

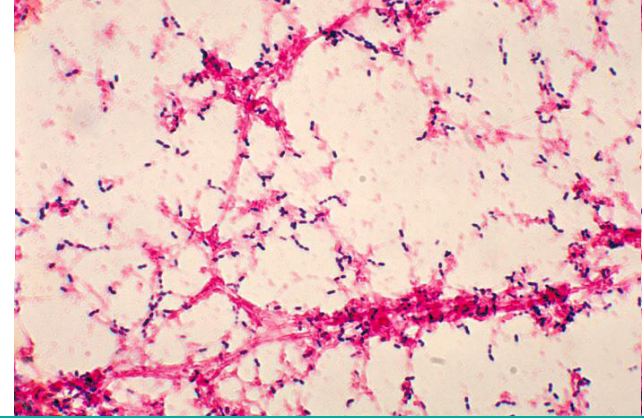


Public Health
England



37TH ANNUAL MEETING OF THE
**EUROPEAN SOCIETY FOR
PAEDIATRIC INFECTIOUS
DISEASES**

Organised jointly by ESPID and the ESPID foundation



Protecting and improving the nation's health

IPD due to emerging serotypes 8, 12F and 9N among <15 years in England

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Public Health England

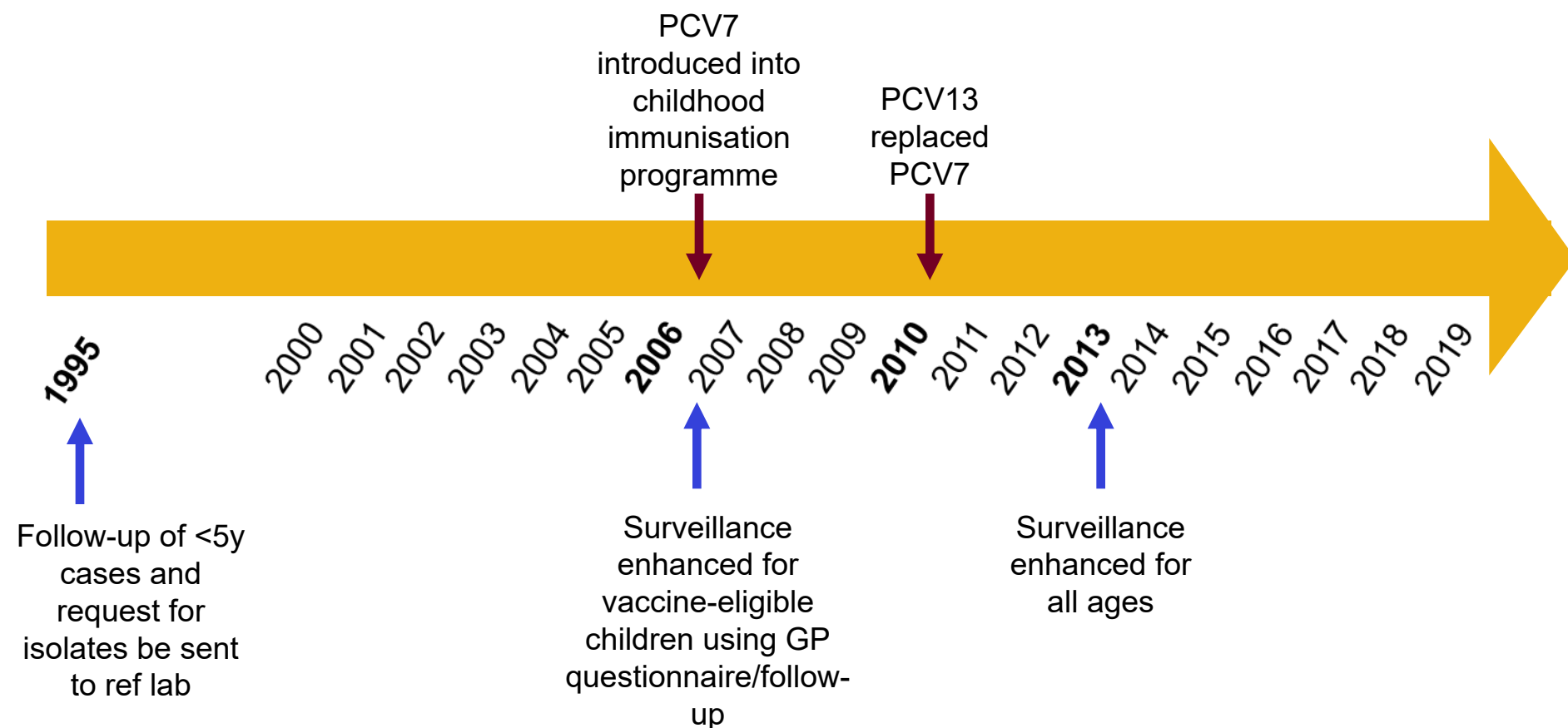
Disclosure

- Nothing to disclose.

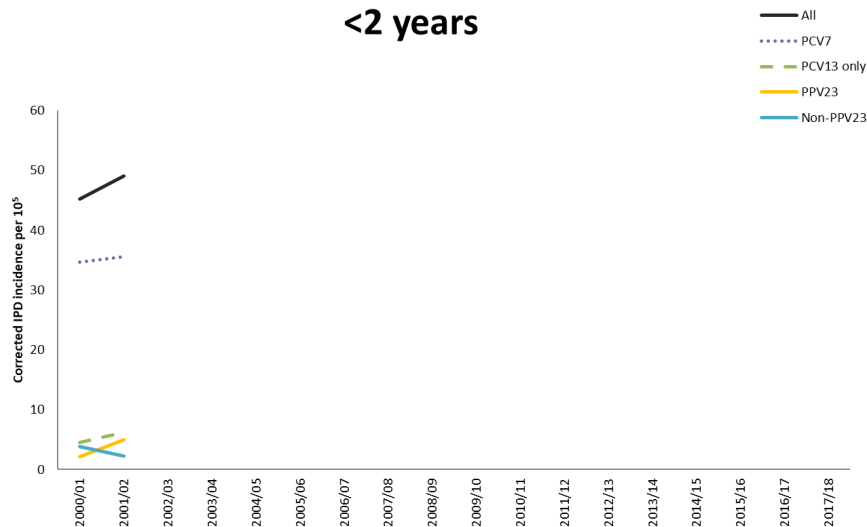
Background

- *Streptococcus pneumoniae* remains an important bacterial cause of meningitis, septicaemia and pneumonia in England across all ages
- Introduction of pneumococcal conjugate vaccines (PCV) into the routine childhood immunisation programme → rapid + sustained decline in VT-IPD
- Ongoing serotype replacement observed – 8, 12F, 9N now account for ~40% all IPD in England

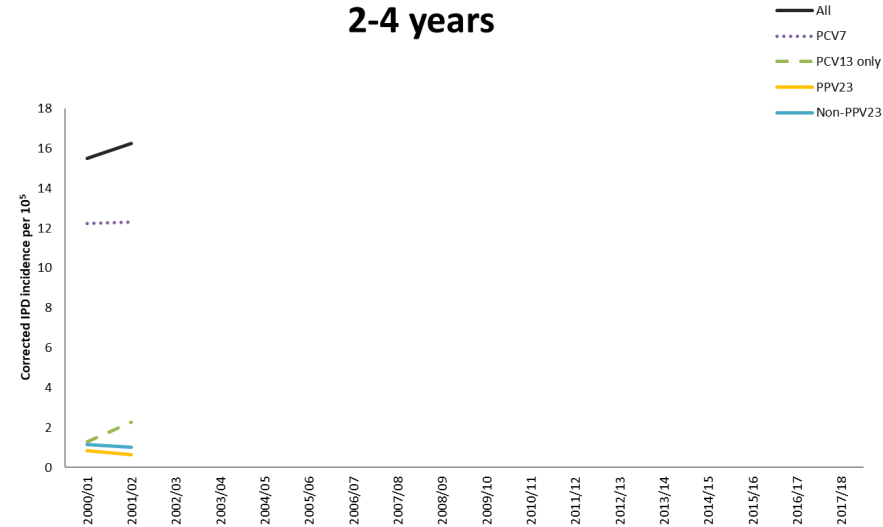
Immunisation & surveillance programmes in England



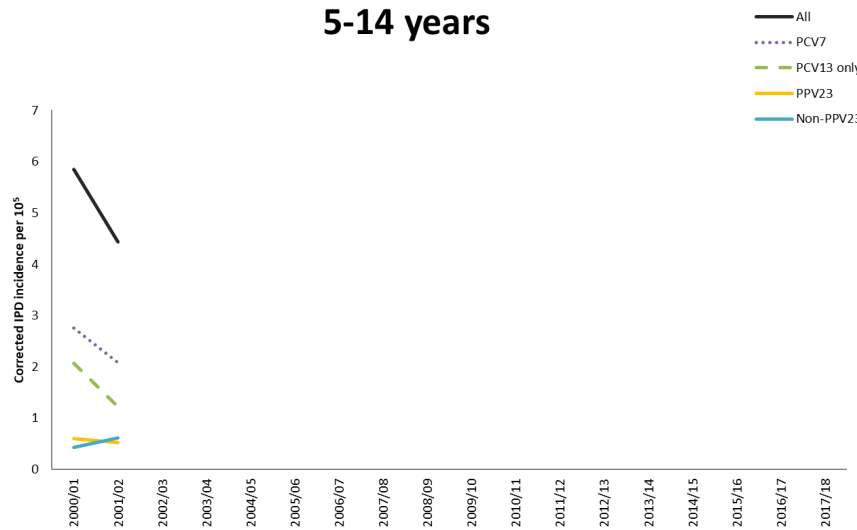
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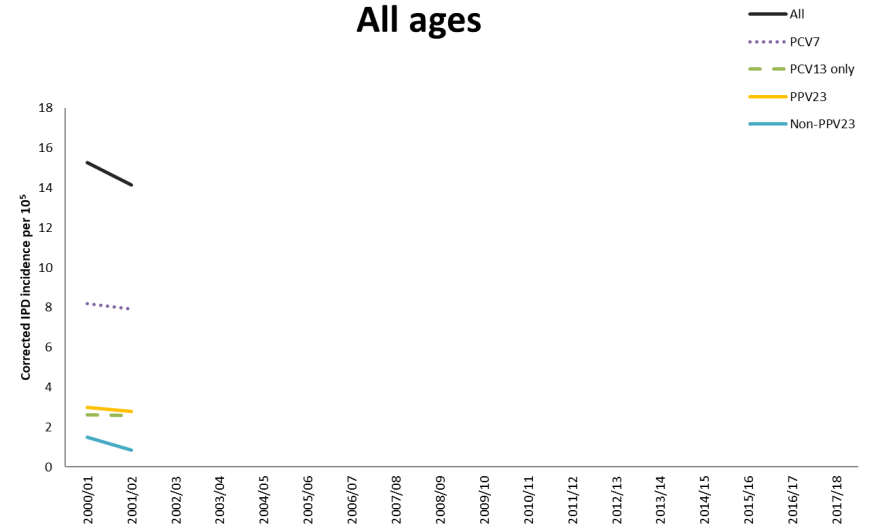
2-4 years



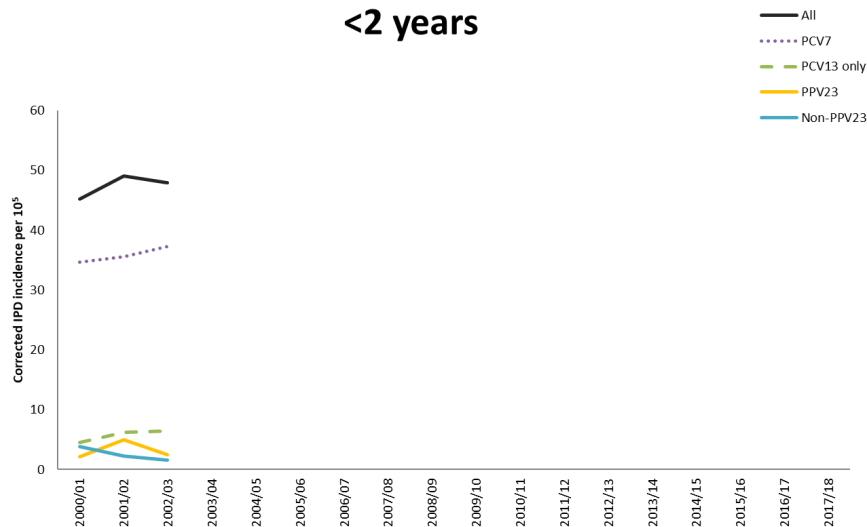
5-14 years



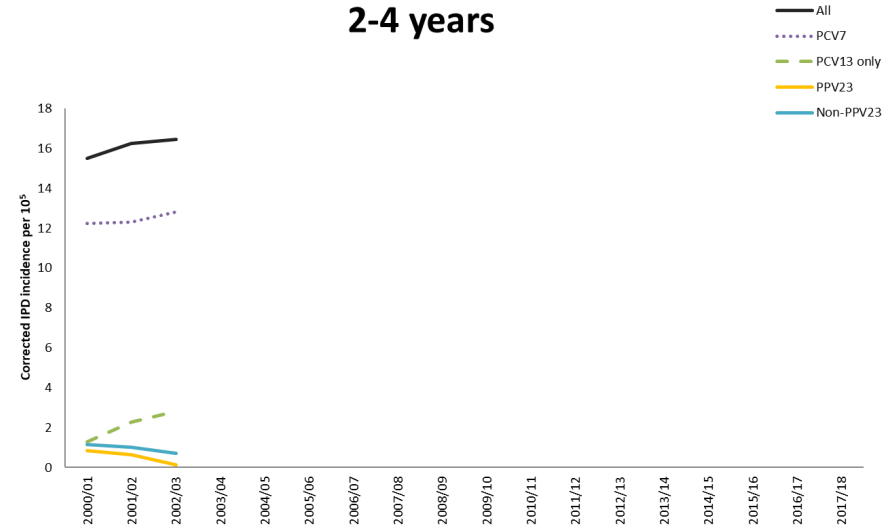
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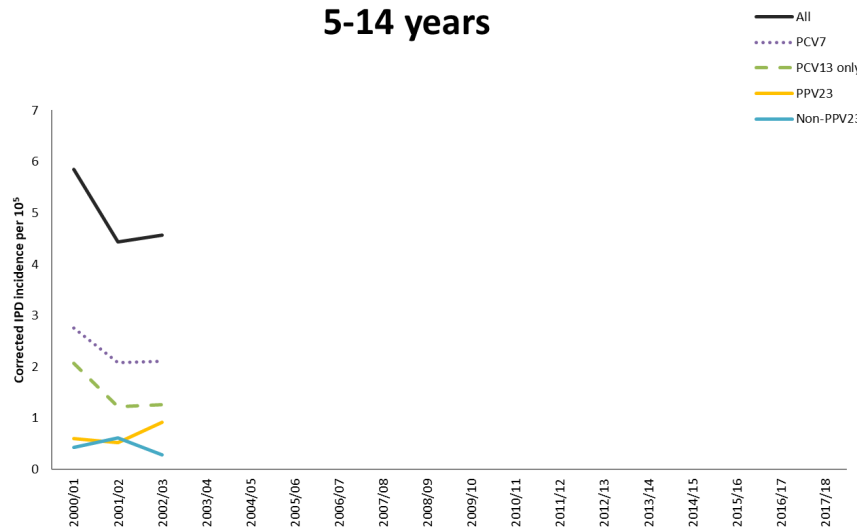
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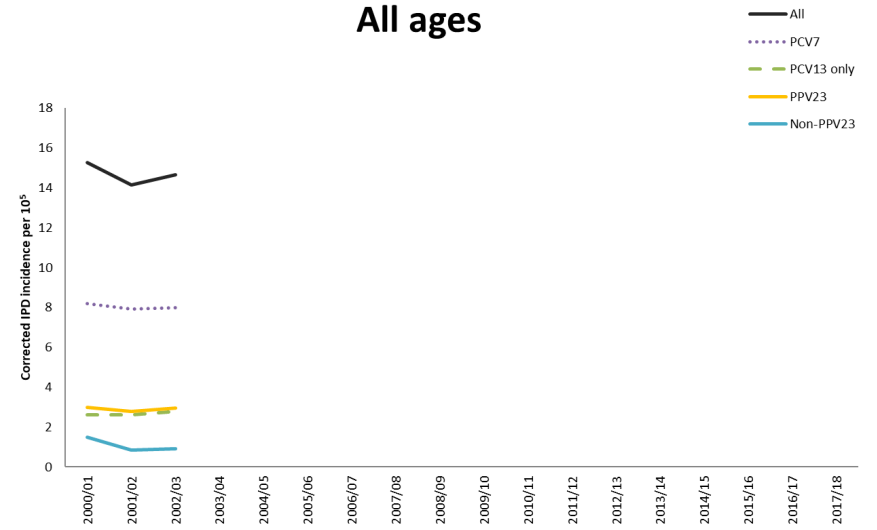
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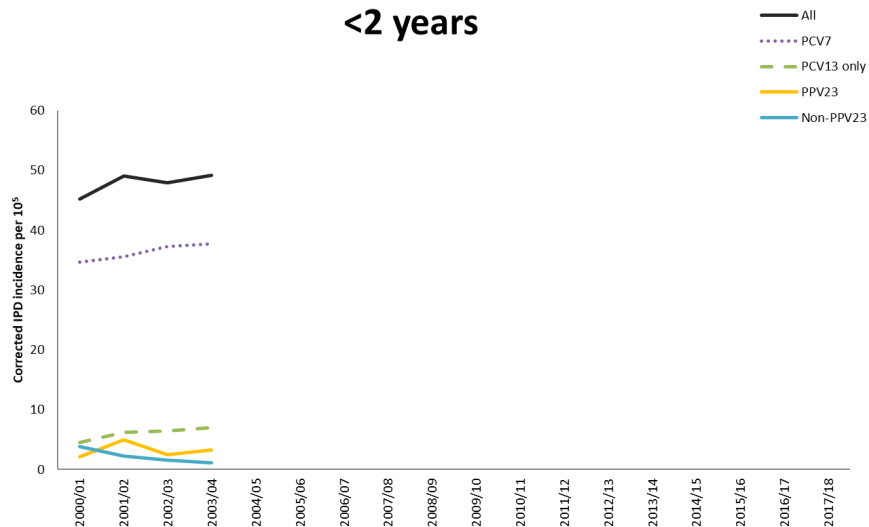
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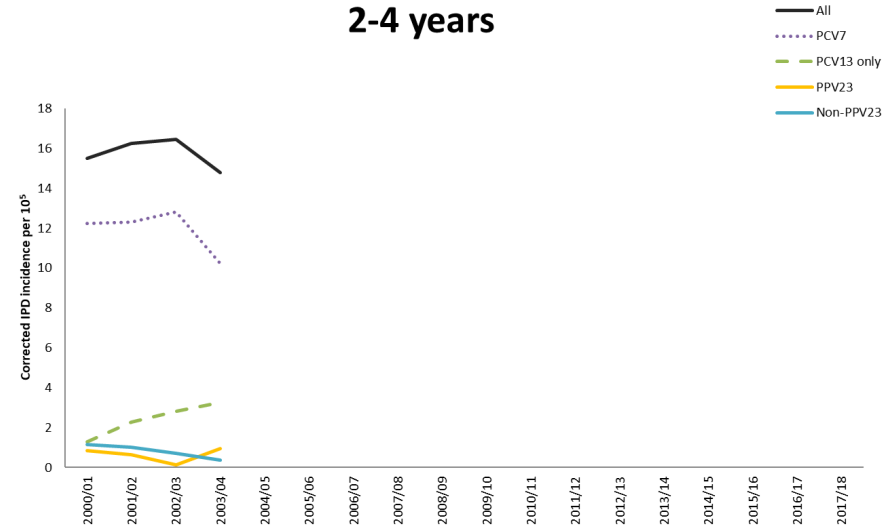
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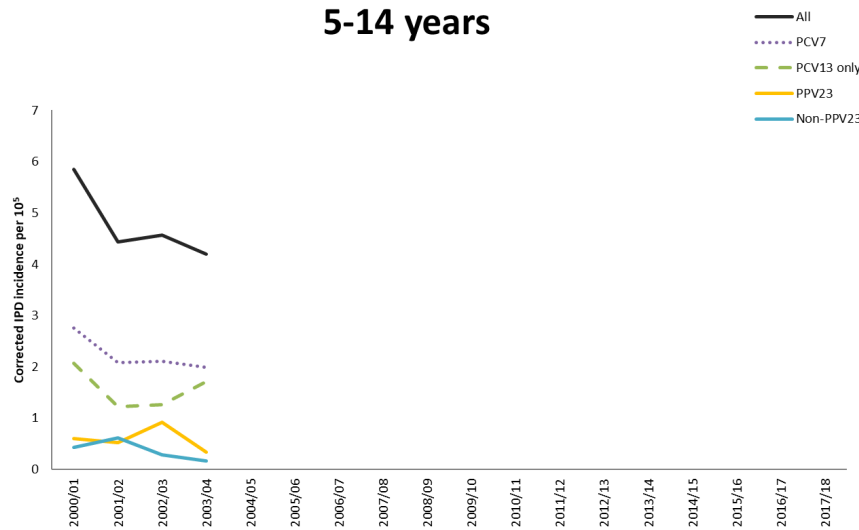
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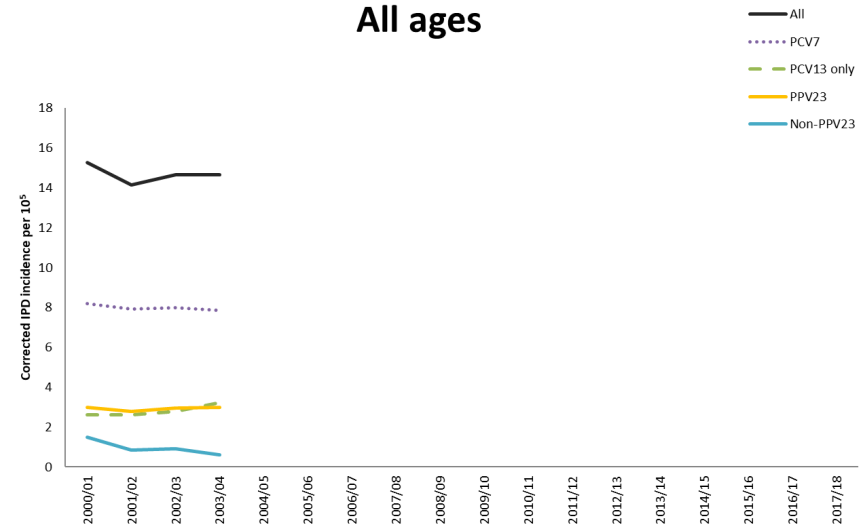
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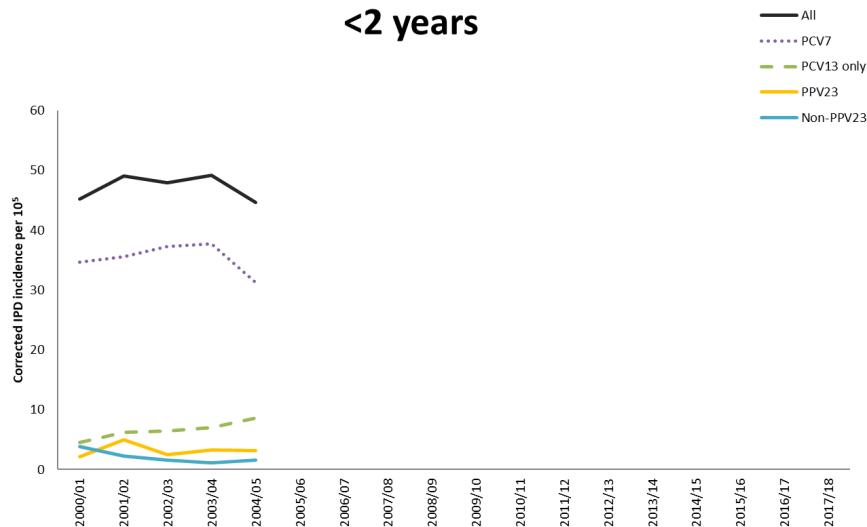
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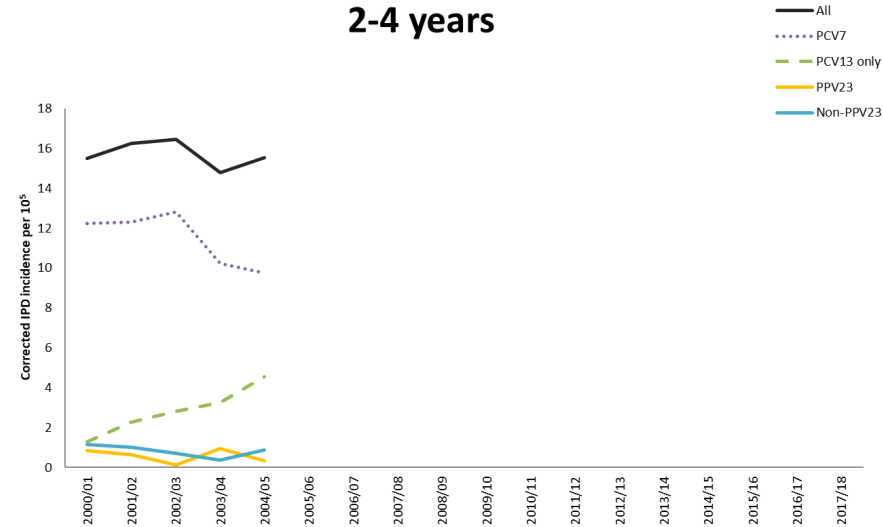
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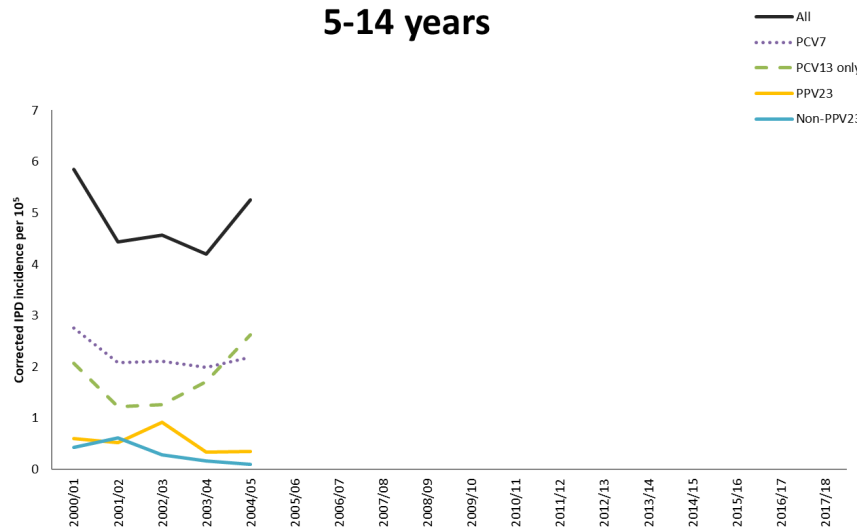
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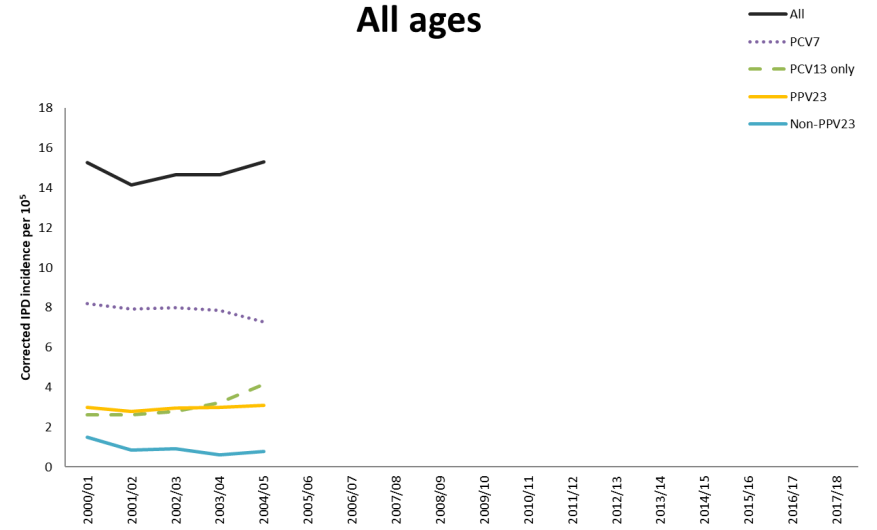
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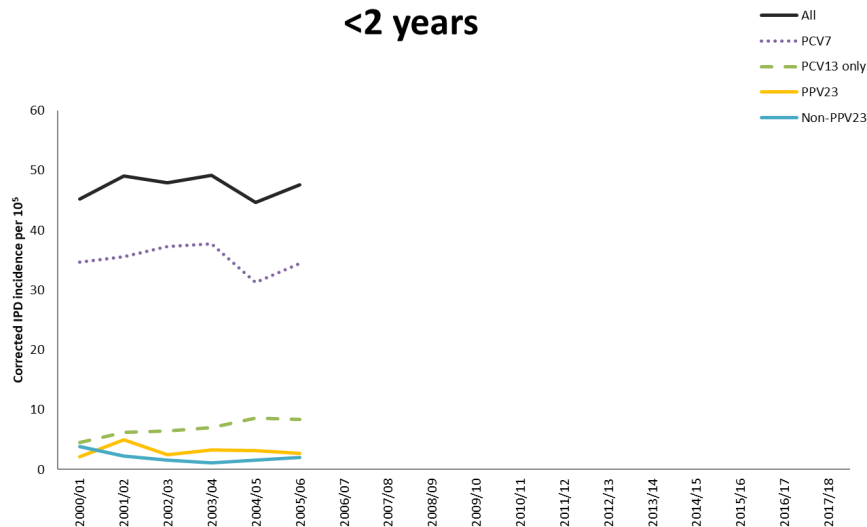
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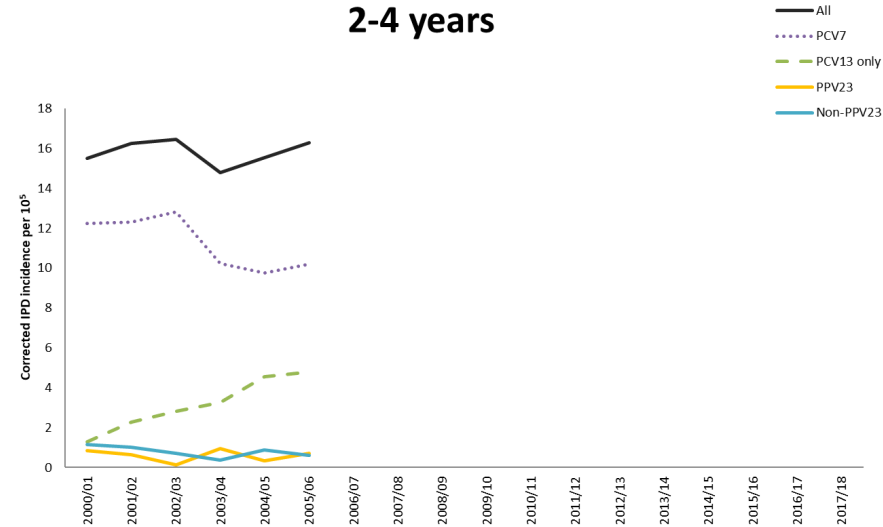
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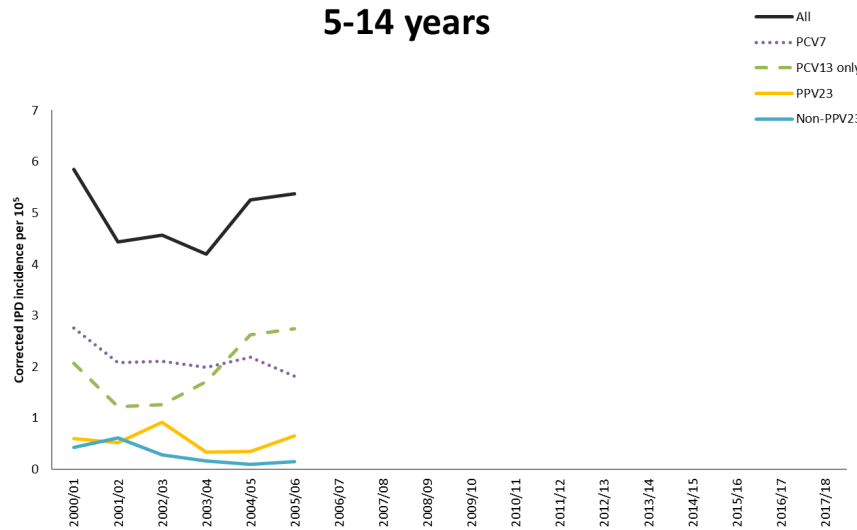
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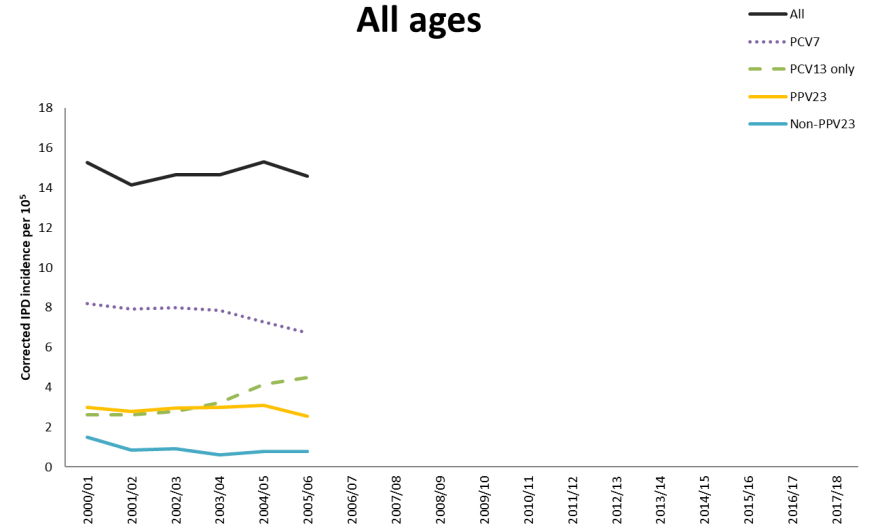
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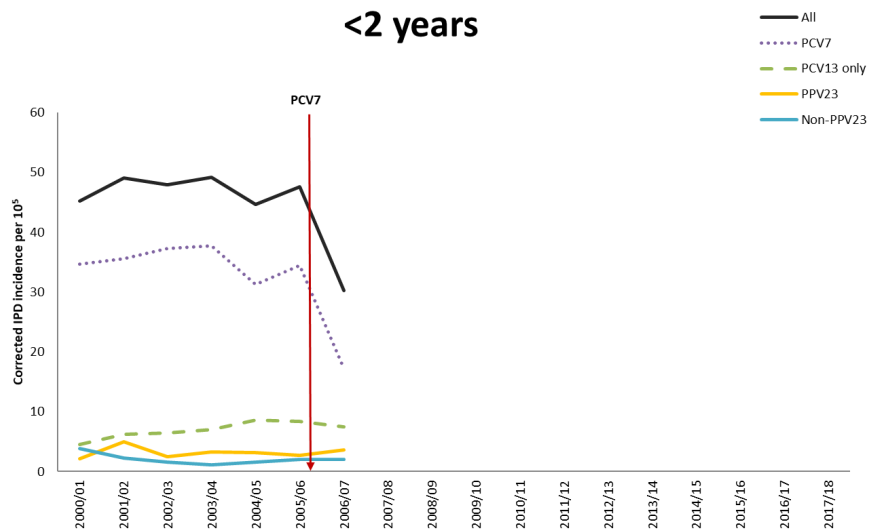
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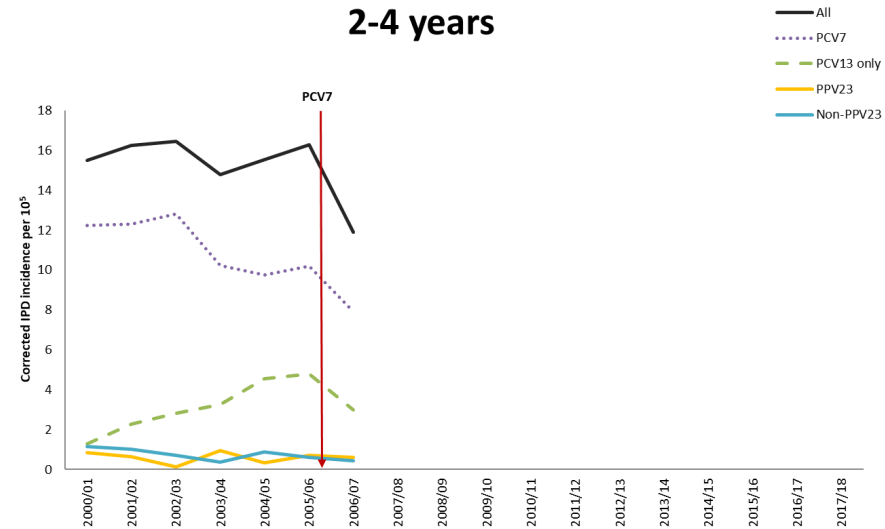
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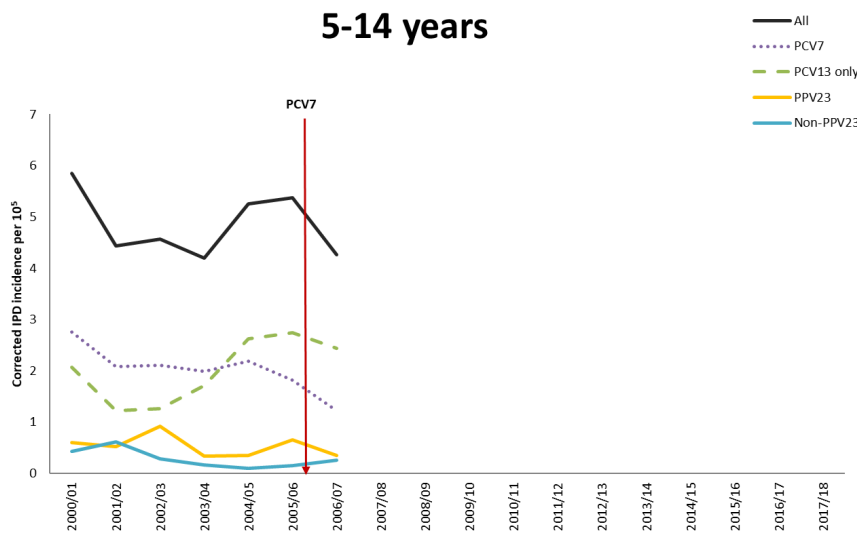
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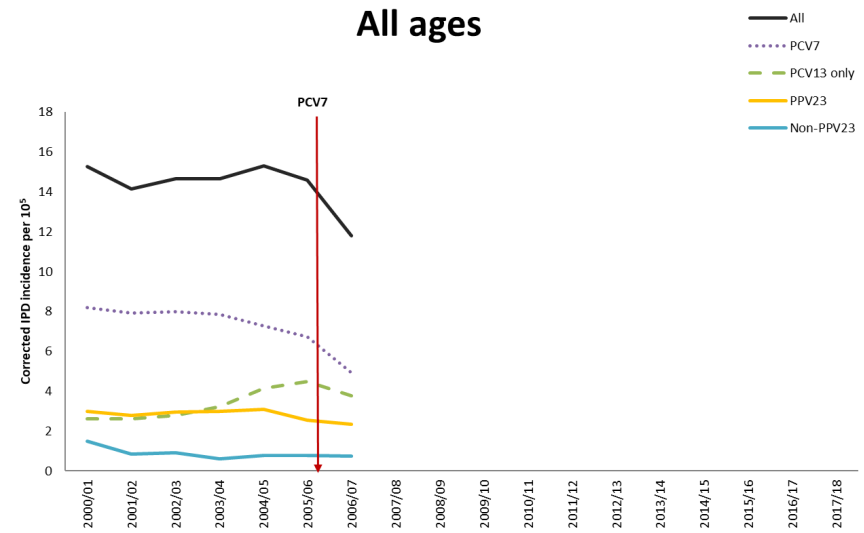
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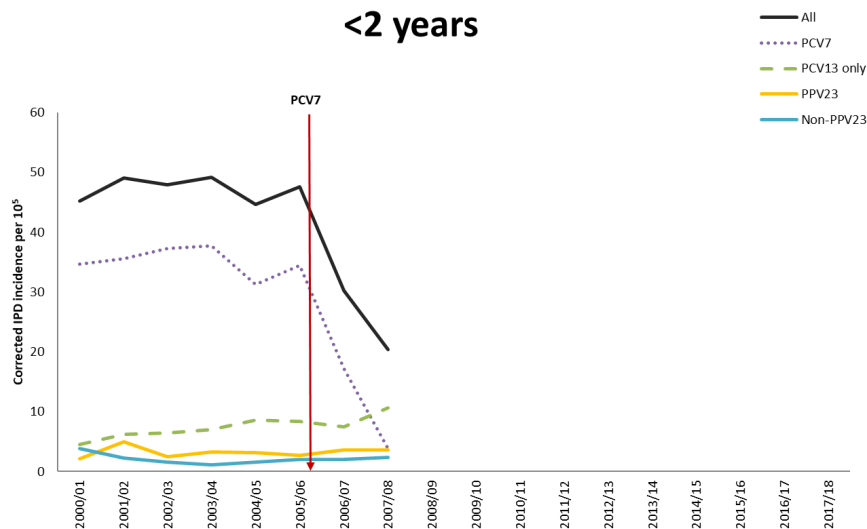
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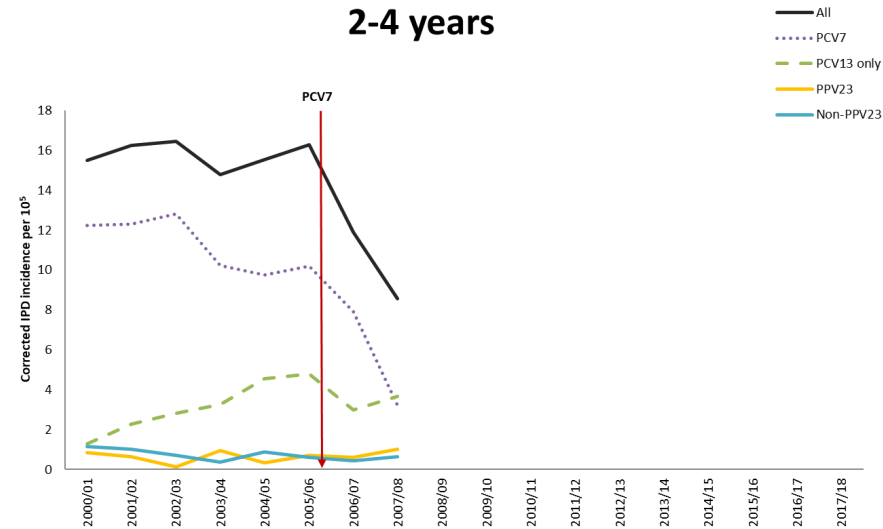
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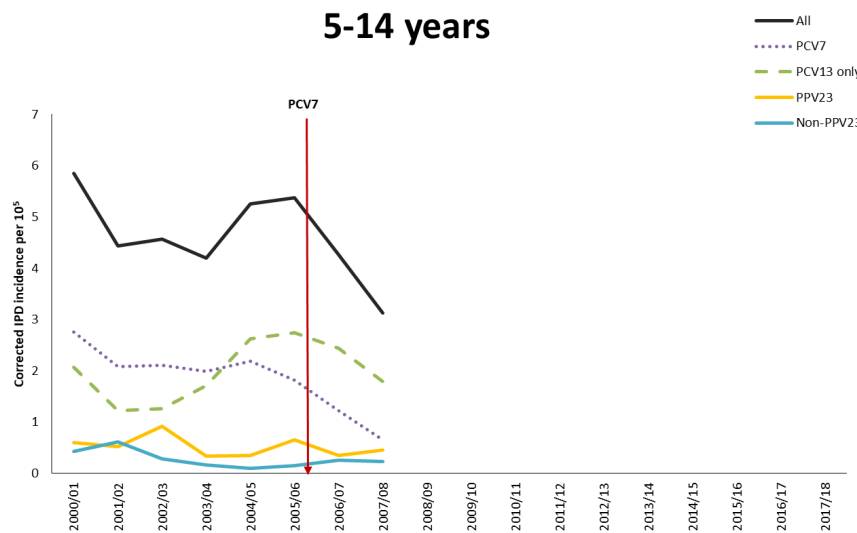
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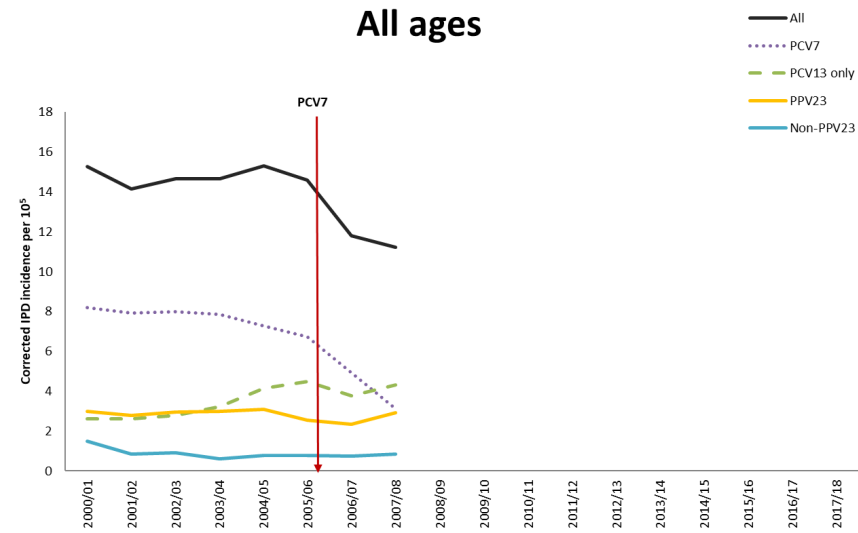
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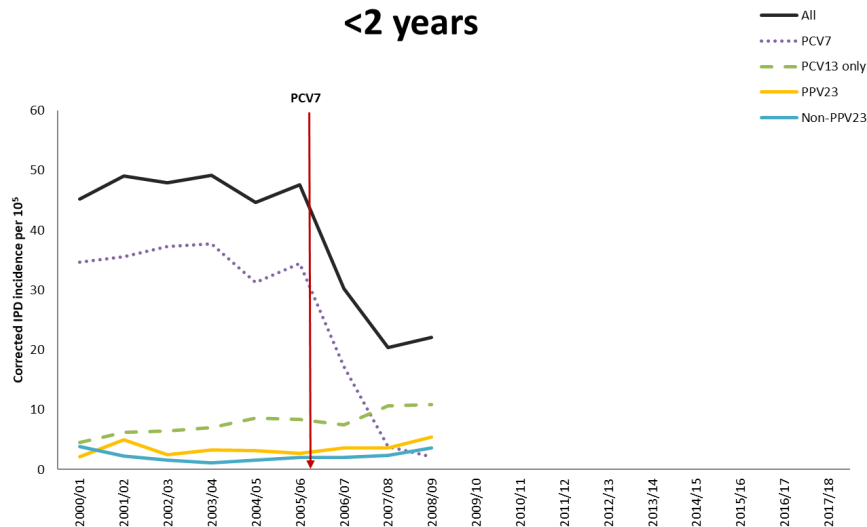
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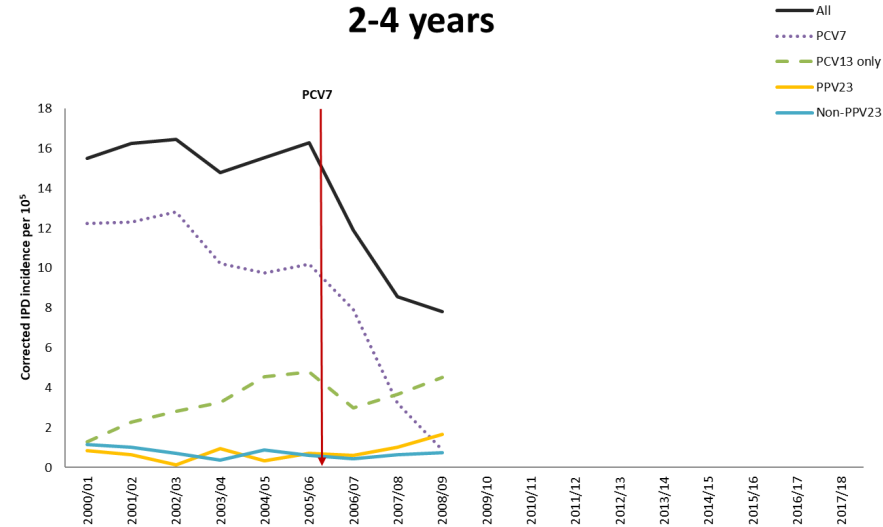
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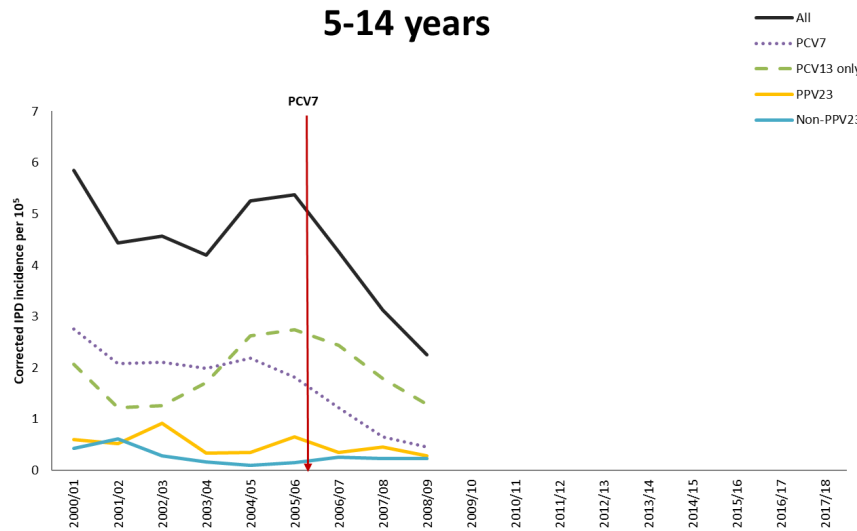
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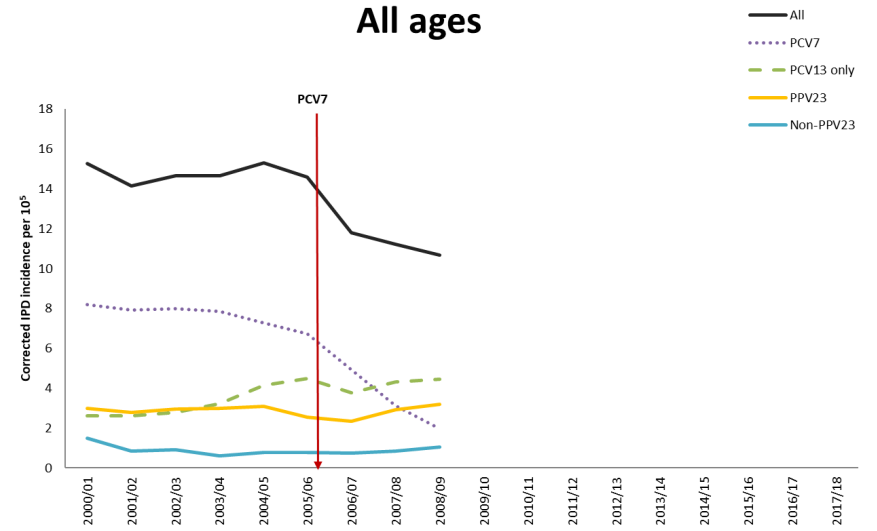
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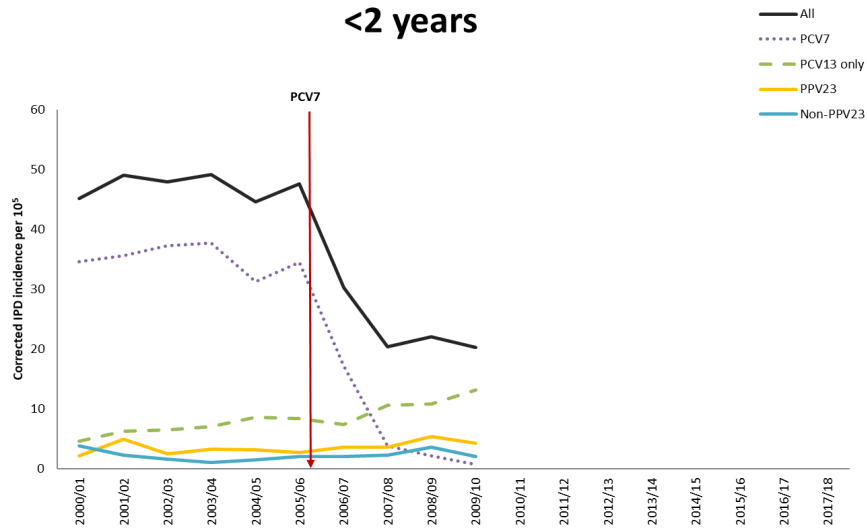
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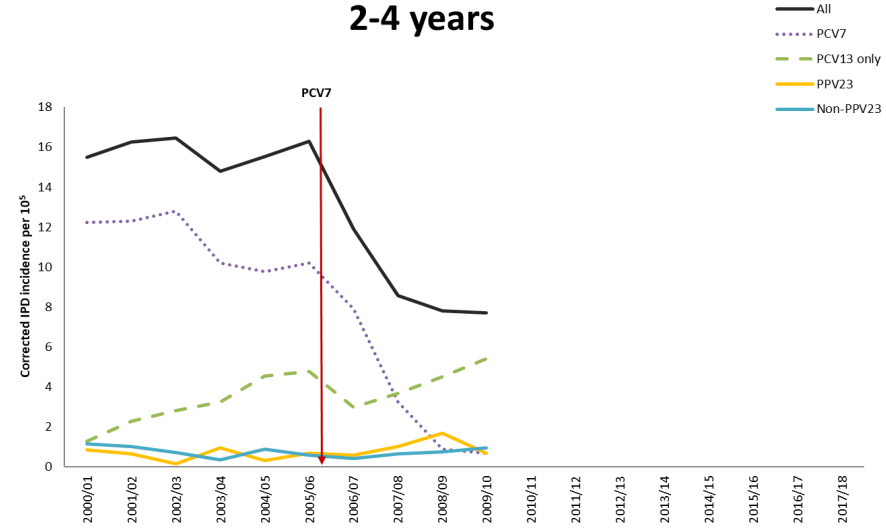
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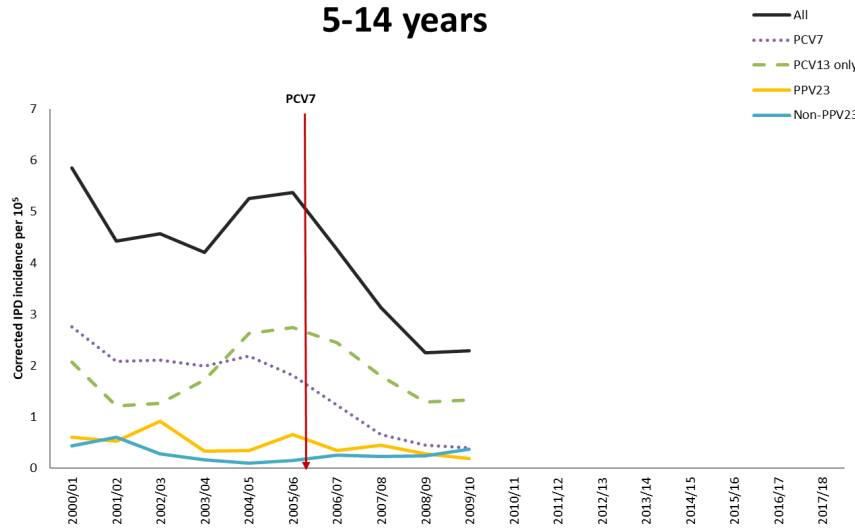
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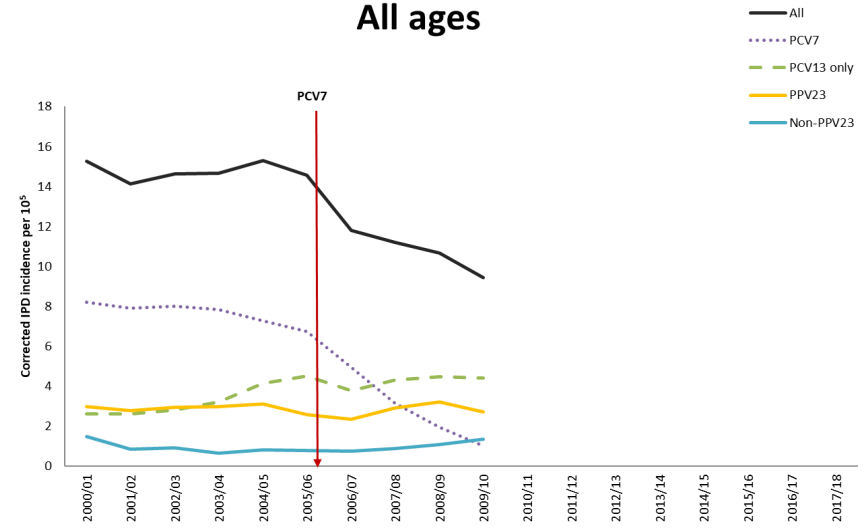
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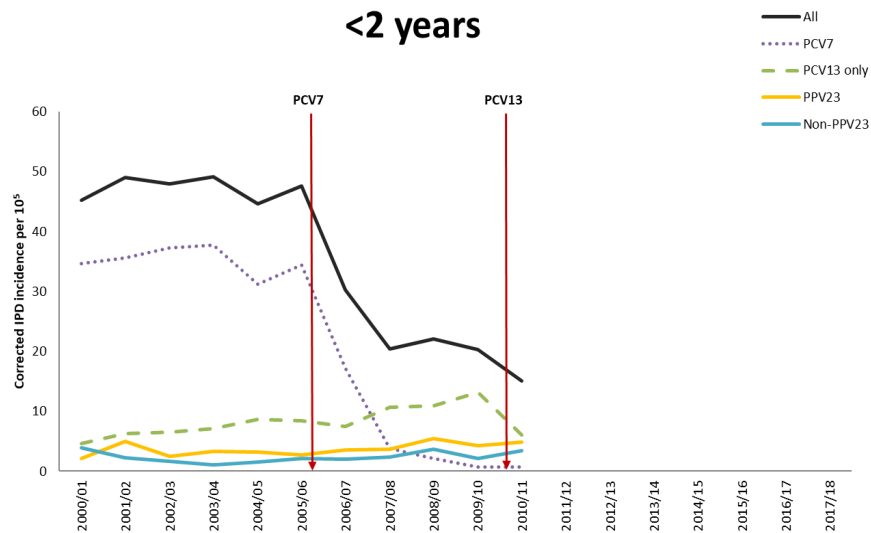
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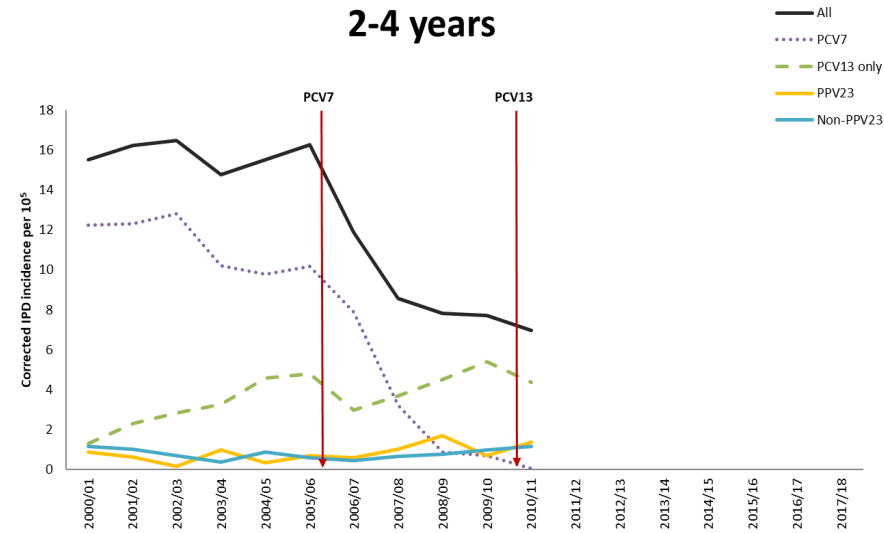
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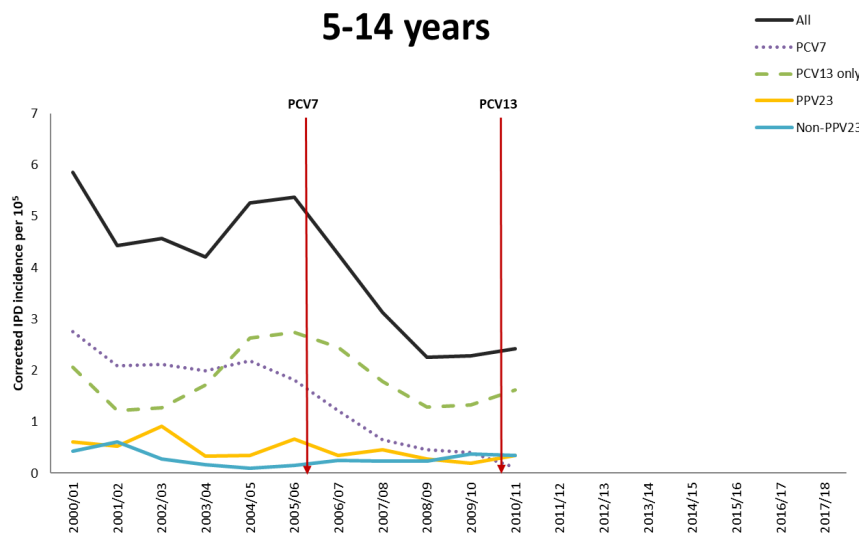
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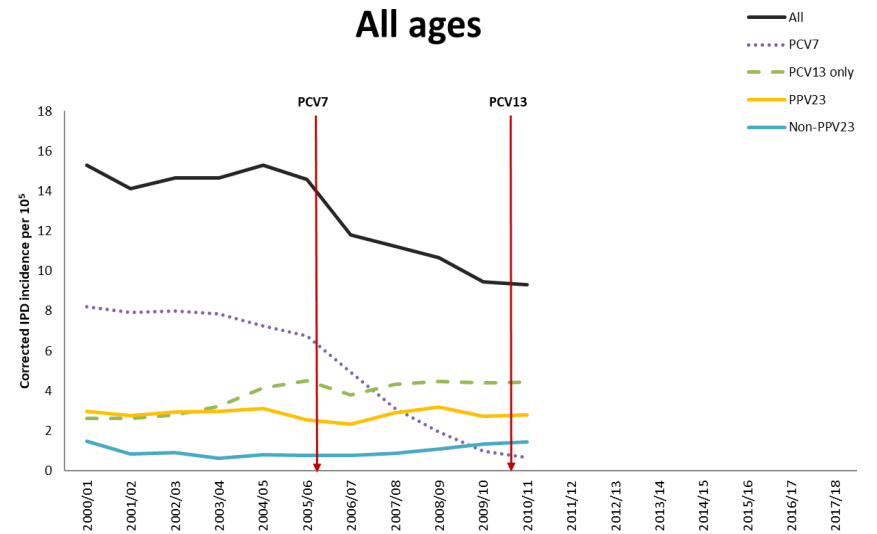
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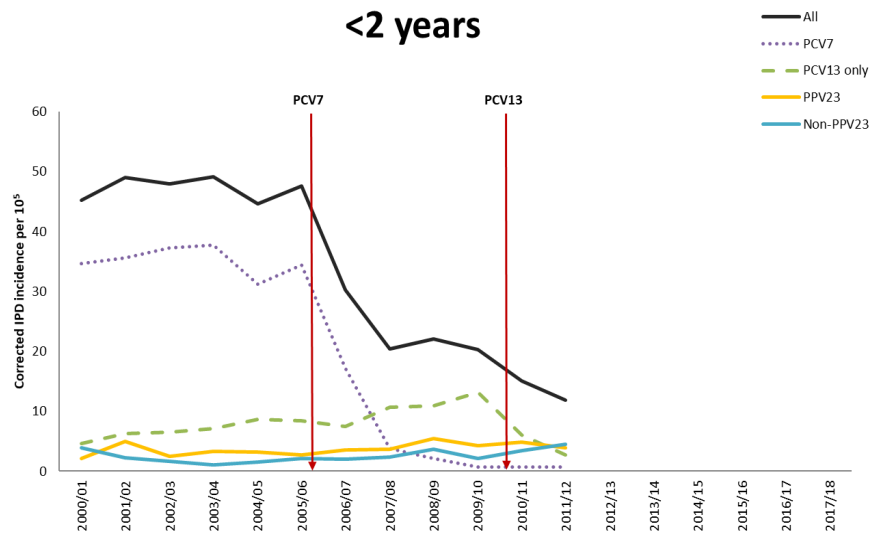
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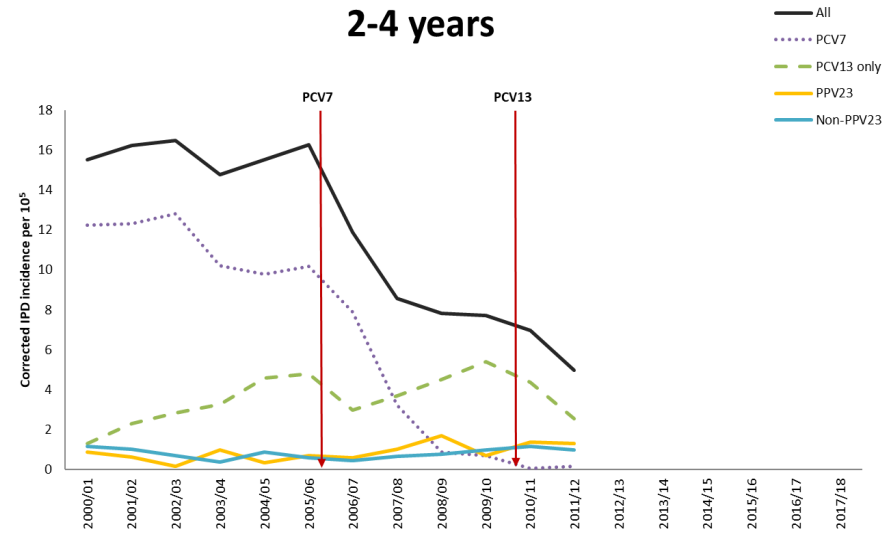
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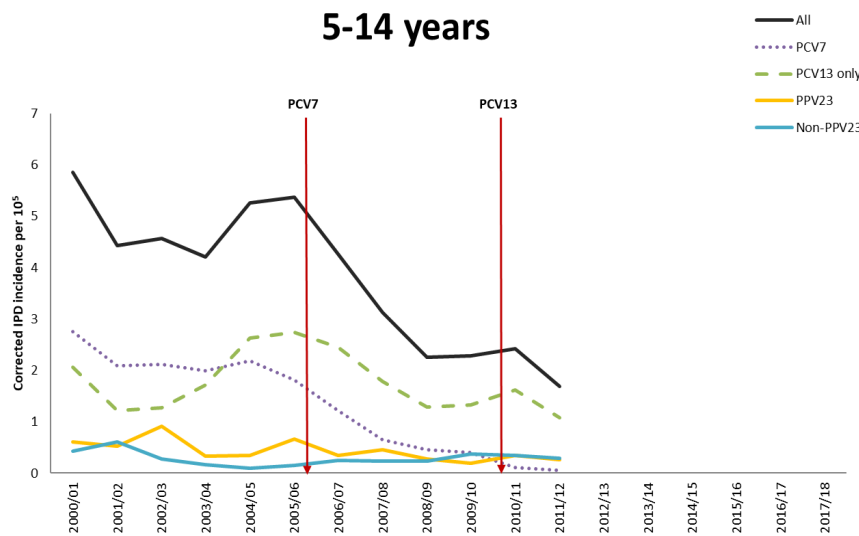
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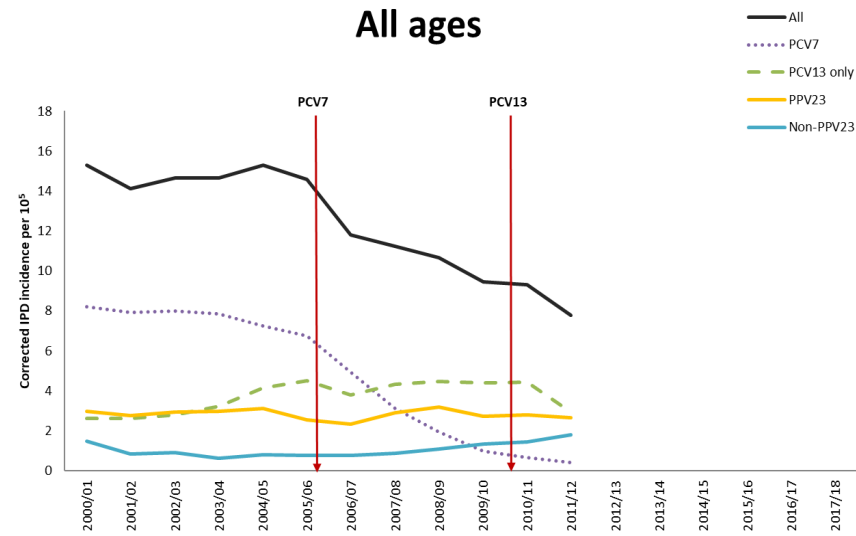
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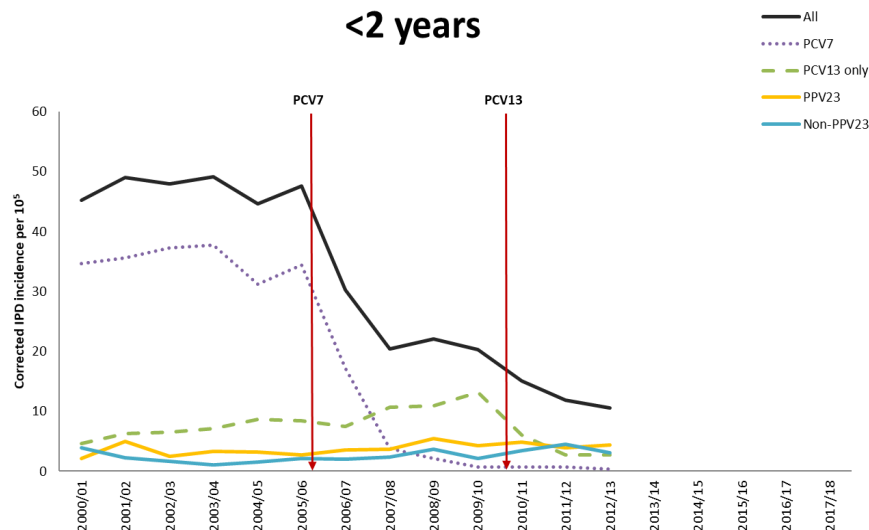
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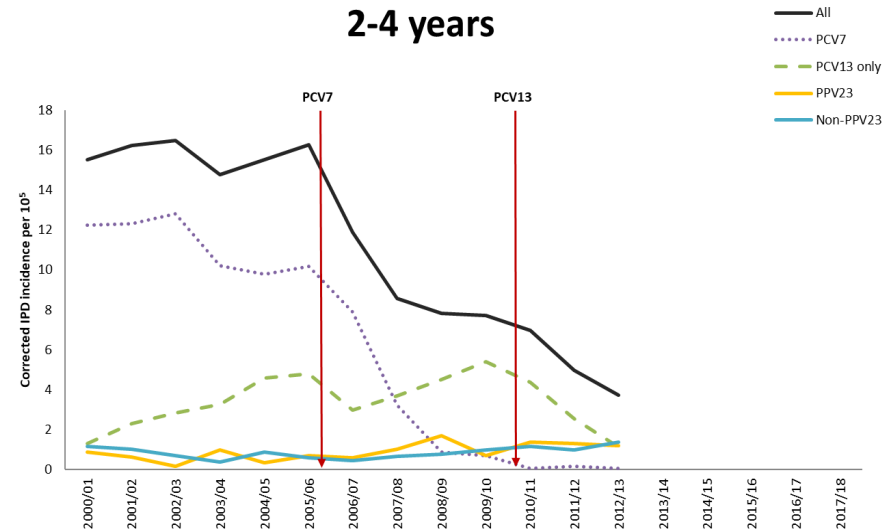
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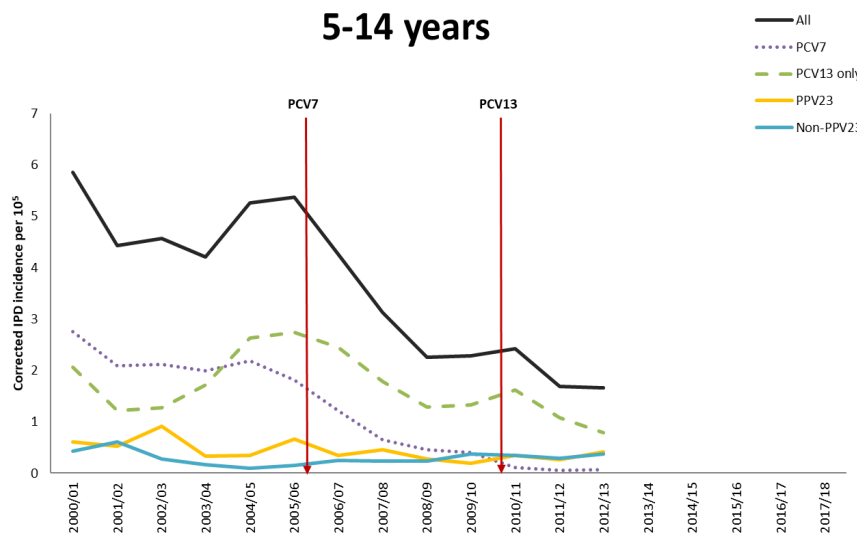
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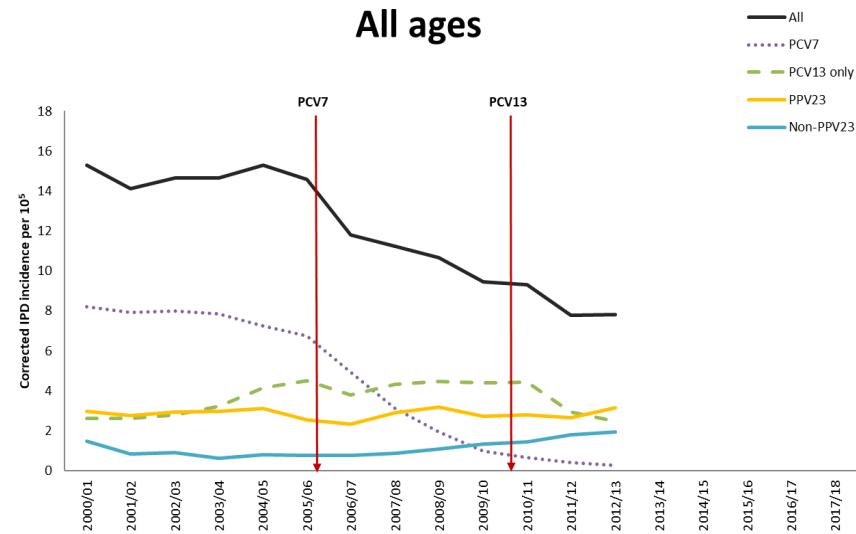
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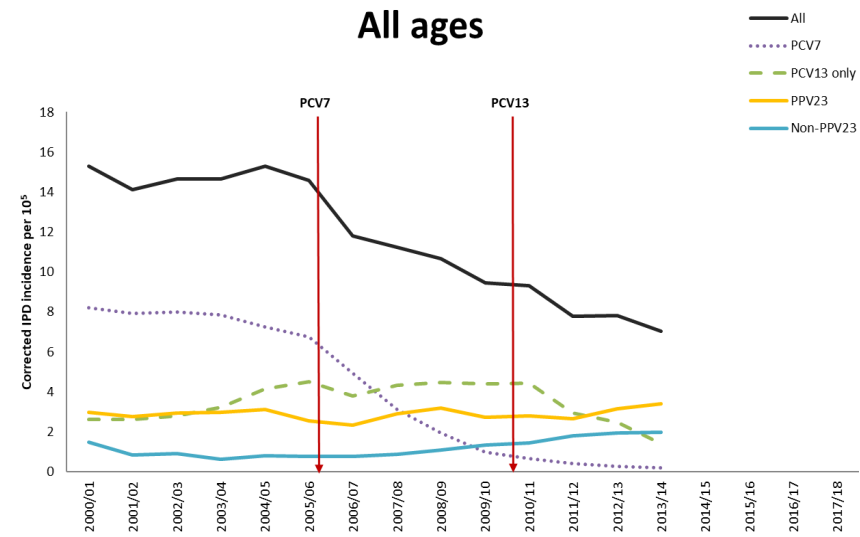
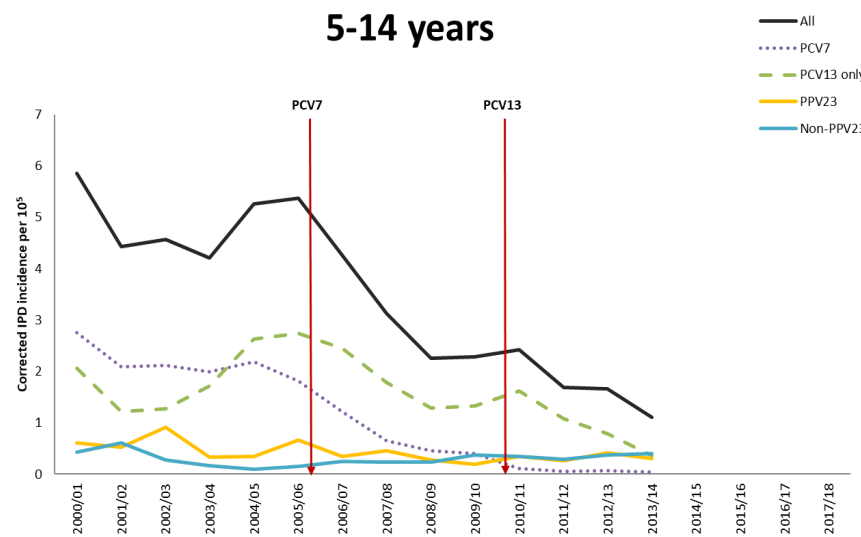
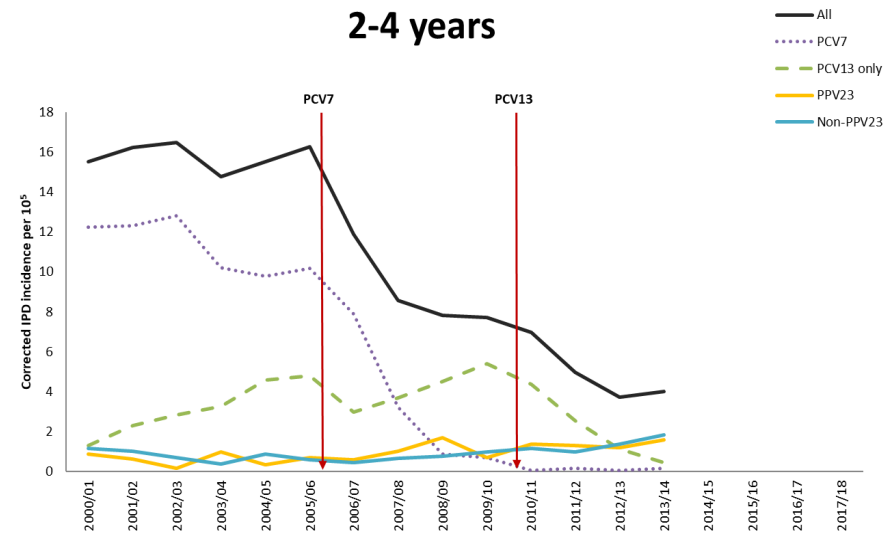
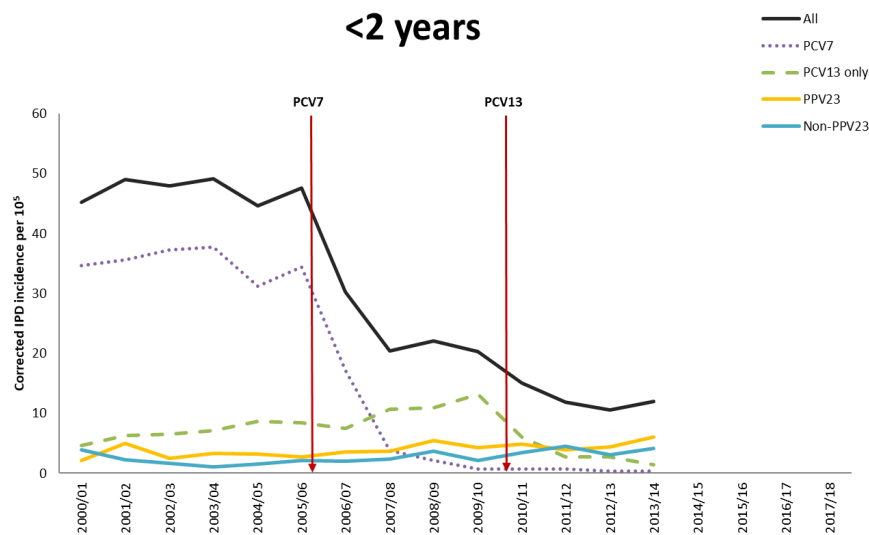


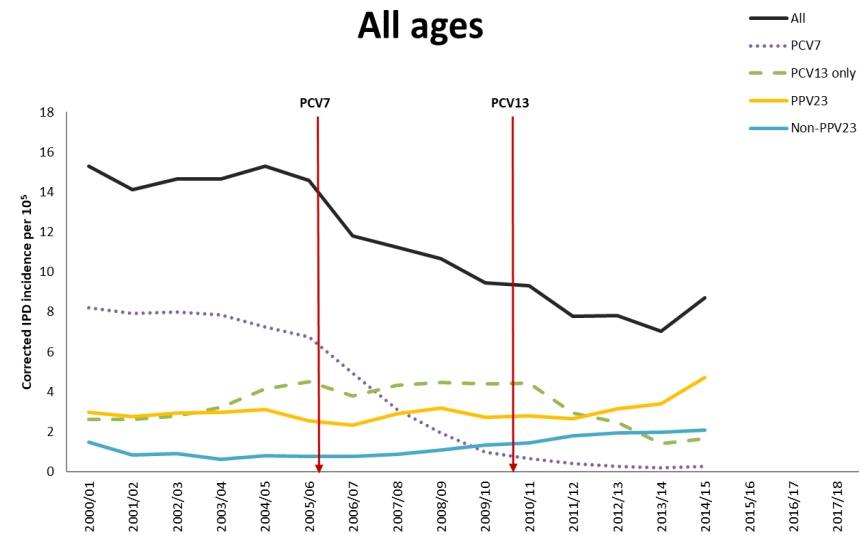
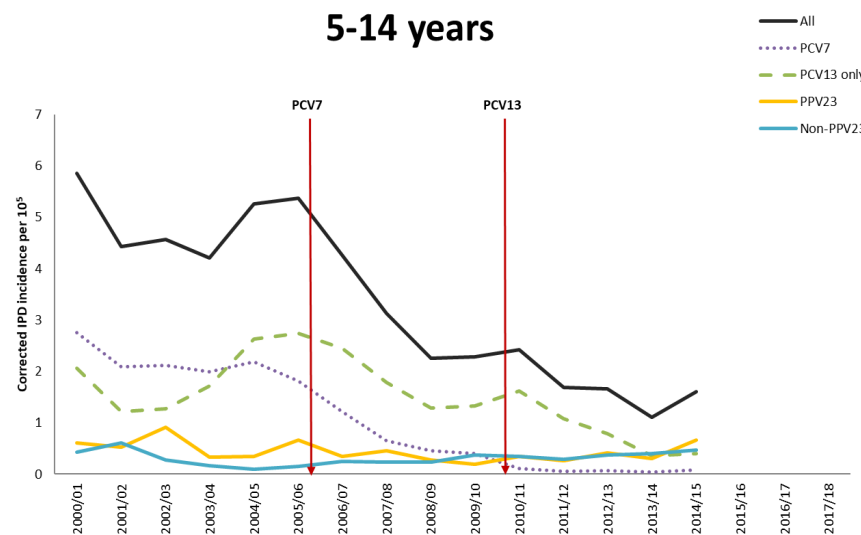
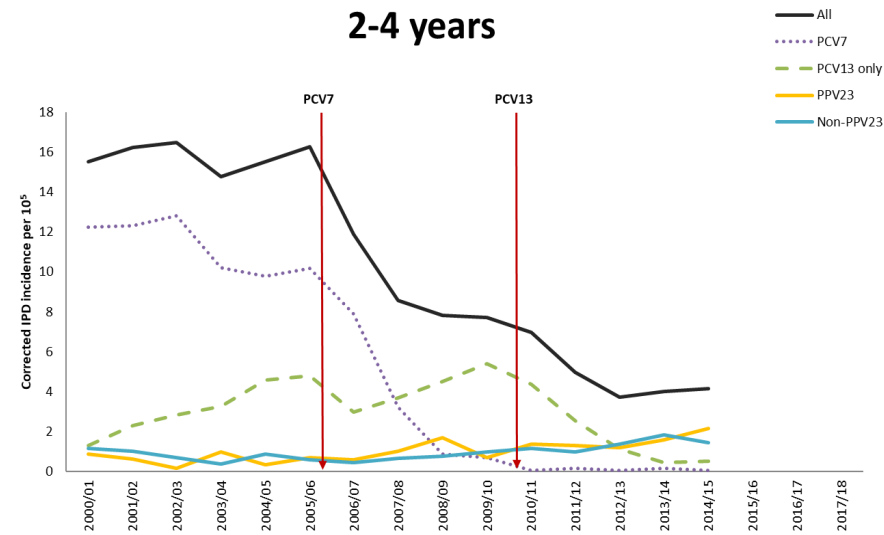
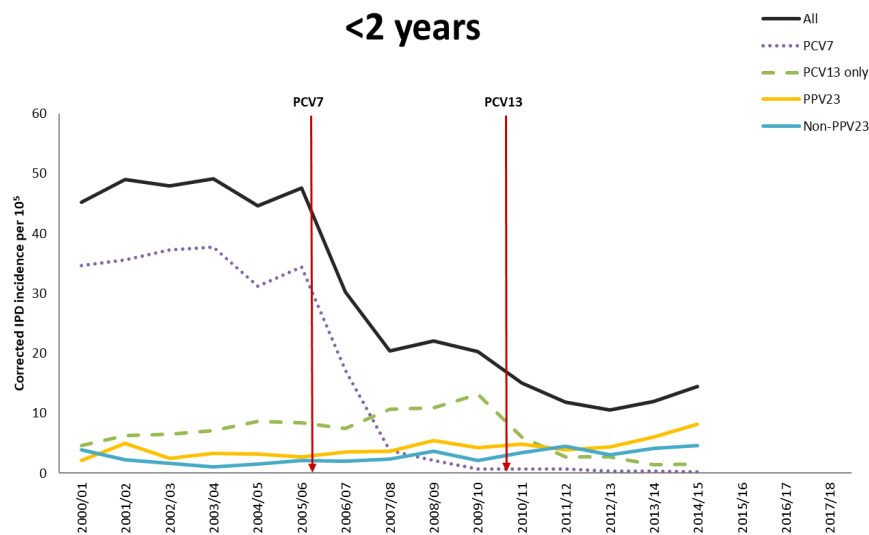
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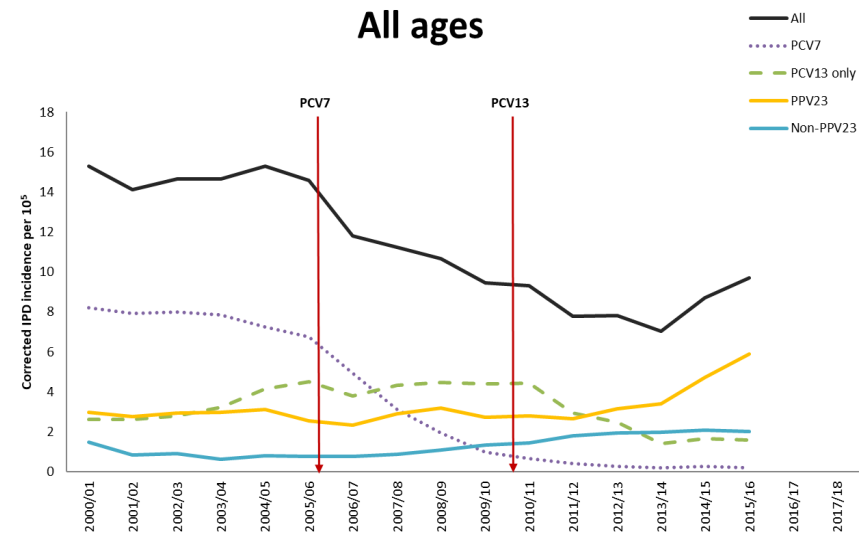
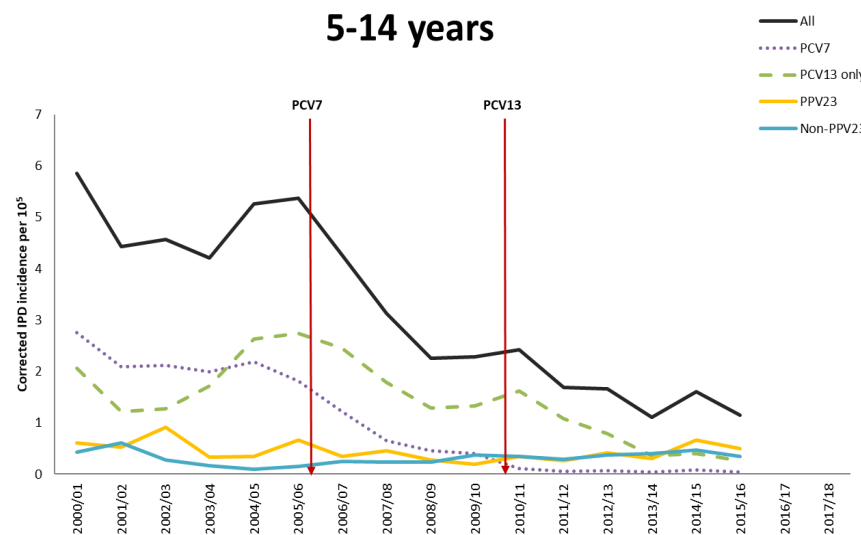
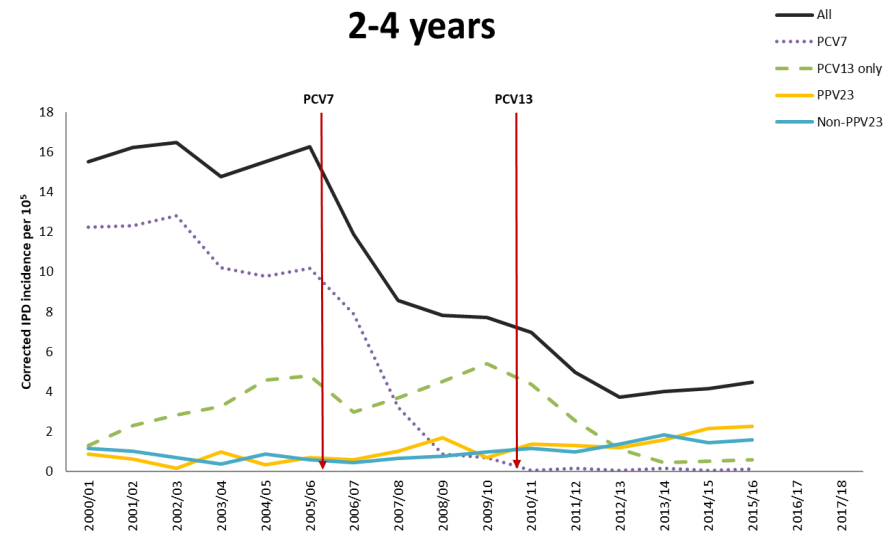
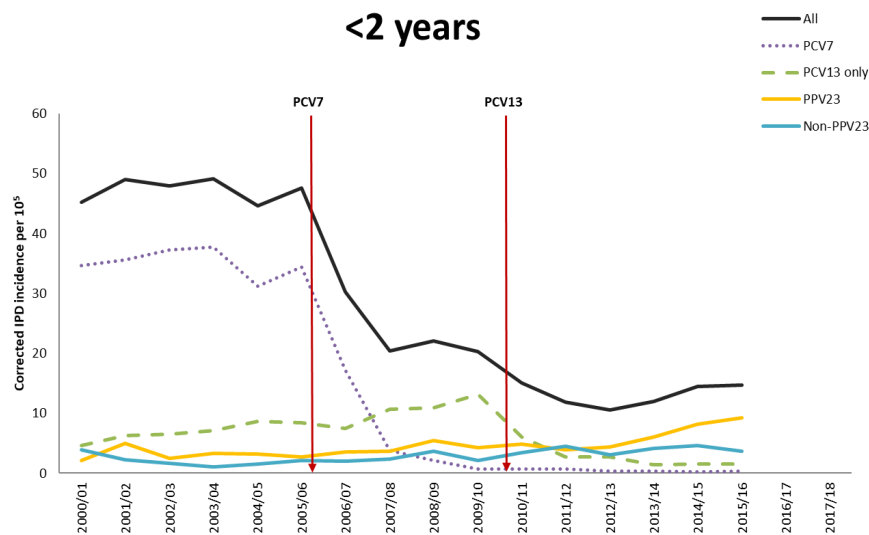


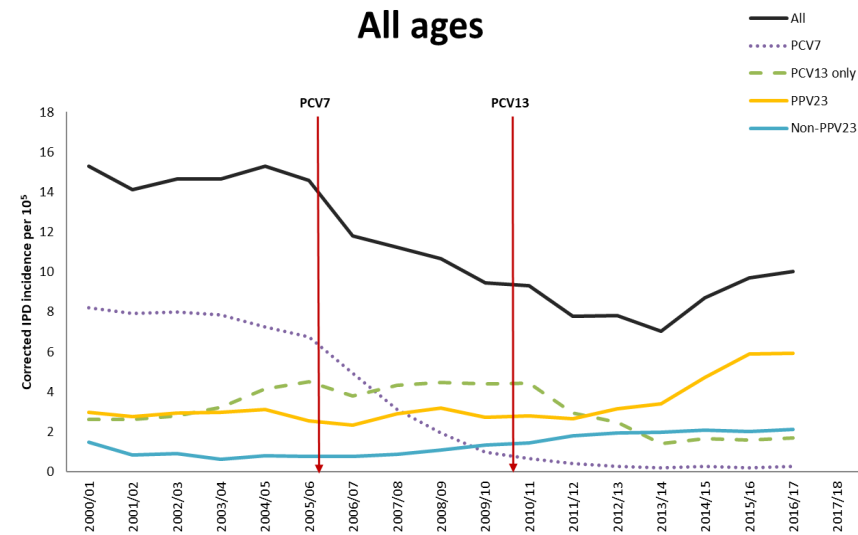
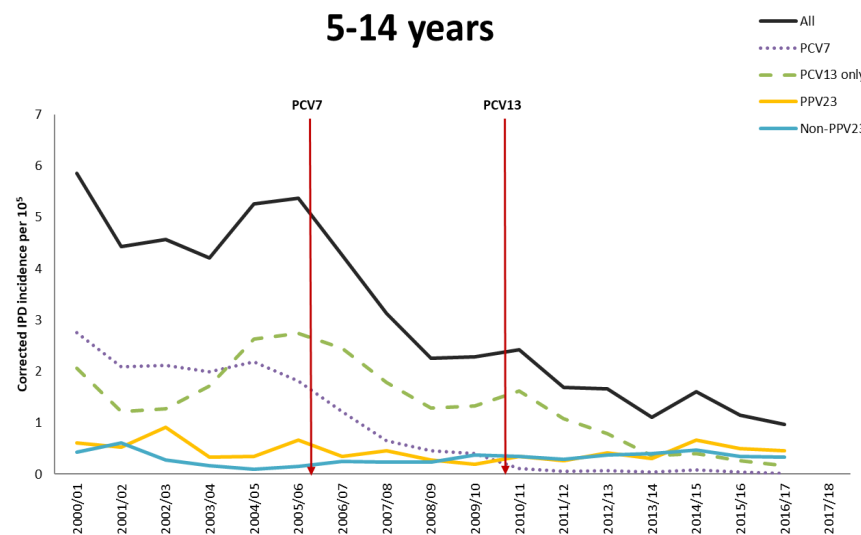
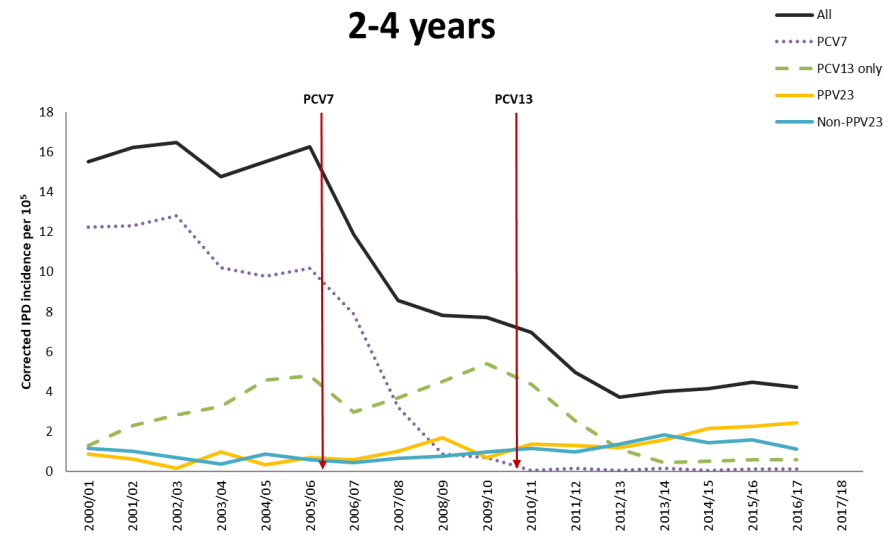
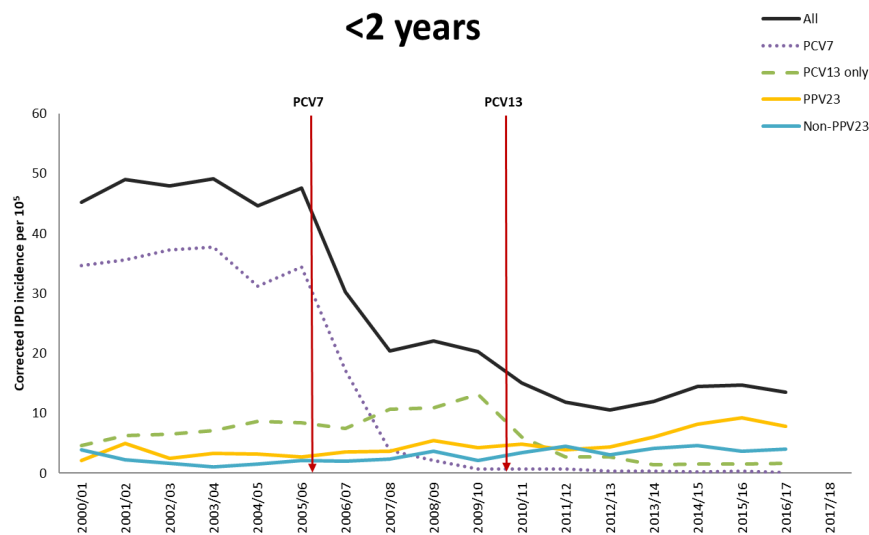
All ages



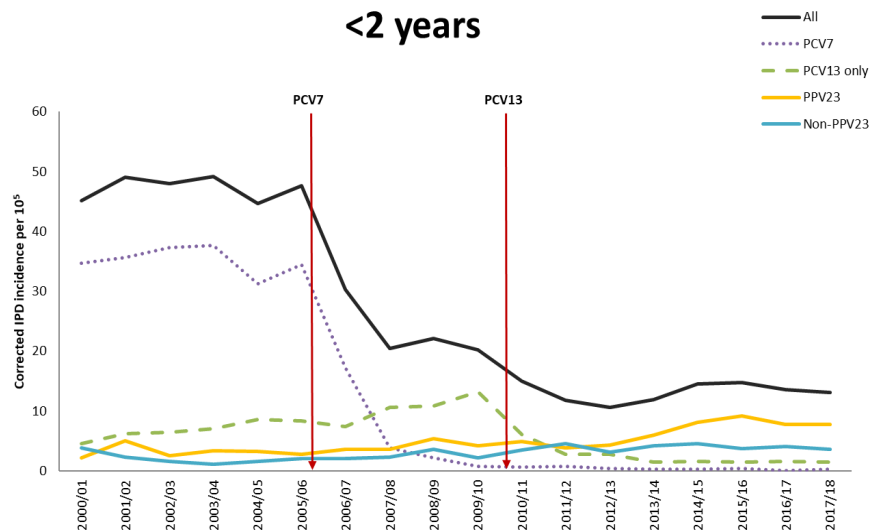




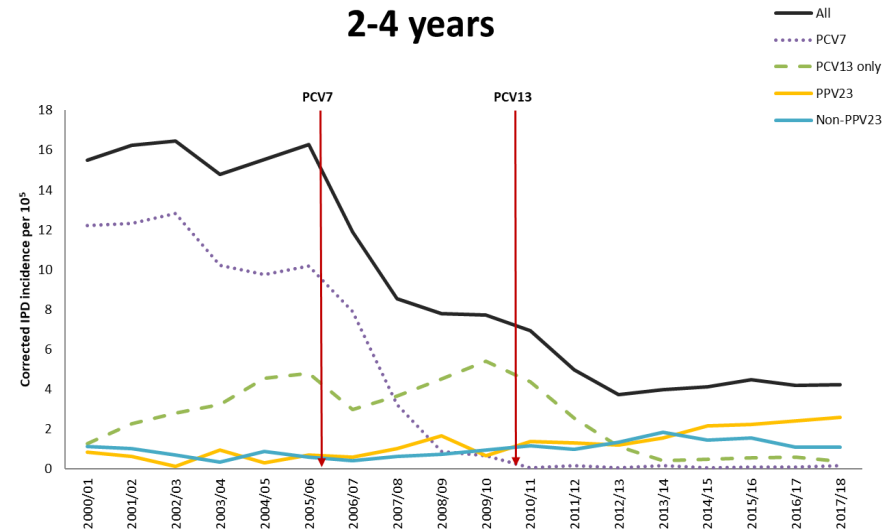




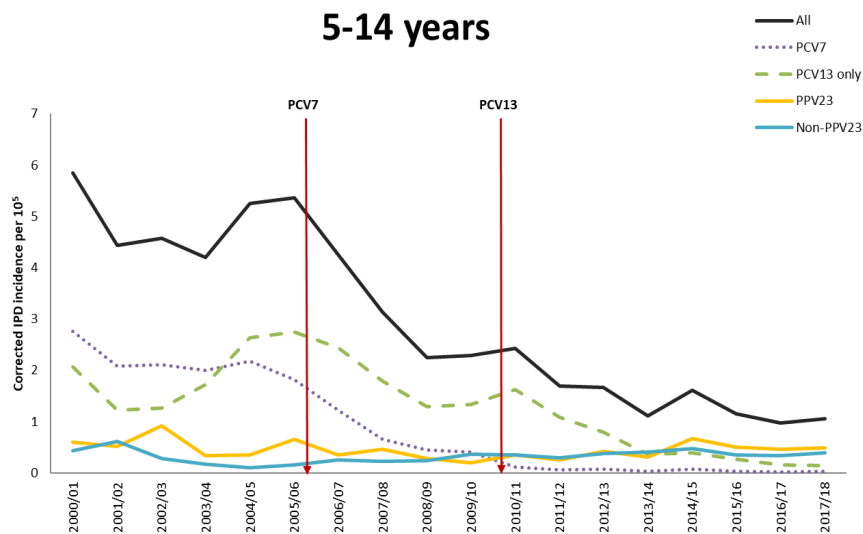
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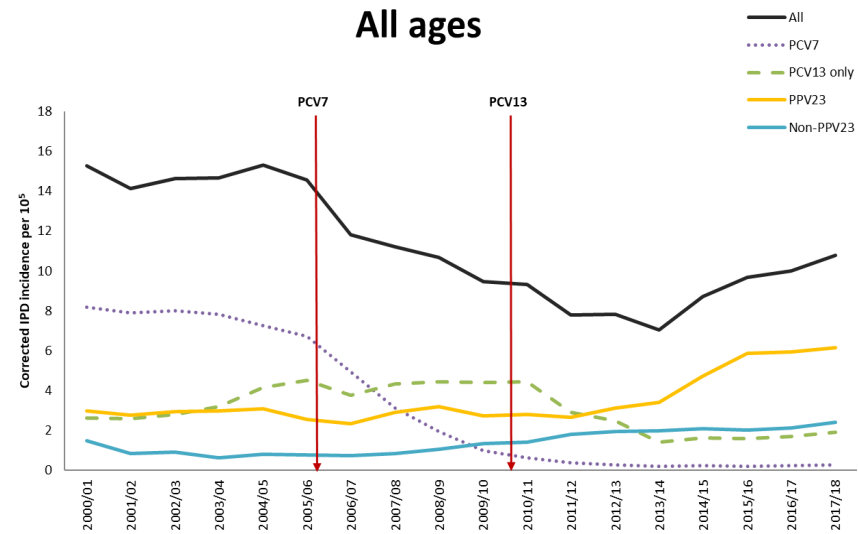
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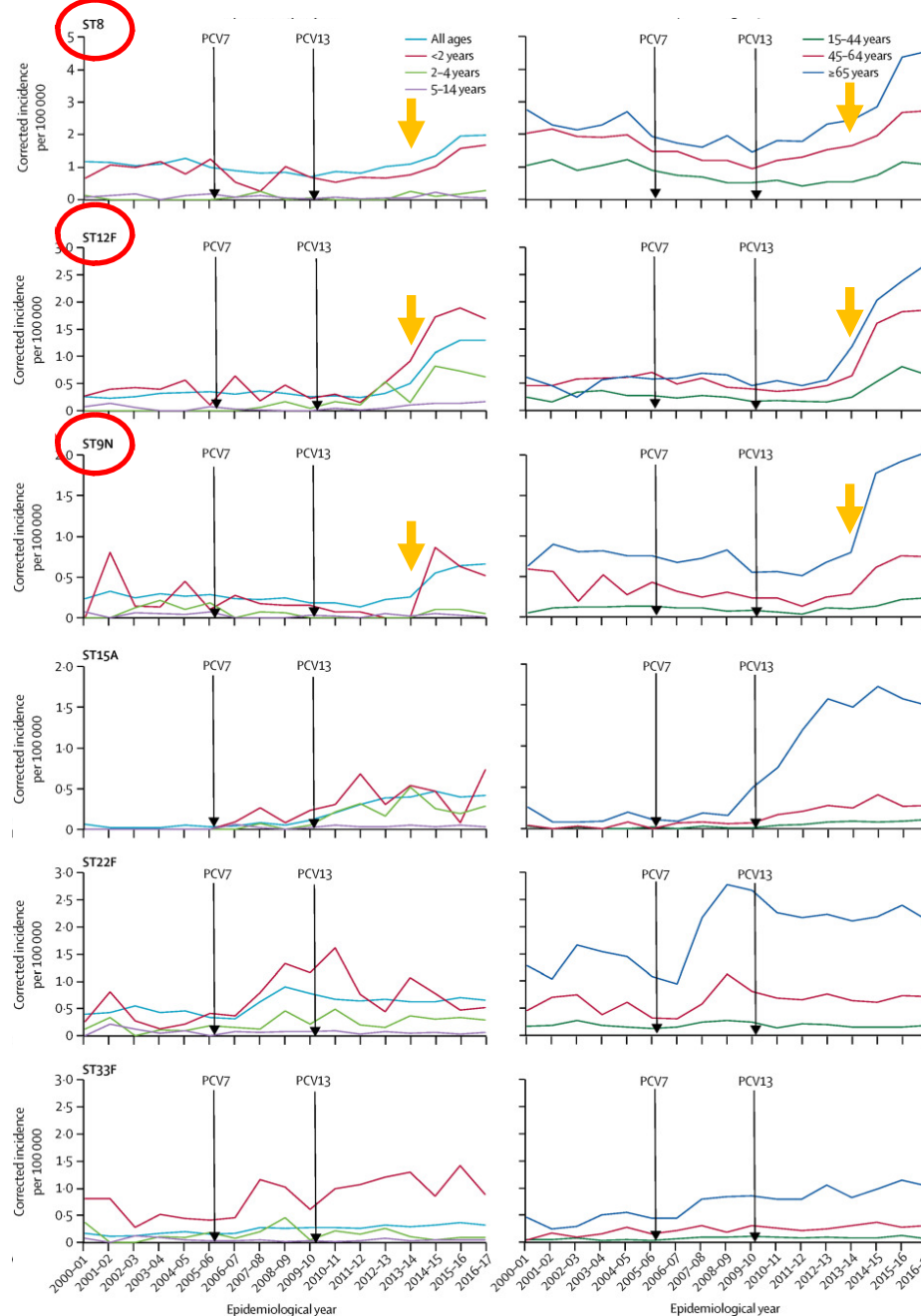


5-14 years



All ages





Ladhani et al 2018
Lancet ID

Aim

- To describe the trends in IPD caused by serotypes 8, 12F and 9N among <15 year olds, clinical characteristics, and outcomes compared to PCV13 serotypes and the remaining non-PCV13 serotypes.

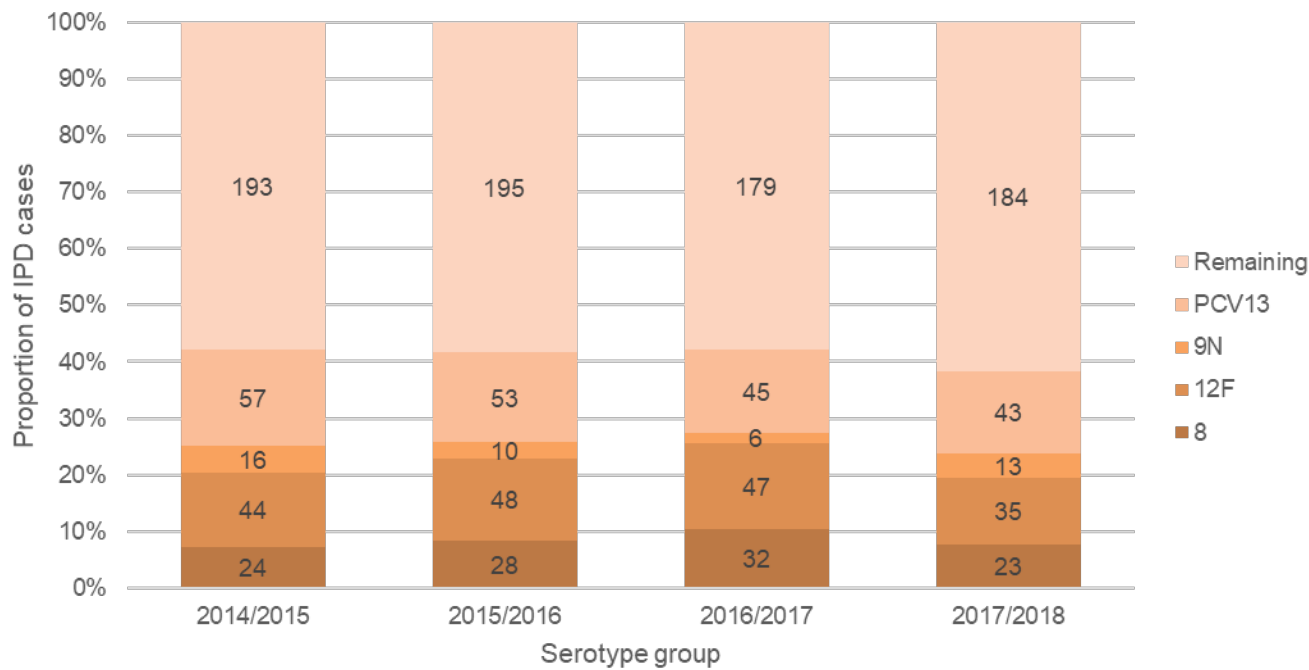
Methods

- In England, hospitals/laboratories routinely send IPD isolates to the Respiratory & Vaccine Preventable Bacteria Reference Unit (RVPBRU) for confirmation and serotyping.
- All confirmed cases are followed up using a standardised surveillance questionnaire.
- IPD defined as *S. pneumoniae* isolated from a normally sterile site.
- An extract of all isolates from children <15 years with a sample date between 1 July 2014 to 30 June 2018 was extracted.
- Cases grouped by serotype:
 - Emerging serotypes: 8, 12F or 9N
 - PCV13: 4, 6B, 9V, 14, 18C, 19F, 23F, 1, 5, 7, 3, 6A, 19A
 - Remaining: remaining non-PCV13/emerging serotypes

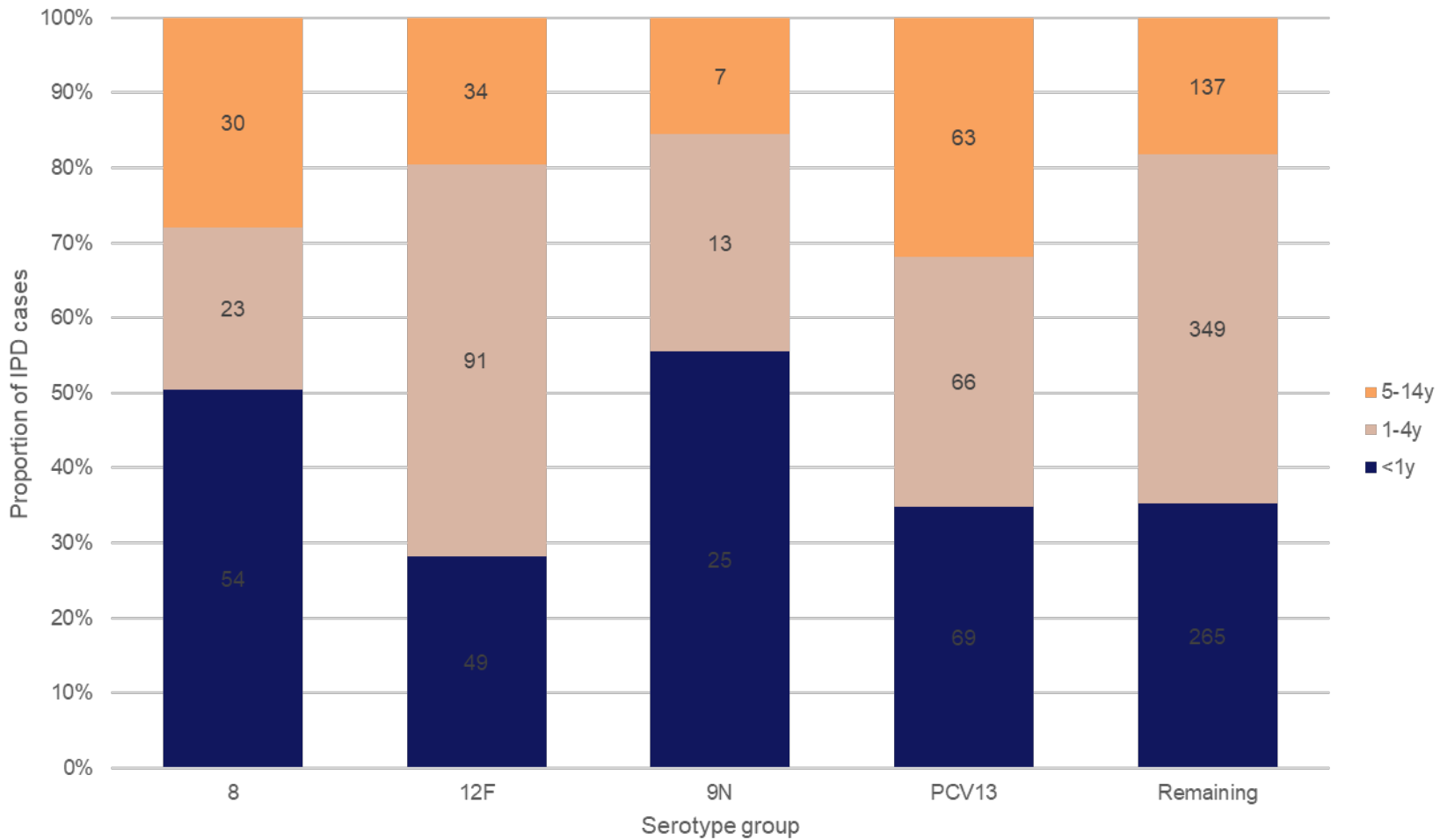
Results

- 1,275 confirmed IPD cases between 2014-18 epi years
- 326 (26%) were infected by serotypes 8, 12F or 9N

Serotype distribution by epi year

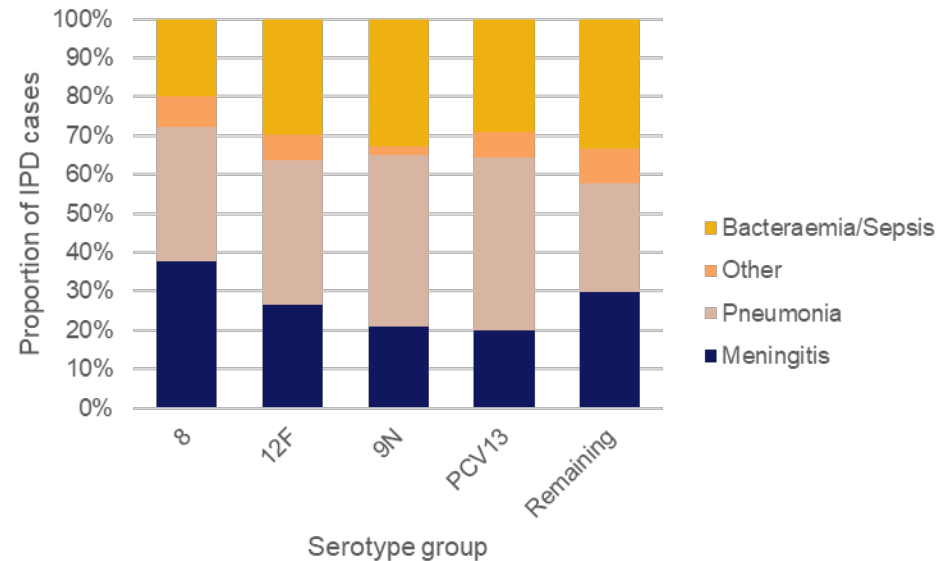


Serotype distribution by age group



Clinical presentation

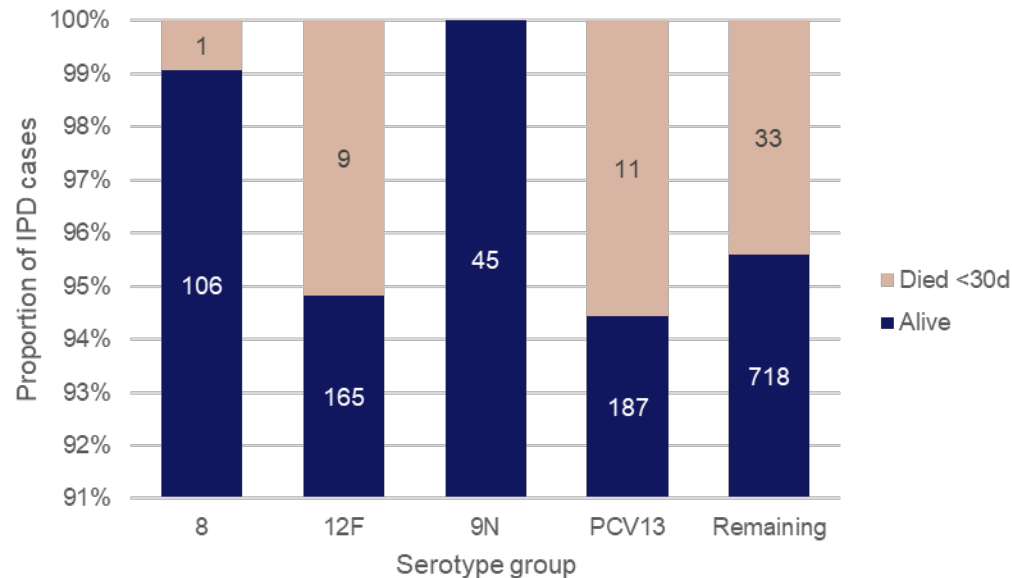
- Cases were significantly more likely to present with pneumonia if infected by any of the emerging serotypes compared with remaining non-PCV13 serotypes, notably for 9N (**aOR 2.44, 95% CI 1.29-4.61**)
- Meningitis was significantly more common among ST8 IPD compared to PCV13 IPD, (**aOR 2.25, 95% CI 1.27-3.98**).



*Adjusted for age and comorbidity status

Deaths

- Overall, 54 (4.2%) of cases died within 30 days of their IPD episode.
- Of which, 19% were due to an emerging serotype (serotype 8, n=1; serotype 12F, n=9).



Conclusions

- IPD due to non-PCV13 serotypes has been increasing, more so in older age groups but also affecting <15 years
- Pneumonia was the most common clinical presentation among those infected by emerging serotypes. Meningitis more common among ST8-IPD.
- One-fifth of all deaths occurred in cases infected by emerging serotypes
- Ongoing enhanced surveillance and further research studying associations with emerging serotypes and IPD outcomes necessary.

Acknowledgements

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