  |  |  |  |  |
| Rate ratio maternal vs non-maternal | 78.21 |  |  | (54.71 | - | 114.54) |
|  |  |  |  |  |  |  |
| No. cases in men 15-44y | 47 | (2.9%) |  |  |  |  |
| Mid-year population estimate men 15-44y  | 10,734,838 |  |  |  |  |  |
| Rate per 1000 men 15-44y | 0.004 |  |  | (0.00 | - | 0.01) |
|  |  |  |  |  |  |  |
| Rate ratio men vs women (non-maternal) 15-44y | 1.18 |  |  | (0.75 | - | 1.87) |
|   |  |  |   |   |   |   |

**Table S2** Specimen source\* of *Streptococcus agalactiae* isolate in women with maternal invasive infection, England 2014

|  |  |  |
| --- | --- | --- |
| N=185 | no. | (%) |
| Blood | 185 | (100.0%) |
| Lower genital tract | 5 | (2.7%) |
| Urine | 4 | (2.2%) |
| Placenta | 3 | (1.6%) |
| Swab\*\* | 3 | (1.6%) |
| Upper genital tract | 1 | (0.5%) |

\**Streptococcus agalactiae* may have been isolated from more than one source in each patient.

\*\* not further specified

**Table S3** Maternal invasive GBS infection according to ethnicity, England 2014

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Ethnicity (n=174) | No. cases | (%) | rate per 1000 deliveries\* | (95% CI) | rate ratio | (95% CI) |
| British (White) | 80 | (43.2%) |  |  |  |  |
| Any other White background | 20 | (10.8%) |  |  |  |  |
| White | **100** | **(54.1%)** | **0.22** | (0.18-0.27) | 1.00 |  |
|  |  |  |  |  |  |  |
| Bangladeshi (Asian or Asian British) | 7 | (3.8%) |  |  |  |  |
| Any other Asian background | 5 | (2.7%) |  |  |  |  |
| Indian (Asian or Asian British) | 13 | (7.0%) |  |  |  |  |
| Pakistani (Asian or Asian British) | 16 | (8.6%) |  |  |  |  |
| Asian | **41** | **(22.2%)** | **0.61** | (0.44-0.83) | 2.76 | (1.92-3.97) |
|  |  |  |  |  |  |  |
| Any other Black background | 4 | (2.2%) |  |  |  |  |
| African (Black or Black British) | 10 | (5.4%) |  |  |  |  |
| Caribbean (Black or Black British) | 2 | (1.1%) |  |  |  |  |
| Black | **16** | **(8.6%)** | **0.55** | (0.32-0.90) | 2.50 | (1.48-4.24) |
|  |  |  |  |  |  |  |
| Any other Mixed background | 1 | (0.5%) |  |  |  |  |
| Any other ethnic group | 9 | (4.9%) |  |  |  |  |
| Chinese (other ethnic group) | 5 | (2.7%) |  |  |  |  |
| Chinese & other | **15** | **(8.1%)** | **0.60** | (0.33-0.98) | 2.69 | (1.56-4.63) |
|  |  |  |  |  |  |  |
| White and Asian (Mixed) | 1 | (0.5%) |  |  |  |  |
| White and Black Caribbean (Mixed) | 1 | (0.5%) |  |  |  |  |
| Mixed | **2** | **(1.1%)** | **0.20** | (0.02-0.72) | 0.90 | (0.22-3.64) |
|  |  |  |  |  |  |  |
| Missing | **9** | **(4.9%)** |  |  |  |  |
| Total | **185** | **(100.0%)** | **0.29** | (0.25-0.34) |  |  |

\*rates calculated using NHS Digital deliveries in NHS hospitals (England), 2014/15

**Table S4** GBS surgical site infection (SSI) risk in women undergoing caesarean section, England 2009-15

|  |  |  |  |
| --- | --- | --- | --- |
| N=27,860 |   |   |   |
|   | **No.**  | (%) | (95% CI) |
| All caesarean section SSIs | 2,180 | (7.8%) | (7.5% | - | 8.1%) |
| Microbiologically diagnosed | 868 | (39.8%) |   |   |   |
| GBS SSI | 47 | (5.4%) | (4.0% | - | 7.1%) |
| Estimated no. GBS SSI | 118 |   |   |   |   |
| Estimated risk GBS SSI per 1000 women | 4.24 |   | (3.51 | - | 5.07) |
|   |   |   |   |   |   |
| *Clinical characteristics of GBS SSI (n=47)* |   |   |   |   |   |
| Focus of infection |   |   |   |   |   |
| Superficial incisional | 35 | (74.5%) | (59.7% | - | 86.1%) |
| Deep incisional | 2 | (4.3%) | (0.5% | - | 14.5%) |
| Organ/space | 10 | (21.3%) | (10.7% | - | 35.7%) |
|   |   |   |   |   |   |
| Readmission due to infection | 10 | (21.3%) | (10.7% | - | 35.7%) |
|  |  |  |  |  |  |

**Table S5** GBS surgical site infection (SSI) risk according to urgency of caesarean section, England 2009-15

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| N=27,544 |   | No. women | No. SSI | SSI risk per 1000 | (95% CI) |
|   |  |  |   |   |   |   |   |
| *Maternal or foetal compromise* | Immediate threat to life of woman or foetus | 2,660 | 3 | 1.13 | (0.23 | - | 3.29) |
| Not immediately life-threatening | 10,109 | 20 | 1.98 | (1.21 | - | 3.05) |
|  |  |  |  |  |  |  |  |
| *No maternal or foetal compromise* | Requires early delivery | 3,703 | 9 | 2.43 | (1.11 | - | 4.61) |
| At a time to suit the woman and maternity services | 11,072 | 15 | 1.35 | (0.76 | - | 2.23) |
|  |  |  |  |  |  |  |  |

Figure S1 **Age distribution of maternal GBS cases vs all maternities\*, England 2014**

\* sourced from Office for National Statistics (England and Wales)

Figure S2 **Distribution of maternal GBS cases according to timing of onset in relation to delivery, England, 2014**

**Figure S3.** BMI stratified GBS SSI risk in women undergoing caesarean section, 2009-2015