

## 20 pneumococcal serotyping methods tested; concern about US healthcare quality measures

November 17 2015

---

Many recently developed pneumococcal serotyping methods detect the dominant serotype in a laboratory or field sample, but several fail to detect minor serotypes, according to a study published this week in *PLOS Medicine*. This investigation of 20 current methods, conducted by Catherine Satzke of the Murdoch Childrens Research Institute, Royal Children's Hospital, Parkville, Victoria, Australia, and colleagues, indicates that a microarray analysis with culture amplification is a top-performing method, but a cheaper culture and latex sweep method represents a viable alternative.

About 800,000 young children, mostly living in low-income countries, die annually from pneumococcal diseases. Vaccine development requires accurate carriage studies with high sensitivity and the ability to detect multiple serotypes in individual samples. Here, in a multi-center comparative study (the PneuCarriage project), researchers used their own methods to serotype "spiked" and field samples containing combinations of *Streptococcus pneumoniae* bacteria. Fifteen methods detected the major serotype in the spiked samples with 70% sensitivity, but only eight detected minor serotypes at the same threshold. For the field samples, a culture microarray method had the best overall performance (95.8% sensitivity and 93.9% Positive Predictive Value (PPV)), while a more affordable culture and latex sweep method that has been used in low-income settings showed promising performance (79.8% [sensitivity](#) and 91.4% PPV).

This study did not test all currently available serotyping methods, and assessed each method as implemented in a single, well-resourced laboratory. Nevertheless, these findings should help to guide future vaccine planning and evaluation. The authors state, "We envisage that these methods will now be applied to vaccine impact studies in low-income settings, measuring changes in carriage before and after vaccine introduction in community carriage surveys and/or in children with pneumonia, and monitoring community carriage as a sensitive indicator of herd immunity under various [vaccine](#) schedules and levels of coverage."

**More information:** Satzke C, Dunne EM, Porter BD, Klugman KP, Mulholland EK, PneuCarriage project group (2015) The PneuCarriage Project: A Multi-Centre Comparative Study to Identify The Best Serotyping Methods for Examining Pneumococcal Carriage in Vaccine Evaluation Studies. *PLoS Med* 12(11): e1001903. [DOI: 10.1371/journal.pmed.1001903](#)

Provided by Public Library of Science

Citation: 20 pneumococcal serotyping methods tested; concern about US healthcare quality measures (2015, November 17) retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-11-pneumococcal-serotyping-methods-healthcare-quality.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--