Trends in Perinatal Group B Streptococcal Disease—United States, 2000-2006


ABCS CONDUCTS ACTIVE, POPULATION- AND LABORATORY-BASED SURVEILLANCE FOR ALL CASES OF INVASIVE GBS DISEASE IN SELECTED COUNTIES OF 10 STATES. GBS CASES ARE IDENTIFIED THROUGH REGULAR CONTACT WITH LABORATORIES AND ARE DEFINED AS ISOLATION OF GBS FROM A NORMALLY STERILE BODY SITE (E.G., BLOOD OR CEREBROSPINAL FLUID) OR FROM THE PLACENTA OR AMNIOTIC FLUID IN CASES OF FETAL DEATH. IN 2005, THE AREAS COVERED BY ABCS REPRESENTED APPROXIMATELY 450,000 LIVE BIRTHS (11% OF U.S. LIVE BIRTHS); 70% OF INFANTS WERE WHITE, 20% WERE BLACK, AND 10% WERE OF OTHER RACE. SURVEILLANCE AREAS USED STANDARDIZED CASE-REPORT FORMS TO COLLECT DEMOGRAPHIC, NEONATAL, AND OBSTETRIC DATA FROM MEDICAL RECORDS. RACE AND ETHNICITY WERE DETERMINED FROM MEDICAL RECORDS OR BIRTH CERTIFICATES. MULTIPLE IMPUTATION PROCEDURES WERE USED TO ADDRESS MISSING DATA FOR RACE AND GESTATIONAL AGE.

The overall EOD incidence rate showed an initial downward trend from 2000 to 2003 (0.52 to 0.31 cases per 1,000 live births), followed by an increase from 2003 to 2006 (0.31 to 0.40 cases per 1,000 live births; p=0.03). When stratified by race, incidence from 2003 to 2006 among black infants increased significantly (0.53 to 0.86 cases per 1,000 live births; p=0.005), whereas incidence among white infants did not change significantly (0.26 to 0.29 cases per 1,000 live births; p=0.64).

When EOD incidence was stratified by gestational age, the average incidence among preterm infants (1.79 cases per 1,000 live births) was significantly higher than among term infants (1.19 cases per 1,000 live births) and among infants born to unknown race (1.29 cases per 1,000 live births). Both preterm black and white infants had increases in EOD incidence from 2003 to 2006 that were not significant (p=0.61 and 0.21, respectively). EOD incidence among term white infants was stable during 2003-2006. Term black infants were the only group with a significant increase in incidence from 2003 to 2006 (0.33 to 0.70 cases per 1,000 live births; p=0.002).

Overall, 93% (549 of 593) of EOD cases from 2003 (the first full year...
after the universal screening recommendations) through 2006 had information available on prenatal GBS screening. Among these, 387 (70%) mothers were screened at least 2 days before the infant’s birth. Among EOD cases in infants delivered at term (395 of 549), a similar proportion of mothers of black and white infants were screened (83% in each group). IAP was administered to 80 (20%) mothers of term infants with EOD during 2003-2006 (16% of black mothers and 23% of white mothers; p=0.09).

The overall rates of LOD remained stable from 2000 (0.36 cases per 1,000 live births) to 2006 (0.30 cases per 1,000 live births). In addition, no overall incidence trend was observed from 2003 to 2006 (p=0.7). When stratified by race, LOD incidence among black infants decreased significantly by 42% (p=0.003) from 2005 (0.95 cases per 1,000 live births) to 2006 (0.55 cases per 1,000 live births). However, no significant trend was observed among black or white infants from 2003 to 2006.

The results described in this report indicate an increase in EOD from 2003 to 2006, and this increase has been driven by increasing incidence among black term infants. This increase was not anticipated and cannot yet be explained fully. The increase in EOD since 2003 was not accompanied by a significant change in the overall incidence rate for LOD. Because EOD incidence trends do not match LOD incidence trends, their shared live-birth denominator is not likely to contribute error to the worsening EOD rates. Also, racial differences in screening do not appear to be a likely cause of the increasing incidence trend among black term infants, because a similar and high proportion of mothers of both black and white case-infants delivered at term were screened. Consistent with this, a recent evaluation of live births during 2003-2004 in the ABCs catchment population found that black race was not associated with lack of screening. Additionally, IAP was administered to a similar proportion of black and white mothers of term infants with EOD. The overall proportion receiving IAP (20%) was low, suggesting that missed opportunities for prevention might contribute more than prophylaxis failures to the remaining EOD burden. However, data on screening results often were incomplete, limiting the ability to determine whether lack of IAP administration represented poor adherence to recommendations. Moreover, in the context of a widely implemented prevention strategy, population-based data rather than case-only data provide the most useful guide to assessing guidelines implementation.

Other factors might influence the effectiveness of prevention and thus rates of disease, including higher GBS carriage rates among black women, the timing of screening, adequacy of specimen collection, and laboratory processing, and implementation of adequate IAP. Evaluation of these factors will be important in determining whether the causes of increasing racial differences in EOD can be directly linked to missed opportunities for prevention.

The findings in this report are subject to at least three limitations. First, although surveillance data can help describe and monitor racial differences in diseases, often they cannot explain why these differences exist. Unidentified risk factors for which race is a proxy might explain the differences. For example, ABCs includes limited information on cases and does not collect variables related to socioeconomic status. Second, select counties in 10 states are covered by ABCs. As a result, rates might not be representative of the entire United States. Finally, these findings represent only 4 years of data since 2002, and additional surveillance is needed to confirm whether the increasing trend will continue.

Since efforts to prevent GBS disease became widespread in the 1990s, the United States has experienced an 80% decline in EOD incidence. Despite the increases in EOD rates after 2003, antenatal screening remains the most effective strategy available. Within the next year, CDC will work with the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, and other partners to update the perinatal GBS disease prevention guidelines. This update will focus on both the laboratory and clinical components of the guidelines and will be based on data accumulated since 2002.
including licensure of polymerase chain reaction–based rapid tests for GBS and a population-based review of approximately 8,000 labor and delivery records of births in 2003 and 2004 in the ABCs population.8

Information for patients, health-care providers, and public health practitioners regarding GBS is available from CDC at http://www.cdc.gov/groupbstrep. Brochures are available in both English and Spanish by telephone (404-639-2215); information regarding bulk orders is available through the CDC Foundation by telephone (877-252-1200).

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