

# Global Health Cast 47

## August 30<sup>th</sup>, 2023

**Every Week**

12.00 noon - CET



**Dr. Melvin Sanicas**

 @Vaccinologist

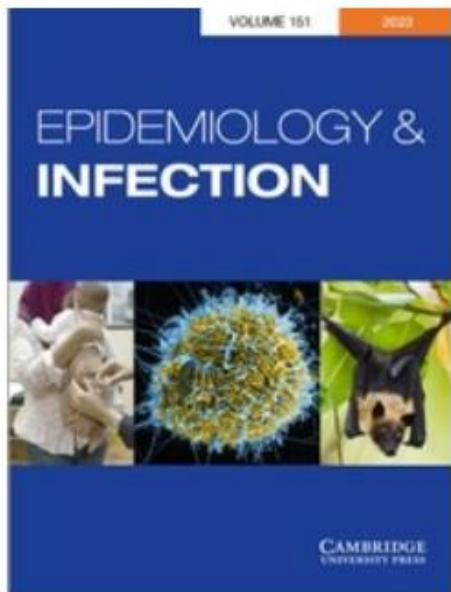


**Prof. Dr. Joe Schmitt**

 @Prof\_Schmitt

# What we talk about today

- **COVID Omicron has 4 times higher death risk than flu**
- **Polio: Public health emergency as 3 African countries report new cases**
- **New tools to bring down burden of RSV**
- **Screen time linked to developmental delays**
- **Vaccination in Pregnancy: Pertussis**



Epidemiology &  
Infection

Accepted manuscript

# Mortality associated with Omicron and influenza infections in France before and during the COVID-19 pandemic

Published online by Cambridge University Press: 25 August 2023

Edward Goldstein 

Article

Metrics

*Our results suggest the need for boosting influenza vaccination coverage in different population groups in France, and for wider detection of influenza infections in respiratory illness episodes (including pneumonia) in combination with the use of antiviral medications. For future Omicron epidemics, wider detection of Omicron infections in persons with underlying health conditions is needed.*

# Statement of the Thirty-sixth Meeting of the Polio IHR Emergency Committee

- The Emergency Committee reviewed the data on wild poliovirus (WPV1) and circulating vaccine derived polioviruses (cVDPV) in the context of global target of eradication of WPV and cessation of outbreaks of cVDPV2 by the end of 2023.
- Technical updates were received about the situation in the following countries: Afghanistan, Algeria, Burkino Faso, Kenya, Madagascar, Pakistan, United Republic of Tanzania and Zambia.

**WILD POLIO:** The committee noted that there has been one new case of WPV1 in Pakistan since the last meeting, bringing the total to two in 2023. In Afghanistan since the last meeting, there have been five new WPV1 cases reported, all from Nangarhar province.

**cVDPV:** The number of cVDPV2 cases is declining and the geographic concentration is more focused, with modest reduction in the number of provinces and districts . Globally 72% of cases are in the four most consequential geographies (eastern DR Congo, northern Nigeria, northern Yemen and Somalia).

# New tools to bring down burden of RSV



The two RSV vaccines -- one from Pfizer (**Abrysvo**) and one from GSK (**Arexvy**) -- can be used in older adults, and Pfizer's vaccine is also approved for pregnant women, aimed at protecting their babies against the virus.



AstraZeneca and Sanofi's Nirsevimab (**Beyfortus**) can be given to the youngest children ahead of their first RSV season, as well as at-risk children ahead of their second RSV season.



August 21, 2023

# Screen Time at Age 1 Year and Communication and Problem-Solving Developmental Delay at 2 and 4 Years

Ippei Takahashi, MMSc<sup>1</sup>; Taku Obara, PhD<sup>1,2,3</sup>; Mami Ishikuro, PhD<sup>1,2</sup>; et al

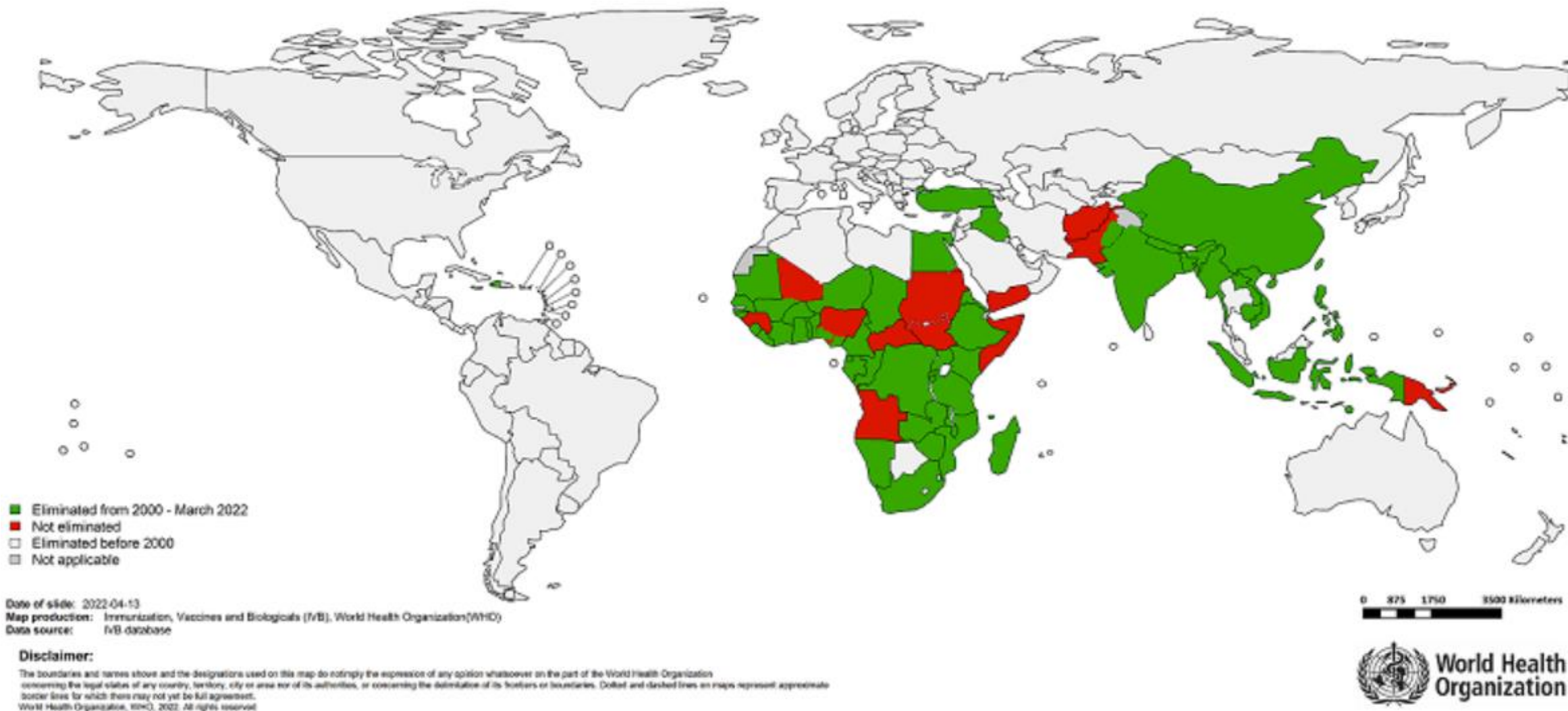
» Author Affiliations | Article Information

*JAMA Pediatr.* Published online August 21, 2023. doi:10.1001/jamapediatrics.2023.3057

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# By March 2022, 47/59 Countries Were Validated As Having Achieved Maternal and Neonatal Tetanus Elimination





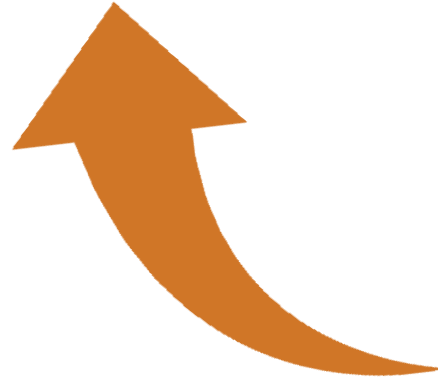
# *Bordetella pertussis* Is Circulating in All Ages

Primary vaccination at 2, 3 and 4 months

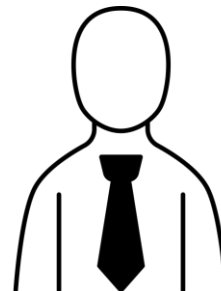
Non-vaccinated or partially vaccinated infants: risk of complications



Booster vaccination at 16–18 months

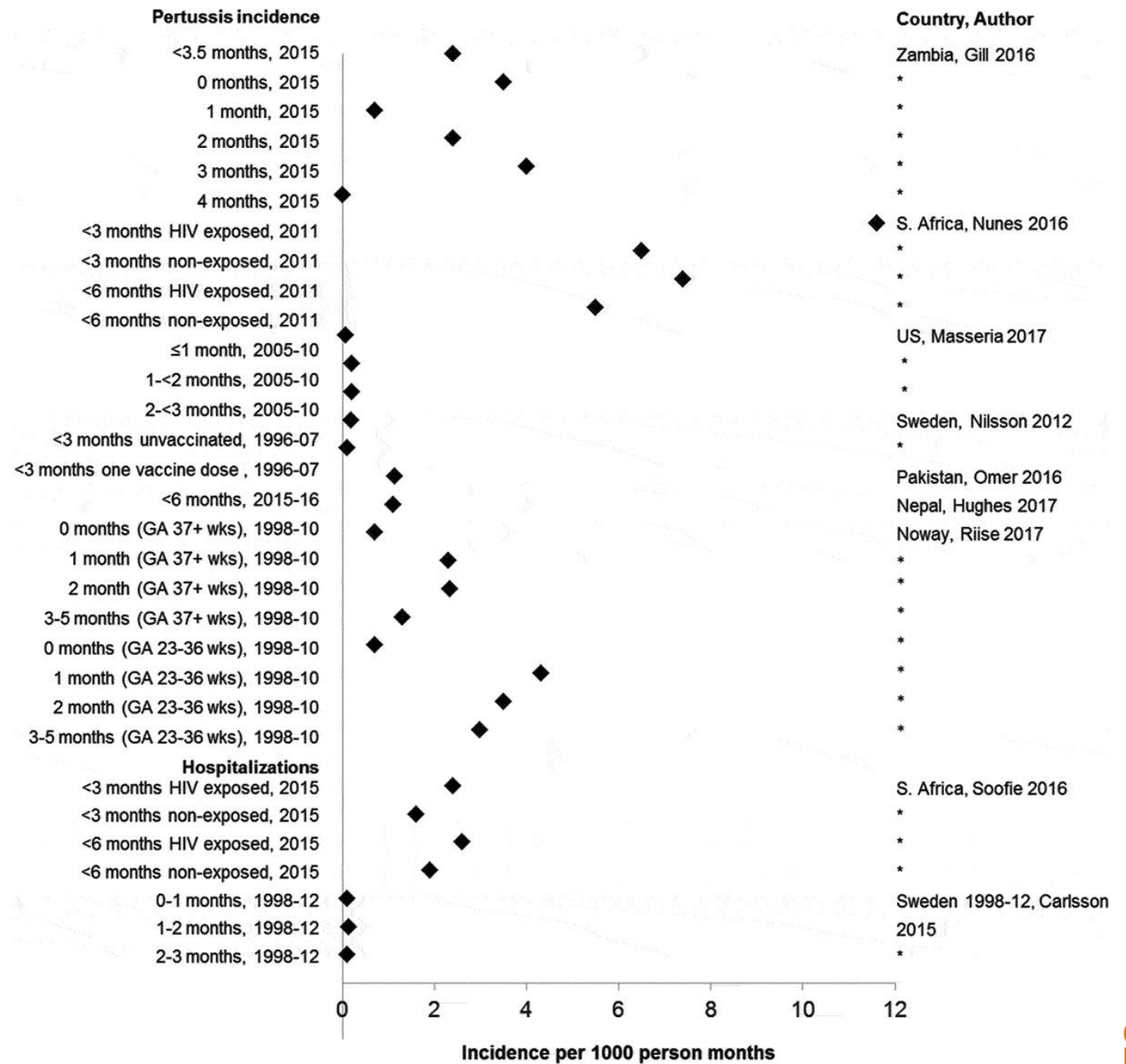


Adults serve as reservoirs of infection

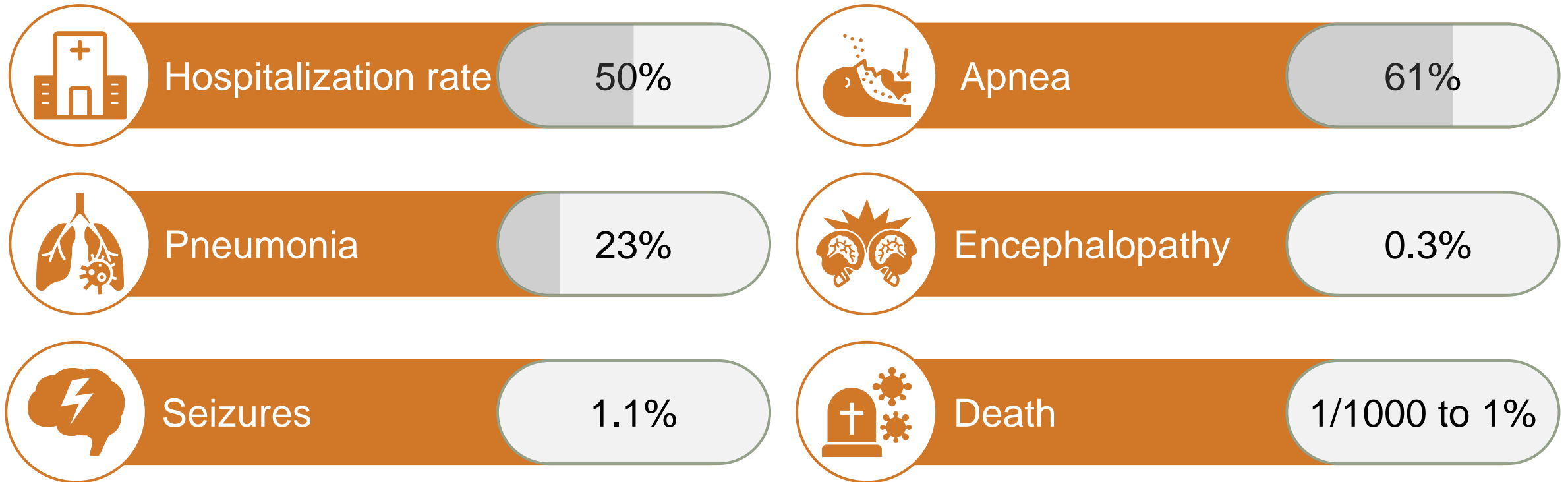


No vaccinal booster: immunity wanes over time

# Pertussis Incidence and Hospitalization Rates in Infants <6 Months of Age



# Complications of Pertussis in Infants



Weight loss, otitis media, pneumothorax, hernia...

# Effectiveness of Maternal Tdap Vaccination at Preventing Infant Pertussis, by Timing of Vaccination

	Cases, No. (%)		Controls, No. (%)		Multivariable VE, % (95% CI)
<b>Total</b>	240	(%)	535	(%)	
<b>Unvaccinated</b>	104	43.3	177	33.1	<b>Reference</b>
<b>Before pregnancy</b>	24	10.0	67	12.5	<b>50.8</b> (2.1 – 75.2)
<b>1<sup>st</sup> or 2<sup>nd</sup> trimester</b>	5	2.1	27	5.1	<b>64.3</b> (-13.8 – 88.8)
<b>3<sup>rd</sup> trimester</b>	17	7.1	90	16.8	<b>77.7</b> (48.3 – 90.4)
<b>After pregnancy</b>	90	37.5	174	32.5	<b>4.9</b> (-49.3 – 39.5)

# Effectiveness of Maternal Tdap Vaccination at Preventing Infant Pertussis Hospitalizations, by Timing of Vaccination

	Cases, No. (%)		Controls, No. (%)		Multivariable VE, % (95% CI)
<b>Total</b>	157	(%)	336	(%)	
<b>Unvaccinated</b>	76	48.4	109	32.4	<b>Reference</b>
<b>Before pregnancy</b>	16	10.2	46	13.7	<b>76.2</b> (37.2 – 91.0)
<b>1<sup>st</sup> or 2<sup>nd</sup> trimester</b>	2	1.3	20	6.0	<b>91.4</b> (24.8 – 99.0)
<b>3<sup>rd</sup> trimester</b>	6	3.8	47	14.0	<b>90.5</b> (65.2 – 97.4)
<b>After pregnancy</b>	57	36.3	114	33.9	<b>32.5</b> (-23.5 – 63.1)

# CDC Recommendations: Tdap During Pregnancy

- 1. Tdap during pregnancy provides the best protection for mothers and infants**
  - Tdap during every pregnancy
  - Optimal timing: between 27- and 36-weeks' gestation
- 2. Postpartum Tdap administration is NOT optimal**
  - Postpartum Tdap administration – no immunity to the infant
  - Cocooning: Tdap to close contacts – siblings, grandparents, and other caregivers
- 3. Tdap should NOT be offered as part of routine preconception care**
  - Pertussis immunity is short; Tdap is recommended during each pregnancy
  - If Tdap is given at a preconception visit, it should be re-administered between 27- and 36-weeks' gestation
  - If Tdap is administered in early pregnancy, it should not be repeated between 27- and 36-weeks' gestation

# Summary: ViP with Tdap Is Not Associated With Adverse Outcomes



Multiple systematic reviews have not found an association between Tdap vaccination during pregnancy and adverse maternal and neonatal outcomes and, in some cases, have demonstrated a benefit<sup>1-3</sup>

Spontaneous abortion<sup>1</sup>

Hypertensive disorders<sup>2</sup>

Chorio-amnionitis<sup>1-3</sup>

Stillbirth<sup>1-3</sup>

Neonatal death<sup>1,2</sup>

Preterm delivery/  
birth<sup>1-3</sup>

Congenital anomalies<sup>1,2</sup>

SGA<sup>1-3</sup>

LBW<sup>1-3</sup>

1 study showed a **moderate benefit** with vaccination<sup>1</sup>

1 study showed a **small benefit** with vaccination<sup>1</sup>

Three studies demonstrated a small increased risk of chorioamnionitis. However, there was no evidence of increased risk of preterm birth, which is a major clinical sequela of chorioamnionitis<sup>4-6</sup>

Note: The definitions of maternal and neonatal outcomes may vary based on the literature.

# Summary: Pertussis

## ► Burden of Disease

High frequency of complications.  
Deaths only in infants and young children (1/100 to 1/1000).

**High**



## ► VEy/VEs

High in adults and pregnant women.

Children are not vaccinated or adequately protected by a vaccine before 5 months of age.

**Good**



## ► Safety

No safety concerns to date.

**Acceptable**







One of the side effects of this new vaccine will be a hysterical reaction in the media

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