

Global Health Cast 46

August 14th, 2023

Every Week

12.00 noon - CET



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What we talk about today

- **What to Know About the 'Eris' Variant**
- **What to do if you catch COVID-19 now?**
- **Unusual Dengue surge in Bangladesh**
- **Vaccination in Pregnancy (ViP) – Influenza**

EG.5 variant gaining ground

- ▶ The so-called "Eris" variant is still an Omicron subvariant and there's no reason to expect it to cause a surge of COVID-19
- ▶ EG.5 and its relatives EG.5.1 and EG.5.1.1 are also on the rise in the U.K., with an estimated prevalence of 14.55% as of July 20, according to the most recent report from the U.K. Health Security Agency
- ▶ The World Health Organization listed EG.5 as a **variant of interest** -- lower than its "variant of concern" category – VOI in mid-July, the earliest documented samples to February 17 (**WHO lists no "variants of concern"**).

VARIANT OF INTEREST (VOI)

VOI NOW: XBB.1.5, XBB.1.16, EG.5



* Increasingly spreading in multiple locations over time



* May reduce immune system's ability to prevent infection

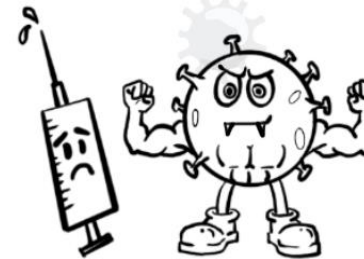
VARIANT OF CONCERN (VOC)

NO VARIANTS OF CONCERN AT THE MOMENT

COVID+ve (DELTA) → COVID+ve (OMICRON)

* Increases the risk of COVID-19 re-infection

* Spreads easily from one person to another



* Less responsive to vaccines or treatment



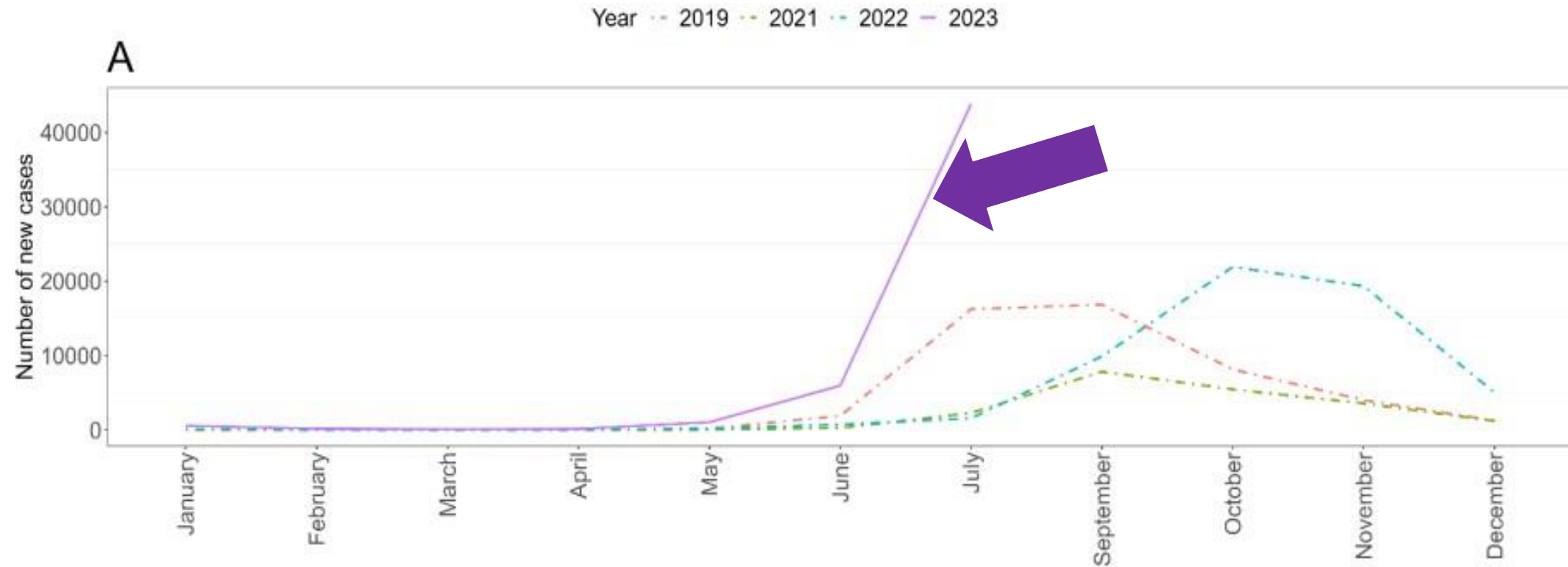
* Has higher risk of severe illness (increased chances of hospitalization or death)

WHAT DO YOU DO WHEN YOU CATCH COVID-19

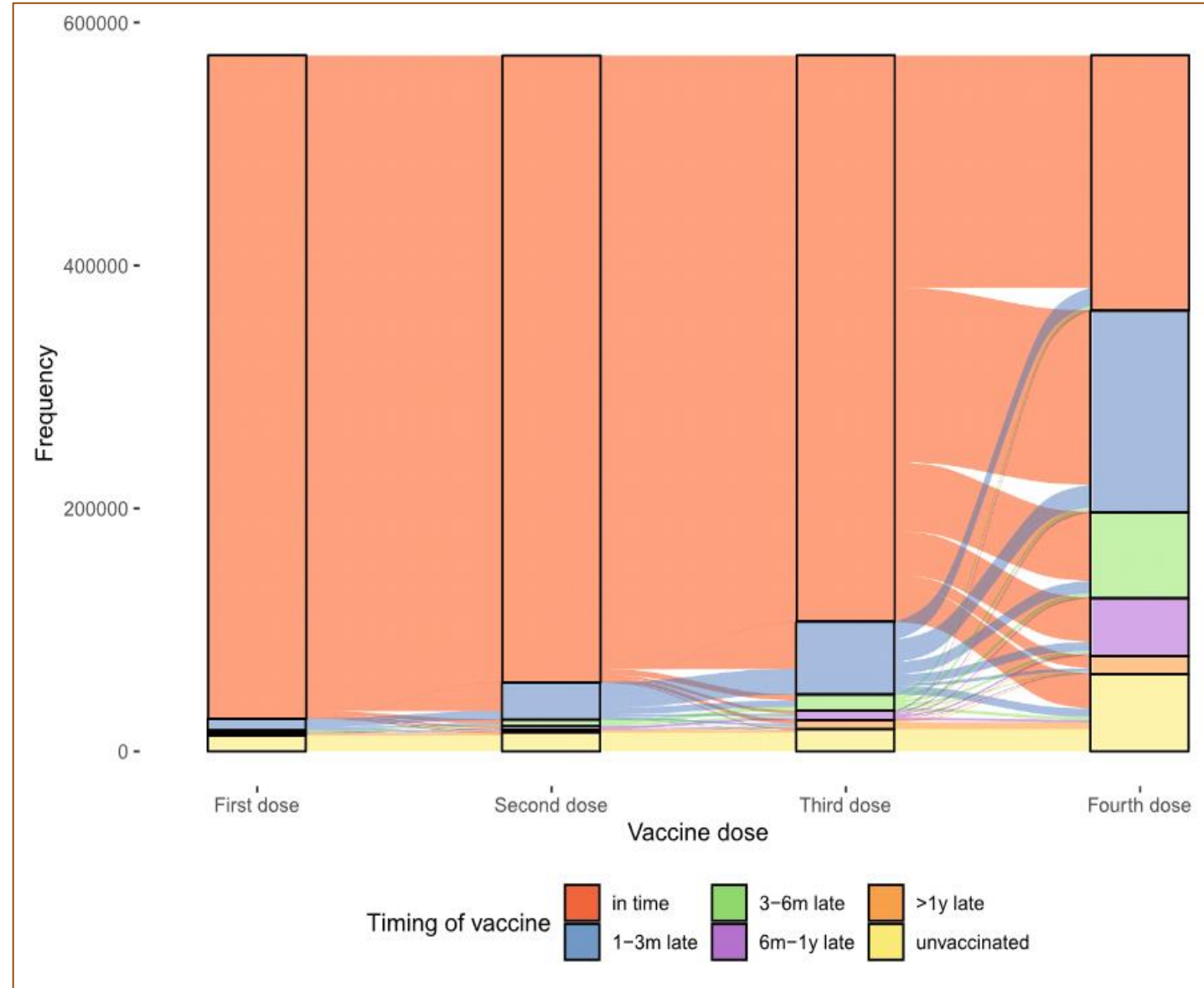
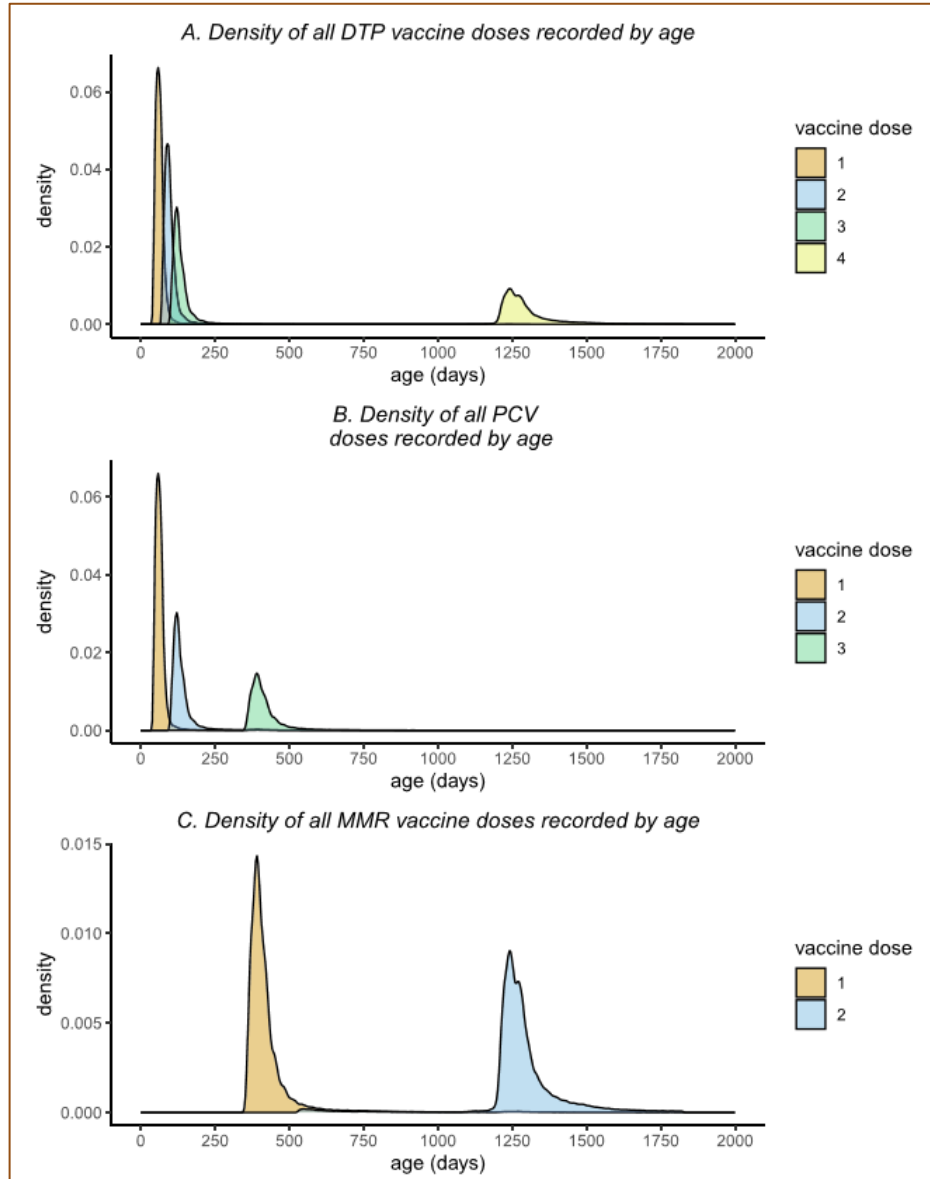
- ▶ **Get tested – if at risk**
- ▶ **If you test positive, stay home, notify your contacts**
- ▶ **Consider treatment**
- ▶ **Drink plenty of fluids and using over-the-counter anti-fever medications if necessary.**
- ▶ **If you start to experience severe symptoms, like difficulty breathing or chest pain, seek medical care immediately.**

Unusual Dengue surge in Bangladesh

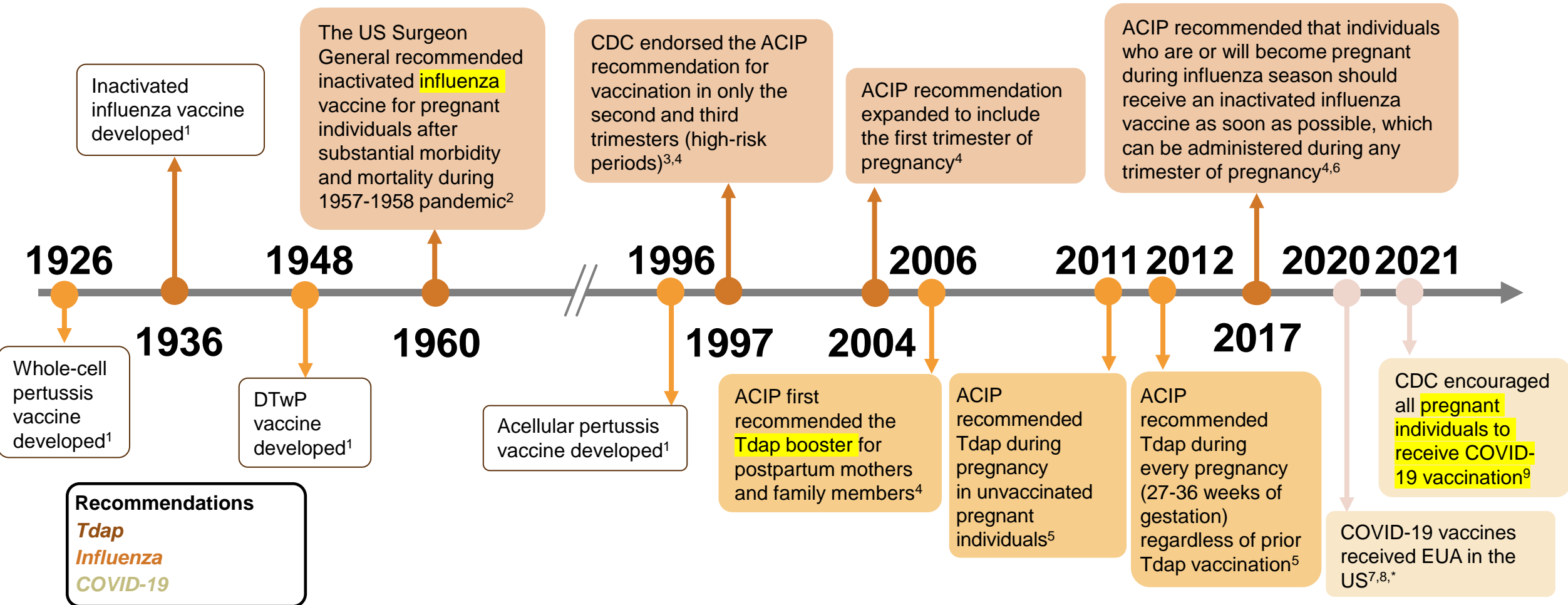
Figure 7. Number of new cases of (A) and deaths (B) from dengue by month in Bangladesh from January 2019 to 31 July 2023



Completion and Compliance, Vaccine Uptake, UK 2006-2014



ViP Is Not New: US History of Routine ViP Recommendations



*Pfizer's mRNA vaccine (BNT162b2) was approved for EUA on December 11, 2020, and Moderna's mRNA vaccine (mRNA-1273) was approved for EUA on December 18, 2020.^{7,8}
 Abbreviations: DTwP - diphtheria, tetanus, whole-cell pertussis; EUA - emergency use authorization; mRNA - messenger RNA; Tdap - tetanus-diphtheria-acellular pertussis.

CDC: People at Risk of Severe and Serious Influenza

Adults 65 years and older



People 65 years and older are at higher risk of developing serious complications from flu compared with young, healthy adults.

Adults with certain chronic health conditions



Chronic health conditions include asthma, heart disease and stroke, diabetes, and chronic kidney disease

During Pregnancy

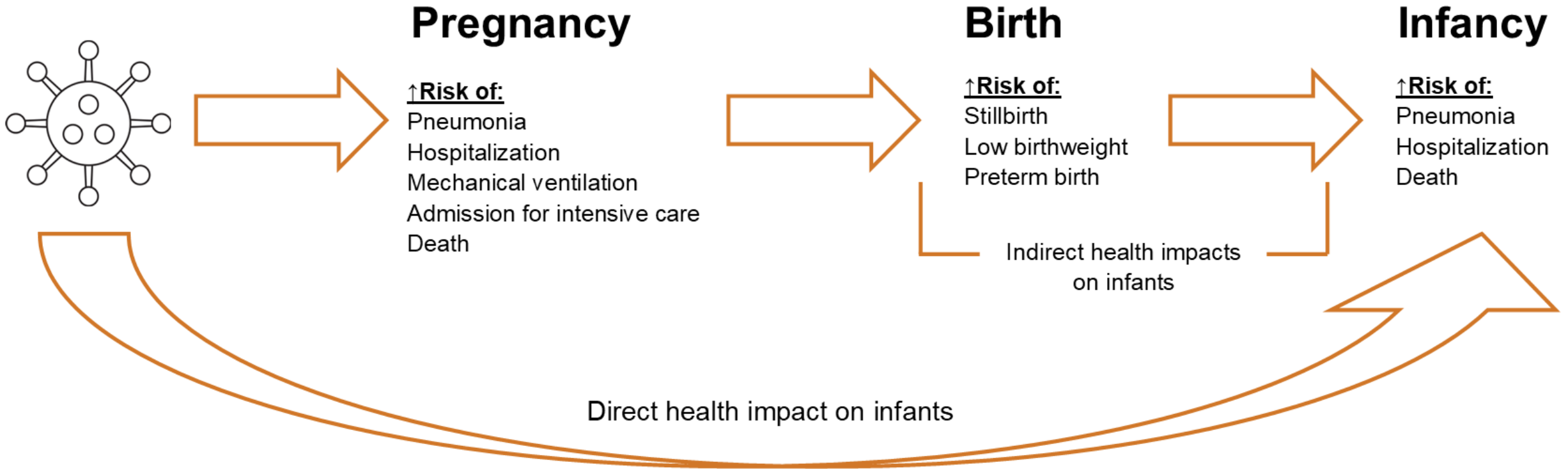


Changes to the immune system, heart, and lungs during pregnancy make people more susceptible to potentially serious flu complications. Flu may also be harmful for a developing baby.

NOTE: Neural tube defects due to fever; low birthweight

NEVER vaccinate pregnant women / immunocompromised patients with live attenuated influenza vaccine

Direct and Indirect Health Impacts of Influenza on Infants <6 Months of Age

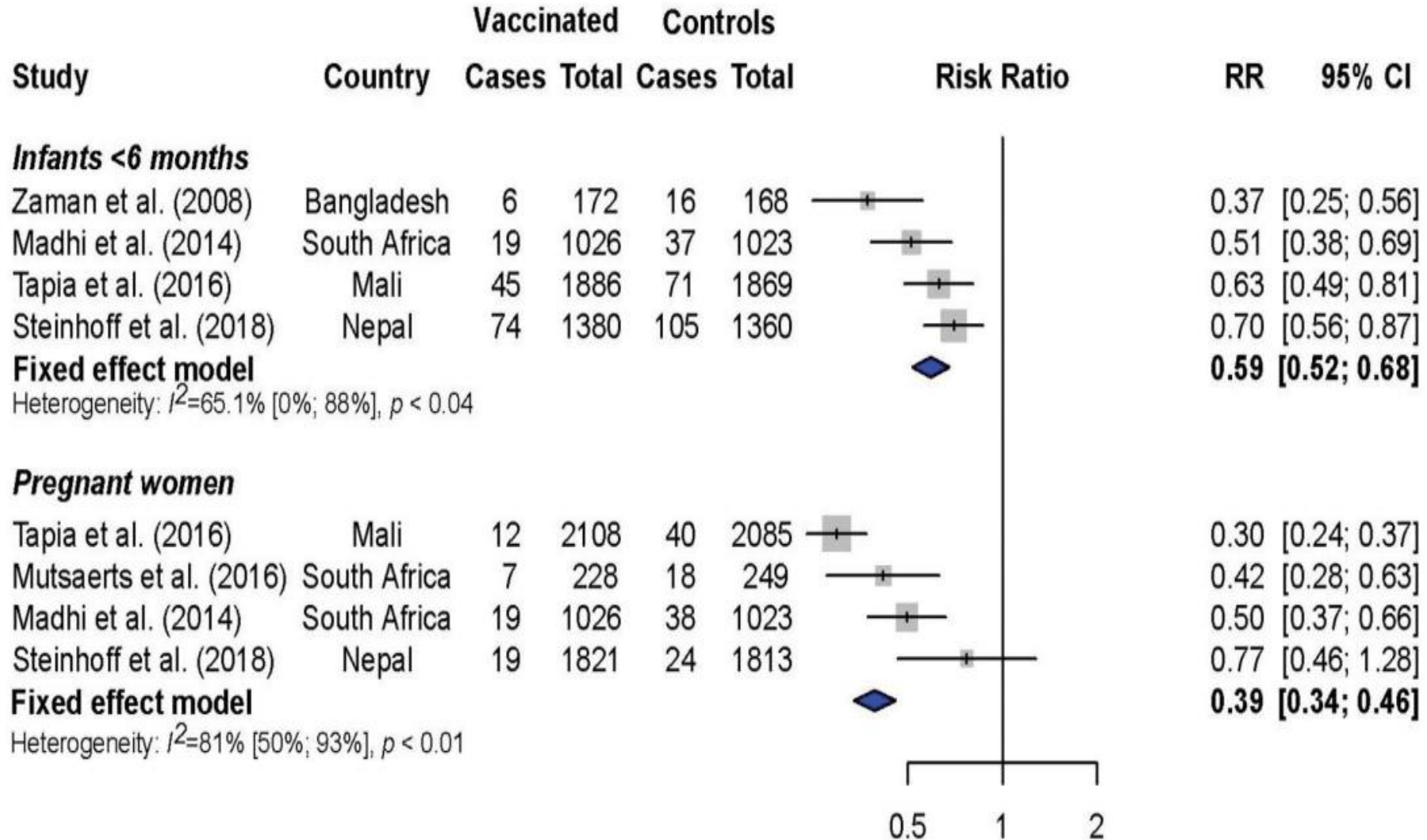


Documented during the 2009 influenza A/H1N1 pandemic.

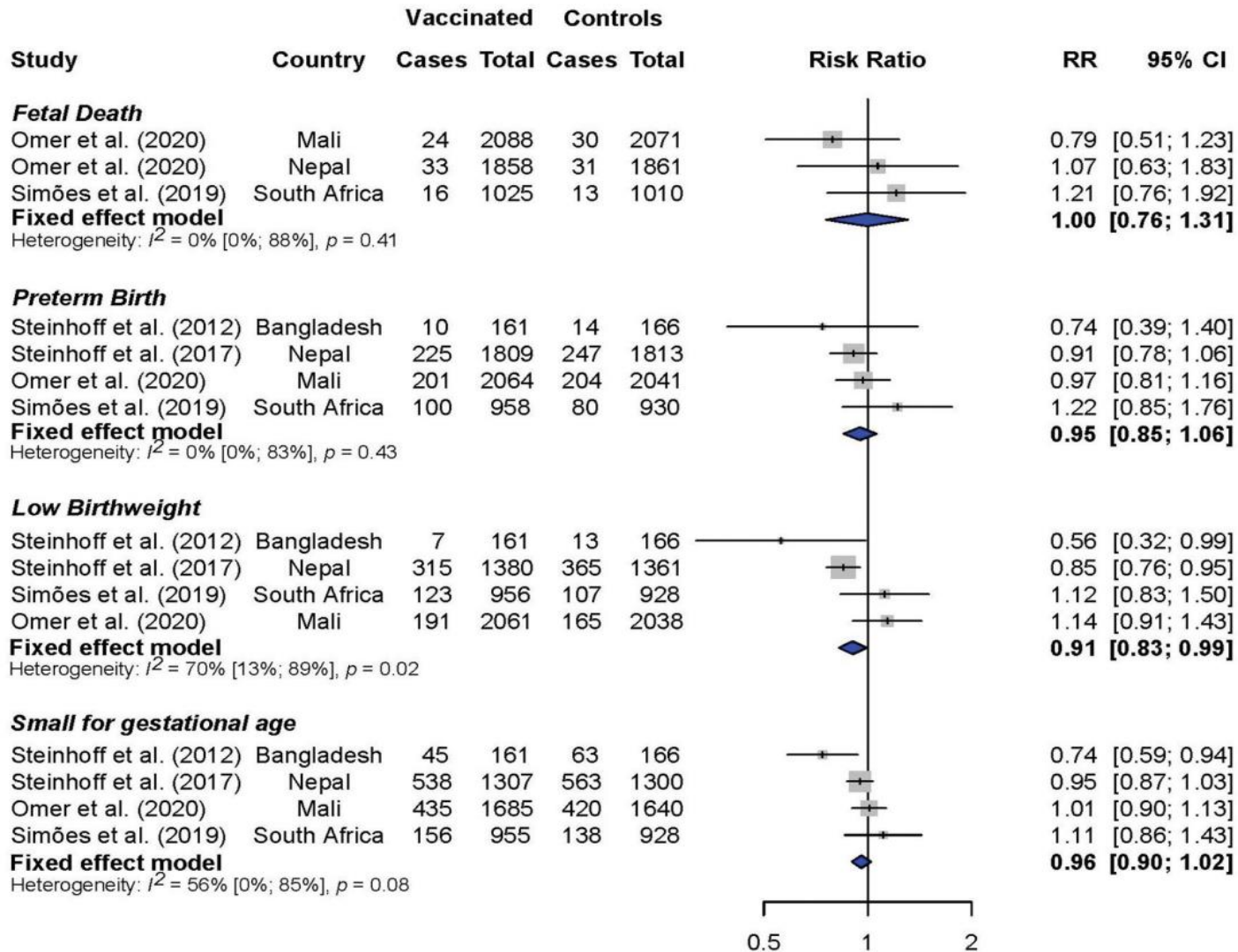
Adjusted Influenza VE Estimates for 2004–2022 – General Population

Season	Reference	Study site	Patients, n	Adjusted VE, %	95% CI
2004–2005	<u>Belongia 2009</u>	WI	762	10	–36, 40
2005–2006	<u>Belongia 2009</u>	WI	346	21	–52, 59
2006–2007	<u>Belongia 2009</u>	WI	871	52	22, 70
2007–2008	<u>Belongia 2011</u>	WI	1,914	37	22, 49
2008–2009	Unpublished	WI, MI, NY, TN	6,713	41	30, 50
2009–2010	<u>Griffin 2011</u>	WI, MI, NY, TN	6,757	56	23, 75
2010–2011	<u>Treanor 2011</u>	WI, MI, NY, TN	4,757	60	53, 66
<u>2011–2012</u>	<u>Ohmit 2014</u>	WI, MI, PA, TX, WA	4,771	47	36, 56
<u>2012–2013</u>	<u>McLean 2014</u>	WI, MI, PA, TX, WA	6,452	49	43, 55
<u>2013–2014</u>	<u>Gaglani 2016</u>	WI, MI, PA, TX, WA	5,999	52	44, 59
<u>2014–2015</u>	<u>Zimmerman 2016</u>	WI, MI, PA, TX, WA	9,311	19	10, 27
<u>2015–2016</u>	<u>Jackson 2017</u>	WI, MI, PA, TX, WA	6,879	48	41, 55
<u>2016–2017</u>	<u>Flannery 2018</u>	WI, MI, PA, TX, WA	7,410	40	32, 46
<u>2017–2018</u>	<u>Rolfes 2019</u>	WI, MI, PA, TX, WA	8,436	38	31, 43
<u>2018–2019</u>	<u>Flannery 2019</u>	WI, MI, PA, TX, WA	10,041	29	21, 35
<u>2019–2020</u>	<u>Tenforde 2021</u>	WI, MI, PA, TX, WA	8,845	39	32, 44
2020–2021	Not applicable	-	-	-	
<u>2021–2022</u>	<u>Chung 2022</u>	CA, MI, PA, TN, TX, WA, WI	3,636	14	–17, 37

Influenza VE in Infants <6 Months and Mothers: Meta-Analysis of Randomized Controlled Trials



Fetal Health Outcomes Following Maternal Influenza Vaccination: Meta-Analysis of Randomized Controlled Trials



ViP With Inactivated Influenza Vaccine Is Not Associated With Adverse Outcomes



Multiple systematic reviews and meta-analyses have not found an association between inactivated influenza vaccination during pregnancy and adverse maternal and neonatal outcomes and, in some cases, have demonstrated a benefit¹⁻⁵

Spontaneous abortion¹⁻³

Maternal/neonatal death^{1,2}

Stillbirth^{1,3,5}

Preterm birth^{1,3-5}

Congenital anomalies¹⁻³

SGA^{1,3,4}

LBW^{1,3,4}

1 study showed a **small benefit** with vaccination¹

3 studies showed a **moderate/large benefit** with vaccination¹

1 study showed a **small benefit** with vaccination¹

1 study showed a **small benefit** with vaccination¹

1. Macias Saint-Gerons D, Solà Arnau I, De Mucio B, et al. Adverse events associated with the use of recommended vaccines during pregnancy: An overview of systematic reviews. *Vaccine*. 2021;39 Suppl 2:B12-B26. doi:10.1016/j.vaccine.2020.07.048

2. McMillan M, Porritt K, Kralik D, Costi L, Marshall H. Influenza vaccination during pregnancy: a systematic review of fetal death, spontaneous abortion, and congenital malformation safety outcomes. *Vaccine*. 2015;33(18):2108-2117. doi:10.1016/j.vaccine.2015.02.068

3. Giles ML, Krishnaswamy S, Macartney K, Cheng A. The safety of inactivated influenza vaccines in pregnancy for birth outcomes: a systematic review. *Hum Vaccin Immunother*. 2019;15(3):687-699. doi:10.1080/21645515.2018.1540807

4. Regan AK, Munoz FM. Efficacy and safety of influenza vaccination during pregnancy: realizing the potential of maternal influenza immunization. *Expert Rev Vaccines*. 2021;20(6):649-660. doi:10.1080/14760584.2021.1915138.

5. Fell DB, Platt RW, Lanes A, et al. Fetal death and preterm birth associated with maternal influenza vaccination: systematic review. *BJOG*. 2015;122(1):17-26.

Summary: Influenza

► Burden of Disease

Influenza is a common ARI with a huge annual burden of disease, specifically in the very young and those aged ≥ 60 years.

Many studies and (meta-) analyses consistently show increased risk of disease and complications in pregnant women and their offspring.

High



► VEy/VEs

Many studies in all types of climates and countries indicate that VE is at least comparable between pregnant and non-pregnant women.

Infants of vaccinated mothers are protected (at a somewhat lower rate).

Good



► Safety

The safety profile of influenza vaccines is comparable between pregnant and non-pregnant women.

There is no safety concern to date.

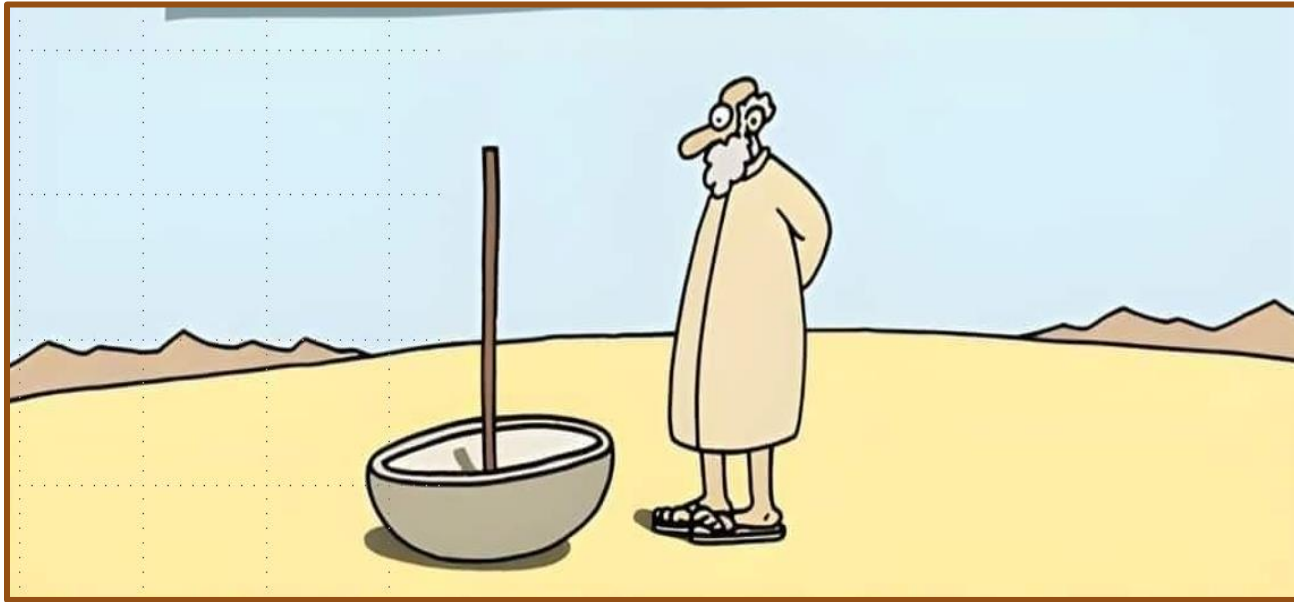
Acceptable



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The Other Day



Eratosthenes of Cyrene c. 276 BC – 195 BC: Greek mathematician, geographer, poet, astronomer, music theorist. First person known to calculate the circumference of the earth Earth, the Earth's axial tilt, global projection of the world with parallels & meridians; founder of scientific chronology; an efficient method of identifying prime numbers.



Kevin age 41, proving more than 2000 year old science is fake.

Next Time

Preparing Physicians for the Clinical Algorithm Era

CDS: Clinical Decision Support

