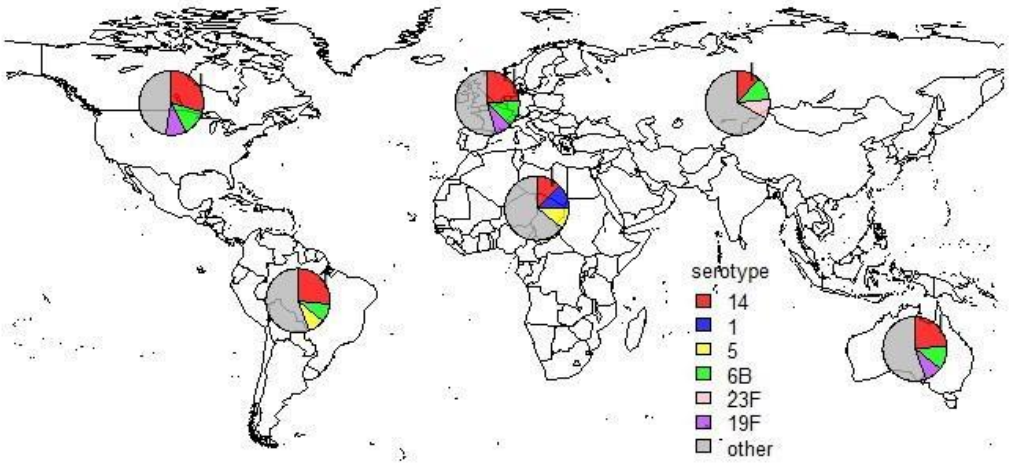
THE CHALLENGE:

OGH consultants conducted an epidemiological analysis of pneumococcal serotype distribution in North America and Europe to aid in the design of future pneumococcal vaccine design.

Invasive pneumococcal disease (IPD) is a notable cause of morbidity and mortality globally. IPD infections can result in a number of serious conditions including pneumonia, infection of the blood (bacteremia/sepsis), middle-ear infection (otitis media), or bacterial meningitis. The evidence shows that IPD prevalence is on the increase despite the availability of pneumococcal conjugate vaccines (PCV).



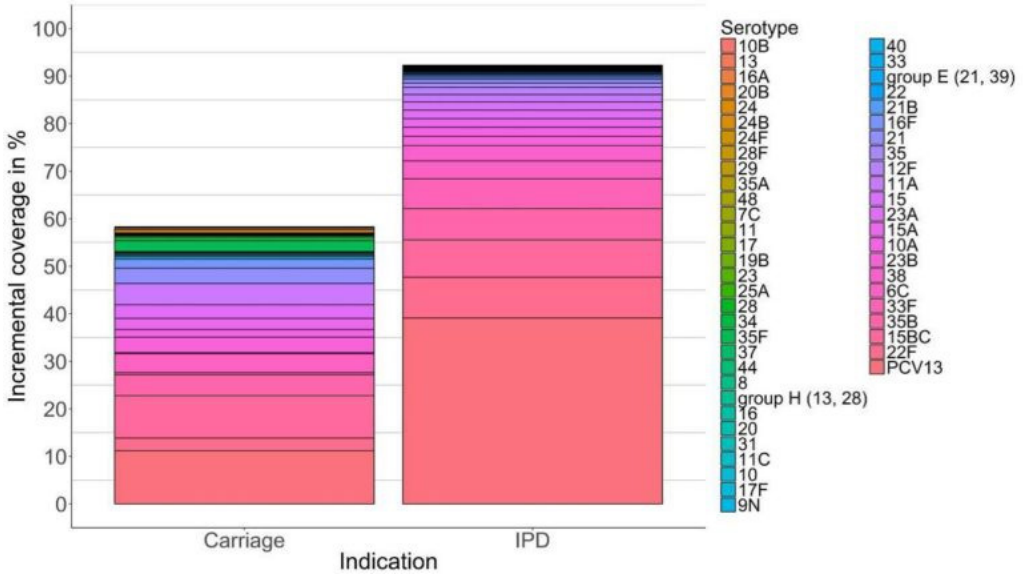
Most frequent three serotypes causing IPD in children under 5 years in GAVI-eligible countries prior to PCV introduction, by world region. (Data from Johnson et al 2010).

THE APPROACH:

This increase has been attributed to the fact that current vaccines do not provide protection against all pneumococcal serotypes. As such, strains of the disease not covered by current vaccines are increasingly filling the gap left by the treatable strains. As the coverage of current PCVs against IPD-causing serotypes decreases in nations adopting PCVs into their immunisation schedules, there is a need for next generation PCVs to provide more protection against these disease strains.

THE IMPACT:

OGH analysed both published and unpublished pneumococcal serotype distribution data from both IPD and nasopharyngeal carriage isolates, from countries representative of the epidemiological landscape in North America (US, Canada) and Europe (UK, Finland) to aid in future vaccine design.



Comparison of coverage of IPD serotypes, nasopharyngeal carriage versus IPD. US, children 0-7 years.