

# Concomitant administration of influenza and COVID-19 vaccinations

Dr Rajeka Lazarus

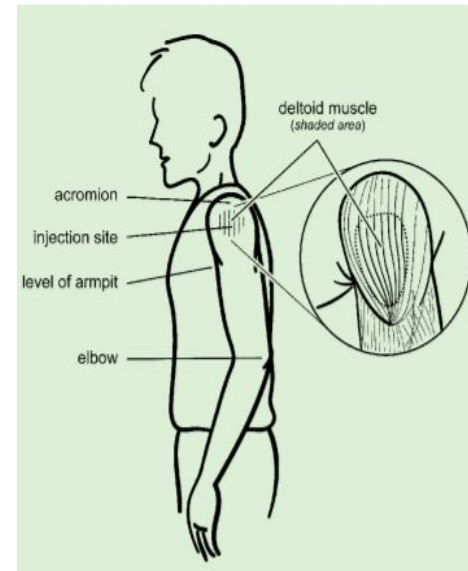
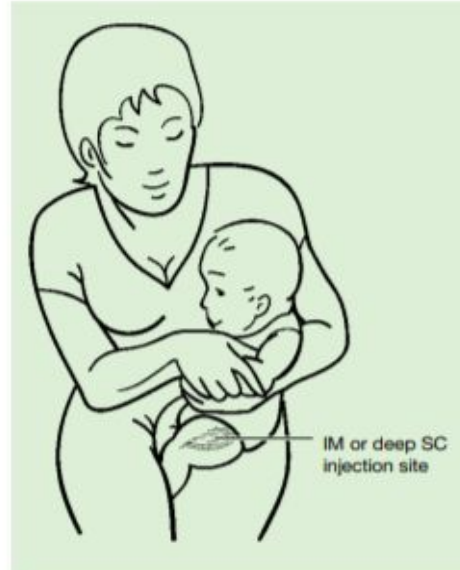




# Concomitant Vaccination Administration



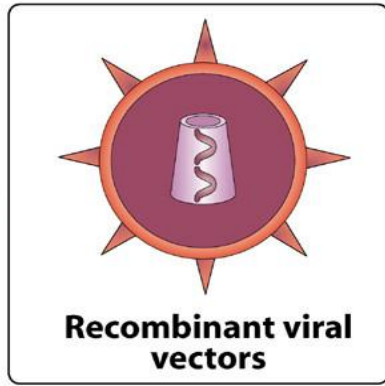
# Concomitant Vaccination Administration



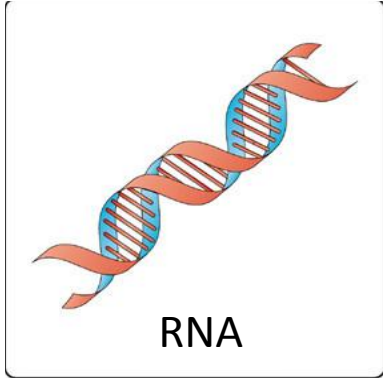
Antigen combination	Recommended Interval Between Doses	Examples/exception
Two or more inactivated	Simultaneously or at any interval between doses	Tdap and MenACWY – 28 days if not together PCV13 and PPV23 not to be given together
Inactivated and live	Simultaneously or at any interval between doses	
Two or more live injectable	28 days minimum interval, if not administered simultaneously	Yellow fever/MMR

Pneumococcal	QIV/TIV	
PCV13		Thompson et al 2018 Schwarz et al 2013 French et al 2012 Schwarz et al 2011
PCV13	+MF59	Young Song et al 2017
PPV23		Ofori-Anyinam et al 2017 Fletcher et al 1997
PPV14		Carlson et al 1979
PPV23	+MF59	Young Song et al 2015

Herpes Zoster		
Live HZ	TIV	Kerzner et al 2007
Subunit +ASO1B		Schwarz et al 2017
Live HZ	QIV	Levin et al 2018
Live HZ	PPV23	MacIntyre et al 201



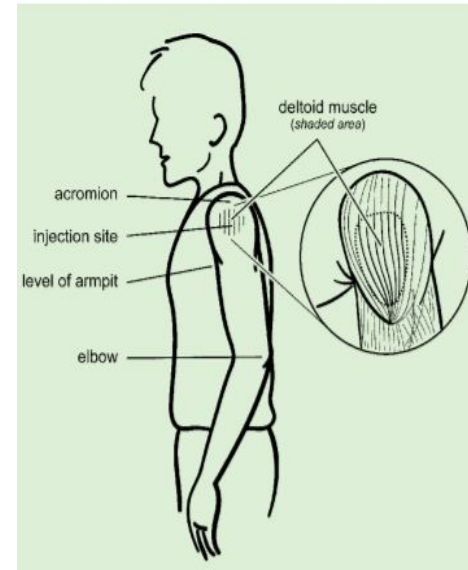
‘abundance of caution’ CDC



‘Avoid incorrect attribution of  
side effects’ UKHSA



# Concomitant Vaccination Administration



Uptake

Delivery

Timing

Immune interference

Reactogenicity

# Uptake



Better uptake of VZ vaccine during overlap with influenza season

Mismatch between pneumococcal and influenza uptake



# Uptake



## Confidence?

## Missed opportunities for HPV vaccine at 50% of visits for influenza vaccine

[https://en.wikipedia.org/wiki/Greta\\_Thunberg](https://en.wikipedia.org/wiki/Greta_Thunberg)

<https://www.buildingconstructiondesign.co.uk/news/teenagers-volunteer-to-help-keep-byker-estate-tidy>

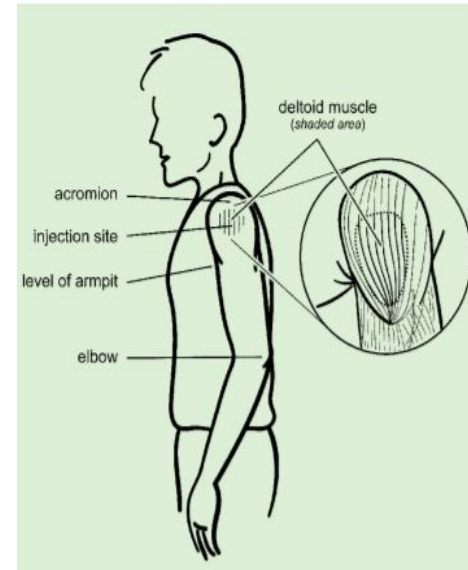
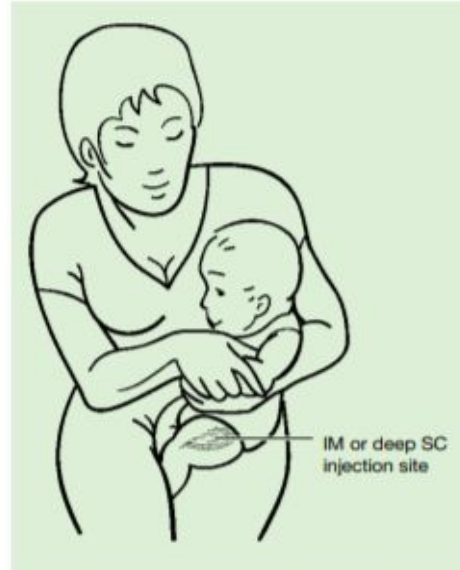
<https://inews.co.uk/sport/olympics/sky-brown-team-gb-youngest-ever-medal-winner-olympics-tokyo-2020-womens-skateboarding-1134608>

Kelly et al **Missed Opportunities for Human Papillomavirus Vaccination at Office Visits during which Influenza Vaccine was Administered: An AAP Pediatric Research in Office Settings (PROS) National Primary Care Research Network Study**

[Vaccine. 2020 Jul 14; 38\(33\): 5105–5108.](#)



# Concomitant Vaccination Administration



Uptake

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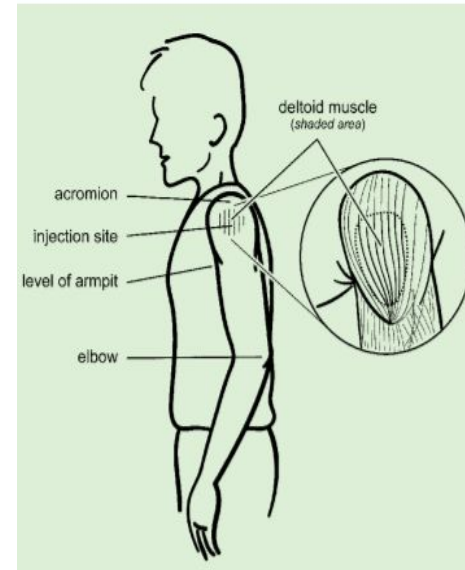
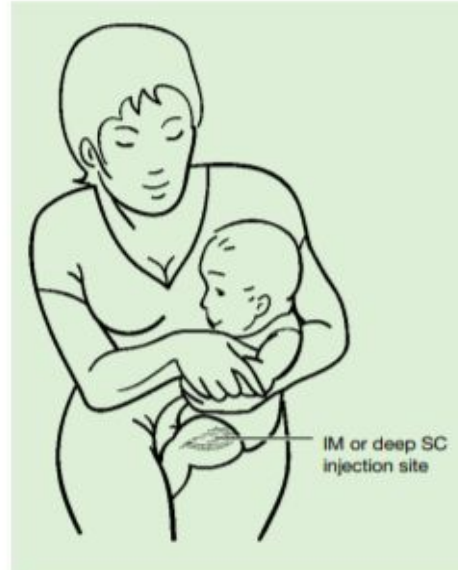


<https://www.ipswichstar.co.uk/news/health/should-12-15-year-olds-have-covid-jab-8318686>

<https://www.reuters.com/world/uk/uk-coronavirus-vaccines-have-weakened-link-between-infections-death-says-2021-06-27/>



# Concomitant Vaccination Administration



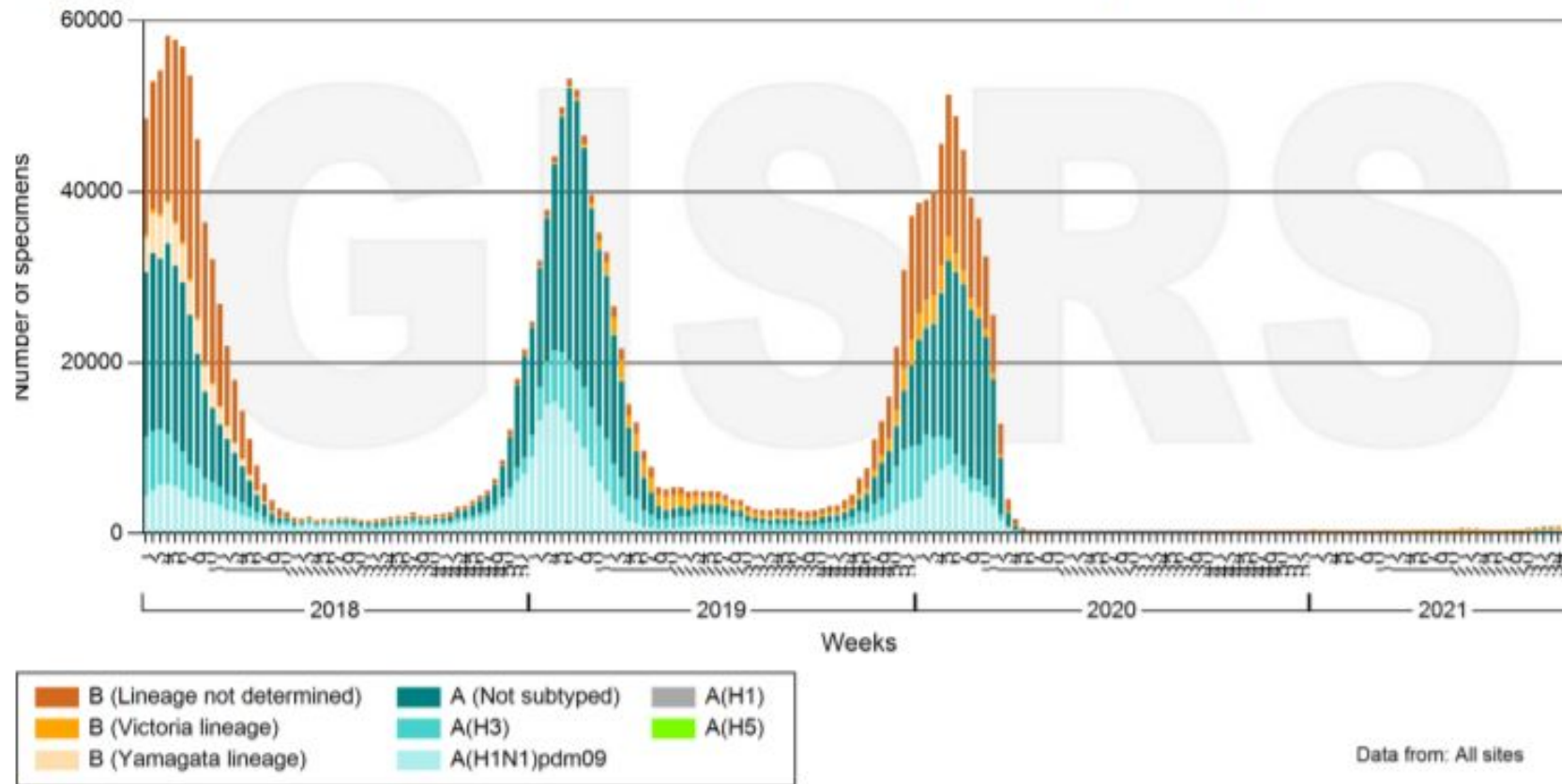
Uptake

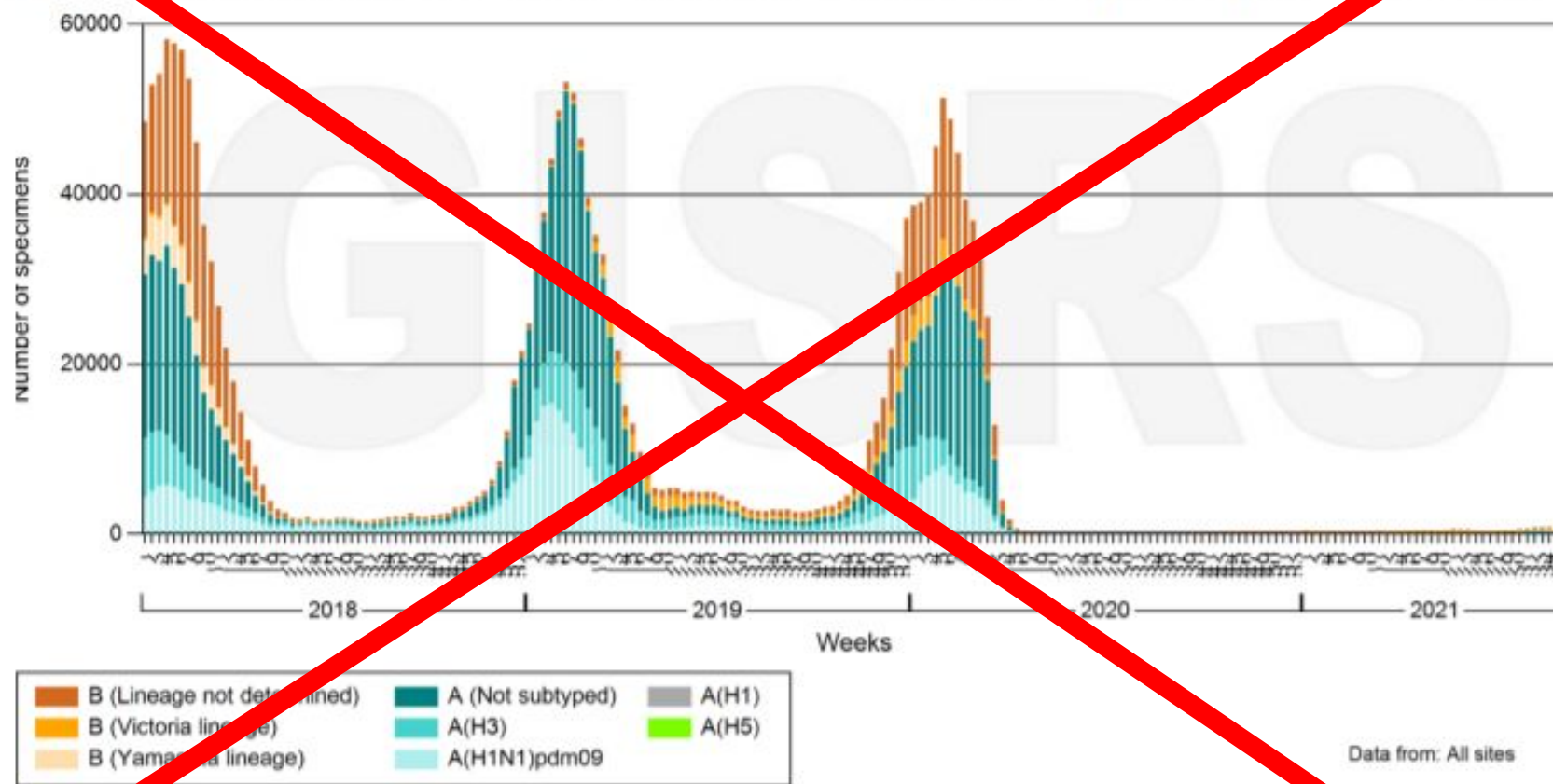
Delivery

Timing

Immune interference



Reactogenicity





ARTICLES | [ONLINE FIRST](#)

## Safety and immunogenicity of concomitant administration of COVID-19 vaccines (ChAdOx1 or BNT162b2) with seasonal influenza vaccines in adults in the UK (ComFluCOV): a multicentre, randomised, controlled, phase 4 trial

[Rajeka Lazarus, DPhil](#)   • [Sarah Baos, PhD](#) • [Heike Cappel-Porter, MMath](#) • [Andrew Carson-Stevens, PhD](#) • [Madeleine Clout, BSc](#) • [Lucy Culliford, PhD](#) • et al. [Show all authors](#)

[Open Access](#) • Published: November 11, 2021 • DOI: [https://doi.org/10.1016/S0140-6736\(21\)02329-1](https://doi.org/10.1016/S0140-6736(21)02329-1)

Reactogenicity

Local  
Reactions

Systemic  
Reactions



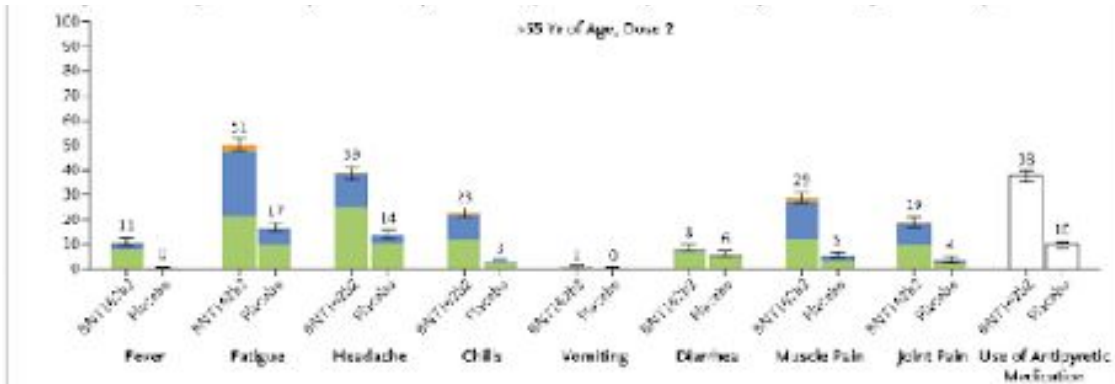
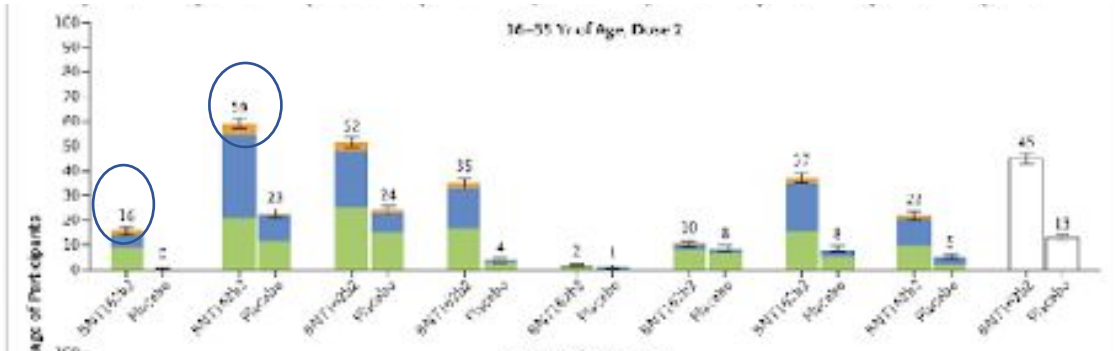
Safety and immunogenicity of ChAdOx1 nCoV-19 vaccine administered in a prime-boost regimen in young and old adults(COV002): a single-blind, randomised, controlled, phase 2/3 trial  
 Ramasamy et al



At least 1 systemic event in  
 65% 18 to 55 years  
 72% in 56 to 59 year

# Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine

Polack et al



Severe adverse events  
 Overall < 2%  
 Fatigue 3.8%  
 Headache 2%

Reactogenicity

Systemic  
Reactions

Fever  
Feverishness  
Chills  
Joint pains  
Muscle pains  
Fatigue  
Headache  
Malaise  
Nausea  
Vomiting  
Diarrhoea

Number of  
participants reporting  
one or more systemic  
reaction

Clinically acceptable  
if absolute increase  
was less than 25%

Reactogenicity

Systemic  
Reactions

Fever  
Feverishness  
Chills  
Joint pains  
Muscle pains  
Fatigue  
Headache  
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Nausea  
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Diarrhoea

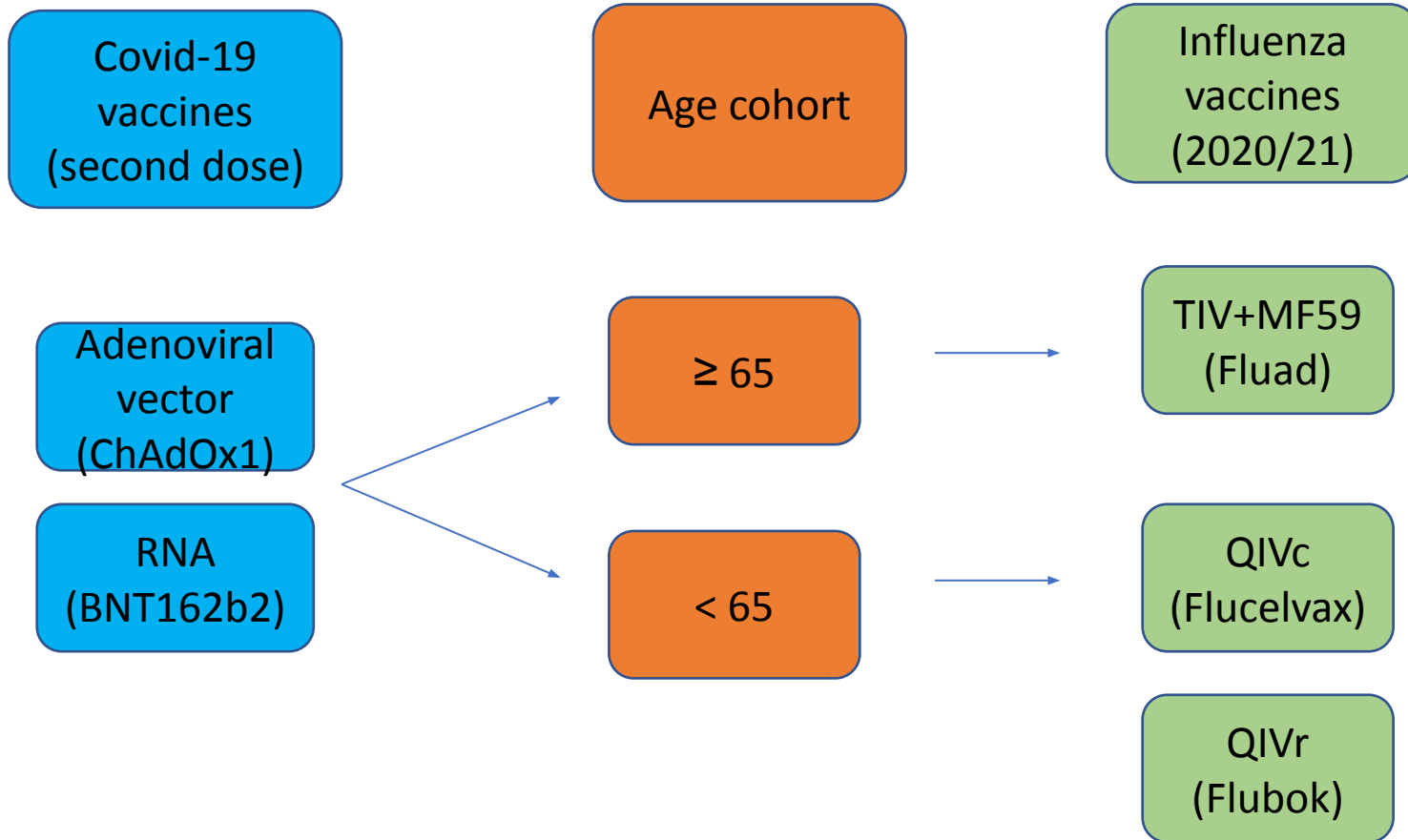
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Immunogenicity

Acceptability

Lost work days

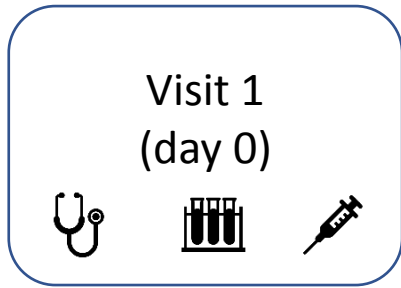


Study vaccines

Covid-19 vaccine	Influenza vaccine	N (%)
Adenoviral vector (ChAdOx1)	QIVc (Flucelvax)	130 (103)
RNA (BNT162b2)	QIVc (Flucelvax)	140 (111)
Adenoviral vector (ChAdOx1)	TIV+MF59 (Fluad)	144 (114)
RNA (BNT162b2)	TIV+MF59 (Fluad)	79 (63)
Adenoviral vector (ChAdOx1)	QIVr (Flubok)	128 (102)
RNA (BNT162b2)	QIVr (Flubok)	54(43%)

Study cohorts

# Study design



Covid-19  
vaccine

Placebo  
(saline)

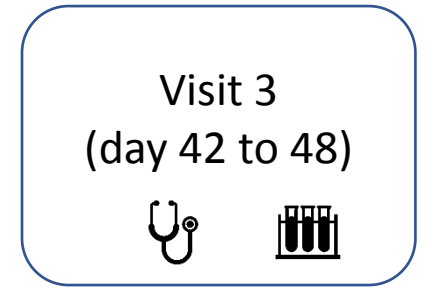
Covid-19  
vaccine

Age appropriate  
influenza vaccine



Age appropriate  
influenza vaccine

Placebo  
(saline)

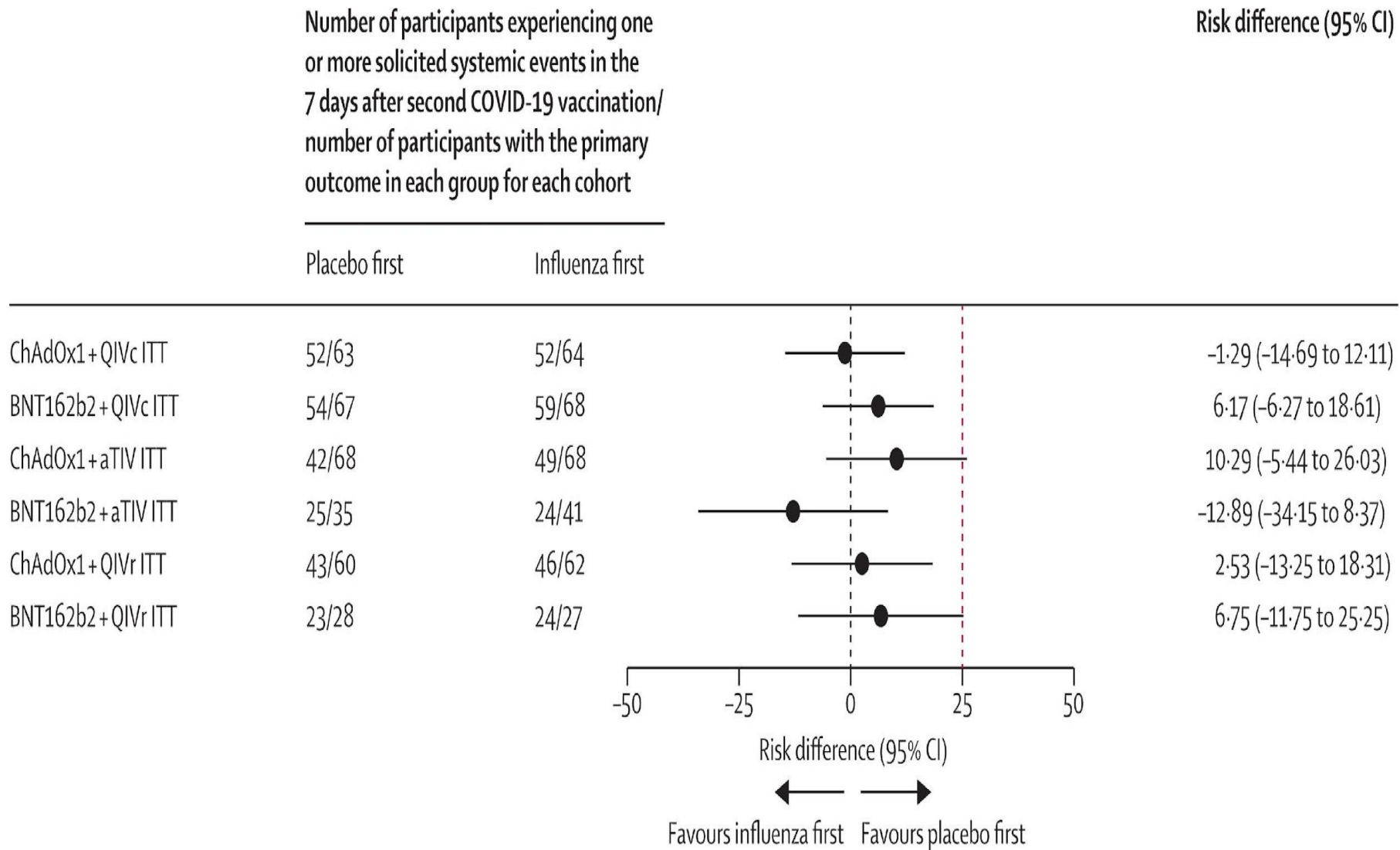


# Demographics

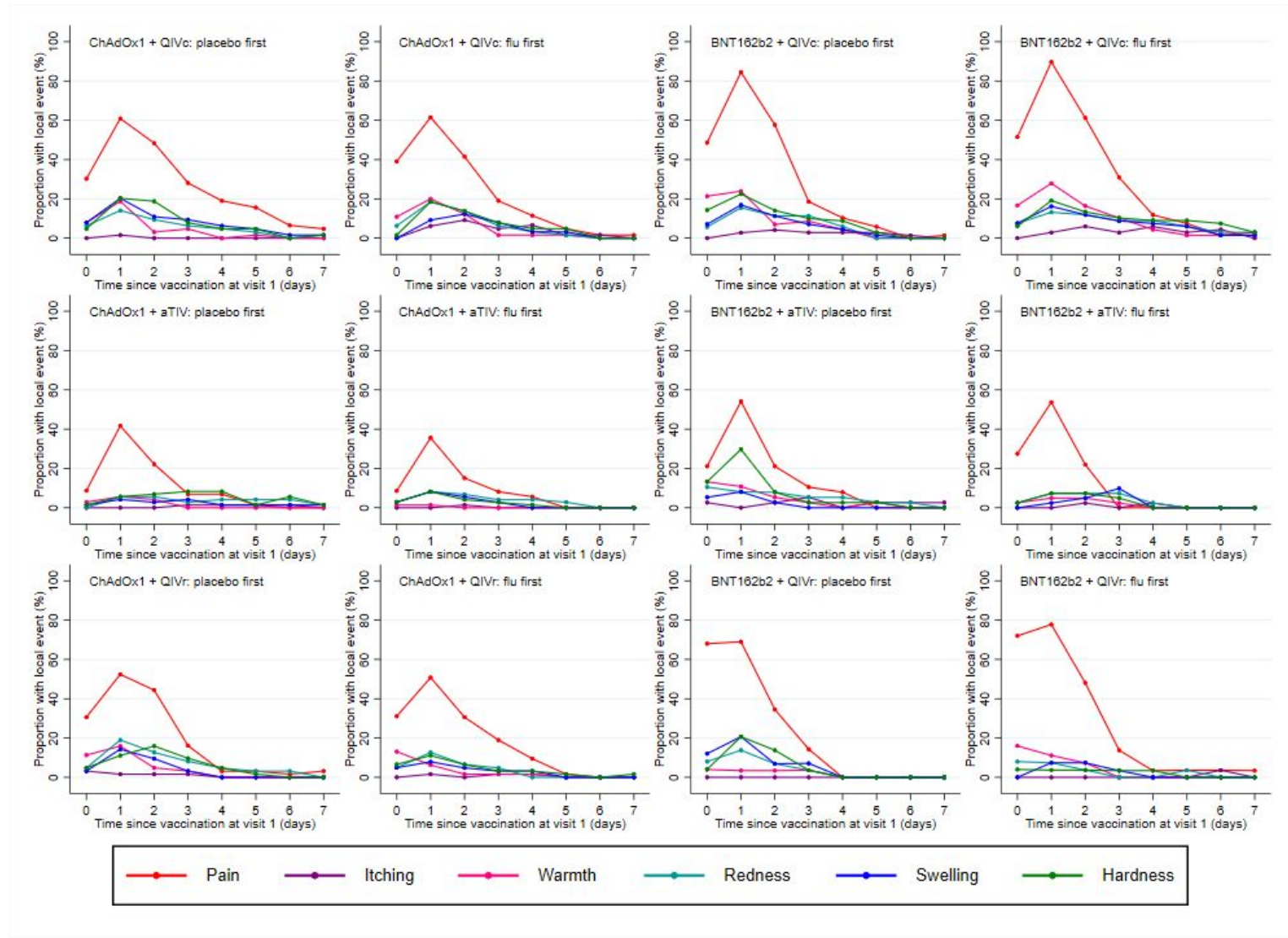
Age (years)	51 (Flucelvax) 69 (Fluad) 52 (Fluad)
Gender	58.5% female
Ethnicity	92.1 % white British
Previous influenza vaccine	85.2%
HCW	13 %



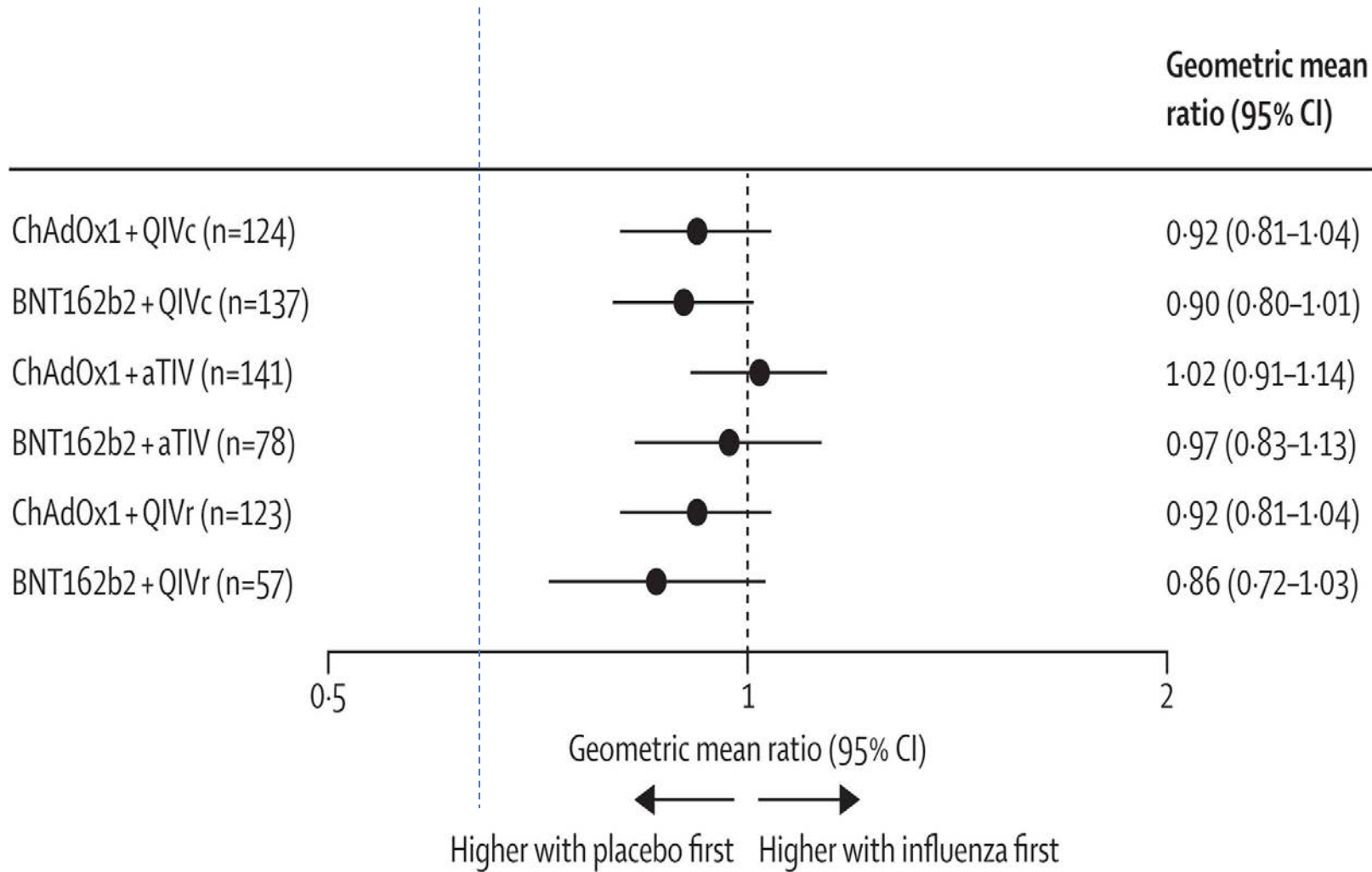
# Systemic Reactions



# Local Reactions

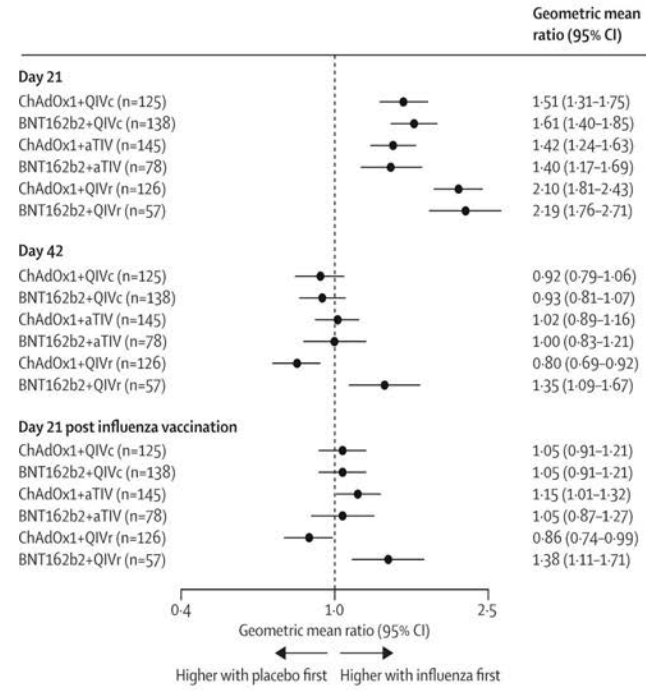


# S-binding IgG 21-28 days after vaccination

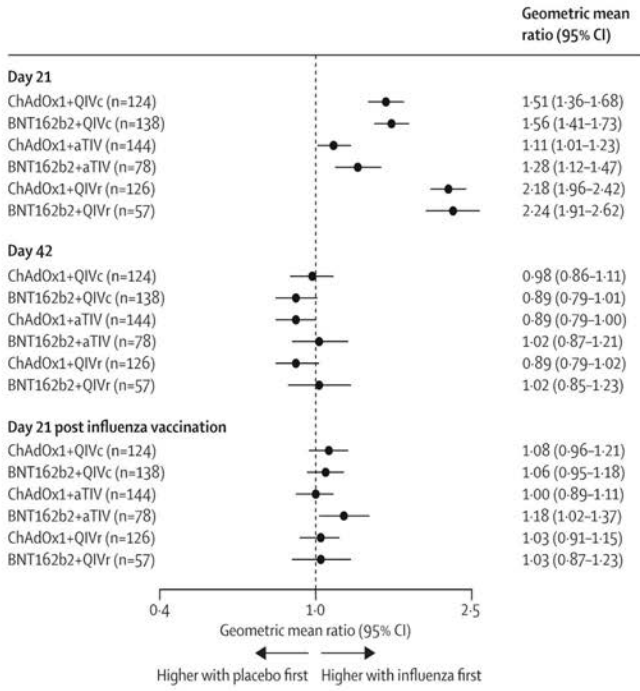


# HAI 21-28 days after vaccination

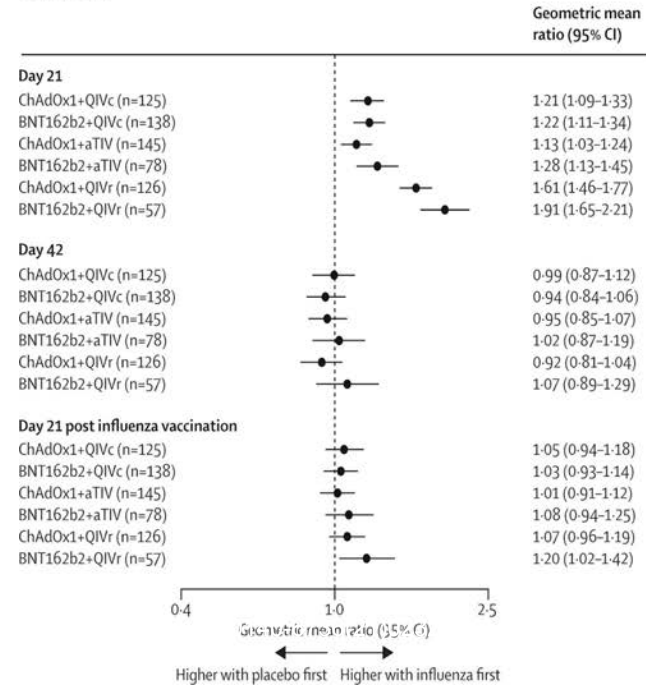
## A A/H1N1



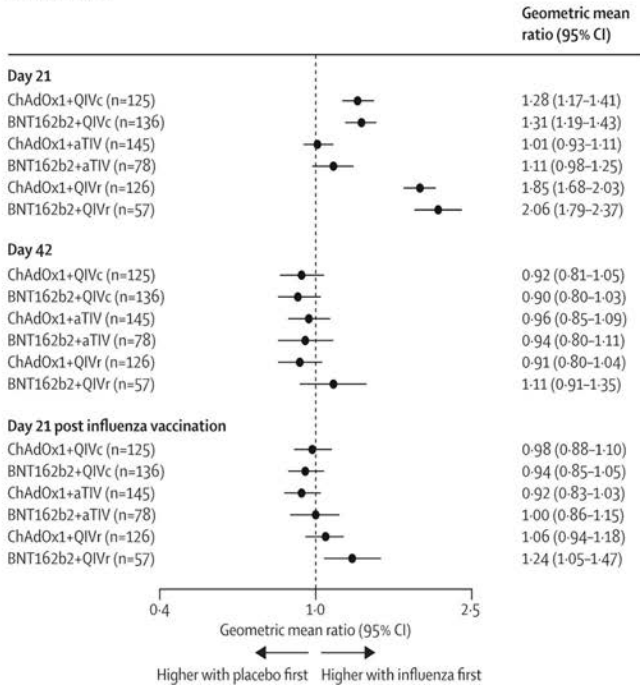
## B A/H3N2



## C B/Victoria



## D B/Yamagata



## Acceptability

Only 9 participants stated that they would not have concomitant vaccination in the future (only 3 received concomitant vaccination)

Missed work days

Only 11 (3.1%) of those employed had time off work due to vaccine related adverse events  
(only 7 received concomitant vaccination)

# Take home messages

No safety concerns identified

No significant impact on the immunogenicity of second dose of COVID-19 vaccine

Need to consider broader points for implementation

# Acknowledgements



**Primary care sites**  
Knowle House Surgery  
Newquay Health centre  
The Alverton Practice