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| **Title:**  “Should pneumococcal serotype 3 be included in sero-type specific immunoassays?”  Ezra Linley, Abigail Bell, Jenna Gritzfeld, Ray Borrow  Vaccine Evaluation Unit, Public Health England, Manchester, UK |
| 1) Background and aim:  Since the introduction of the PCV13 vaccine, a number of studies have been performed demonstrating the limited efficacy of the pneumococcal serotype 3 (Pn3) component of this vaccine. This poster outlines the evidence for this, and details some of the technical difficulties of the Pn3 component of the multiplexed pneumococcal antibody assay and discusses whether it is necessary to include Pn3 in the assay in the future.  2) Methods:  A literature review was performed on recent publications to assess the evidence for efficacy of the PCV13 vaccine against Pn3.  Literature was reviewed to propose some mechanisms for the lack of efficacy.  Evidence for issues regarding reproducibility of the Pn3 component of the Luminex assay was reviewed and summarized.  3) Results:  Evidence from seven countries (Denmark, France, Greece, Portugal, Sweden, UK, US) shows limited or no effectiveness of PCV13 vaccine against Pn3 invasive pneumococcal disease, otitis media, and carriage.  Pn 3 capsule shows some unique characteristics that may serve to explain this lack of efficacy – capsular polysaccharide is abundantly expressed, leading to a greater thickness of capsule, and free CPS may be released during growth.  The Pn3 component of the Luminex assay demonstrates poorer between-laboratory reproducibility than other components according to NEQAS reports.  4) Conclusion:  The serotype 3 component of the PCV13 vaccine has limited to negative evidence for efficacy, thus serotype specific results for Pn3 anti body levels are of questionable clinical relevance. This, in combination with the issues regarding assay reproducibility of the Pn3 Luminex component, leads us to suggest that Pn3 be removed from the multiplexed immunoassay. |