

K. Green<sup>1</sup>, A. Shigayeva<sup>1</sup>, W. Rudnick<sup>1</sup>, A. Plevneshi<sup>1</sup>, S. Pong-Porter<sup>1</sup>, J. Li<sup>1</sup>, A. McGeer<sup>1</sup>

<sup>1</sup>Mount Sinai Hospital, Toronto, Canada

**Objectives:** In 2001, the first pneumococcal conjugate vaccine (PCV7) was authorized in Ontario, Canada. Publicly funded PCV7 was introduced in 1/2005, PCV10 in 10/2009 and PCV13 in 11/2010. TIBDN performs population-based surveillance for invasive pneumococcal disease (IPD) in Toronto/Peel and describes trends in pneumococcal serotypes prior to and post introduction of conjugate vaccines.

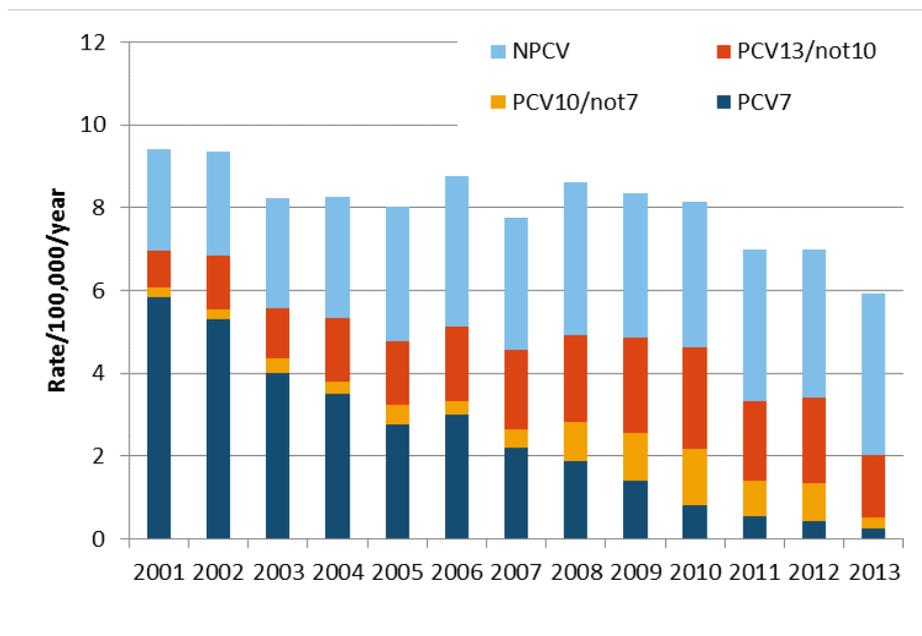
**Methods:** IPD cases are reported to a central office and one isolate/case is serotyped at a central lab. Demographic and clinical data are collected by chart review and patient/physician interview.

**Results:** From 1/2001 to 7/2014, 4916 adult ( $\geq 15$  years) IPD cases were identified. 47% of adult cases were  $\geq 65$  years. Over this period, 3518 (72%) adults had a chronic underlying illness predisposing them to IPD. Pneumonia was diagnosed in 3595 (73%) cases, bacteremia without focus in 638 (13%), and meningitis in 303 (6%).

Since 2009, the IPD rate due to PCV13/nonPCV7 serotypes decreased (2.4 to 1.1/100000/year in adults  $<65$  years and from 8.9 to 6.0/100000/year in adults  $\geq 65$  years). IPD due to nonPCV serotypes remained constant (all adults, about 3.5/100000/year) and IPD due to PCV7 serotypes continued to decrease (all adults, 5.8 in 2001 to 0.2/100000/year in 2013).

The overall IPD rate in adults  $\geq 65$  years decreased from 26/100000/year in the 2005–2010 period to 19/100000/year in 2013. In adults  $<65$  years, IPD decreased from 5.2/100000/year in 2005–2009 to 3.4/100000/year in 2013.

**Figure 1:** Incidence of IPD among adults ( $\geq 15$  years) by PCV-serotype groups in Toronto/Peel, Canada, 2001-2013.



From 1/2013 to 7/2014, serotype was available for 469 (87%) adult IPD cases. Serotypes 19A (14%), 22F (12%) and 3 (10%) were most common. NonPCV serotypes comprised 64% of adult cases; 22F, 23A, 6C were most common (11%, 5%, and 5% of cases, respectively).

**Conclusions:** Since PCV13-program implementation in 2010, the IPD rate due to PCV13/not7 serotypes decreased among both older and younger adults. Between 2010 and 2013, the IPD rate due to nonPCV serotypes has remained constant.