

tively between January 2004 and December 2006. Clinical data were abstracted from the subjects' medical records.

**Results:** 1388 significant bacterial isolates from blood and cerebrospinal fluid were identified. Six pathogens accounted for 69.5% (965/1388) of the isolates. The most common isolate was *Streptococcus agalactiae* ( $n=206$ ; 14.8%) followed by *Staphylococcus aureus* ( $n=185$ ; 13.3%), *Escherichia coli* ( $n=163$ ; 11.7%), *Viridans streptococcus* ( $n=148$ ; 10.7%), *Klebsiella pneumoniae* ( $n=146$ ; 10.5%) and *Acinetobacter baumannii* ( $n=119$ ; 8.6%). 18% (37/206) of *Streptococcus agalactiae* isolates and 11% (18/163) of *Escherichia coli* isolates were from cerebrospinal fluid, compared to  $\leq 10\%$  in other pathogens.

83/172 (40.2%) of *Streptococcus agalactiae* (GBS) isolates were from infants  $\leq 3$  days of age. Incidence of early-onset (EO) GBS sepsis is 1.1/1000 live births. 89/172 (51.7%) of GBS isolates were from infants 4 days to 3 months of age, giving incidence of late-onset sepsis (LOS) of 1.2/1000 live births. Mean age of infants with LOS GBS sepsis is 12.5 days.

*S. aureus*, *E. coli*, *Viridans streptococcus* and *K. pneumoniae* sepsis are predominantly LOS, with mean age of LOS cases being 31, 31, 24 and 35 days old respectively.

**Conclusions:** Vertically transmitted bacteria are a significant cause of sepsis in young infants in South Africa. The increasing incidence of community-acquired *Staphylococcus aureus* sepsis in young infants is concerning and requires further investigation.

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#### Perianal Cellulites Associated with Group A Streptococci in Iranian Children

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**Background:** Perianal cellulites/dermatitis caused by group A beta-hemolytic streptococci (GABHS) occurs mainly in children with the ages from 6 months to 10 years. This study was done to describe the isolation of group A streptococci from children with perianal dermatitis and their siblings.

**Methods:** The study was conducted between January, 1998, and December 2005. Eighteen children aged from 7 months to 5.4 years were enrolled. Patients with erythema in the perianal region were entered into the study and GABHS was isolated from the perianal area, throat and skin lesions by culture methods. All siblings living in the same house as the index patient were examined within 48h of diagnosis.

**Results:** Eighteen patients (10 male and 8 female), aged from 7 months to 5.4 years, were enrolled into the study.

clinical signs. Thirteen (72%) patients had additional isolates of GABHS. Four of 13 had GABHS isolated from more than 1 place. In 4 siblings, GABHS was isolated from the pharyngeal swab; none had clinical symptoms compatible with streptococcal disease.

**Conclusion:** Perianal dermatitis caused by GABHS occurs mainly in children. Frequency of concomitant throat and skin lesion of GABHS in children with perianal streptococcal dermatitis and their siblings may contribute to early diagnosis of the disease and initiation of treatment.

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#### Clinical Presentation, Community-Based Management and Outcome of Umbilical Infections in Newborns

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**Background:** Umbilical infections (omphalitis) are very common neonatal infections in home-delivered babies and may predispose to sepsis. Current recommendations call for hospitalization and parenteral therapy. However, in most low-income countries, these recommendations are not practical as hospital-based care is not accessible or refused. Early diagnosis and management of omphalitis in the community may improve clinical outcomes.

**Objectives:** To identify the clinical profile and outcome of omphalitis in newborns evaluated and managed in community settings.

**Methods:** Cases of omphalitis from amongst a birth cohort of 6904 newborns in 3 low-income communities of Karachi were referred to local Primary Health Centers (PHCs) by trained Community Health Workers (CHWs) if pre-defined clinical signs were present. Infections were categorized as mild, moderate or severe omphalitis on the basis of redness, swelling and discharge. Infants with signs of sepsis were excluded. Regimens used were at the discretion of the treating physician. Evaluation was conducted at 2–3 days, and 1 week.

**Results:** A total of 1355 babies were diagnosed with omphalitis (without sepsis); 23.9% were mild, 38.9% moderate, and 37% severe. Purulent discharge from the umbilicus was the most common presenting feature (29.8%), followed by cellulitis of  $<2$  cm (24.1%). After one week, of the 179 babies treated with only topical gentian violet for 5 days, 98.9% improved. Oral cephalixin (50 mg/kg/day divided twice daily for 5 days) was given to 216 babies and 99.5% improved. A combination of topical gentian violet and oral cephalixin was given to 957 patients; 99.4% were improved. Two received oral cephalixin and intramuscular gentamicin and both improved. One refused all therapy. There were two deaths by one week (case fatality rate 0.1%).

**Conclusion:** Early diagnosis of omphalitis is possible by trained CHWs. Outcomes of simple, home-based treatment regimens are excellent, with minimal need for hospital referral.

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