How well is the 23vPPV working in the non-Indigenous Elderly?

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Background

- Effectiveness against IPD
  - ~50% in elderly
  - Higher in younger adults
  - Lower in those with immunosuppression and chronic disease

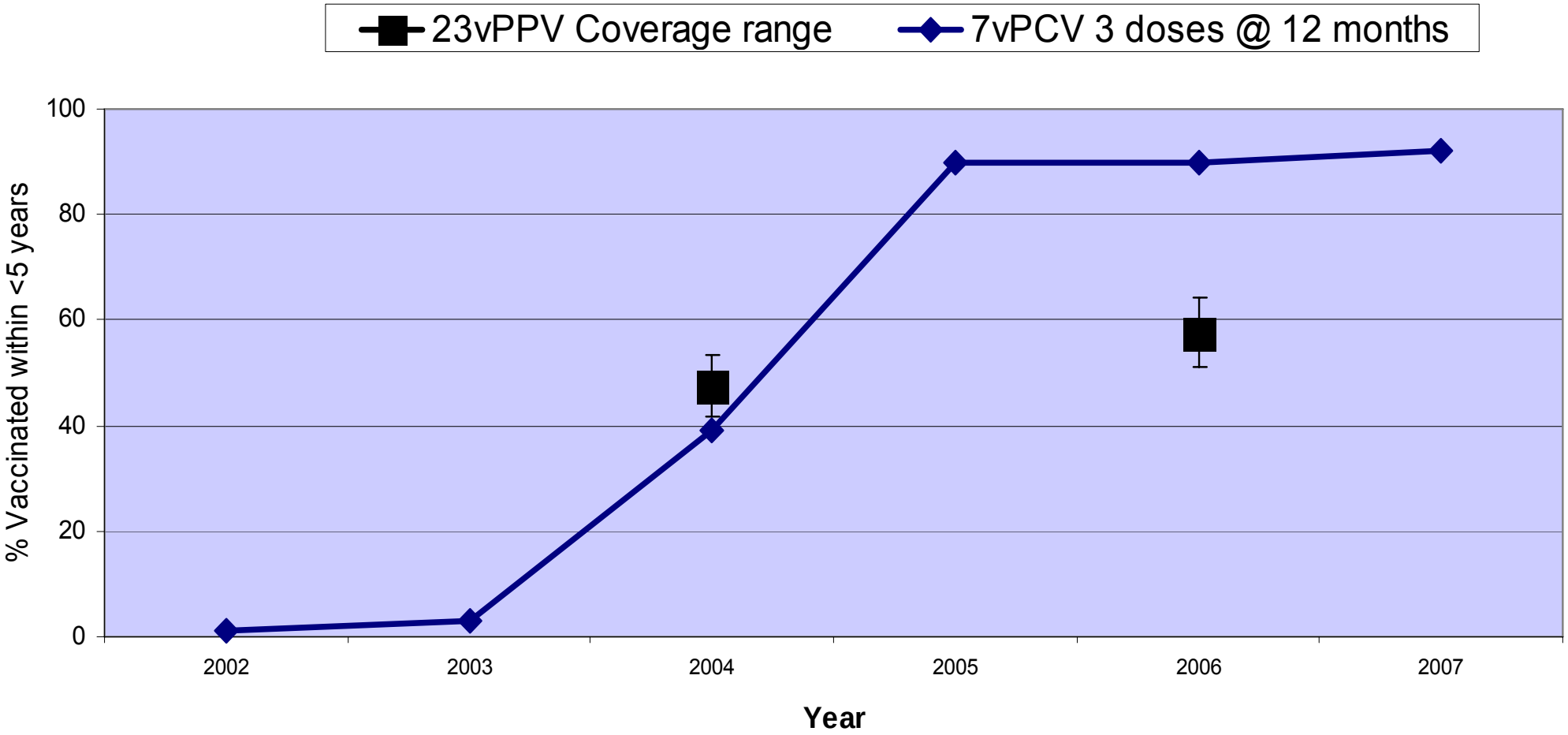
23vPPV in Australia

- 1983:
  - Licensed
- 1997
  - Recommended by NHMRC for all ≥65 years
  - Available on PBS
- 1998:
  - Funded in Victoria for ≥65 years
- 1999:
  - Funded nationally for Indigenous adults ≥50 years and 15-49 with risk factors
- 2005:
  - Funded nationally for ≥65 years
  - Concurrent with national 7vPCV program

Methods

- Impact on IPD notifications
  - 2002-2007
  - Aged ≥65 years
  - Excluding Victoria
  - Excluding Indigenous
  - Other published data
- Vaccination coverage
  - National CATI surveys 2004, 2006
  - “Have you been vaccinated for pneumonia in the previous five years?”
  - By jurisdiction
- Vaccine Effectiveness
  - Screening method
  - Indirect Cohort method

IPD notification rates*, aged 65+ years, and self-reported pneumococcal vaccination coverage



* Adjusted for untyped cases. Cases recorded as Indigenous or from Victoria are excluded

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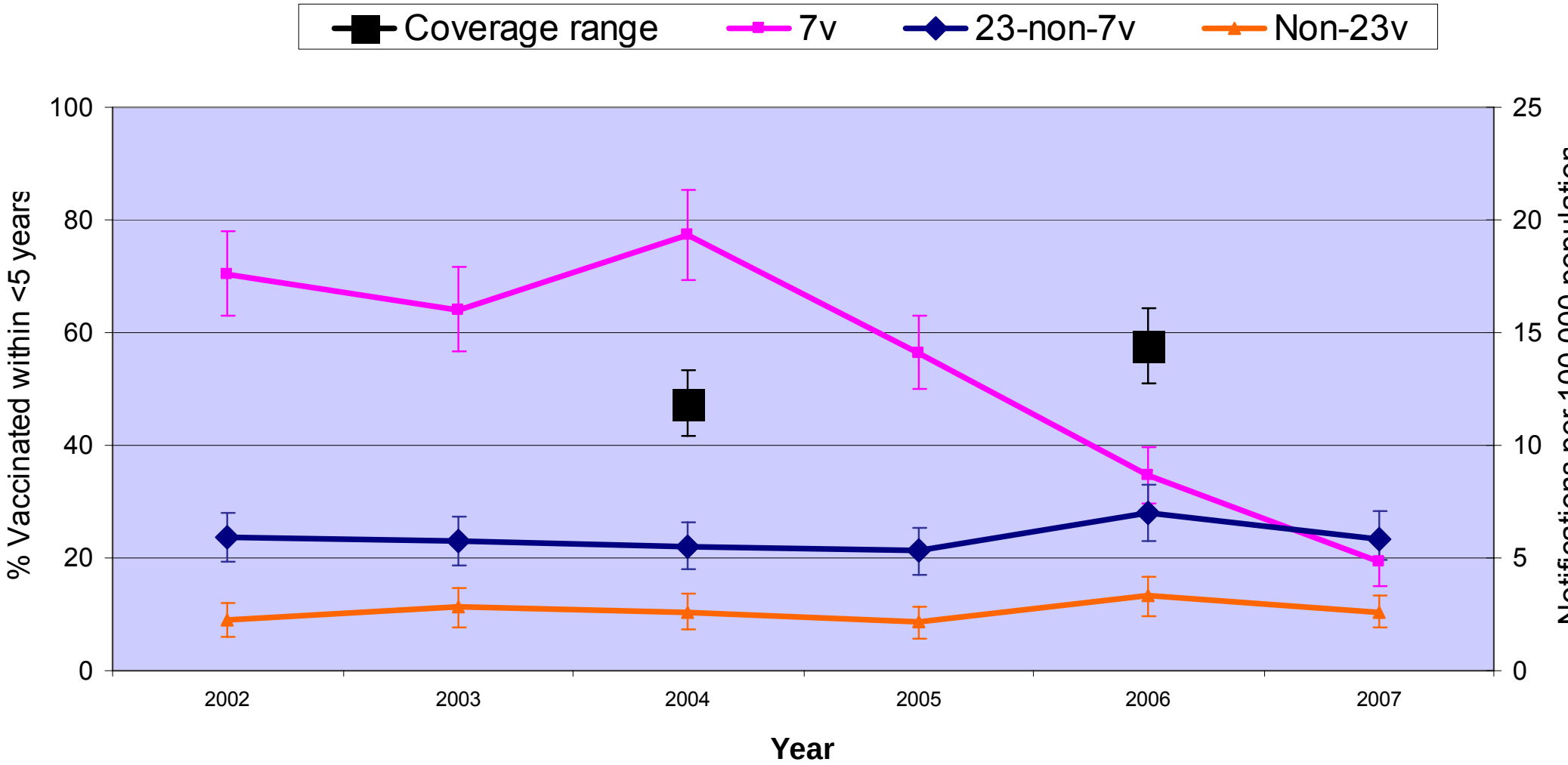

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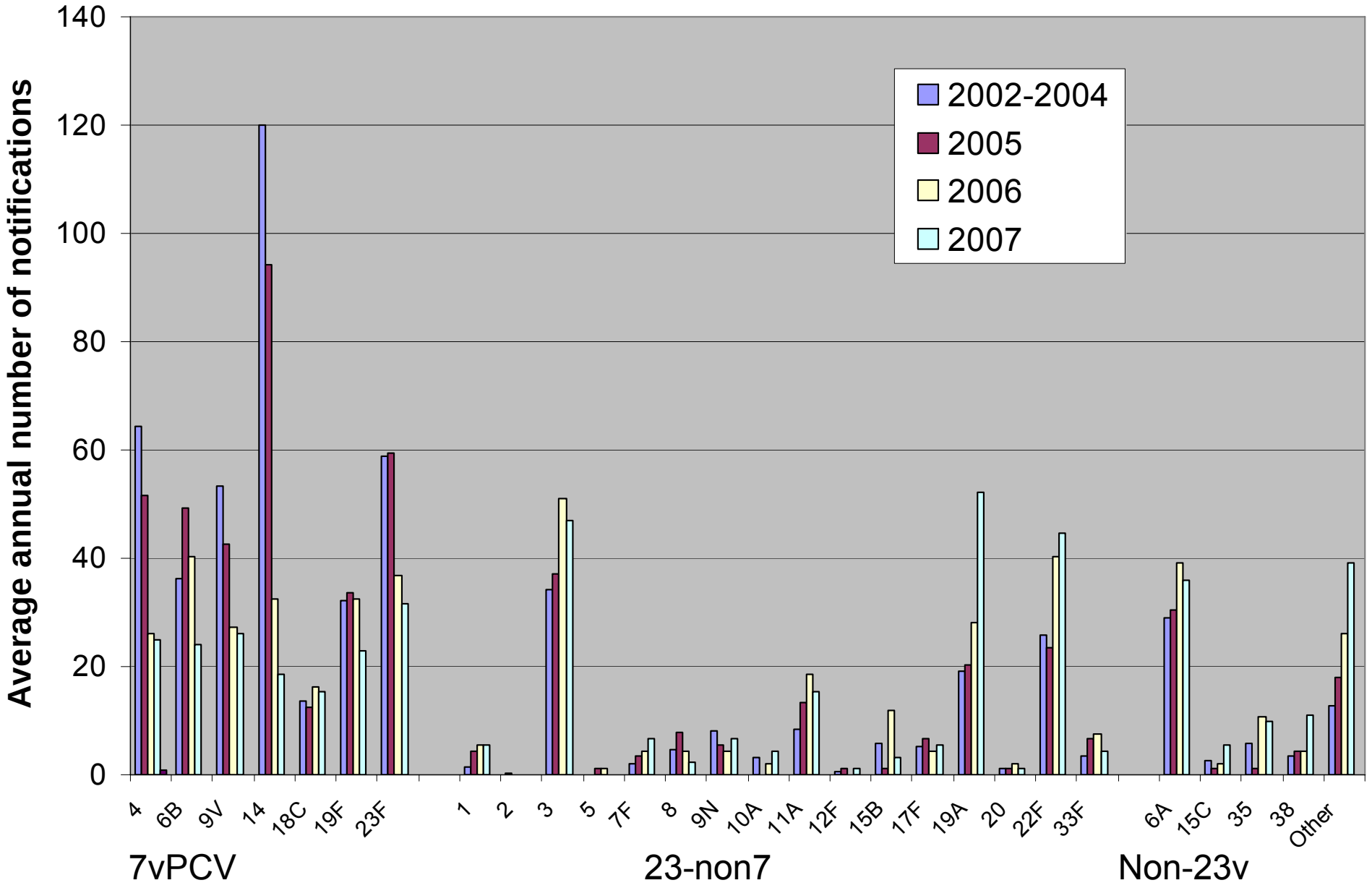
IPD notifications by serotype



Impact of 23vPPV in the US

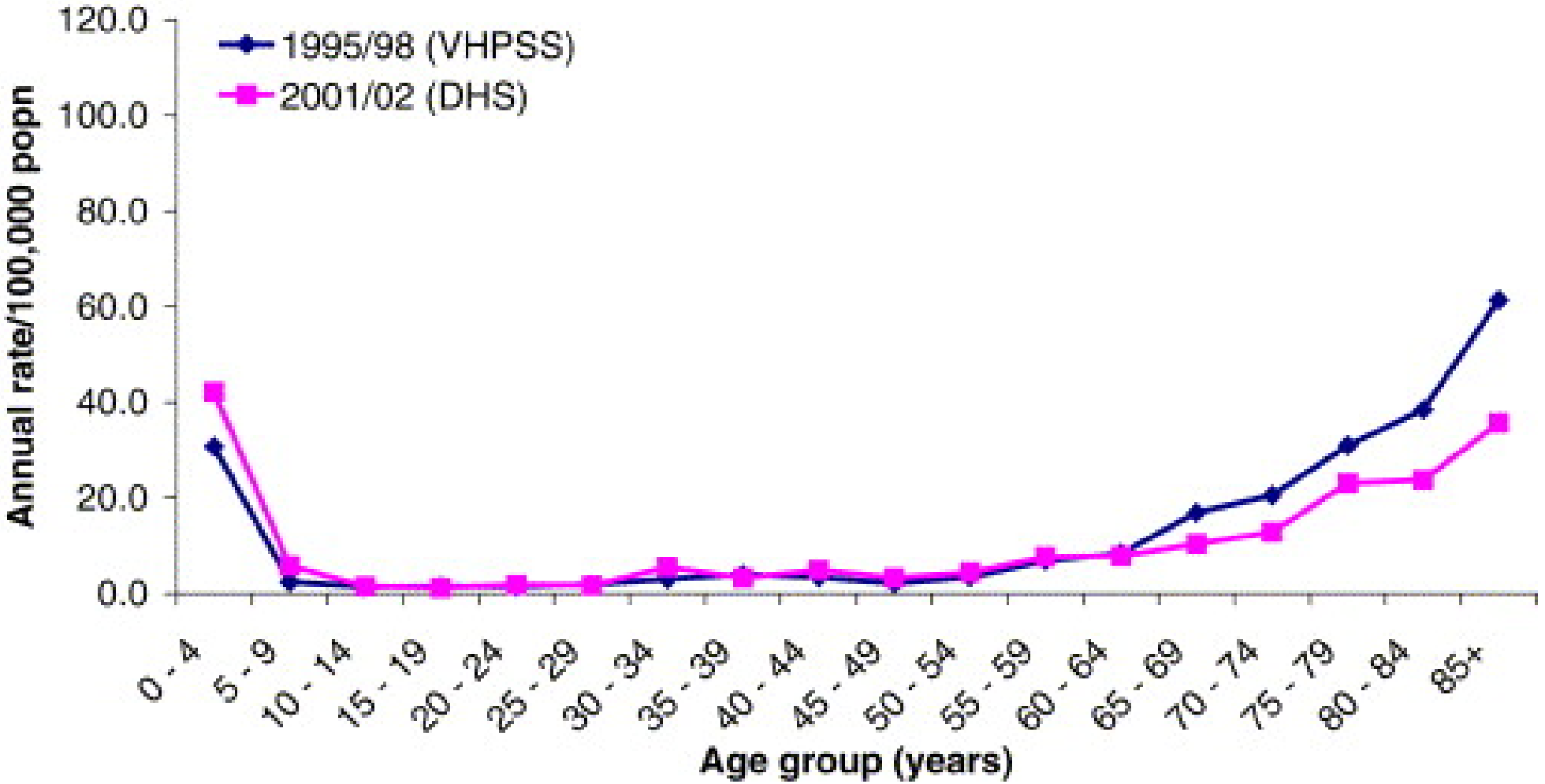
- Incremental increases in coverage 1989-2003
- Concurrent increases in influenza vaccine coverage
- 7vPCV introduced 2000-01

- All-age pneumococcal deaths declined 3% 1989-1998
  - Pneumo, flu vaccines or something else?

- IPD hospitalisations in elderly decreased 2001/02
  - Associated with 7vPCV, not 23vPPV

- IPD in elderly decreased in 2002-03 vs 1998-99
  - In 7vPCV serotypes
  - Not in 23v-non7v serotypes

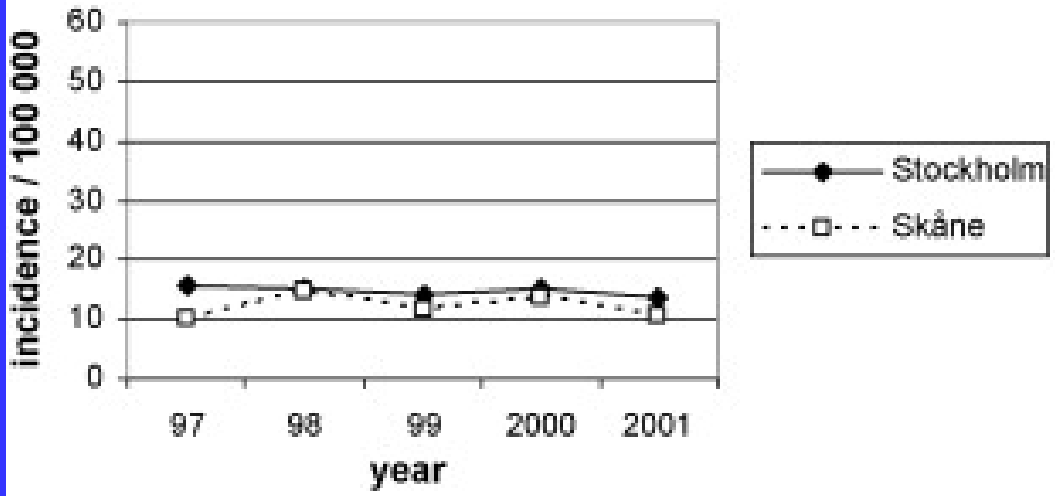
Settings without 7vPCV use: Victoria



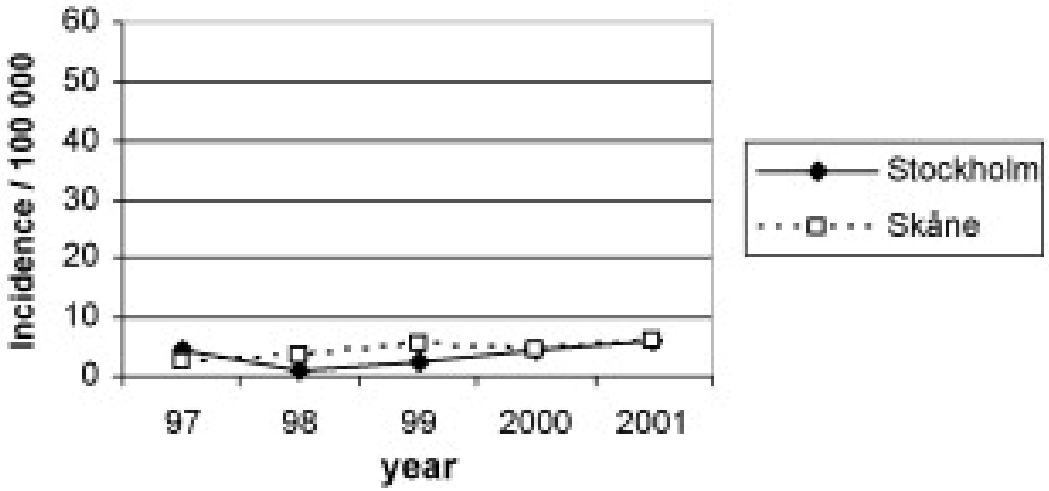
Source: Andrews et al. Vaccine 2004;23:132-138

Settings without 7vPCV use: Sweden

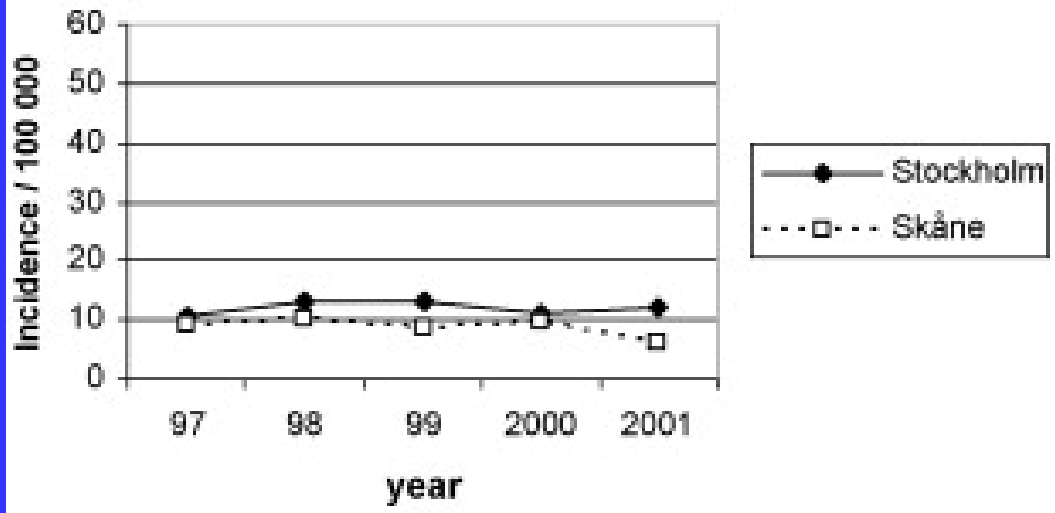
(a) Total Incidence of IPD all age groups



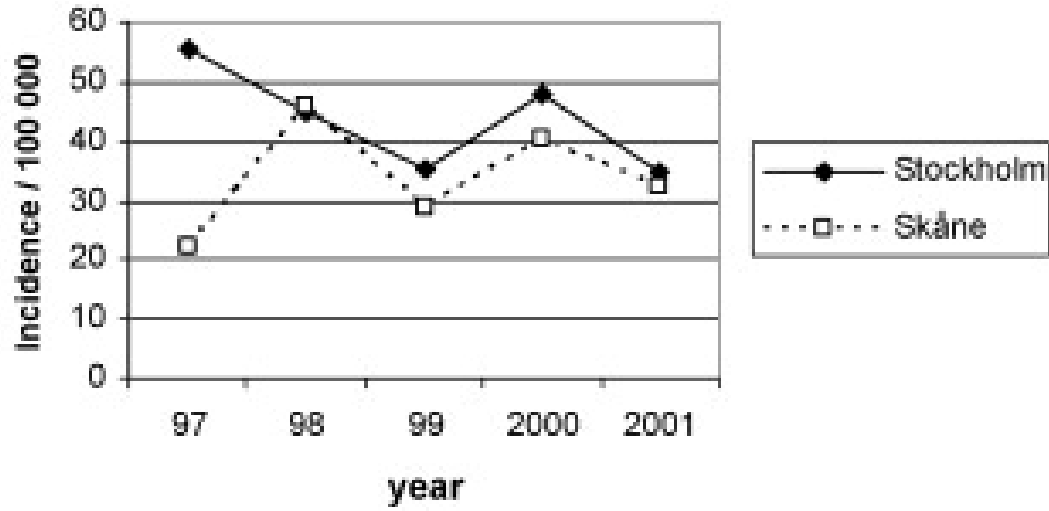
(b) Total Incidence of IPD age 0-18



(c) Total Incidence of IPD age 19-64



(d) Total Incidence of IPD age >64

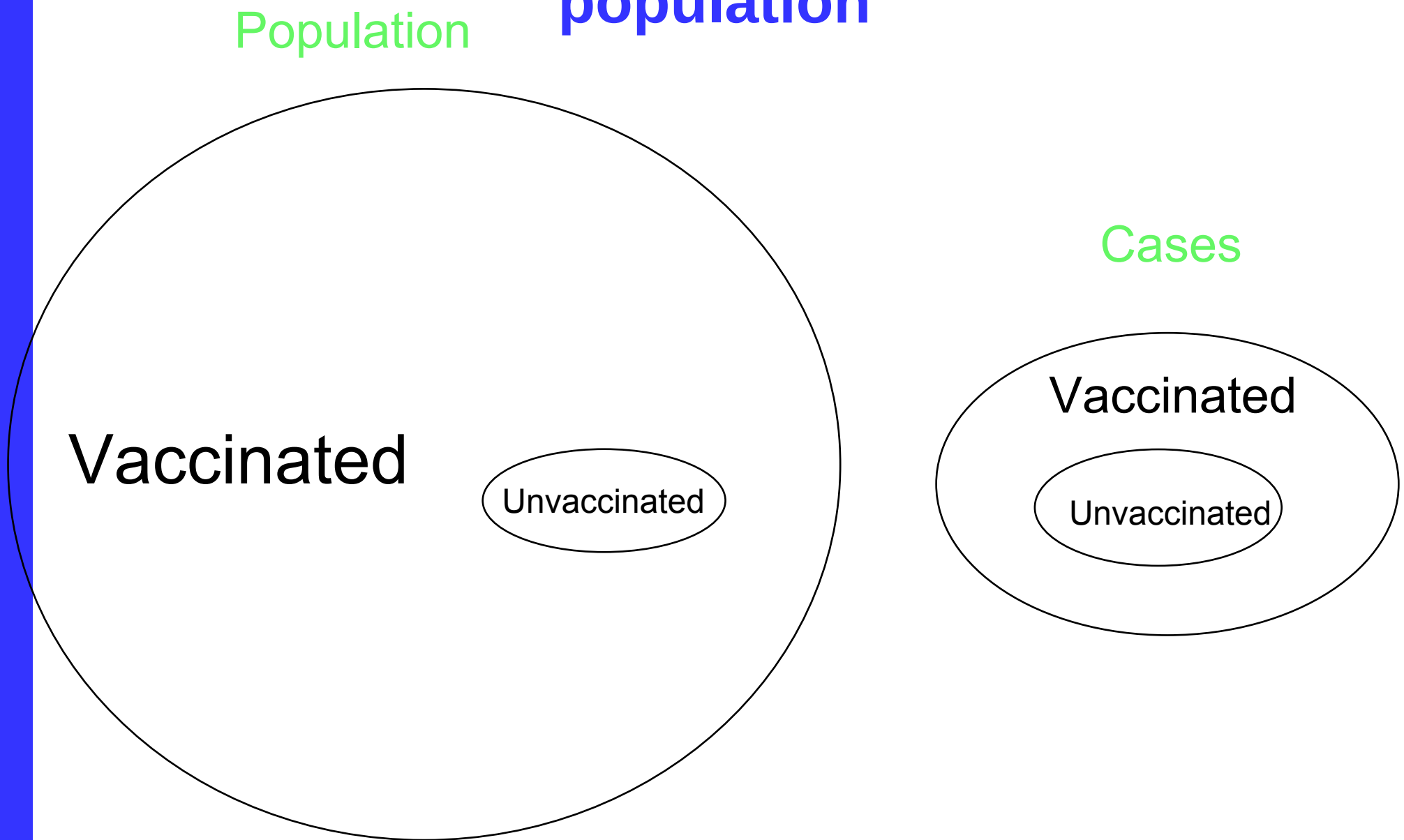


Source: Spindler et al, Vaccine 2008

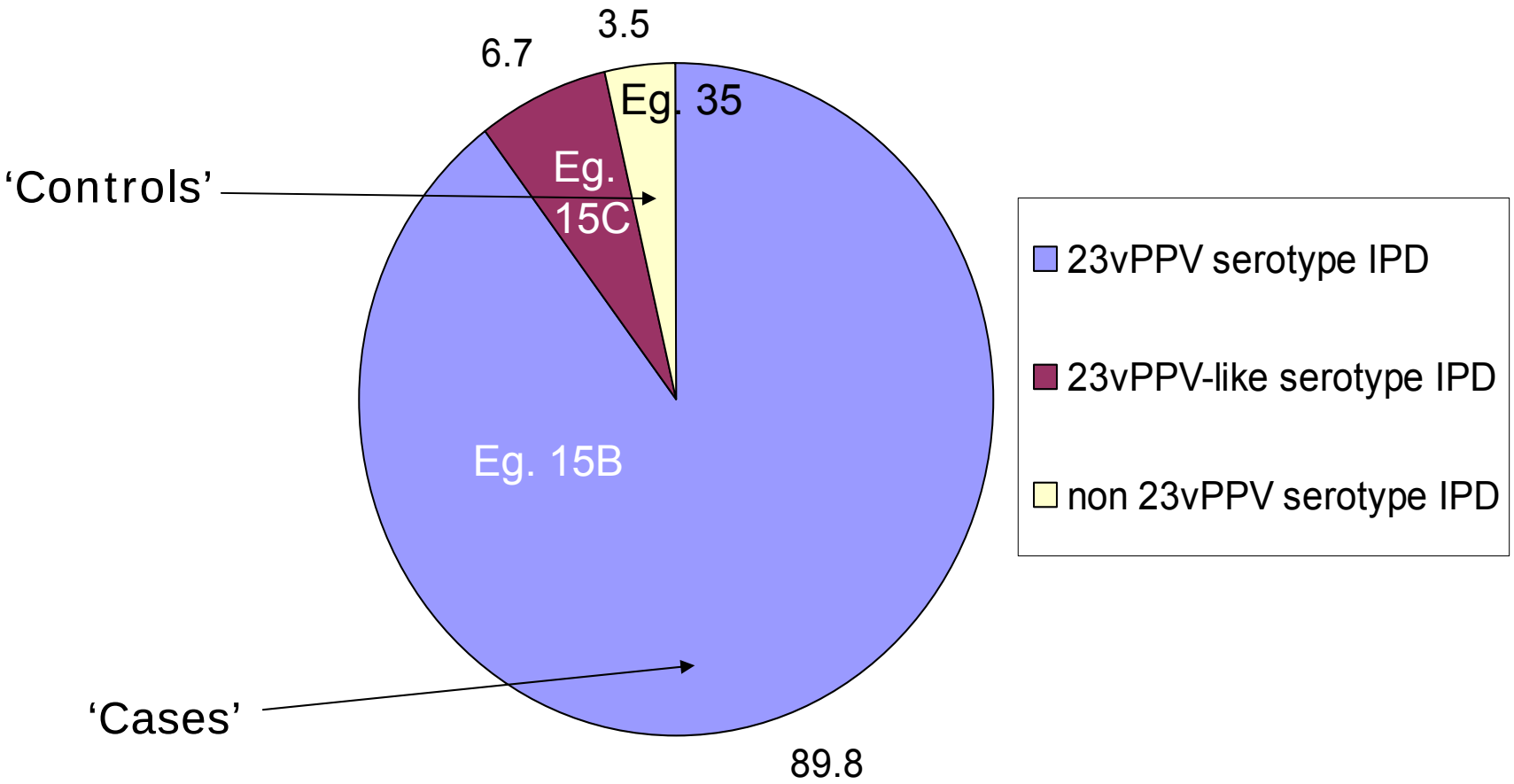
VE estimation

- Indirect cohort method
- Screening method

The Screening method –
Vaccination coverage in cases versus the population



Indirect Cohort Method: using IPD notifications only



23vPPV estimates of effectiveness against vaccine-type IPD

Country	Method	Age group			
		62-73	**74-79**	**80+**	**All**
England & Wales*	Screening†	24% (14-24)	37% (28-45)	38% (32-44)	34% (29-38)
	Indirect Cohort†	40% (13-59)	25% (-12-49)	8% (-21-30)	23% (6-36)
		65-74	**75+**		**All**
Scotland	Screening†	54 (20-74)	69 (52-80)		62 (45-73)
	Indirect Cohort†				51% (-278 – 94)
Australia	Screening‡	45% (28-58)	66% (58-73)		57% (42-68)
	Indirect Cohort‡	67% (7-88)	4% (-97-53)		33% (-20 – 62)
	Indirect Cohort†	58% (-17 – 85)	0% (-99-49)		24% (-33 – 57)

* Unpublished data provided by E. Miller and N. Andrews, Health Protection Agency, United Kingdom.
† Ever vaccinated
‡ Fully vaccinated, according to handbook recommendations

Conclusions

- Limited evidence of impact of 23vPPV on IPD in Australia
  - Swamped by effect of 7vPCV?
  - Incremental increase in coverage
- Some evidence of population impact when 7vPCV not used

- VE estimates >0

Acknowledgements

- Enhanced IPD Surveillance Working Group
- Nick Andrews, UK Health Protection Agency