Results. Seven patients were identified; all had sickle cell disease and five had moderate to severe asthma requiring controller medications. They presented to the emergency department with mild respiratory illness with fevers, but had hemodynamic stability. Peripheral blood cultures were obtained and intravenous ceftriaxone was administered as the empiric antibiotic therapy. Six patients were discharged home after evaluation, and one patient was admitted for treatment for acute chest syndrome with venoocclusive crisis (see figure). When the blood cultures grew *B. holmesii*, previously discharged patients were called back for follow-up; three were admitted, and only one patient had a subsequent blood culture growing *B. holmesii*. Hospitalization days ranged from 3 to 5 days, and two patients went home with oral ciprofloxacin at the time of discharge. Total antibiotic days ranged from 1 to 15 days among the seven patients. No one required an intensive level care, and all were asymptomatic without recurrence of *B. holmesii* infections at the post-discharge follow-up.

Conclusion. In our pediatric patients with *B. holmesii* bacteremia, clinical recovery was favorable with no severe illness, despite widely different treatment regimens and length of therapy. The questions still remain regarding pathogenicity of *B. holmesii* infection and efficacy of antibiotic use.

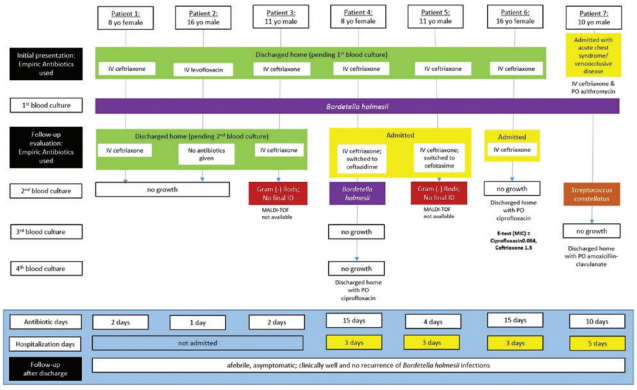

Figure. Summary of treatment course and follow-up for the patients with *Bordetella holmesii*

Disclosures. **All authors:** No reported disclosures.

2313. Risk of Relapsed or Persistent Infection Caused by Enterobacter Species in Children

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Background. *Enterobacter* species are a major cause of infections in hospitalized children. Treatment is complicated by the presence of a chromosomal AmpC β-lactamase, capable of inactivating certain antibiotics, including third-generation cephalosporins (3GC). Previous studies in adults have reported a 3–19% risk of relapsed bacteremia with 3GC therapy. Data in children regarding risk factors predicting relapse or persistence of infection are lacking. We sought to determine the frequency of and risk factors for relapse or persistence of *Enterobacter* infection in children.

Methods. Retrospective study of patients <21 years old admitted to Texas Children's Hospital during 2012, 2015 and 2016 with bacteremia due to *Enterobacter* species. Risk factors for relapse or persistence of bacteremia 72 hours and up to 30 days after initial positive blood culture were evaluated; relapsed infection at secondary sites also was evaluated.

Results. 58 individual patients with bacteremia due to *Enterobacter* species were identified; most (58%) were immunosuppressed and 19 (32.8%) were critically ill. The majority (75.9%) had primary bacteremia; 82.8% had a central line. An intra-abdominal source was identified in 6 (10.3%) patients. Seventeen (29.3%) patients had initial *Enterobacter* isolates resistant to 3GCs. Of the 41 patients with 3GC-susceptible isolates, 5 (12.2%) had relapse or persistence of infection; 2 of these developed relapse with an isolate resistant to 3GCs. Among the relapsed cases, those who developed resistant isolates had uncontrolled intra-abdominal or biliary sources of infection. Treatment with a 3GC was not associated with increased risk of relapse or persistence of infection (OR 2.1; 95% CI, 0.3–14.2, $P = 0.45$). Source control was inadequate in all cases of relapsed bacteremia. Relapsed cases with primary bacteremia cleared their bacteremia with central line removal. One patient with relapsed infection died.

Conclusion. The incidence of relapsed or persistent *Enterobacter* infection after initial bacteremia is comparable to previous adult studies. However, treatment of 3GC-susceptible isolates with 3GCs did not result in higher rates of treatment failure. Source control is important in preventing relapse or persistence of infection.

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2314. Invasive *Haemophilus influenzae* Infections in Children: A 10-Year Study

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Background. The rate of *Haemophilus influenzae* type b (HIB) infections has decreased dramatically since the use of HIB vaccines in infants and children. The current prevalence of invasive HIB infections and those due to non-type b *H. influenzae* is not fully known. The objective was to describe the cases of all invasive *H. influenzae* infections and describe the spectrum and severity of clinical disease.

Methods. Retrospective study of all hospitalized patients with culture-proven invasive *Haemophilus influenzae* infections at Nationwide Children's Hospital, Columbus, Ohio, from 2009 to 2018. The electronic health records were reviewed for pertinent demographic, clinical, laboratory data, and outcomes.

Results. There were a total of 59 culture-proven *H. influenzae* infections of which 12 were excluded due to insufficient patient data. The remaining 47 patients (32 [68%] male; 30 [64%] white, 8 [17%] African-American) and their culture results are provided in Table:

Haemophilus influenzae Infections in 47 Patients: Culture Results

	Type a $N = 1$ (%)	Type b $N = 3$(%)	Encapsulated non-b $N = 11$(%)	Not typeable $N = 30$(%)	Not typed $N = 2$(%)	Total $N = 47$(%)
<6 months	0	0	0	7(23)	1(50)	8(17)
≥6–12 months	1(100)	2(67)	7(64)	7(23)	0	17(36)
>1–5 years	0	1(33)	4(36)	6(20)	1(50)	12(25)
>5–8 years	0	0	0	8(26)	0	8(17)
>8–17 years	0	0	0	0	0	0
≥18 years	0	0	0	2(6)	0	2(4)
Blood only	1(100)	1(33)	4(36)	27(90)	2(100)	35(75)
CSF only	0	1(33)	0	0	0	1(2)
Both Blood and CSF	0	1(33)	5(45)	0	0	6(13)
Both CSF and Peritoneal Fluid	0	0	0	1(3)	0	1(2)
Both Blood and Synovial Fluid	0	0	2(18)	0	0	2(4)
Both Blood and Eye Discharge	0	0	0	2(6)	0	2(4)
Virus Coinfection	1(100)	3(100)	3(27)	14(46)	1(50)	22(47)
Bacteria Coinfection	0	1(33)	0	5(16)	2(100)	8(17)
Death	0	0	0	1(3)	0	1(2)

There were 14 (30%) patients with pneumonia and bacteremia, 6 (13%) with meningitis and bacteremia, 2 (4%) with only meningitis, 1 (2%) with bacteremia/meningitis and septic hip, 2 (4%) septic arthritis with bacteremia, 1 (2%) with periorbital cellulitis and bacteremia, and 21 (45%) with only bacteremia. Of the 3 cases of *H. influenzae* type b, 2 had not been vaccinated while 1 received only 1 dose of HIB vaccine.

Conclusion. Invasive *H. influenzae* infections were associated with substantial morbidity and a 2% case-fatality rate.

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2315. *Neisseria meningitidis* Oro-Pharyngeal Carriage, Serogroups and Clonal Complex in Children and Adolescents in Argentina

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Background. *Neisseria meningitidis* (Nm) pharyngeal carriage is a necessary condition for invasive meningococcal disease. In 2017, Argentina introduced a tetravalent meningococcal conjugated vaccine (MenACYW) to the National Immunization Program for children. We present the first carriage study in children in the prevaccine era. Aims: 1) to assess the rate of Nm carriage in healthy children and adolescents attending a public hospital in Buenos Aires city; 2) to determine serogroup and clonal complex distribution; 3)to determine carriage risk factors by age.

Methods. Cross-sectional study including children 1–17 years, stratified in two age groups (1–9 years and 10–17 years) assisted at Ricardo Gutiérrez Children Hospital between March-December 2017. Oro-pharyngeal swabs were plated and meningococci identified by conventional microbiology methods. Serogroup was determined by PCR. Clonal complex was determined by MLST.

Results. A total of 1751 children were included. Group aged 1–9 years: 38 Nm were isolated from 943 samples collected: overall carriage 4.0%. Serogroups distribution: B 26.3%, Y 2.6%, W 5.3%, Z 5.3%, non-groupable 7.9% and non-capsulated 52.6%. Clonal complex was determined for 25 isolates. Attendance at social venues was the only independent predictor of Nm carriage (adjusted OR: 2.02, CI 95% = 1.01–4.03; $P = 0.04$). Group aged 10–17 years: 76 Nm were isolated from 808 samples: overall carriage 9.4%. Serogroups distribution: B 19.7%, C 5.3%, W 7.9%, Y 9.2%, Z 5.3%,