

Global Health Cast 48

September 5th, 2023



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Every Week

12.00 noon - CET

What we talk about today

- **Blood biomarkers predicted cognition 6 and 12 months post COVID**
- **WHO reports 3 more MERS-CoV cases**
- **Men B vaccine associated with reduced gonorrhoea incidence**
- **Avian flu in Spain**
- **ViP: COVID19: Burden of disease, vaccine efficacy and safety**



Acute blood biomarker profiles predict cognitive deficits 6 and 12 months after COVID-19 hospitalization

- ✓ high levels of fibrinogen
- ✓ elevated D-dimer relative to C-reactive protein

Received: 5 April 2023

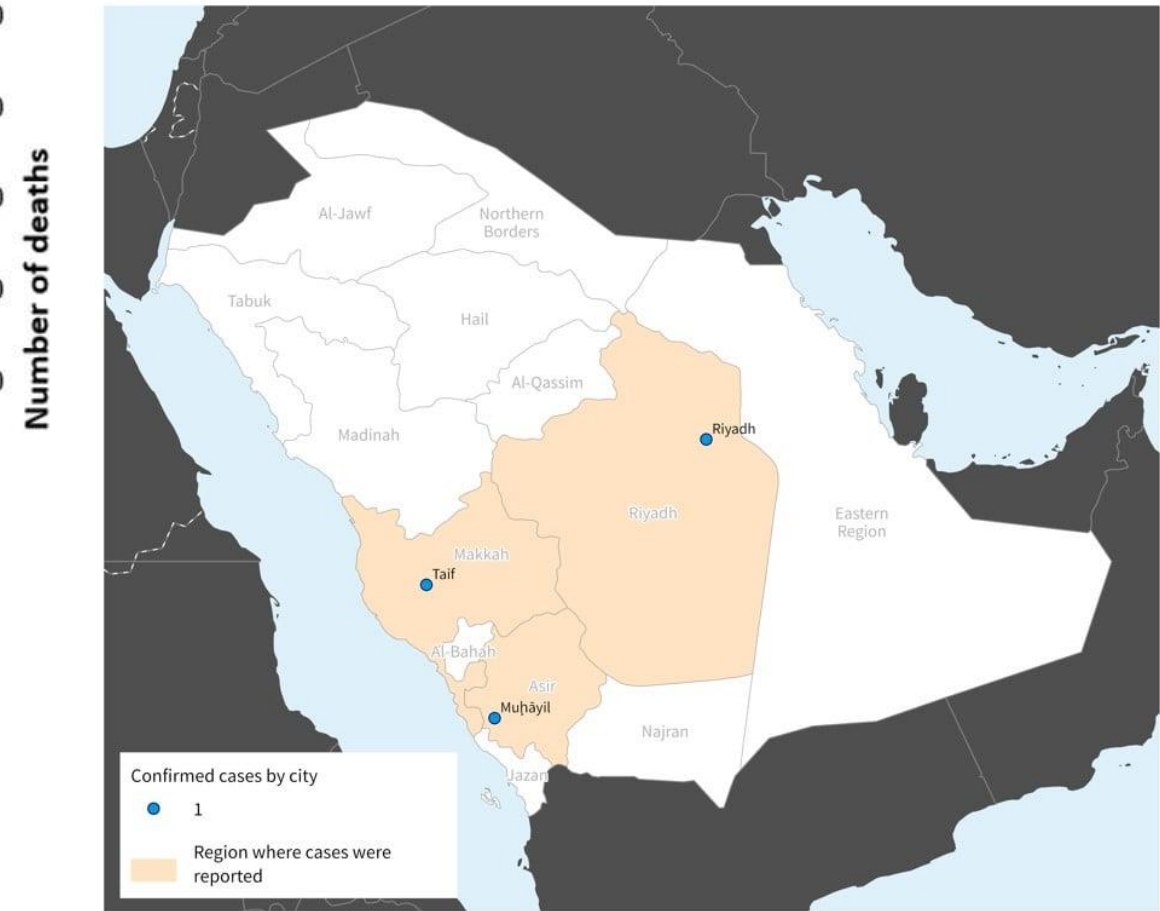
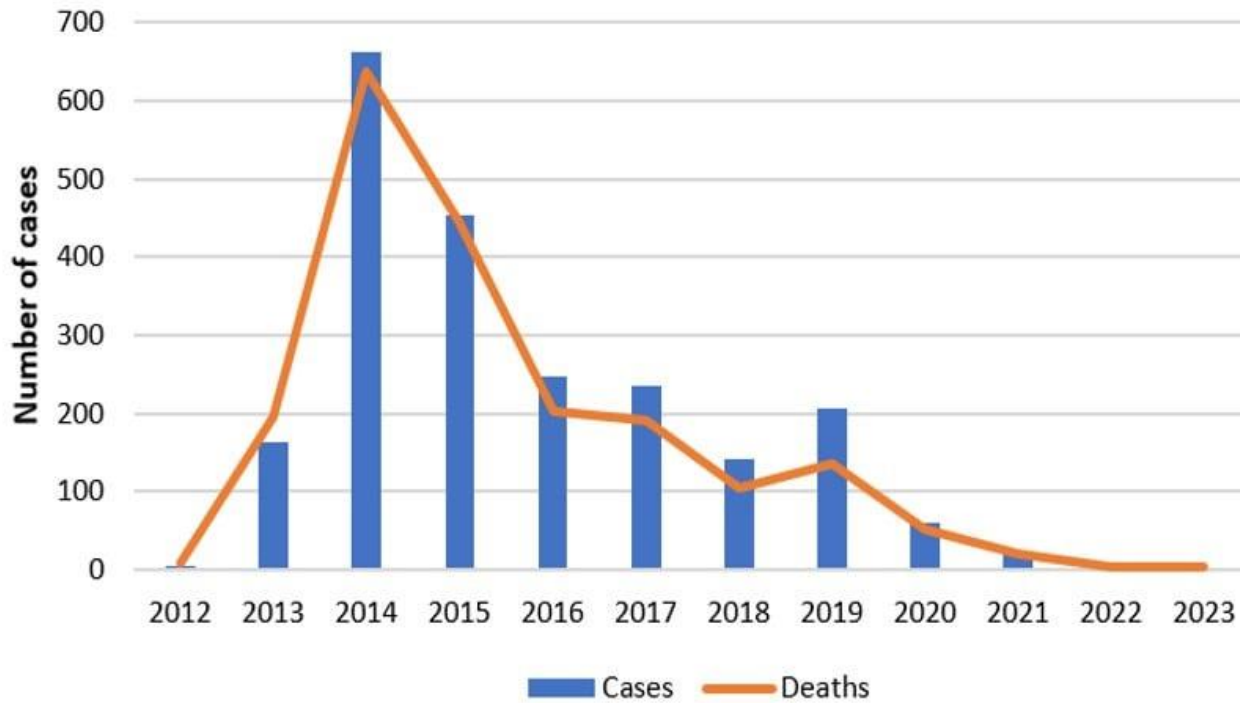
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Check for updates

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Between 13 September 2022 to 12 August 2023, KSA reported 3 additional MERS-CoV cases with 2 associated deaths

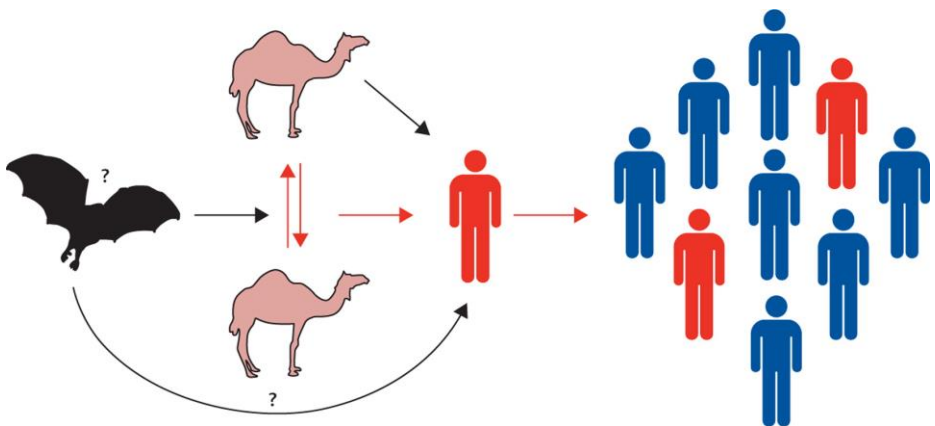


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Data Source: World Health Organization, Geonames
 Map Production: WHO Health Emergencies Programme
 Request ID: RITM00087
 Map date: 25 August 2023

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World Health Organization
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Meningococcal group B vaccine associated with reduced gonorrhea incidence



Research Letter | Infectious Diseases

Association of Group B Meningococcal Vaccine Receipt With Reduced Gonorrhea Incidence Among University Students

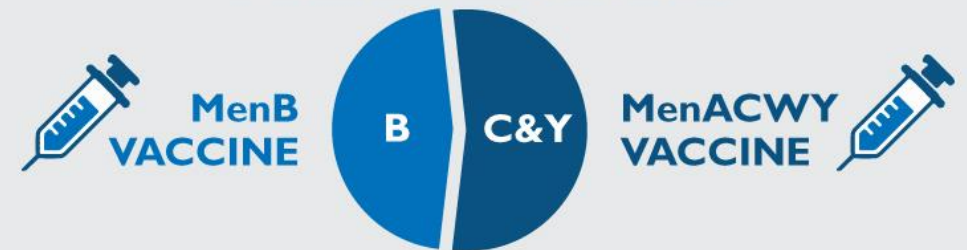
Steve G. Robison, MPH; Richard F. Leman, MD, MPH

Introduction

In 2017, New Zealand researchers reported that a meningococcal group B vaccine (MBV) appeared to reduce gonorrhea incidence, with vaccine effectiveness of 31%.¹ These researchers compared population-level gonorrhea rates with rates of chlamydia, an unrelated sexually transmitted infection. *Neisseria meningitidis* and *Neisseria gonorrhoeae* are closely related genetically, and the MBV was found to target outer membrane vesicles (OMVs) common to both.¹ This finding was initially controversial as, previously, no effective vaccine for gonorrhea had been found. However, following broader use of OMV-based MBVs, several retrospective, population-based studies successfully replicated the New Zealand finding using chlamydia or other vaccines as controls.²⁻⁴ Currently, 2 MBVs are available in the US: MenB-4C (OMV-based) and MenB-FHbp (not OMV-based). Mass vaccination campaigns prompted by group B meningococcal outbreaks at University of Oregon in 2015 and Oregon State University in 2016 each used both available MBVs. Vaccination was confined to students, staff, and some medical and public health personnel. We assessed whether receipt of OMV-based MBV was associated with subsequent lower gonorrhea prevalence than receipt of non-OMV-based MBV.

TWO KINDS OF VACCINES PREVENT AGAINST MENINGOCOCCAL DISEASE

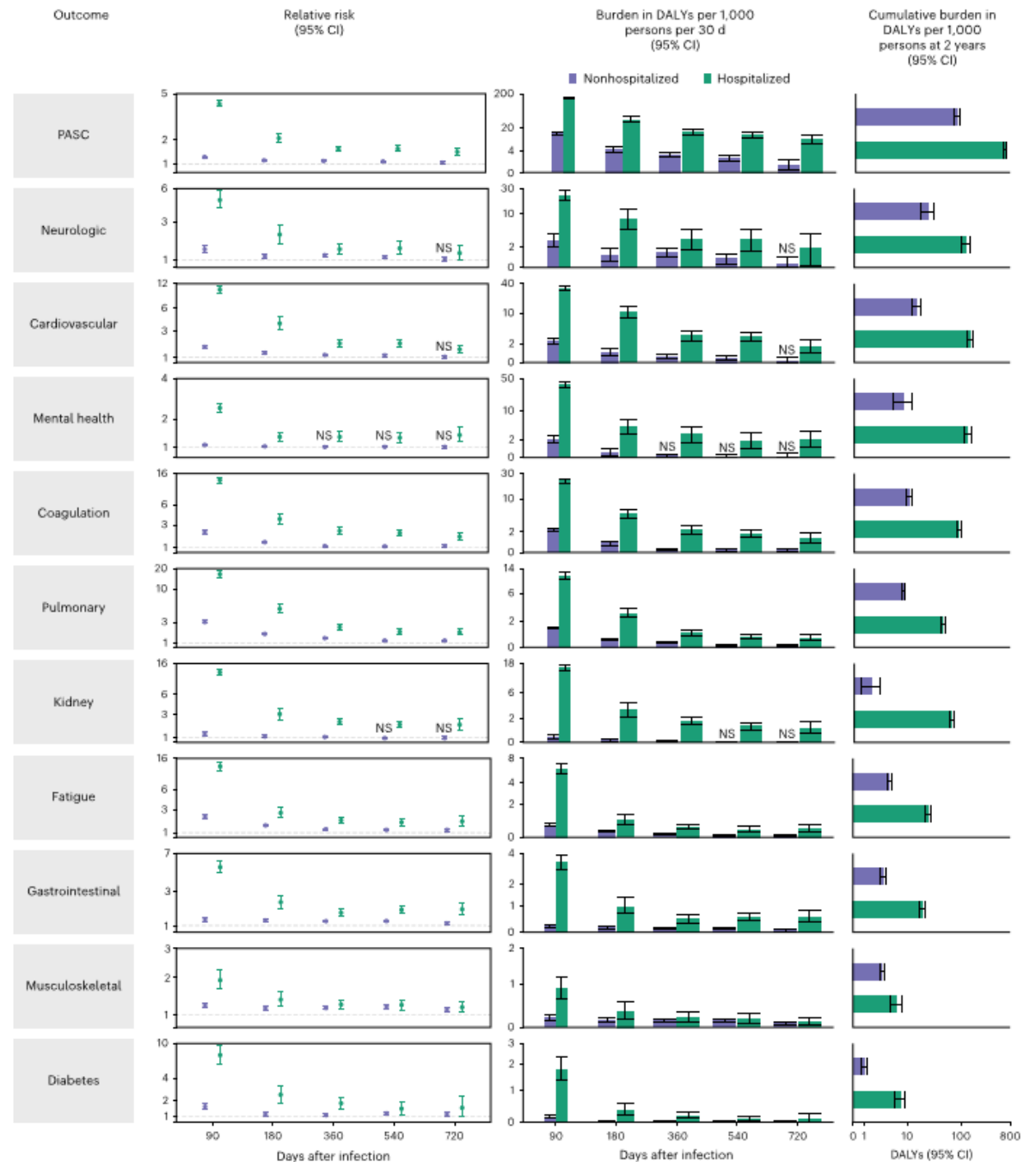
MenB is the most common cause of disease in adolescents and young adults*



Vaccination is the best way to protect against it.

*Cases in 11-24 year olds in the US by serogroup (2009-2013)

Risks and DALYs of PACS overall and by organ system and care setting of the acute phase of the disease.



Highly pathogenic avian influenza (HPAI A H5N1) outbreak in Spain: its mitigation through the One Health approach – a short communication

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Abstract

Highly pathogenic avian influenza (HPAI A H5N1) has occurred over the past few years, especially during the 1918–1919 Spanish Flu pandemic, which wiped out many people in the world. It caused acute illness in about 25–30% of the world's population, which led to the deaths of up to an estimated 40 million people. Of recent, public health authorities in Spain reported the detection of avian influenza A in two poultry workers on a single farm, following an outbreak in poultry confirmed on 20 September which was likely to be due to exposure to infected poultry or contaminated environments and poor interprofessional collaborations among the Spanish health workers. This is a public health challenge for the Spanish government and the world at large. Thus, we believed that through the One Health approach in Spain, there would be a stop to and prevention of further spread of the recent outbreak of avian influenza A in Spain, as well as other infectious diseases and future outbreaks in the country and the world at large.

Keywords: animals, humans, global health, one health, highly pathogenic Avian influenza

COVID-19 in Pregnant and Non-Pregnant Women: A Community-Based Study

| Study | Study group | Outcome (Pregnant vs. non-pregnant, Relative risk, 95% CI) |
|------------------|--|--|
| Rios-Silva, 2020 | 448 pregnant women, 17,942 non-pregnant women 13 to 49 years of age with COVID-19 | <p>Hospitalization: 2.10 (1.82, 2.55)</p> <p>ICU admission: 10.2% versus 7.4%, P = 0.2</p> <p>Invasive/mechanical ventilation: 5.1% versus 5.7%, P = 0.7</p> <p>Death: 0.74 (0.35, 1.56)</p> |
| Zambrano, 2020 | 30,415 pregnant and 431,410 non-pregnant women 15 to 44 years of age with symptomatic COVID-19 | <p>ICU admission: 3.0 (2.6, 3.4)</p> <p>Invasive/mechanical ventilation: 2.9 (2.2, 3.8)</p> <p>Death: 1.7 (1.2, 2.4)</p> |
| Lokken, 2021 | 240 pregnant women and 32,902 individuals 20 to 39 years of age with COVID-19 | <p>Hospitalization: 3.5 (2.5, 5.3)</p> <p>Death: 13.6 (2.7, 43.6)</p> |

Pooled Prevalence of Maternal Outcomes of Different SARS-CoV-2 Variant Infections During Pregnancy

| Outcome | Type of SARS-CoV-2 Variant | | | | | |
|---------------------------|----------------------------|-----------------------|-----------------|-----------------------|-------------------------|-----------------------|
| | Wild Type | Alpha | Alpha and Gamma | Pre-Delta | Delta | Omicron |
| ICU admission (%) | | | | 4.17 (1.53–6.80) * | 11.31 (4.00–18.61) * | 1.83 (0.85–2.81) * |
| Maternal death (%) | 0.39 (–0.44–1.22) | 0.28 (0.04–0.53) * | | 0.63 (0.05–1.20) * | 4.20 (1.43–6.97) * | 0.40 (–0.19–1.00) |

* p -value < 0.05

COVID-19 VE During Pregnancy: 3 Studies

Retrospective cohort study, Israeli pregnancy registry (≥ 28 days after dose 1)

- ▶ **10 / 7530** vaccinated pregnant women versus **46 / 7530** unvaccinated matched controls
- ▶ Hazards of infection: 0.33%; 1.64%; **adjusted hazard ratio 0.22** (95% CI 0.11, 0.43; $p < 0.001$)¹

Mayo Clinic Health System analysis

- ▶ Fully vaccinated during pregnancy significantly less likely to become infected before delivery
- ▶ **2 / 140 (1.4%)** versus **210 / 1861 (11.3%)**; ($p < 0.001$)
- ▶ 2 infections in vaccinated women occurred before vaccination²

Israeli observational cohort study: BNT162b2 VE 7–56 days after dose 2 was:

- ▶ **96%** (95% CI 89, 100) for any infection
- ▶ **97%** (95% CI 91, 100) for symptomatic infection
- ▶ **89%** (95% CI 43, 100) for COVID-19-related hospitalization³

1. Goldshtein I, Nevo D, Steinberg DM, et al. Association Between BNT162b2 Vaccination and Incidence of SARS-CoV-2 Infection in Pregnant Women. *JAMA*. 2021;326(8):728-735. doi:10.1001/jama.2021.11035.

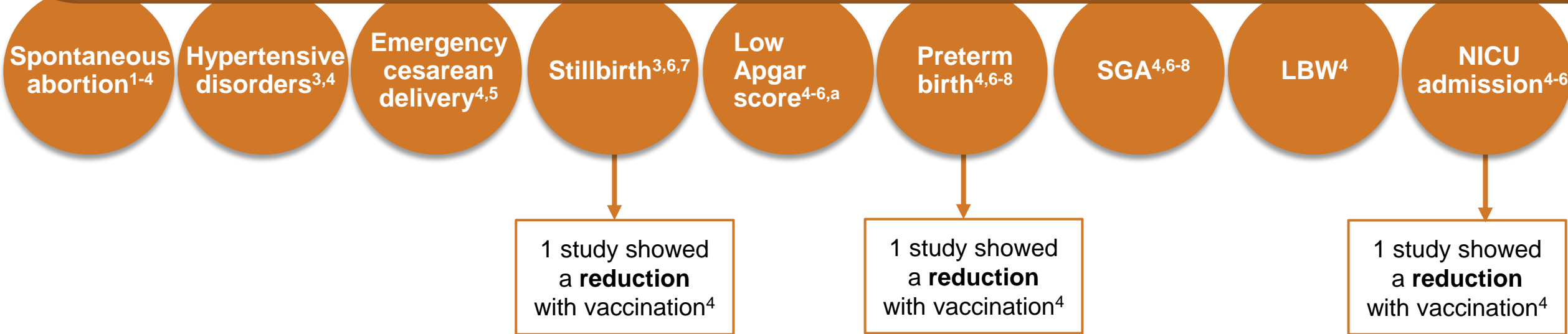
doi:10.1016/j.ajogmr.2021.100467.

3. Dagan N, Barda N, Kepten E, et al. BNT162b2 mRNA Covid-19 Vaccine in a Nationwide Mass Vaccination Setting. *N Engl J Med*. 2021;384(15):1412-1423. doi:10.1056/NEJMoa2101765

ViP With COVID-19 Vaccine Is Not Associated With Adverse Outcomes



Retrospective cohort studies, case-control studies, and a systematic review and meta-analysis have not found an association between COVID-19 vaccination during pregnancy and adverse maternal and neonatal outcomes and, in some cases, have demonstrated a benefit.¹⁻⁸



Note: The definitions of maternal and neonatal outcomes may vary based on the literature. For further inquiries regarding data, please contact Pfizer medical information team.

^a The Apgar scoring system is a standardized method to assess the status of newborns immediately after birth. A low Apgar score at 5 minutes is considered a score <7.⁴⁻⁶

Summary: COVID-19

► Burden of Disease

High, frequent, and regular infections in the general population.

Systemic disease with various long-term complications.

High



► VEy/VEs

Short term only (3–6 months) but high VE (90%).

Good



► Safety

Good safety profile in pregnant and lactating women.

No harm to unborn children / newborns.

Acceptable



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