

Changes in Invasive Pneumococcal Disease (IPD) Following 5 Years of 13-valent Pneumococcal Conjugate Vaccine Use in the U.S.

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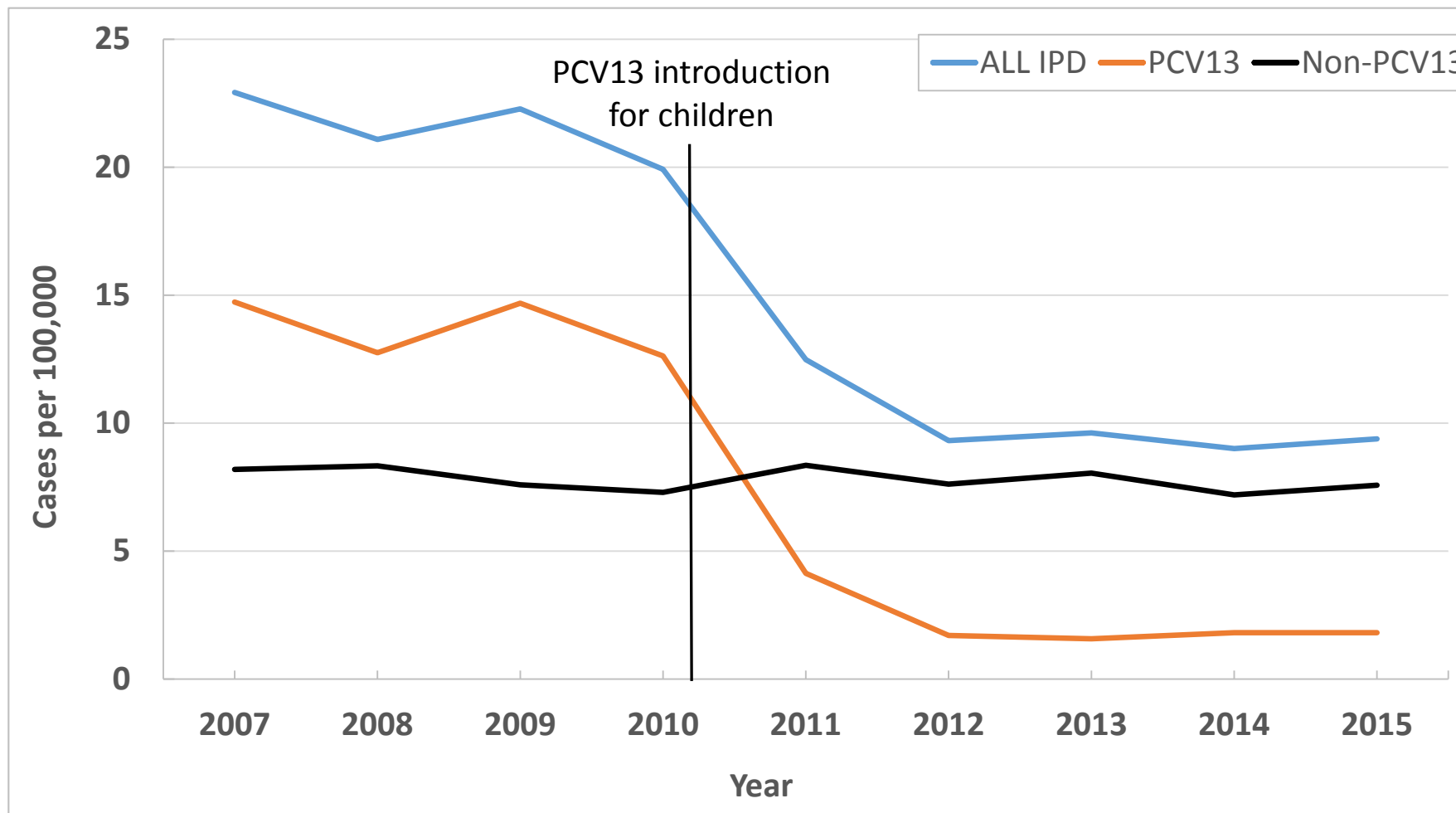
Advisory Committee on Immunization Practices

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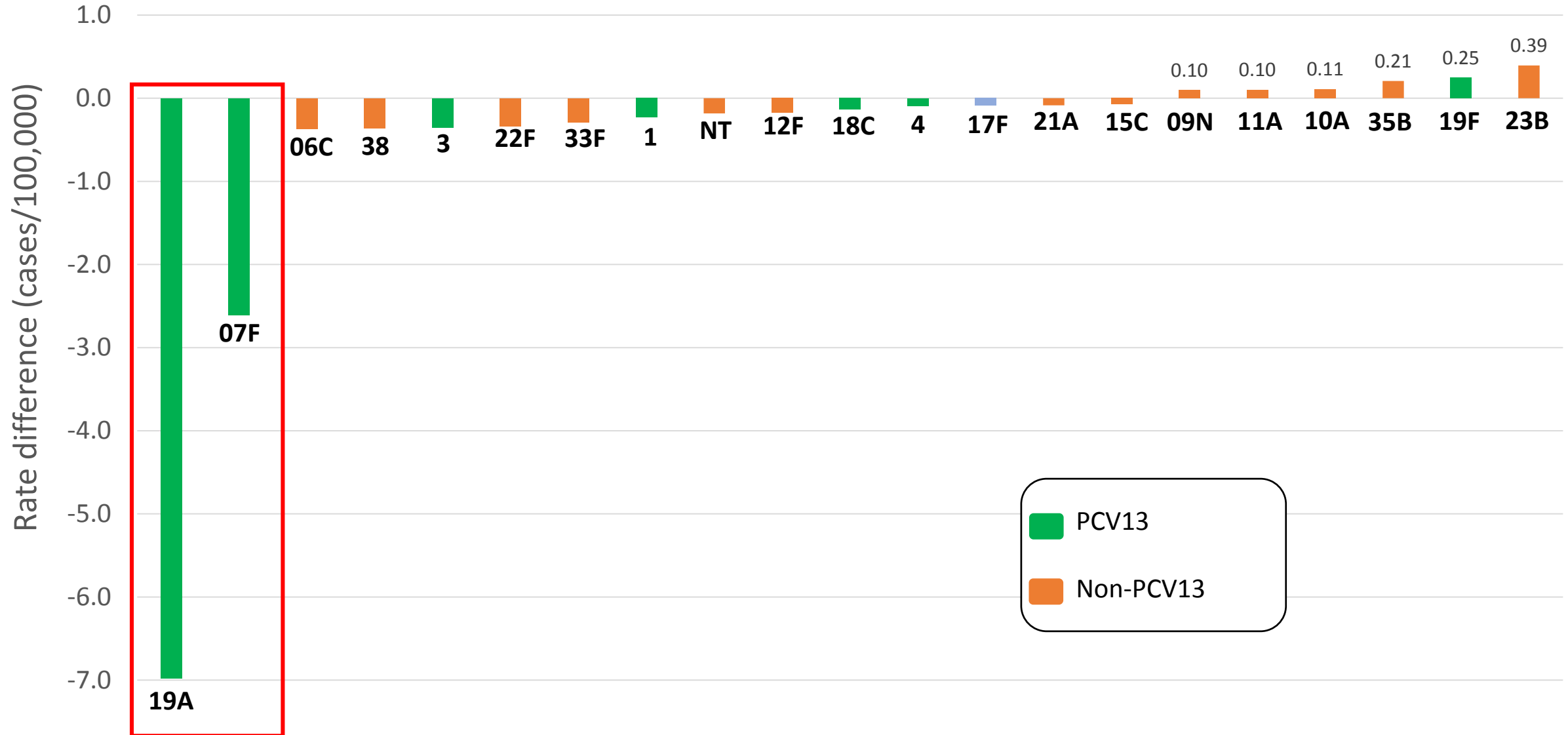
Background and Aims

- In 2010, PCV13 replaced PCV7 in the U.S. infant immunization schedule
- In 2014, PCV13 was recommended for use in series with 23-valent polysaccharide vaccine (PPSV23) for all adults ≥ 65 years
- We evaluated the impact of PCV13 on IPD among adults and children
- Using data from Active Bacterial Core Surveillance system, we compared incidence (cases/100,000 population) pre-PCV13 (2007-2008) to post-PCV13 (2014-2015)

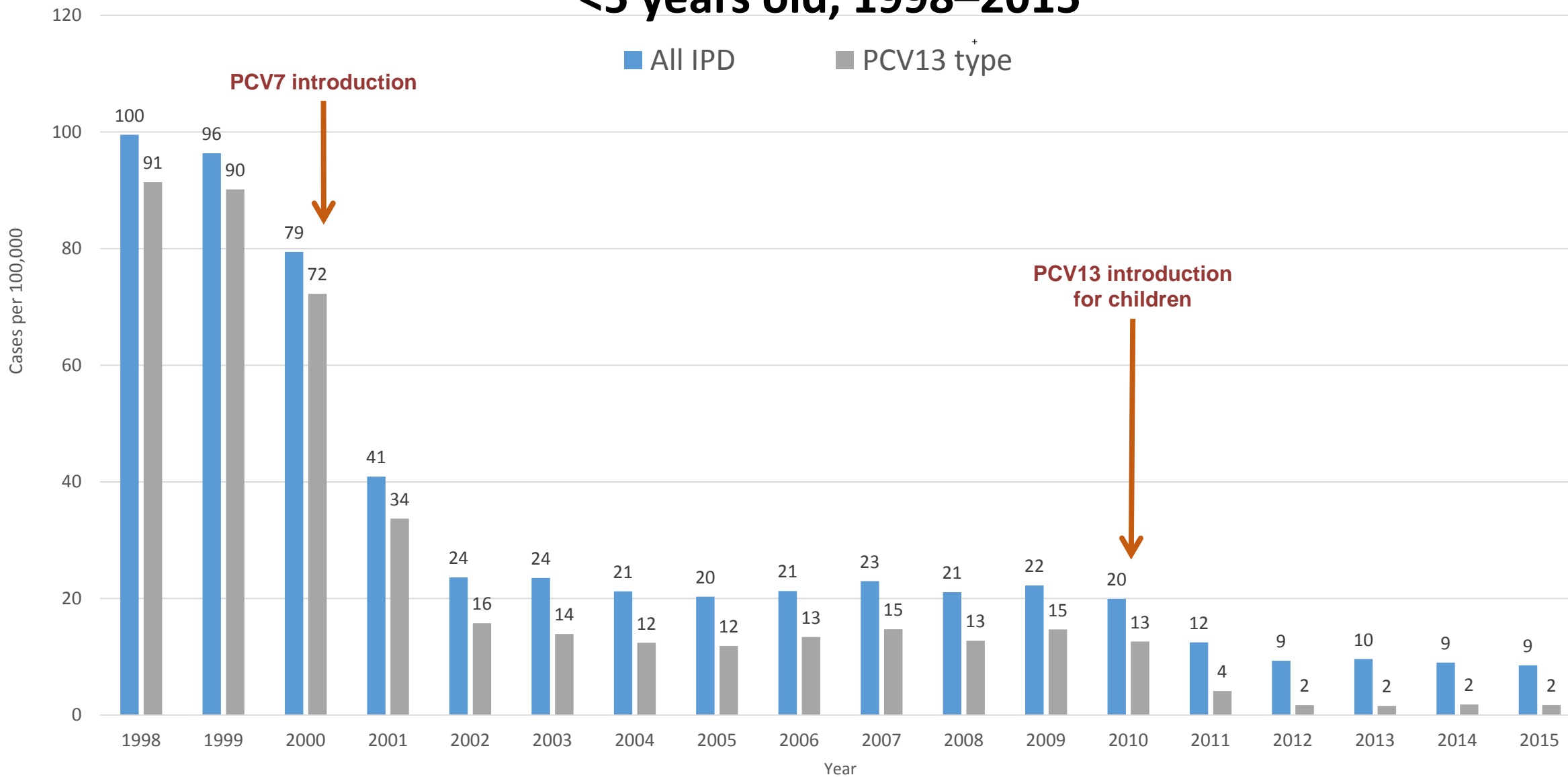
Annual Trends in IPD Incidence by Serotype Groups, Children <5 Years Old, 2007–2015



Rate differences by serotype among children <5 years old, 2007 - 2008 vs. 2014 - 2015

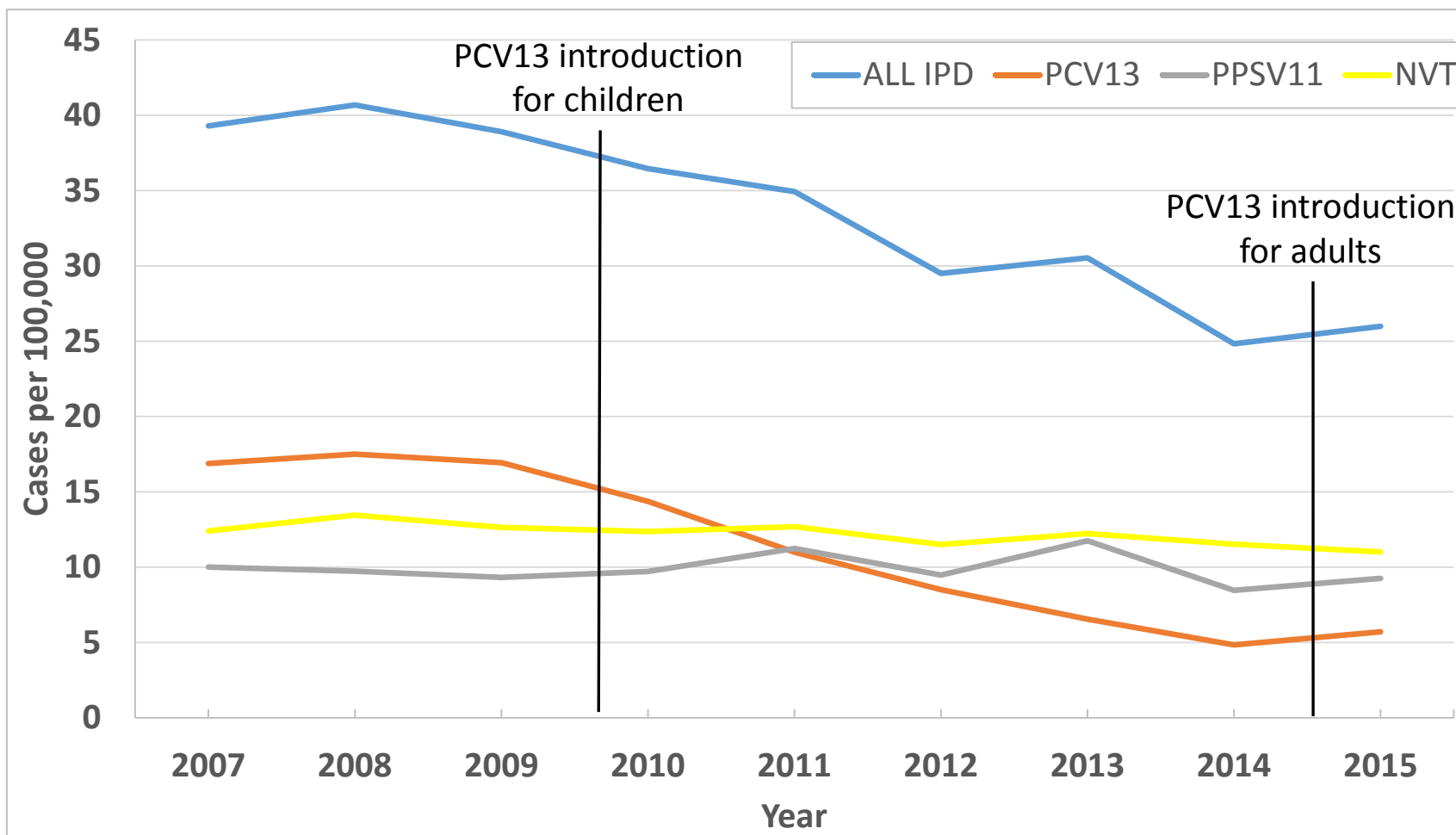


Trends in invasive pneumococcal disease among children aged <5 years old, 1998–2015

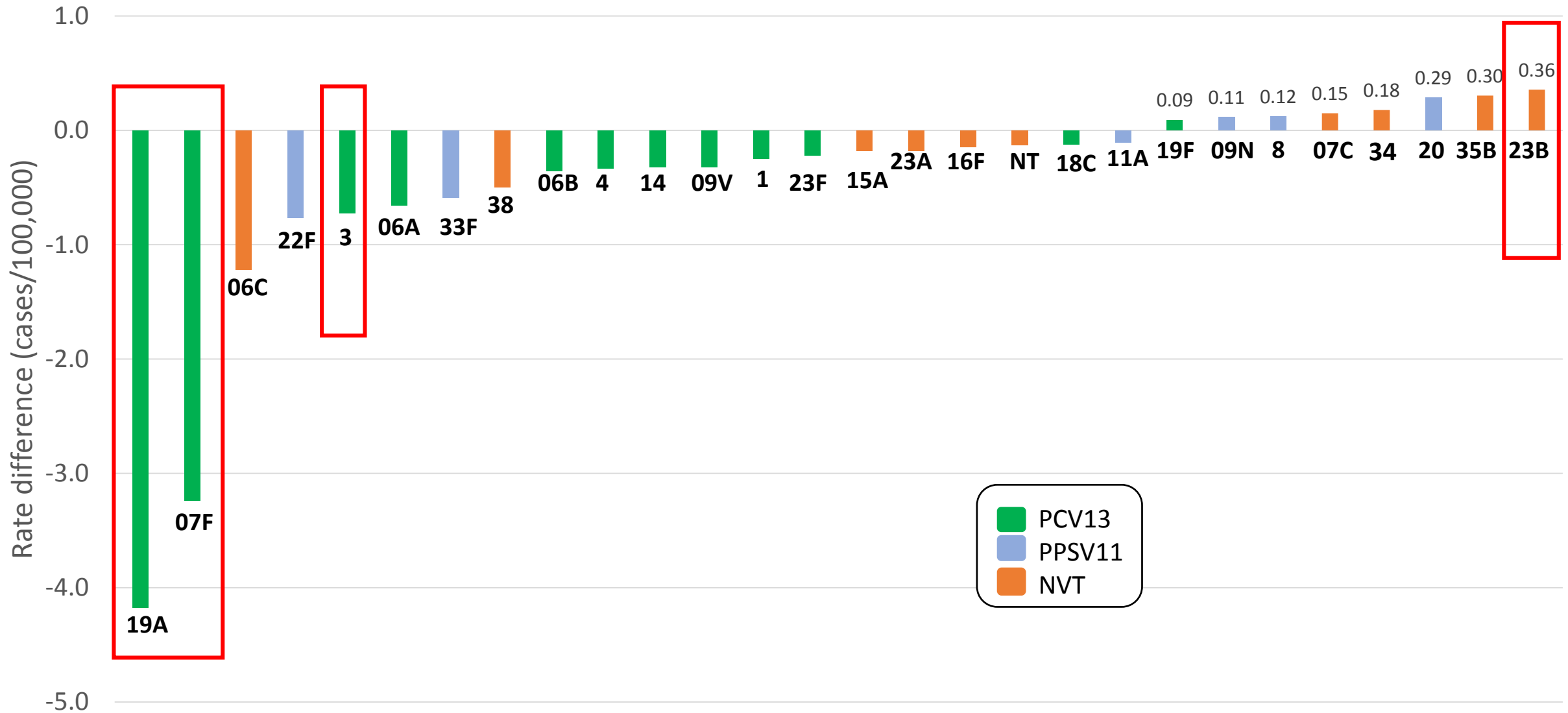


*PCV13 serotype: 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F

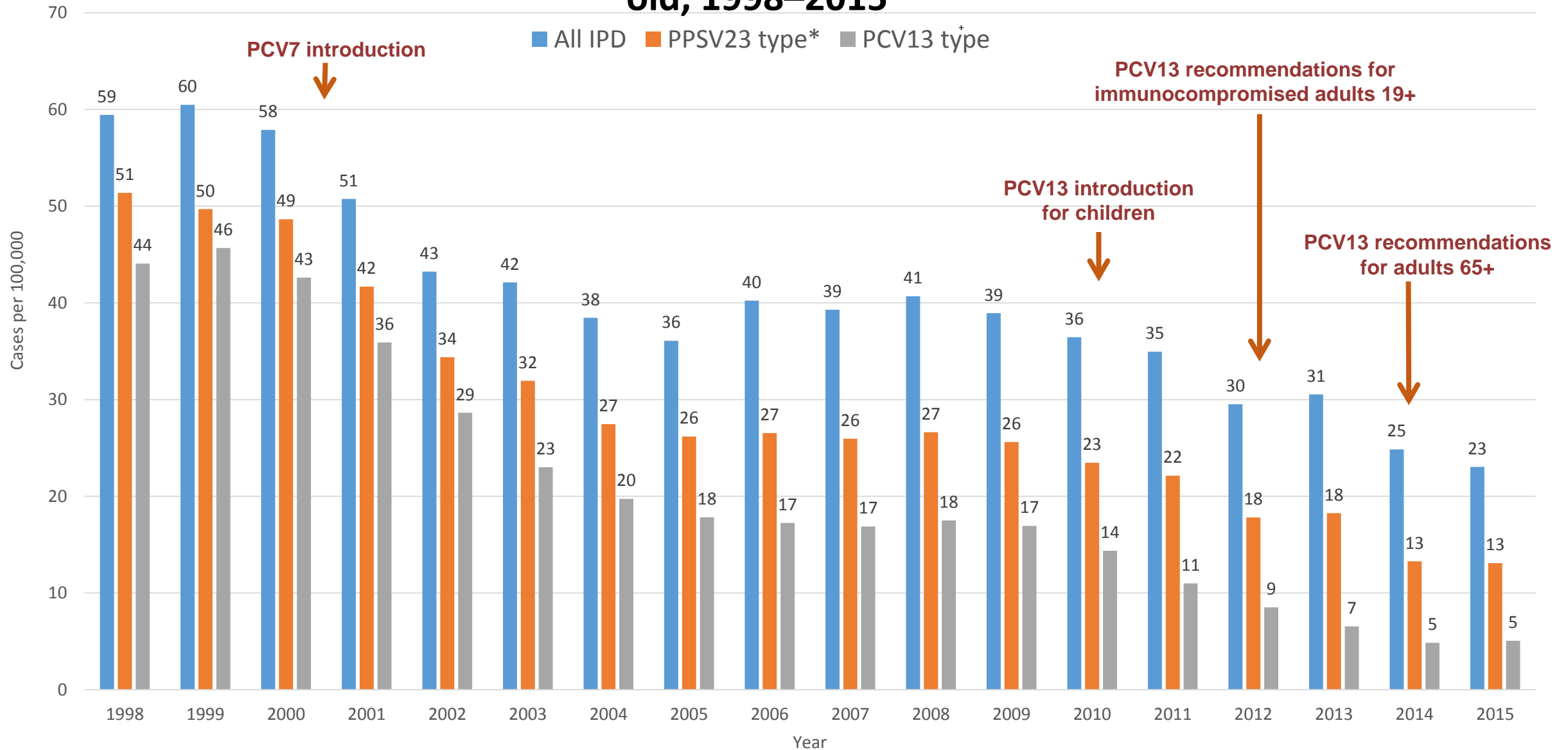
Annual Trends in IPD Incidence by Serotype Groups, Adults ≥ 65 Years Old, 2007–2015



Rate differences by serotype among adults ≥ 65 Years Old, 2007 - 2008 vs. 2014 - 2015



Trends in invasive pneumococcal disease among adults aged ≥ 65 years old, 1998–2015

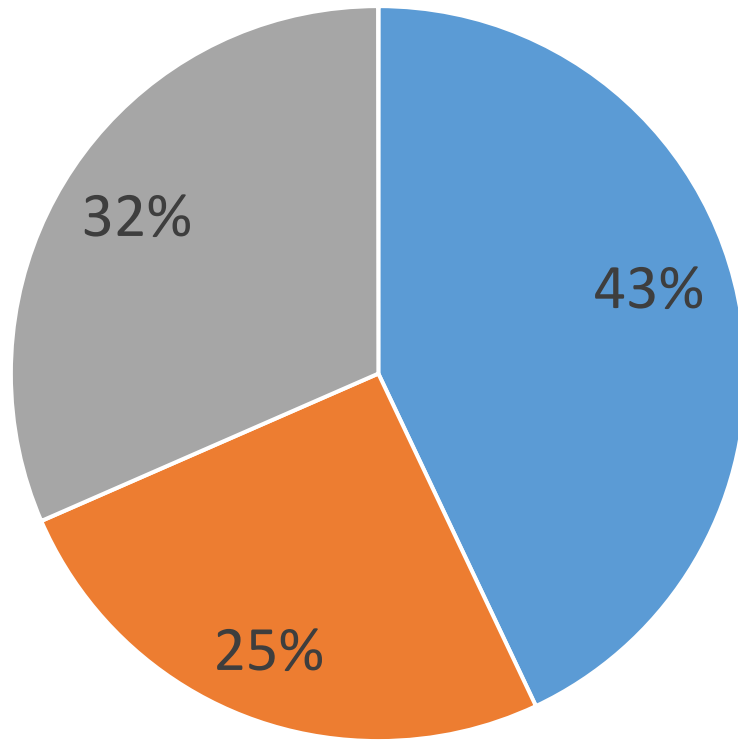


*PPSV23 serotypes: 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, and 33F

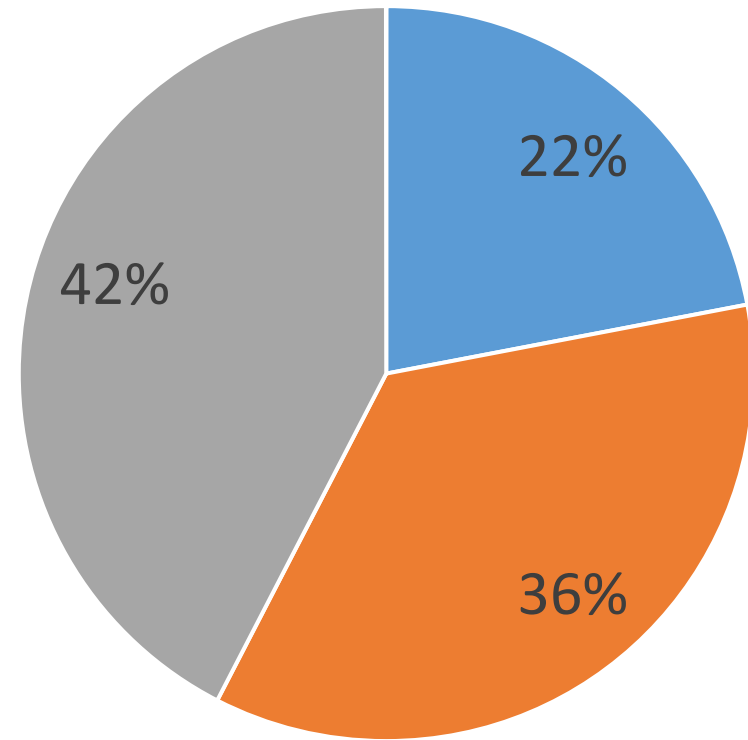
†PCV13 serotype: 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F

Serotype distribution among adults ≥ 65 Years Old, 2007 - 2008 vs. 2014 - 2015

2007-2008



2014-2015



■ PCV13 ■ PPSV23/non-PCV13 ■ Non Vaccine

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Changes in IPD incidence: 2007- 2008 vs. 2014- 2015

Age (years)	Serotype group	% change (95%CI)
<5	PCV13	-86.82 (-90.59, -81.53)*
	Non-PCV13	-10.88 (-28.09, 10.44)
	ALL IPD	-58.24 (-64.67, -50.65)*
5-18	PCV13	-84.78 (-91.04, -74.13)*
	Non-PCV13	-5.77 (-34.63, 35.83)
	ALL IPD	-55.28 (-66.11, -41.00)*
19-64	PCV13	-68.66 (-72.17, -64.72)*
	PPSV11	6.19 (-4.85, 18.52)
	NVT	-10.9 (-21.47, 1.08)
	ALL IPD	-35.11 (-39.23, -30.72)*
≥65	PCV13	-69.29 (-73.73, -64.10)*
	PPSV11	-10.11 (-22.59, 4.39)
	NVT	-12.77 (-23.52, -0.50)*
	ALL IPD	-36.47 (-41.42, -31.1)*

* statistically significant decrease

Summary

- Significant reductions in PCV13-type IPD following the 5 years of PCV13 use; reductions driven by types 19A and 7F
- Significant decreases in overall IPD among children and adults
- No significant changes in non-PCV13 types among children and adults
 - Increases of small magnitude (<0.5 case/100,000) in select non-PCV13 serotypes
- In 2010-2015, PCV13 use in children has prevented an estimated 280,000 IPD cases and 20,000 deaths among all ages

Conclusions

- In 5 years post-PCV13 introduction, significant reductions were seen in IPD caused by the PCV13 serotypes in children and adults, indicating continued direct and indirect effects
- No evidence of serotype replacement in children or general population of adults

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