Background: The Canadian Bacterial Surveillance Network (CBSN) has been monitoring resistance trends in Canadian isolates of S. pneumoniae (SP) since 1993.

Methods: CRBN is a collaborative network of microbiology laboratories from across Canada that submit bacterial isolates to a central laboratory for broth microdilution antimicrobial susceptibility testing performed according to CLSI standards.

Results: Between 1993 and 2009, 33,369 isolates of S. pneumoniae were collected and tested. Characteristics of pneumococcal isolates by year are shown in Table 1 below.

Results (con’t)

- Erythromycin resistance increased significantly from 1.9% in 1993 to 22.4% in 2007 (P<0.0001). In 2008, erythromycin resistance decreased slightly to 21.1% (P=0.039) with a subsequent increase to 23.5% (P=0.01) in 2009. Between 2003 and 2008, a 2-fold increase was observed. By 2009, erythromycin resistance decreased from 115 Rx/1000 pop in 1994 to 7 Rx/1000 pop in 2009. Azithromycin and clarithromycin became the macrolides of choice with a sustained increase from 9 to 67 Rx/1000 pop for clarithromycin between 1994 and 2009 and a parallel increase in Rx rates for azithromycin from 1 Rx/1000 pop in 1994 to 63 Rx/1000 pop in 2002. Since 2003 use of all three macrolides has decreased or remained relatively unchanged (Figure 2).

Conclusions: In Canada, pneumococcal resistance to beta-lactam antibiotics, macrolides and tetracycline remains low. The increasing trend in resistance to fluoroquinolones remains low.