114年「流感疫苗教育訓練」課程

COVID-19疫情下針對呼吸道病毒感染(流感外)之照護處置及疫苗預防

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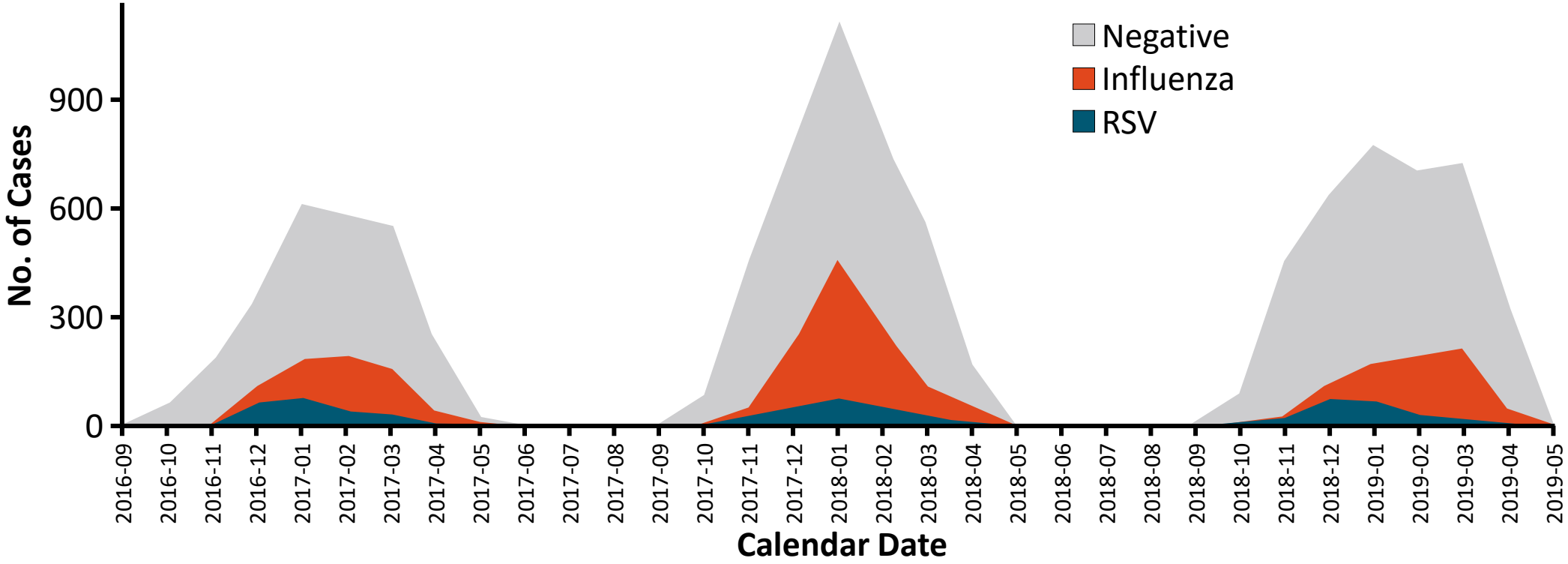
Chung-Shan Medical University Hospital, Aug 24, 2025

人類呼吸道融合病毒 (Respiratory Syncytial Virus)

Risk for Severe RSV Disease

Respiratory Viral Seasons: RSV Seasonality

- Prospective study of adults hospitalized with acute respiratory illnesses (N = 10,311)



- **RSV rates:** 6.0% (n = 622); **peaks:** Jan 2016-2017 and 2017-2018, Dec 2018-2019
- **Influenza rates:** 18.8% (n = 1940); **peaks:** Feb 2016-2017, Jan 2017-2018, March 2018-2019

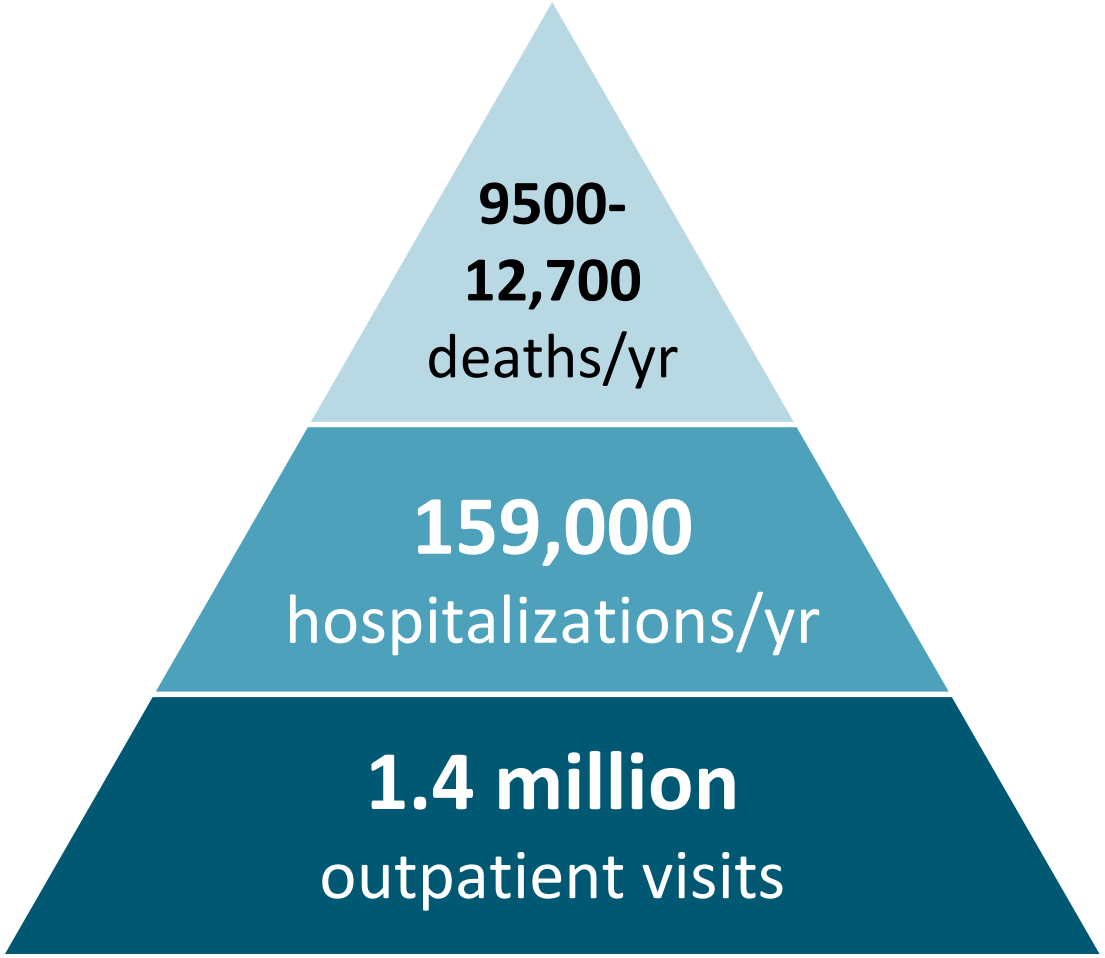
Begley. Clin Infect Dis. 2023;76:1980.

Slide credit: clinicaloptions.com

US RSV Burden: Adults Aged 65 Yr and Older

- Annual RSV **attack rates** in older adults:
  - Community setting: 2%-10%
  - Congregate setting: 5%-10%
- RSV **mortality**: 78%-86% of deaths occur in adults aged ≥65 yr

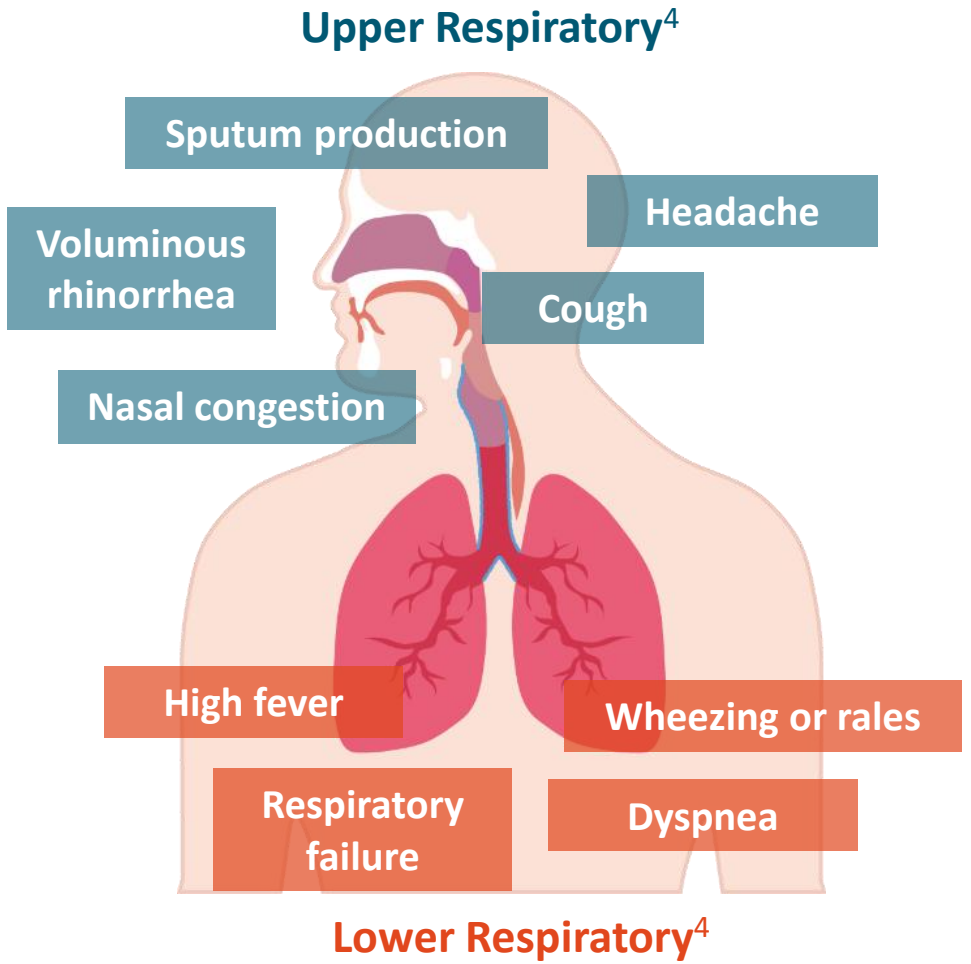
Disease burden **underestimated** and **expected to increase** with aging population



Branche. Drugs Aging. 2015;32:261. Matias. Influenza Other Respir Viruses. 2014;8:507. Thompson. JAMA. 2003;289:179.
Choi. Influenza Other Respir Viruses. 2022;16:151. McLaughlin. Open Forum Infect Dis. 2022;9:ofac300.
Branche. Influenza Other Respir Viruses. 2022;16:1151.

RSV in Adults: Clinical Symptoms and Complications

- On average, adults seek medical attention 5-6 days into illness[1]
- Spread of RSV infection to **lower respiratory tract** can result in[2,3]:
  - Pneumonia
  - Acute bronchitis
  - Exacerbations of asthma, COPD, or CHF

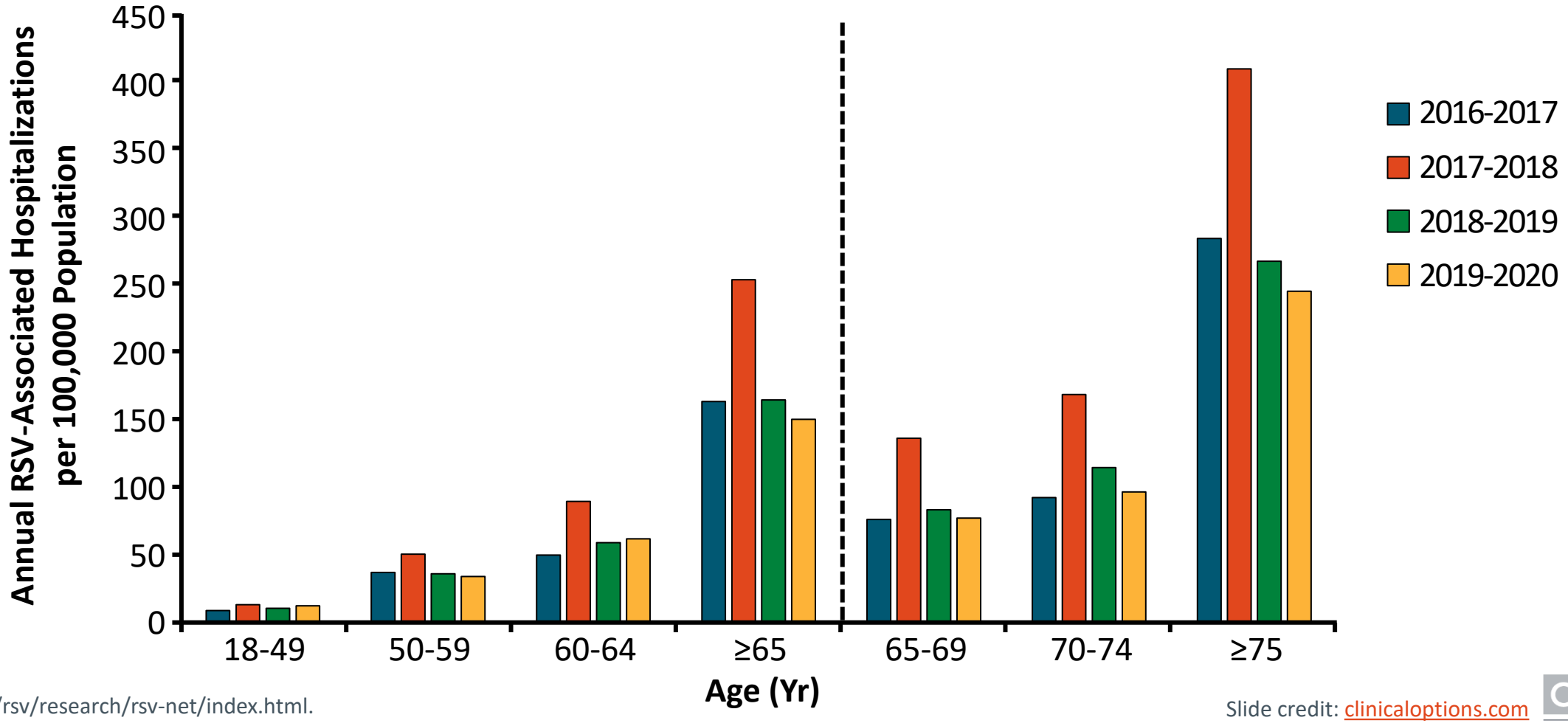


1. McLaughlin. Open Forum Infect Dis. 2022;9:ofac300. 2. drugs.com/health-guide/acute-bronchitis.html.
3. cdc.gov/rsv/clinical/index.html. 4. Falsey. Clin Microbiol Rev. 2000;13:371.

Slide credit: clinicaloptions.com

RSV-NET US RSV Burden on Hospitalizations: Older Age Is a Key Risk Factor

- Estimated annual laboratory-confirmed RSV-associated hospitalizations per 100,000 adults

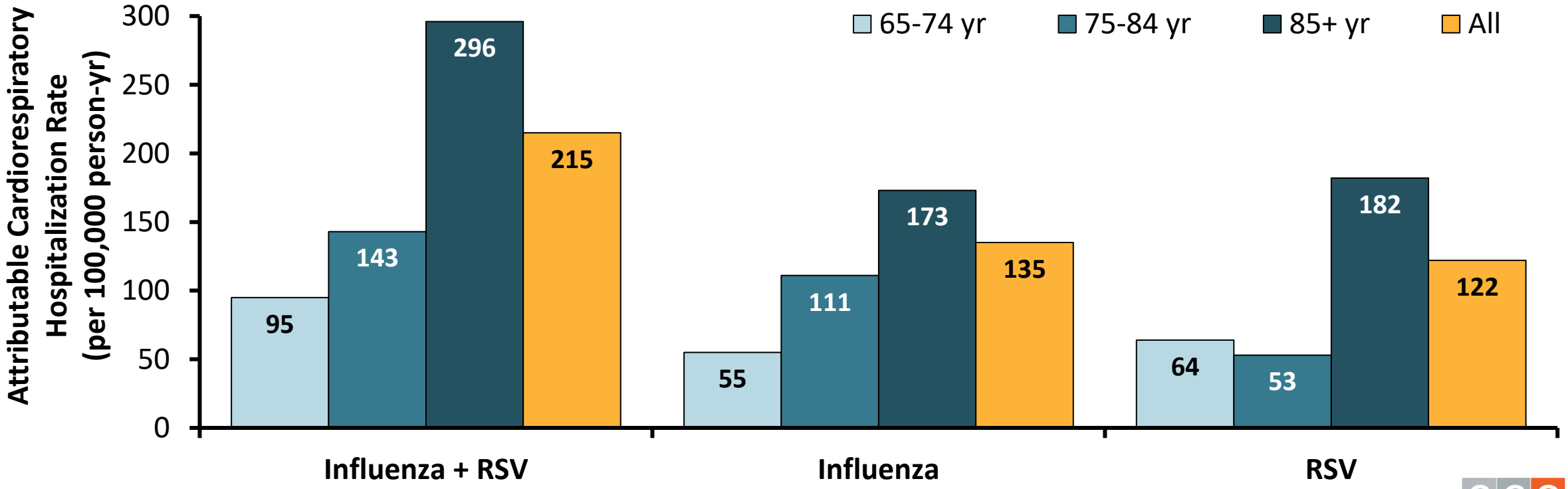


cdc.gov/rsv/research/rsv-net/index.html.

Slide credit: clinicaloptions.com

Cardiorespiratory Hospitalization Attributable to Influenza and RSV in LTCF Residents

- Retrospective analysis for 6 respiratory seasons (2011-2017) using Medicare Provider Analysis and Review in-patient claims
  - Long-stay (≥100 days) residents of long-term care facilities aged ≥65 yr



Bosco. JAMA Netw Open. 2021;4:e2111806.

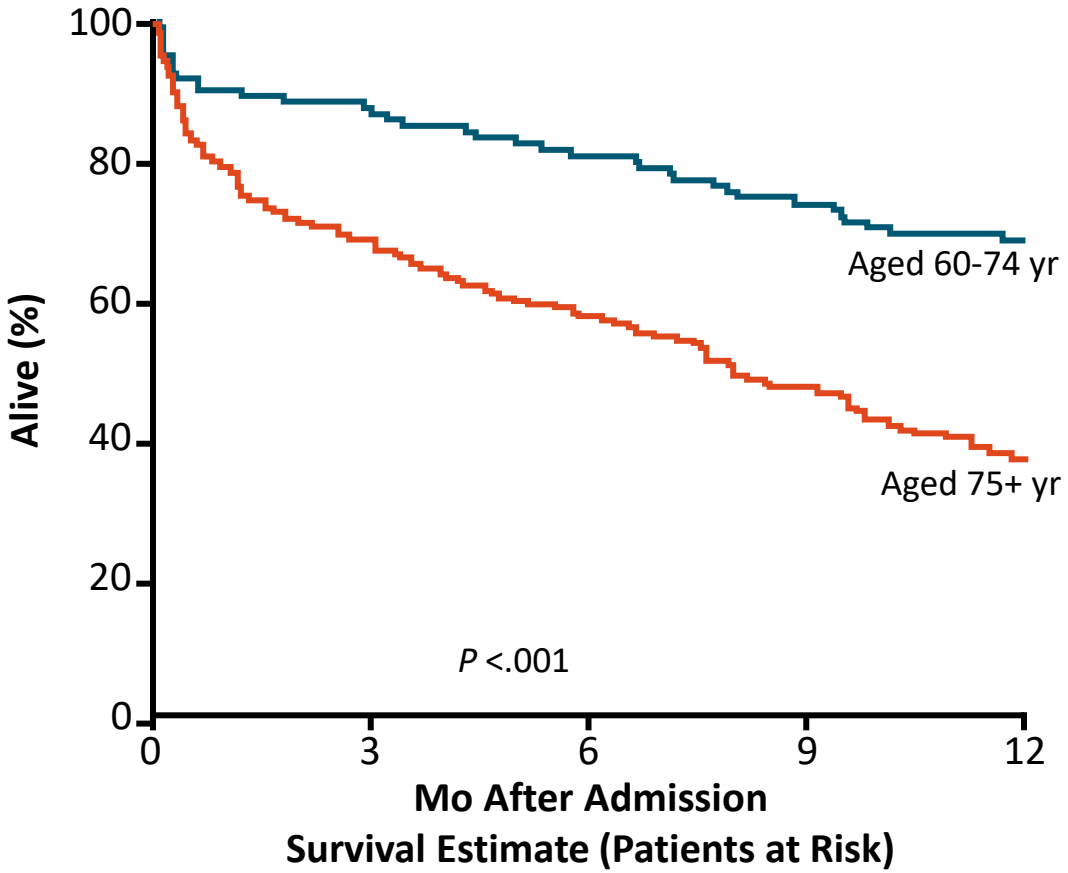
Slide credit: clinicaloptions.com

Increasing Age Increases Susceptibility and Mortality to RSV-Associated Pneumonia

- Estimates of RSV-associated CAP in adults per 10,000 persons per yr:

Age, Yr	50-64	65-79	≥80
Cases	0.80	2.50	4.25

- RSV is fifth-leading cause of CAP requiring hospitalization
- Based on study of 664 adults aged ≥60 yr hospitalized with RSV
  - ~50% had radiologically confirmed pneumonia
  - 21% required ventilator support



Jain. NEJM. 2015;373:415. Tseng. J Infect Dis. 2020;222:1298.

Slide credit: clinicaloptions.com

RSV IVY Network: In-Hospital Outcomes in Adults ≥60 Yr of Age

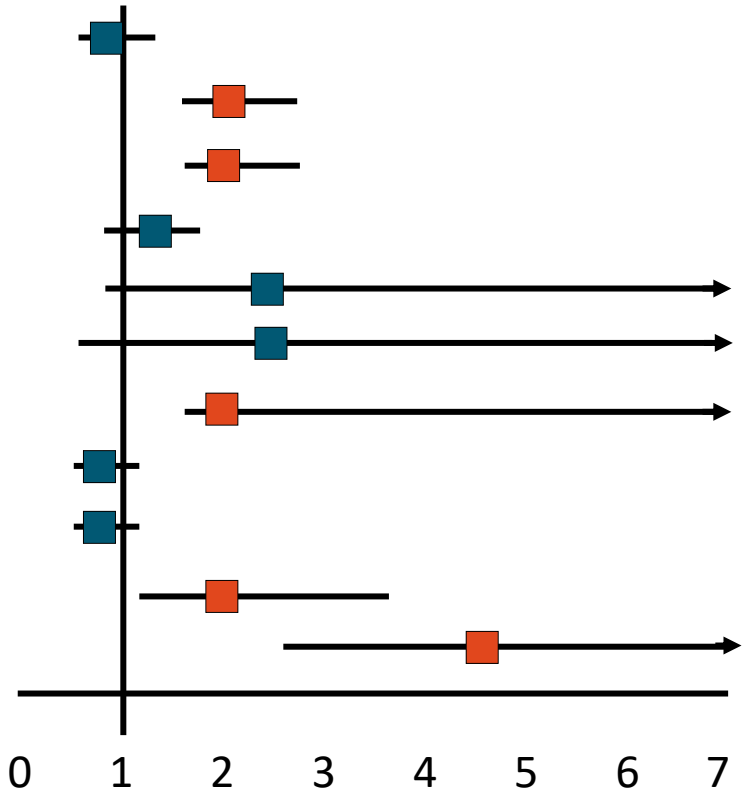
- Surveillance data from 25 medical centers from Feb 2022 - May 2023
  - Multivariable logistic regression models adjusted for age, sex, race and ethnicity, number of organ systems with chronic medical conditions, and US DHHS region

Outcomes, n/N (%)	RSV vs COVID-19		RSV vs Influenza	
	aOR (95% CI)	*P* Value	aOR (95% CI)	*P* Value
Standard flow O_2	2.97 (2.07-4.27)	<.001	2.07 (1.37-3.11)	<.001
HFNC or NIV	2.25 (1.65-3.07)	<.001	1.99 (1.36-2.9)	<.001
ICU admission	1.49 (1.13-1.97)	.005	1.55 (1.11-2.19)	.01
IMV or death	1.39 (0.98-1.96)	.07	2.08 (1.33-3.26)	.001

Surie. MMWR Morb Mortal Wkly Rep. 2023;72:1083.

Comorbidities Increase Risk of RSV Hospitalization for Older Adults

- Patients with medical claim for RSV diagnosis identified using Medicare 5% national sample administrative database between July 1, 2011, and June 30, 2015



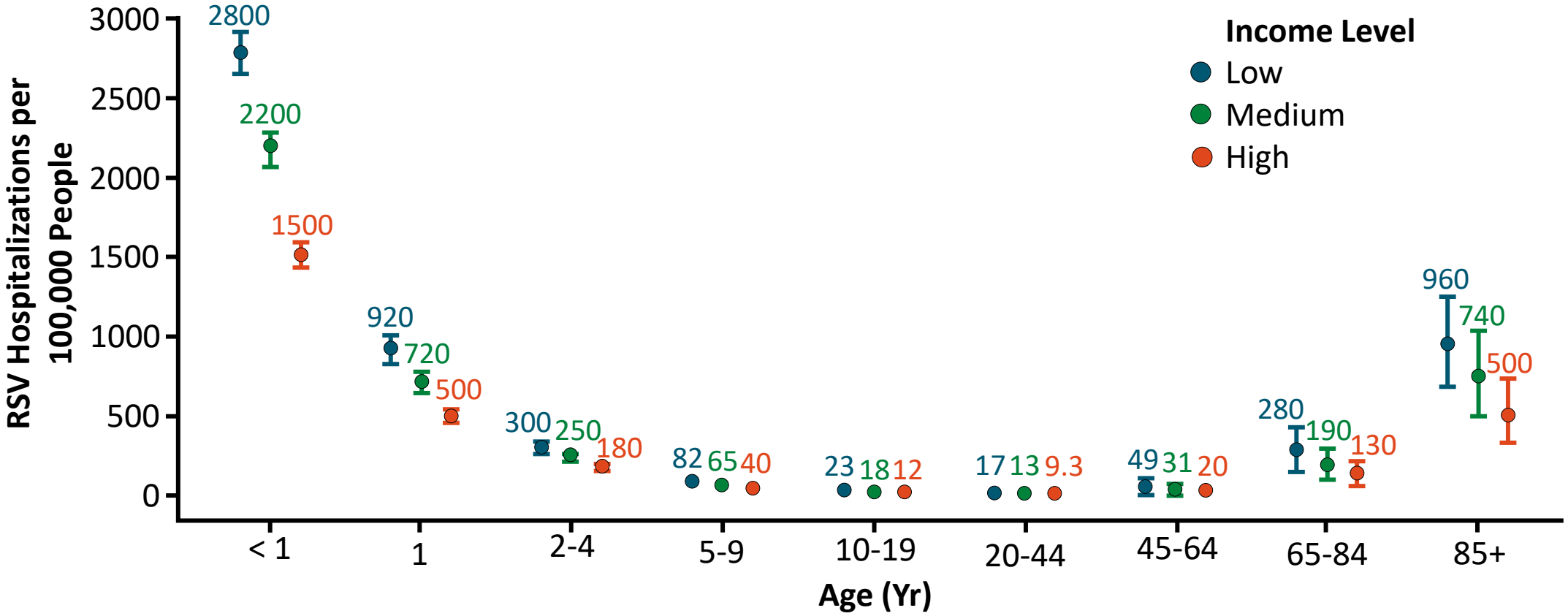
	OR (95% CI)	*P* Value
Asthma	0.79 (0.50-1.24)	.303
COPD	2.12 (1.49-3.02)	<.001
Heart failure	2.06 (1.40-3.02)	<.001
Coronary artery disease	1.16 (0.82-1.65)	.411
Solid organ transplant	2.52 (0.88-7.22)	.085
Stem cell transplant	2.53 (0.21-29.70)	.461
Hematologic malignancies	5.17 (2.02-13.20)	.001
High cholesterol	0.75 (0.55-1.03)	.074
Osteoarthritis	0.72 (0.51-1.02)	.062
Stroke	2.00 (1.02-3.96)	.045
Chronic kidney disease	4.37 (2.74-6.98)	<.001

Wyffels. Adv Ther. 2020;37:1203.

Slide credit: clinicaloptions.com

Estimated Annual RSV Hospitalization Rates by Age and Socioeconomic Status

- RSV-related respiratory hospitalization data from New York, New Jersey, and Washington using State Inpatient Databases (July 2005-July 2014)



Zheng. Pneumonia (Nathan). 2022;14:6.

Slide credit: clinicaloptions.com

Take-home Points

- RSV is associated with substantial morbidity and mortality in older adults
- **Advancing age** increases susceptibility and mortality to RSV-associated pneumonia
- **Comorbidities** (eg, CHF, COPD) and **LTCF residence** increase risk of hospitalization among older adults who develop RSV
- Higher RSV hospitalization observed in certain **historically marginalized racial/ethnic** and **low socioeconomic status groups**

RSV Vaccination Recommendations

Importance of RSV Stereochemistry in Vaccine Development

- Breakthrough in vaccine **development with RSV F glycoprotein**
  - Mediates viral fusion and host-cell entry
  - Elicits neutralizing antibodies
  - Highly conserved across RSV subtypes A and B
- "The neutralization sensitivity of each antigenic site is directly related to exclusive or preferential binding to the preF conformation"

Graham. Curr Opin Virol. 2017;23:107. McLellan. Curr Top Microbiol Immunol. 2013;372:83. Graham. NEJM. 2023;388:579.

RSV Vaccine Efficacy by Season in Adults Aged ≥60 Yr

RSV-Associated LRTD, % (95% CI)	RSVpreF	RSVPreF3	mRNA-1345
Season 1: 2021-2022	89 (54-99)	83 (58-94)	84 (66-92)
Season 2: 2022-2023 (interim)	79 (23-96)	56 (28-74)	--
Combined: 2021-2023 (interim)	84 (60-95)	75 (60-85)	63 (49-74)

Melgar. MMWR Morb Mortal Wkly Rep. 2023;72:793. Wilson. NEJM. 2023;389:2233. s29.q4cdn.com/435878511/files/doc_presentations/2024/Feb/15/rsvvw-2024-p301-additional-analysis-and-cop-oral-presentation_fd-003-sks-1-_rd_final.pdf.

FDA-Approved RSV Vaccines for Older Adults

- Both recombinant vaccines directed at F glycoprotein

RSV Vaccine (RSVpreF, Pfizer)

- **Bivalent** F proteins
- Single-dose (0.5 mL) IM
- Individuals aged ≥60 yr, pregnant persons

RSV Vaccine, Adjuvanted (RSVPreF3, GSK)

- **Adjuvanted** $AS01_E$
- Single-dose (0.5 mL) IM
- Individuals aged ≥60 yr

FDA review for mRNA-1345 RSV vaccine expected in April 2024

RSV vaccine PI. RSV vaccine, adjuvanted PI. precisionvaccinations.com/vaccines/mrna-1345-rsv-vaccine.

Slide credit: clinicaloptions.com

RSV Vaccines: Safety

- RSV vaccines are safe and well tolerated; serious AEs are similar to placebo
- Numerical imbalance of **atrial fibrillation events** reported within 1 mo following vaccination with **RSVpreF** and **RSVPreF3**
  - Each vaccine reported 10 events in intervention arm vs 4 events in control arm
- 3 cases of **GBS** were observed within 42 days of vaccination (2 cases after **RSVpreF**; 1 case after **RSVPreF3**)
- No cases of atrial fibrillation or GBS reported with **mRNA-1345**

Melgar. MMWR Morb Mortal Wkly Rep. 2023;72:793. Wilson. NEJM. 2023;389:2233.
cdc.gov/vaccines/acip/meetings/downloads/slides-2024-02-28-29/02-RSV-Adults-Das-508.pdf.

VAERS Reports: GBS and Non-GBS Neuroinflammatory Conditions After RSV Vaccination in Adults Aged ≥60 Yr

Risk Window	RSV Vaccine	Observed Verified GBS, n (as of Feb 16, 2024)	Total Doses Admin, n (as of Feb 2-3, 2024)	Observed VAERS Reporting Rate, per Million Doses	Estimated Expected Rate, per Million Doses (95% CI)
21 days	RSVpreF	14	3,063,832	4.6	2.0 (0.7-4.2)
	RSVPreF3	7	6,587,912	1.1	
42 days	RSVpreF	14	3,063,832	4.6	5.2 (2.8-8.9)
	RSVPreF3	8	6,587,912	1.2	

Non-GBS Conditions

- 2 reports of transverse myelitis (1 report each after **RSVpreF** and **RSVPreF3**)
- 3 reports of acute disseminated encephalomyelitis (1 report after **RSVpreF** and 2 reports after **RSVPreF3**)
- 1 report of posterior reversible encephalopathy syndrome after **RSVpreF**
- 1 report of acute encephalitis after **RSVpreF**

cdc.gov/vaccines/acip/meetings/downloads/slides-2024-02-28-29/05-RSV-Adults-Shimabukuro-508.pdf.

Summary of RSV Vaccine Data

Benefits

- High/similar vaccine efficacy
- Protection across 2 seasons against severe disease
- Safe and well tolerated with low reactogenicity
- No severe outcomes (hospitalization/death)

Limitations

- Studied in “relatively” healthy populations
  - Few persons aged >80 yr, with comorbidities, and residency in LTCF
- Safety signals related to neuroinflammatory AEs and atrial fibrillation (protein subunit vaccines)

Papi. NEJM. 2023;388:595. Walsh. NEJM. 2023;388:1465.

RSV Vaccines in Older Adults: CDC

CDC ACIP recommendation: "Persons aged **≥60 yr** may receive a single dose of RSV vaccine, **using shared clinical decision-making**"

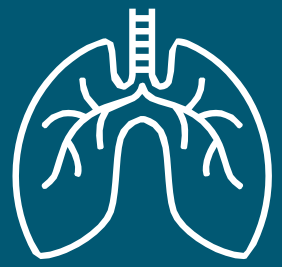
- Decision to vaccinate patient should be based on **discussion between HCP and patient**, guided by:
  - Best available evidence of who may benefit
  - Individual's characteristics, values, and preferences
  - HCP's clinical discretion
  - Characteristics of the vaccine being considered

Timing of Administration

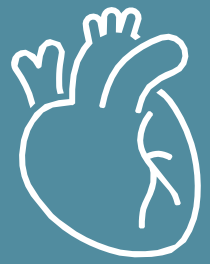
- Include as part of discussion
- Most beneficial to administer in **late summer** or **early fall** (eg, August to October), before onset of RSV season

cdc.gov/vaccines/acip/acip-scdm-faqs.html. Melgar. MMWR Morb Mortal Wkly Rep. 2023;72:793.
cdc.gov/vaccines/acip/meetings/slides-2024-02-28-29.html.

Persons at High Risk for Severe RSV Disease



Chronic lung diseases (eg, COPD, asthma)



Chronic CV diseases (eg, HF, CAD)

Immunocompromising conditions

Hematologic disorders

Neurologic disorders

Endocrine disorders (eg, diabetes)

Kidney and liver disorders

Other underlying conditions or factors

Residents of nursing homes/LTCFs

Frailty and advanced age

cdc.gov/vaccines/acip/meetings/downloads/slides-2023-06-21-23/07-RSV-Adults-Britton-508.pdf. Walsh. J Infect Dis. 2004;189:233.

Anticipated Expanded Indications for Recombinant RSV Vaccine

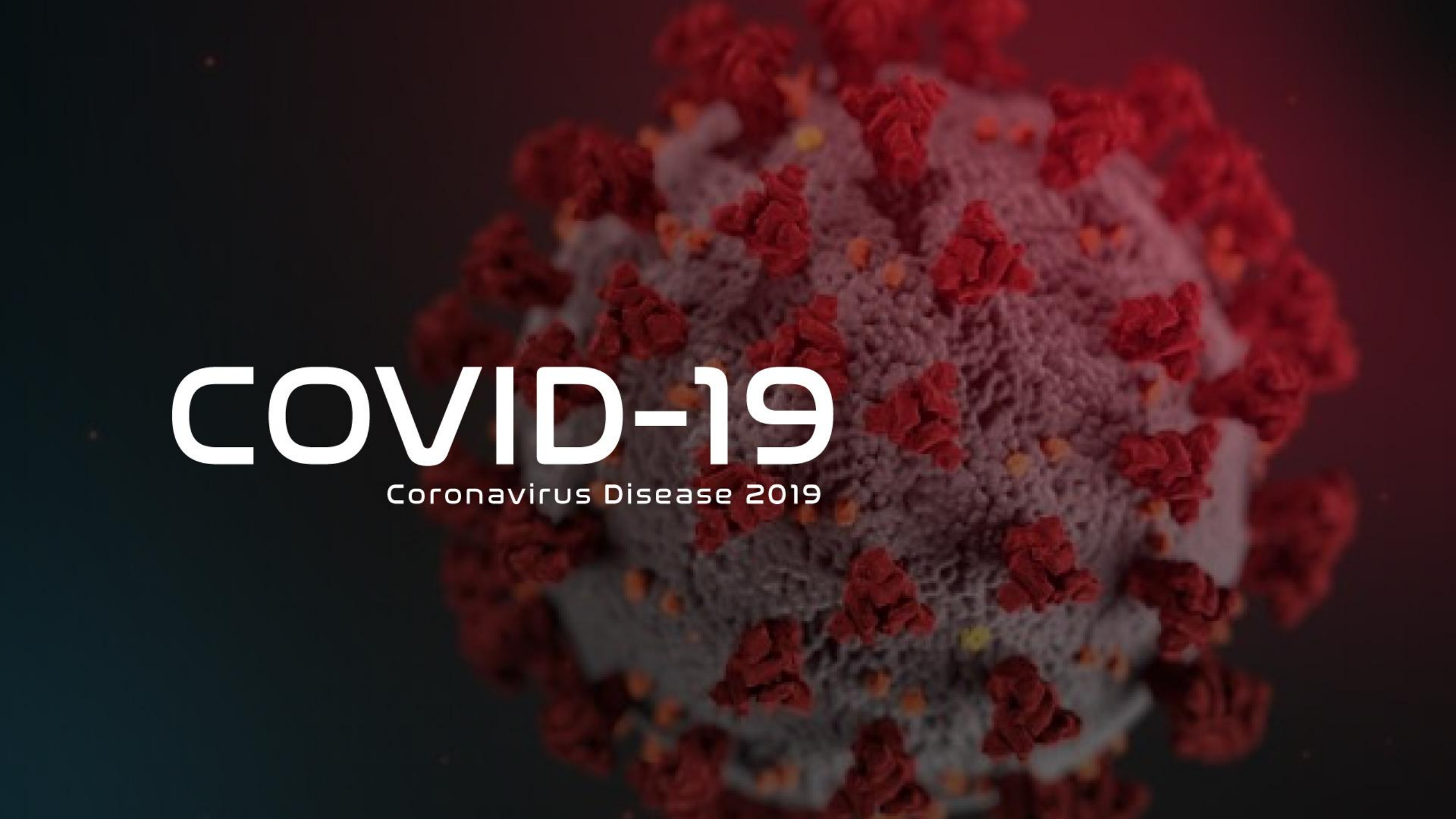
- Under FDA priority review to extend **RSVPreF3** indication to include **adults aged 50-59 yr at increased risk**
  - Diagnosed with ≥1 medical condition (eg, COPD, chronic CVD, diabetes mellitus, CKD, CLD)
- Decision expected in June 2024

gsk.com/en-gb/media/press-releases/arexvy-accepted-under-priority-review-in-us-for-the-prevention-of-rsv-disease-in-adults-aged-50-59-at-increased-risk. NCT05590403.

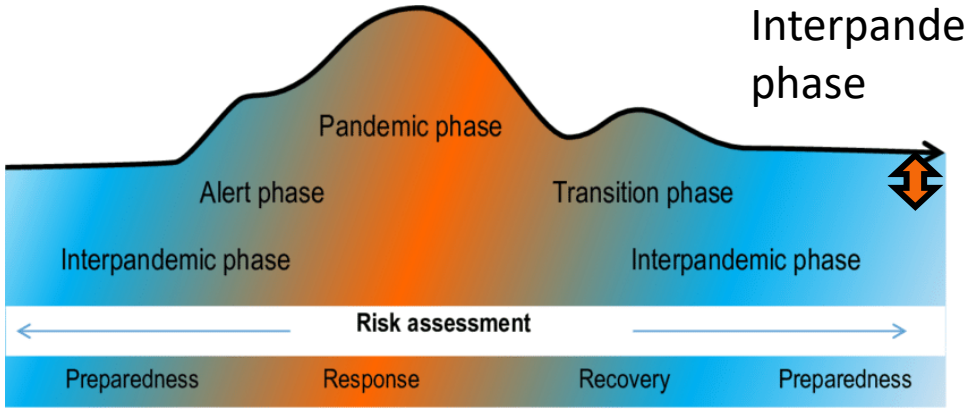
RSV Vaccine FAQs: Vaccine Coadministration

- **Data are limited**, but coadministration with other adult vaccinations is acceptable
  - Can be coadministered with the influenza, COVID-19, pneumococcus, Tdap, and shingles vaccine
- If vaccines are not administered the same day, there is no required interval between vaccines
- Determining need to coadminister should be based on **risk** of acquiring the vaccine-preventable disease, **vaccine** reactogenicity profile, and patient **preference**

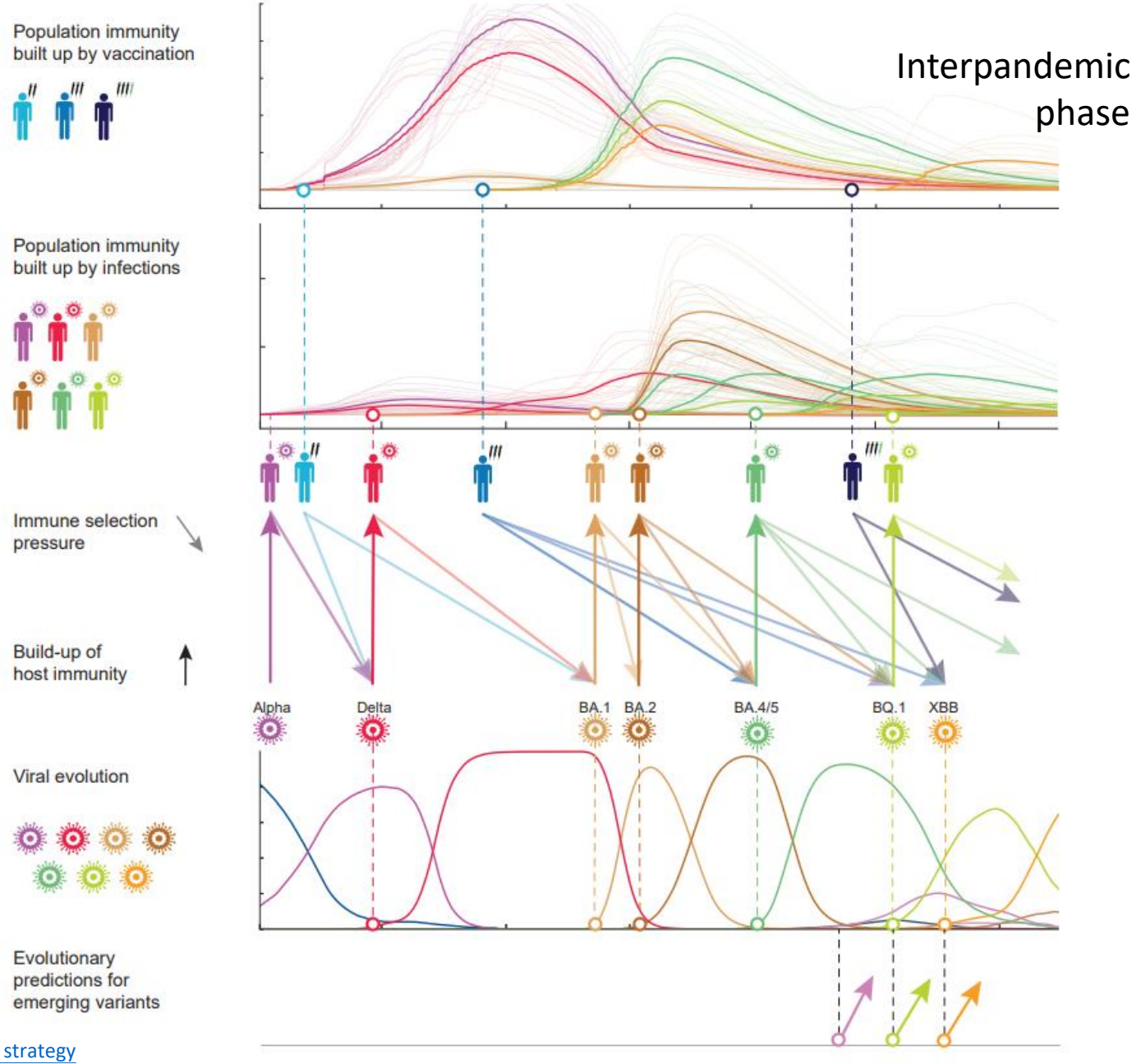
cdc.gov/respiratory-viruses/whats-new/getting-vaccines-at-same-time.html.
cdc.gov/vaccines/acip/meetings/downloads/slides-2023-06-21-23/07-RSV-Adults-Britton-508.pdf.


COVID-19
Coronavirus Disease 2019

未來疫情發展，將視變異株變化及群體免疫多樣狀態，進入病毒共存狀態的 Interpandemic phase。

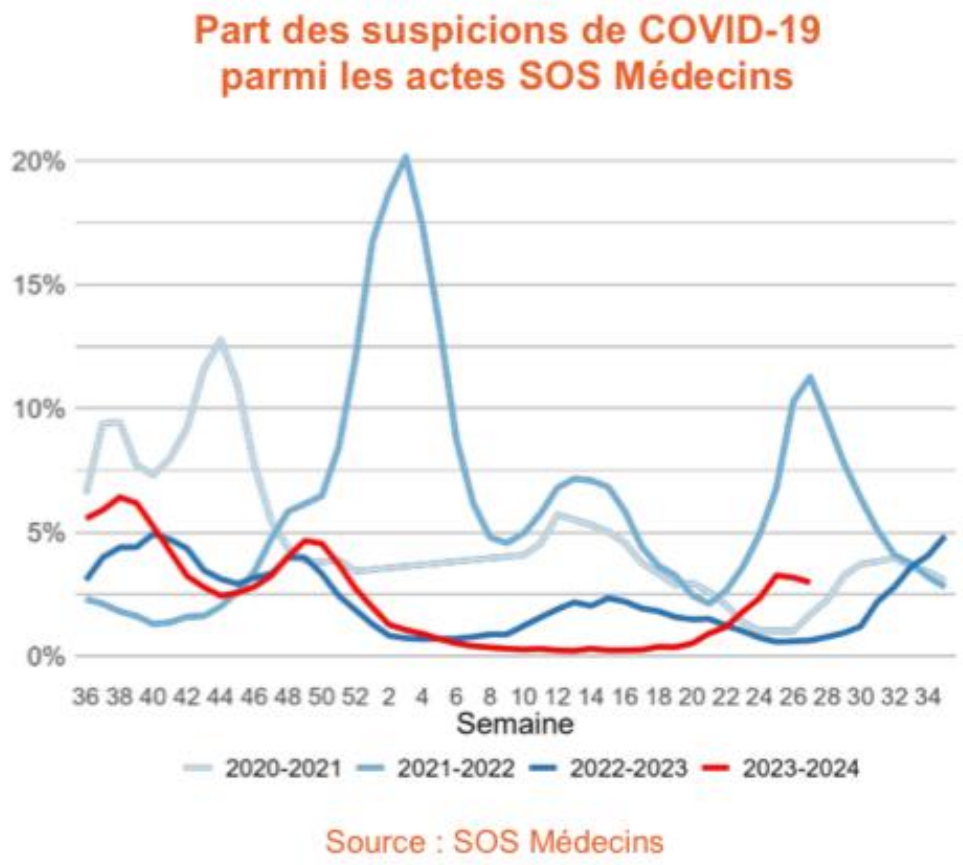


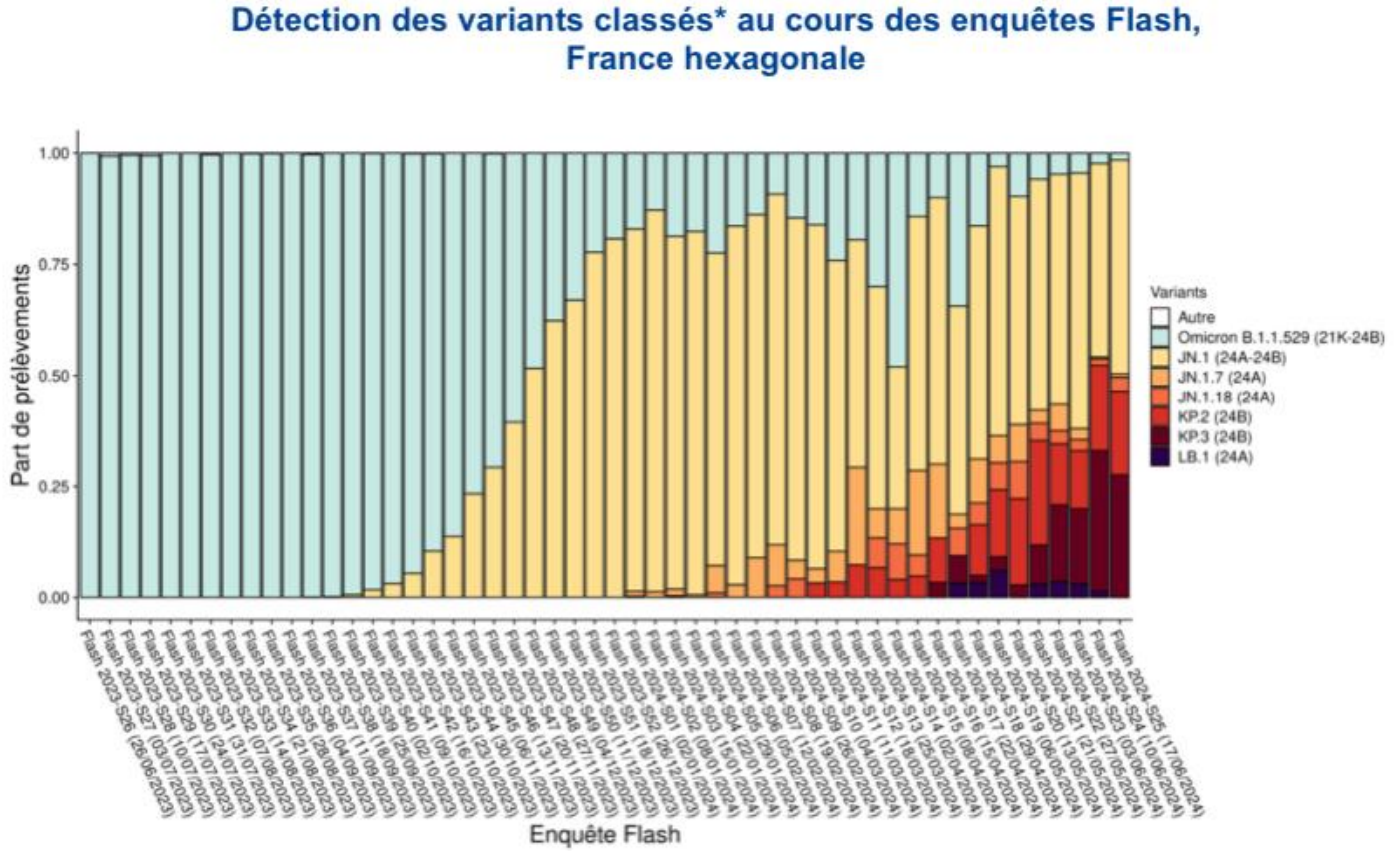
Interpandemic phase



Matthijs Meijers et al. Cell. 2023 Nov 9;186(23):5151-5164.e13.
Ministero della Salute - Istituto Superiore di Sanità Prevention and response to COVID-19: evolution of strategy and planning in the transition phase for the autumn-winter season. English version. vii, 109 p.

奧運法國新冠急診到訪上升，KP系列呈上升趨勢





https://www.santepubliquefrance.fr/ Updated: 10 July 2024.

奧運田徑／百米金牌萊爾斯染新冠200米收銅：感到自豪

2024-08-09 14:20 世界日報／記者胡玉立／綜合報導

美國選手萊爾斯原是男200公尺賽跑奪金大熱門，但決賽前感染新冠，影響成績，跑完後倒在場邊，坐輪椅送到醫院救治。(路

國際疫情升溫，並以KP.3系列為主流

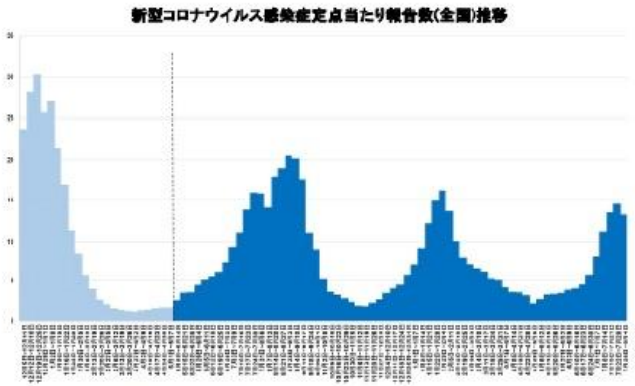
亞/美洲疫情

- **日本**自今年5月中旬起，病例數連續12週上升後，於第31週(7/29-8/4)病例數下降，定醫報告病例數為65,000餘例，每定醫點平均13.29例，以愛知、長崎、佐賀縣為高。

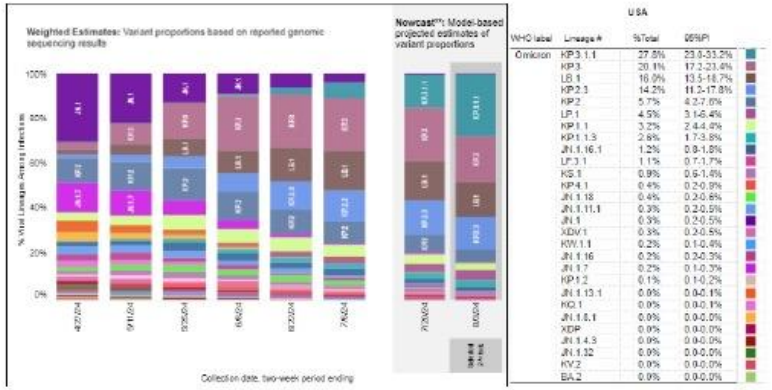
- **美國**自今年5月中旬以來，陽性率及急診就診率持續上升，主要流行變異株為KP.3、LB.1、KP.2.3、KP.2及KP.3.1.1，其中變異株KP.3.1.1占比快速上升。

日本

定醫平均報告病例數(例)

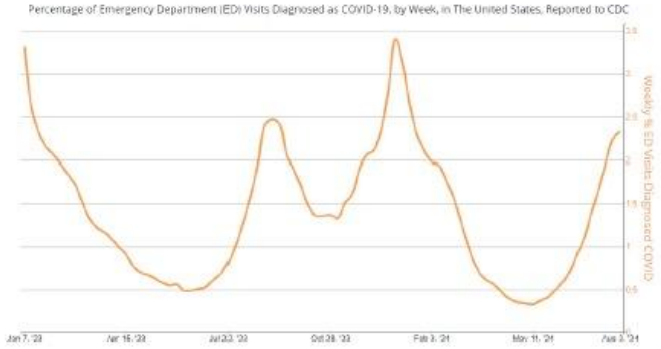


變異株趨勢變化

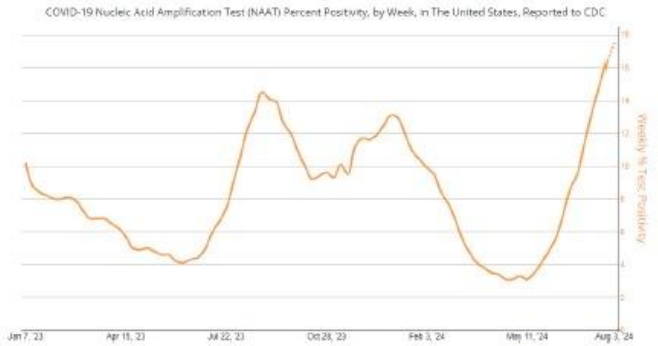


美國

急診就診率(%)



陽性率(%)



來源：厚生勞動省 8/9、US CDC COVID-19趨勢、US CDC COVID-19變異株趨勢、CIDRAP 8/6

衛生福利部疾病管制署 疫情監測週報 Updated: 13 Aug 2024.

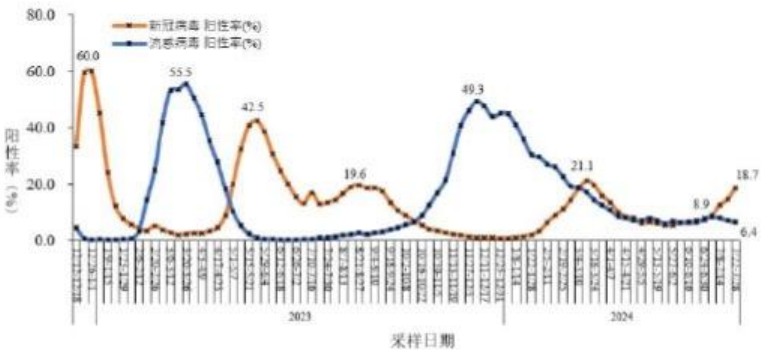
中國以JN.1及重組株XDV為主流

中國疫情

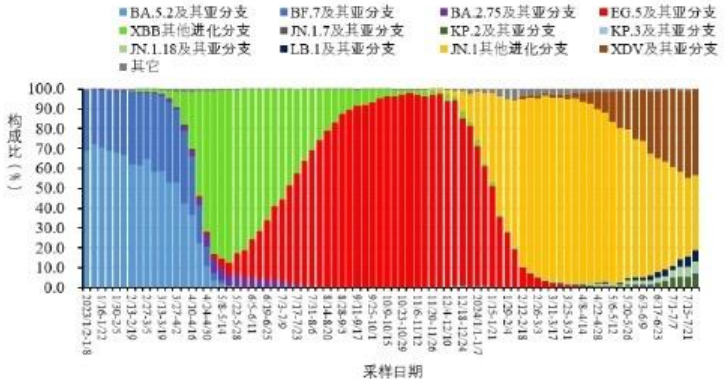
公布7月新冠感染疫情：

- 新冠病毒陽性率自7月初8.9%持續上升至7月底18.7%，發燒門診就診量及類流感就診率略降，主要流行變異株為JN.1、XDV及其衍生變異株。
- 新增203例重症及2例死亡，相較於6月(112例重症/5例死亡)重症數上升而死亡數下降。
- 香港第31週(7/28-8/3)陽性率持續上升，定醫就診率下降，主要流行變異株為JN.1及其衍生變異株。

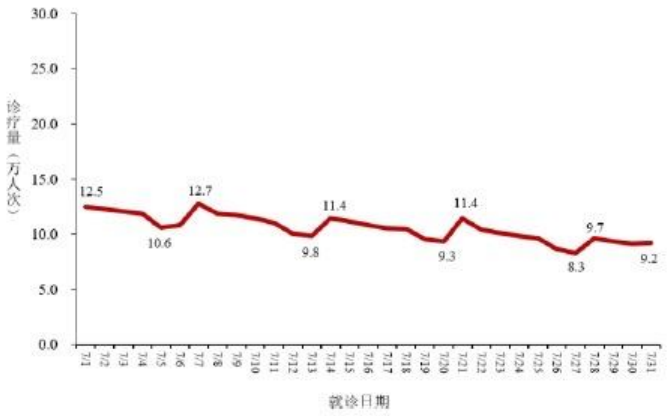
中國類流感病例新冠/流感病毒陽性率趨勢(%)



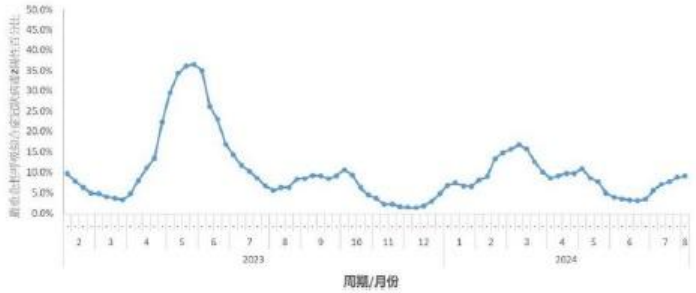
中國新冠病毒感染本土病例變異株變化趨勢



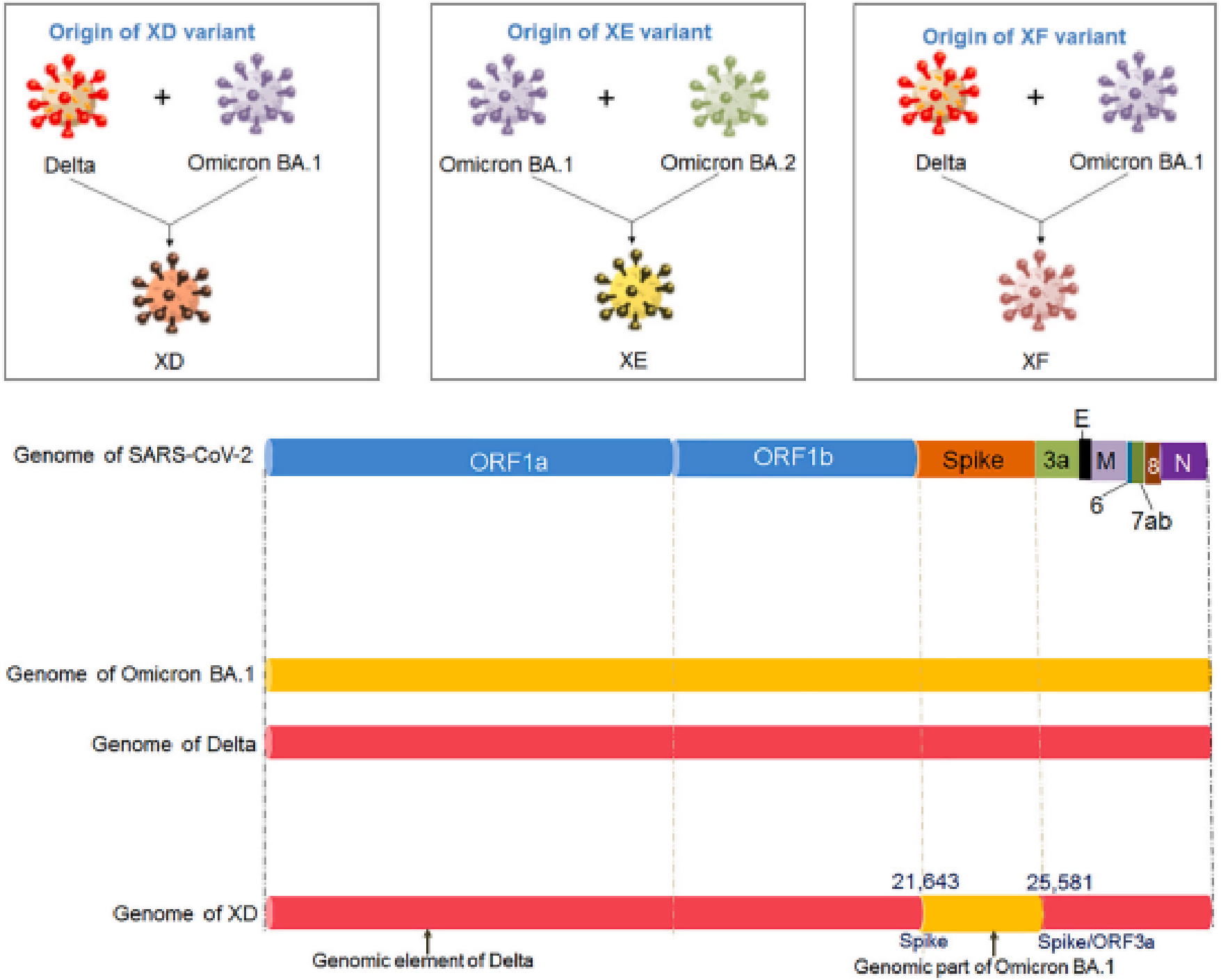
中國發燒門診就診量(萬人次)



香港陽性率(%)



衛生福利部疾病管制署 疫情監測週報 Updated: 13 Aug 2024.



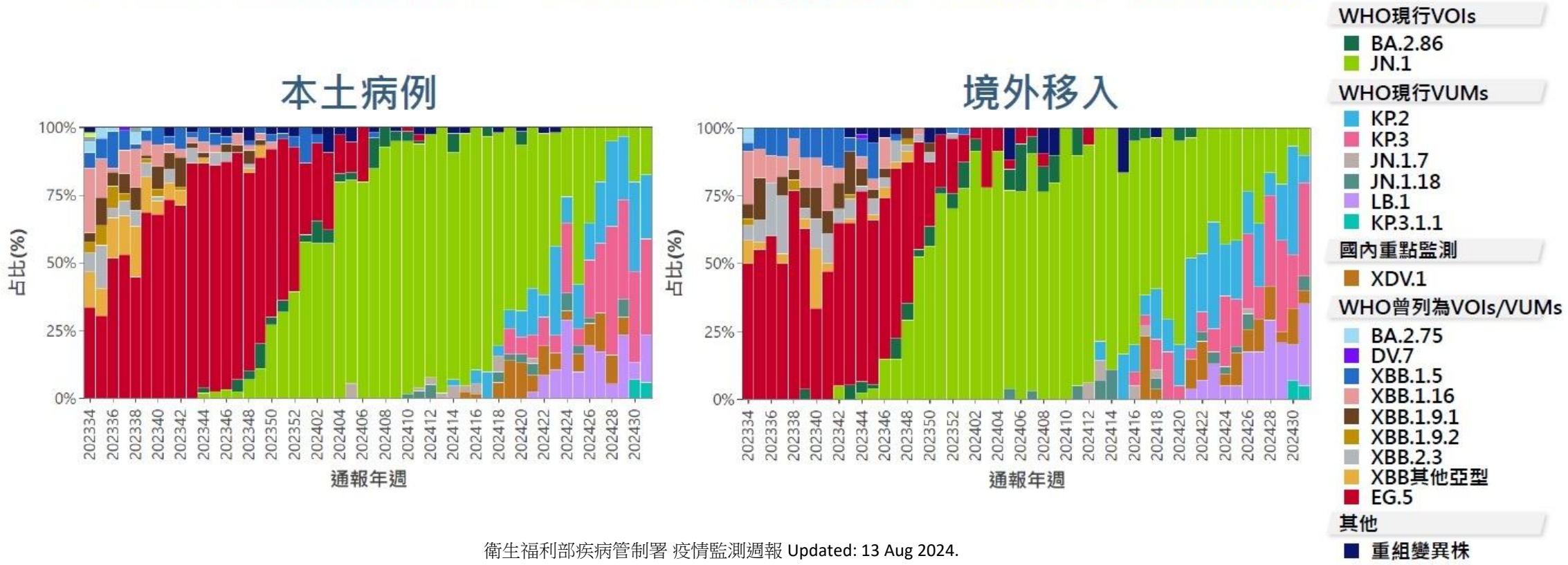
Int J Surg. 2022;102:106670.

台灣變異株KP為主流，LB.1及XDV.1持平

SARS-CoV-2 Variants：Omicron 變異株檢出趨勢

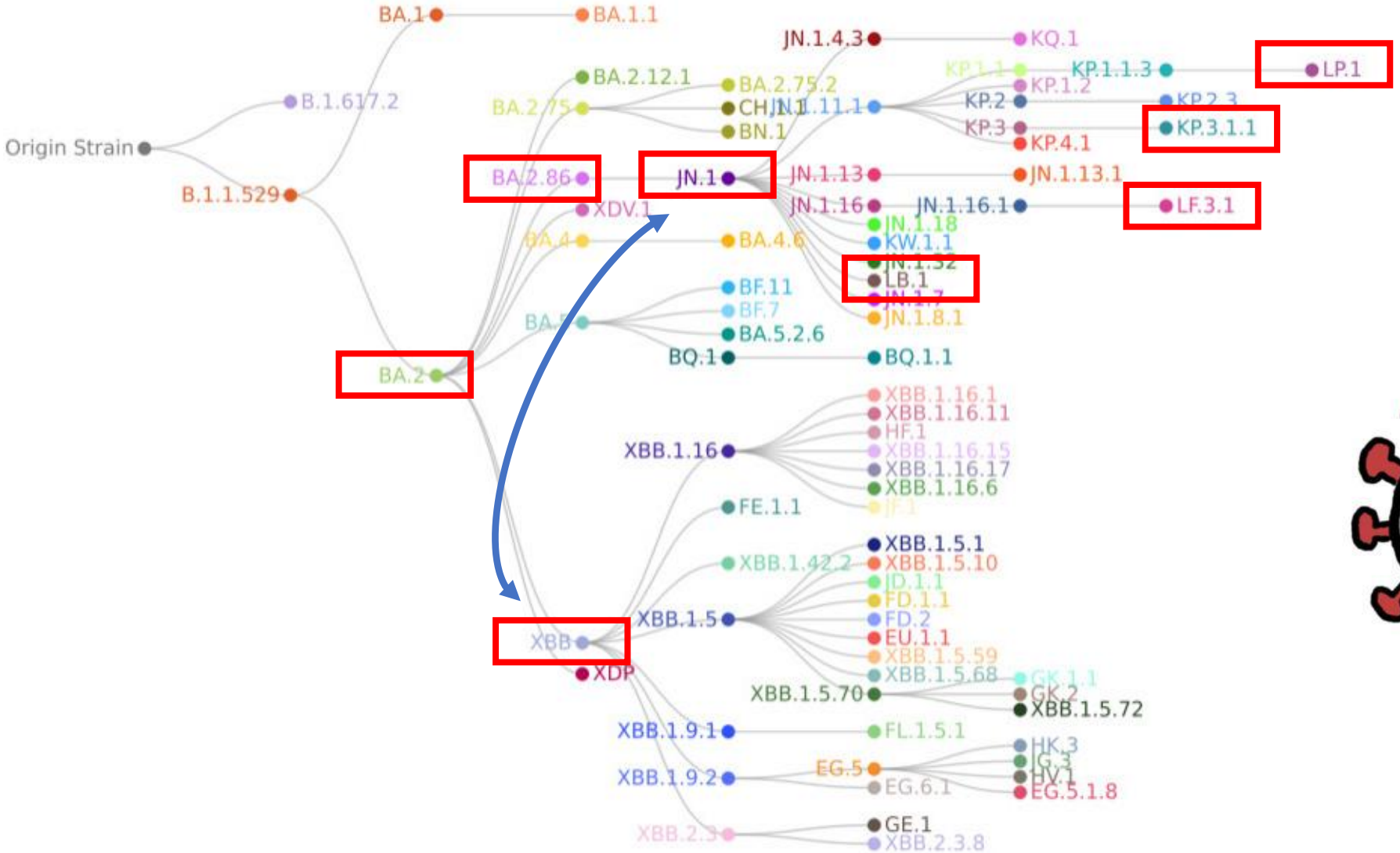
近四週監測變異株占比：

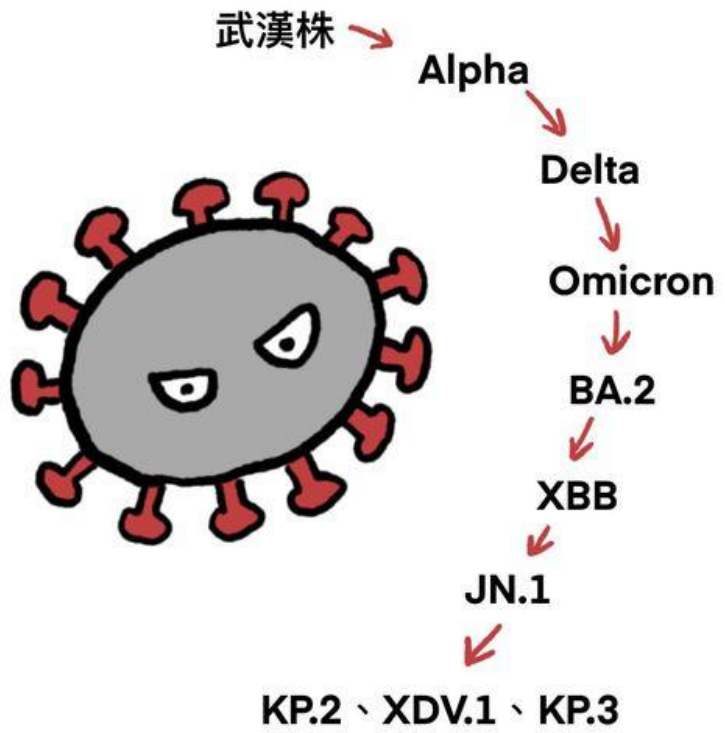
- 本土病例：KP.3 占 38% 為多，KP.2 占 27%、LB.1 占 15%、JN.1 占 10%、XDV.1 占 5%。
- 境外移入：KP.3 占 31% 為多，LB.1 占 24%、KP.2 占 18%、JN.1 占 14%、XDV.1 占 8%。



衛生福利部疾病管制署 疫情監測週報 Updated: 13 Aug 2024.

KP.3.1.1及LB.1仍為JN子代，新LP及LF密切關注



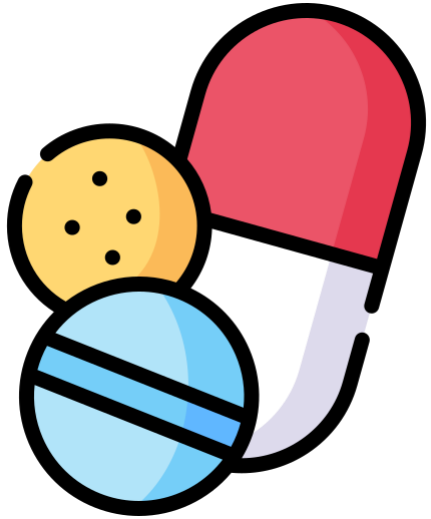


US CDC. Variant Proportions. Updated: 3 Aug 2024. Accessed: 5 Aug 2024.

NPI

Vaccine

Treatment



口罩經研究證實具有降低病毒傳播能力，高風險族群或確診族群建議可配戴口罩。

Relative efficacy of masks and respirators as source control for viral aerosol shedding from people infected with SARS-CoV-2: a controlled human exhaled breath aerosol experimental study

Jianyu Lai,[a] Kristen K. Coleman,[a] S.-H. Sheldon Tai,[a] Jennifer German,[a] Filbert Hong,[a] Barbara Albert,[a] Yi Esparza,[a] Dewansh Rastogi,[b] Aditya Srikakulapu,[a] Petri Kalliomäki,[a] Maria Schanz,[a] Alycia A. Smith,[a] Isabel Sierra Maldonado,[a] Molly Oertel,[a] Naja Fadul,[a] T. Louie Gold,[a] Kathleen McPhaul,[a] Tianzhou Ma,[c] Benjamin J. Cowling,[d] and Donald K. Milton[a,*]

[a]Maryland Institute for Applied Environmental Health, University of Maryland School of Public Health, College Park, MD, USA
[b]Department of Chemical and Biomolecular Engineering, University of Maryland, College Park, MD, USA
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eBioMedicine
2024;104: 105157
Published Online 30 May 2024
https://doi.org/10.1016/j.ebiom.2024.105157

Summary

Background Tight-fitting masks and respirators, in manikin studies, improved aerosol source control compared to loose-fitting masks. Whether this translates to humans is not known.

Methods We compared efficacy of masks (cloth and surgical) and respirators (KN95 and N95) as source control for SARS-CoV-2 viral load in exhaled breath of volunteers with COVID-19 using a controlled human experimental study. Volunteers (N = 44, 43% female) provided paired unmasked and masked breath samples allowing computation of source-control factors.

Findings All masks and respirators significantly reduced exhaled viral load, without fit tests or training. A duckbill N95 reduced exhaled viral load by 98% (95% CI: 97%–99%), and significantly outperformed a KN95 ($p < 0.001$) as well as cloth and surgical masks. Cloth masks outperformed a surgical mask ($p = 0.027$) and the tested KN95 ($p = 0.014$).

Interpretation These results suggest that N95 respirators could be the standard of care in nursing homes and healthcare settings when respiratory viral infections are prevalent in the community and healthcare-associated transmission risk is elevated.

Jianyu Lai et al. EBioMedicine. 2024 Jun:104:105157.

國內COVID-19疫苗接種情形

- 截至113.6.23 XBB疫苗累計接種280.5萬人次
  - 第1劑：累計271.5萬人次
  - 第2劑：累計9萬人次(其中65歲以上累計8萬人次)
- XBB疫苗庫存量(截至113.6.23)
  - 莫德納：約283.8萬劑
  - Novavax：約3萬劑

台灣XBB.1.5疫苗接種率整體為11.47%

2024/06/25

衛生福利部疾病管制署

台灣XBB.1.5疫苗接種率仍需要提升，特別是風險相對較高的50-64歲或65歲以上族群

2023/09/26起全國各縣市新冠XBB.1.5疫苗接種率

資料下載日2024/06/18　單位：%

縣市	全年齡	6M-4歲	5-11歲	12-17歲	18-29歲	30-49歲	50-64歲	65歲以上
臺北市	8.89	3.36	10.00	13.19	3.78	6.05	8.96	14.69
新北市	10.19	4.52	25.03	25.11	3.48	5.66	8.51	17.20
桃園市	9.79	5.19	18.46	18.17	3.45	6.07	8.74	19.46
臺中市	11.51	3.57	24.03	25.29	3.97	5.90	9.05	24.49
臺南市	16.17	7.76	27.79	31.04	6.96	11.18	15.43	25.49
高雄市	13.02	5.49	29.56	28.51	5.07	7.55	10.16	23.18
基隆市	12.44	10.64	30.09	25.37	3.65	5.79	11.41	22.04
新竹縣	9.16	5.10	12.59	14.15	3.51	6.59	9.34	17.72
新竹市	9.06	6.18	10.78	10.17	3.70	7.17	9.84	16.46
苗栗縣	10.58	4.87	29.01	30.56	3.40	4.75	7.19	18.53
彰化縣	10.05	3.22	19.95	15.49	3.06	4.89	8.00	22.86
南投縣	12.74	9.63	27.60	24.83	4.66	6.97	11.07	21.92
雲林縣	10.59	3.08	27.33	23.34	3.50	5.29	8.15	19.47
嘉義市	11.61	8.58	25.93	22.71	4.78	7.20	10.30	17.59
嘉義縣	12.24	3.85	23.82	24.22	3.90	5.72	11.56	22.92
屏東縣	15.74	8.79	34.93	29.21	4.77	7.04	14.56	30.48
宜蘭縣	13.96	7.33	32.31	33.94	4.31	6.99	11.85	24.65
花蓮縣	12.56	9.66	41.30	37.66	4.66	6.16	8.77	18.08
臺東縣	13.16	13.22	42.99	41.19	4.83	6.12	9.21	19.31
澎湖縣	11.55	4.86	33.17	38.89	5.26	7.04	9.32	17.74
金門縣	7.24	2.72	10.71	15.72	4.46	5.92	6.64	11.25
連江縣	16.50	6.30	35.61	40.99	7.70	13.32	14.87	25.62
總計	11.40	5.16	23.13	23.33	4.16	6.56	9.86	20.62

註：1.本國籍接種人數(不含死亡人數及外籍人士)/內政部戶政司全球資訊網人口統計我國人口數(2341.51萬人)*100【人口數更新日期：113年5月31日】
2.爲第1劑接種率統計

2024/06/18

衛生福利部疾病管制署

衛生福利部疾病管制署 疫情監測週報
Updated: 18 June 2024.

XBB.1.5疫苗

對於JN.1保護力約50%，
但6個月後明顯下降，

仍具防重症及死亡效果。

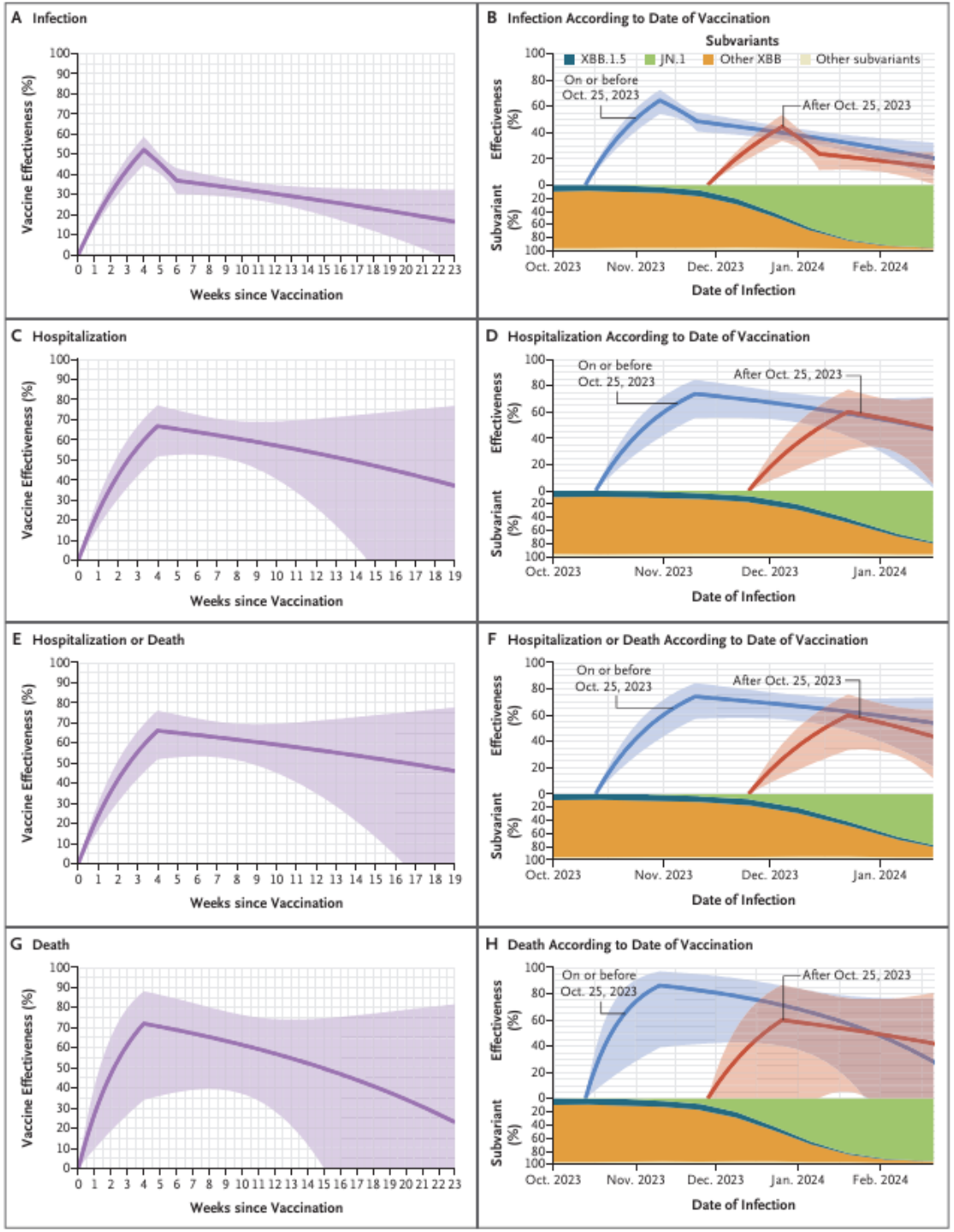


Figure 1 (facing page). Effectiveness of the XBB.1.5 Vaccines against Omicron Subvariants as a Function of Time since Vaccination.

Panels A and B show the vaccine effectiveness of the XBB.1.5 vaccines against infection, Panels C and D the vaccine effectiveness against hospitalization, Panels E and F the vaccine effectiveness against hospitalization or death, and Panels G and H the vaccine effectiveness against death. Panels A, C, E, and G show the results of the analysis of all vaccine doses. Panels B, D, F, and H show the stratified analysis according to the date of administration of an XBB.1.5 vaccine (with each curve starting at the median date of administration of an XBB.1.5 vaccine for persons in that cohort), as well as the prevalence of XBB.1.5, other XBB, JN.1, and other subvariants. In all panels, the solid curves show the estimates of vaccine effectiveness, and the shaded bands indicate 95% confidence intervals.

Dan-Yu Lin et al. N Engl J Med. 2024 Jun 13;390(22):2124-2127.

CID. 2024 Aug 6:ciae405.

Lineage	COVID-19 vaccination status	No. of vaccinated COVID-19 case-patients/total no. of case-patients (%)	No. of vaccinated control-patients/total no. of control-patients (%)	Median days since updated dose among case-patients (IQR)	Median days since updated dose among control-patients (IQR)	Adjusted vaccine effectiveness % (95% CI)
XBB	Updated dose 7–89 days before illness onset	47/579 (8.1)	568/4304 (13.2)	44 (22–67)	47 (26–68)	54.2 (36.1 to 67.1)
XBB	Updated dose 90–179 days before illness onset	6/538 (1.1)	276/4012 (6.9)	92 (91–105)	118 (106–131)	[a]
JN	Updated dose 7–89 days before illness onset	38/357 (10.6)	568/4304 (13.2)	56 (31–74)	47 (26–68)	32.7 (1.9 to 53.8) [b]
JN	Updated dose 90–179 days before illness onset	40/359 (11.1)	276/4012 (6.9)	118 (107–130)	118 (106–131)	23.4 (-11.8 to 47.6) [b]

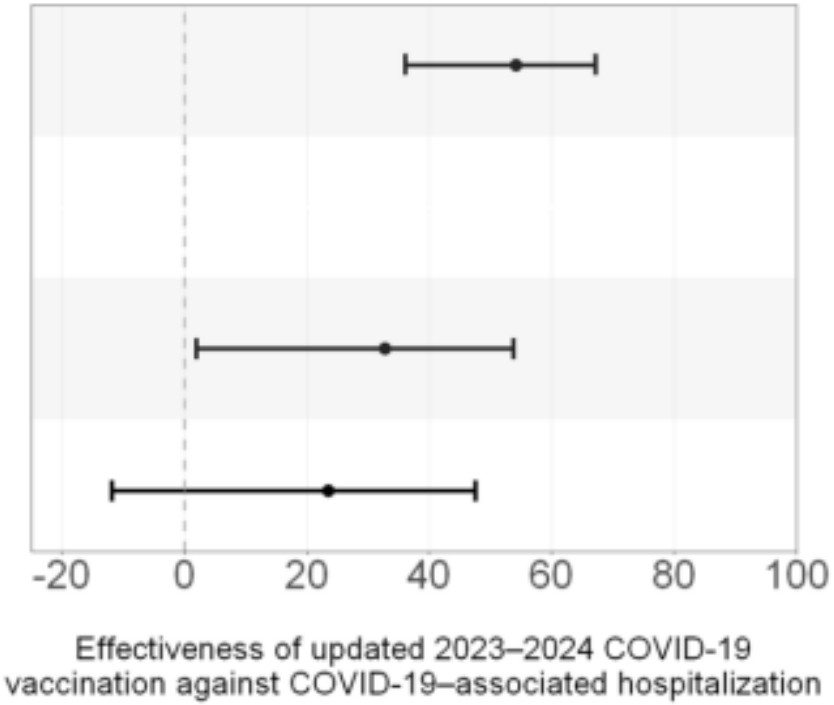
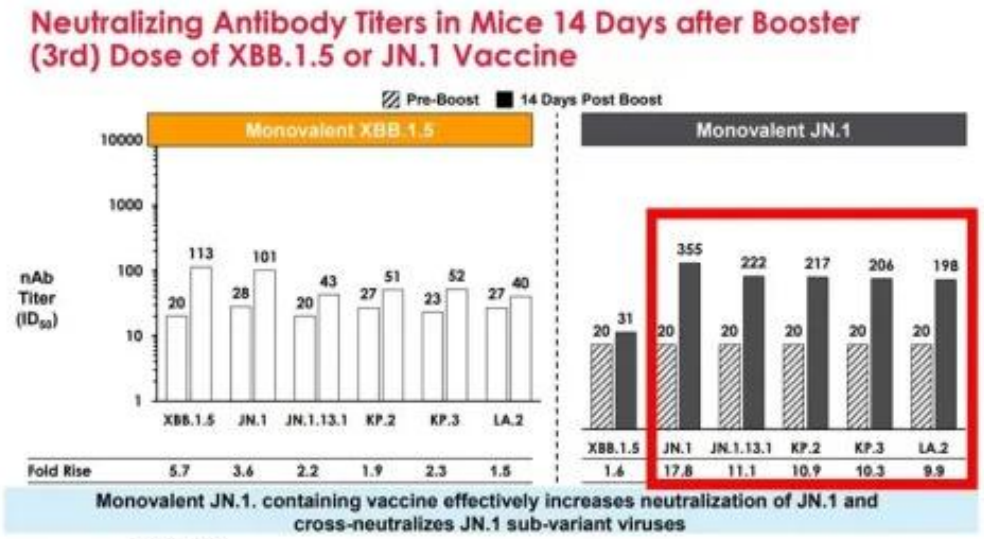


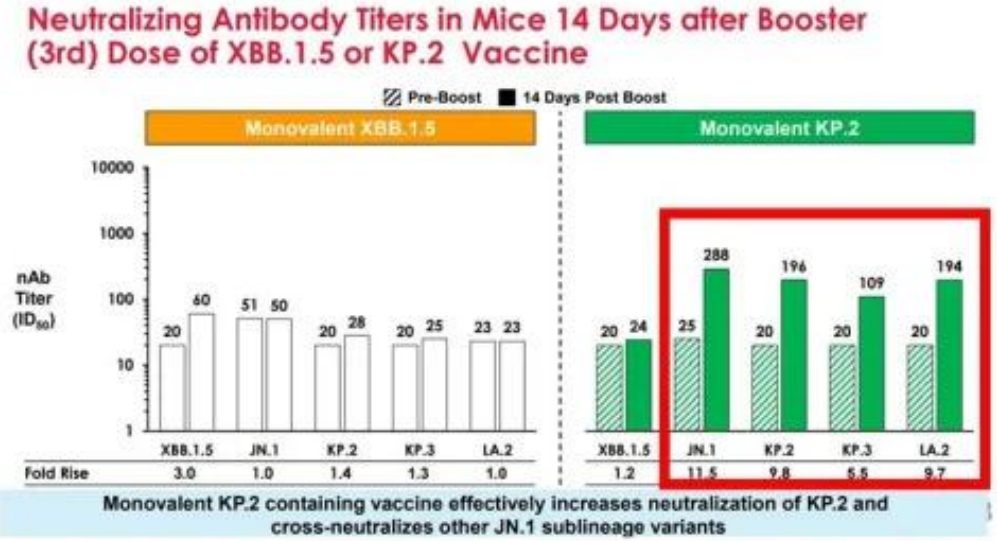
Figure 2. Effectiveness of updated 2023–2024 (monovalent XBB.1.5) COVID-19 vaccination against COVID-19–associated hospitalization from XBB and JN lineage infection — IVY Network, 26 Hospitals, October 18, 2023–March 9, 2024. Vaccine effectiveness was calculated as (1 – adjusted odds ratio) × 100% with odds ratios calculated using multivariable logistic regression adjusting for age, sex, race/ethnicity, HHS region, admission date in biweekly intervals, and Charlson comorbidity index.

[a] Based on timing of recommendations to receive updated 2023–2024 COVID-19 vaccines and JN lineage emergence, limited numbers of individuals with XBB infection were 90–179 days from their updated dose, precluding estimation of VE within this stratum.

莫德納JN.1疫苗動物試驗報告

- KP.2、KP.3亞變異株，皆是由JN.1變異株衍生發展而來。
- 目前流行之**JN.1、KP.2、KP.3變異株之間突變位點差異小**。
- 相較XBB.1.5疫苗，於追加接種含單價JN.1疫苗後能**有效增強對JN.1變異株的中和作用，對於KP.2、KP.3亞變異株也具較高交叉中和作用**。





資料來源
113/7/3專家會議-莫德納公司分享COVID-19新變異株疫苗相關試驗數據簡報資料

新冠及流感接種計畫對象及開打時程

●自113年10月1日起新冠疫苗與流感疫苗同步開打●

階段順序	疫苗種類	實施對象
第一階段 (10/1起)	流感疫苗 + 新冠疫苗	醫事及衛生防疫相關人員 65歲以上者 55歲以上原住民 安養、長期照顧(服務)等機構之受照顧者及其所屬工作人員 滿6個月以上至國小入學前幼兒 孕婦 具有潛在疾病者【包括(19-64歲)高風險慢性病人、BMI≧30者、罕見疾病患者及重大傷病患者】 6個月內嬰兒之父母 幼兒園托育人員、托育機構專業人員及居家托育人員(保母) 國小、國中、高中、高職、五專一至三年級學生 禽畜相關及動物防疫相關人員
第二階段 (11/1起)	流感疫苗	50至64歲無高風險慢性病成人
	新冠疫苗	滿6個月以上民眾(未列在第一階段實施對象)

2024/07/10

衛生福利部疾病管制署

新冠快篩陽性就醫建議

以下對象若出現發燒、呼吸道症狀等COVID-19相關症狀，請自行快篩，陽性者請儘速就醫，並由醫師評估是否開立公費口服抗病毒藥物。 3-1

衛生福利部疾病管制署 20230515記者會 Updated: 15 May 2023.

重症高風險因子

- 65歲以上
- 具慢性病：氣喘、癌症、糖尿病、慢性腎病、心血管疾病、慢性肺疾、結核病、慢性肝病、失能、精神疾病、失智症、吸菸*、BMI≧30、影響免疫功能之疾病
- 孕婦、產婦(產後六周內)

*註：吸菸(或已戒菸者)需同時具有任一其他風險因子，方符合用藥條件

2023/05/15-更新

衛生福利部疾病管制署

建議五日內做兩次快篩並間隔至少24至48小時
沒有發燒且快篩陰性也可能是新冠確診

快篩整體來看陽性率大概6成。
症狀出現三天的快篩跟PCR陽性率是最高的，
所以目前可以建議五天內做兩次。

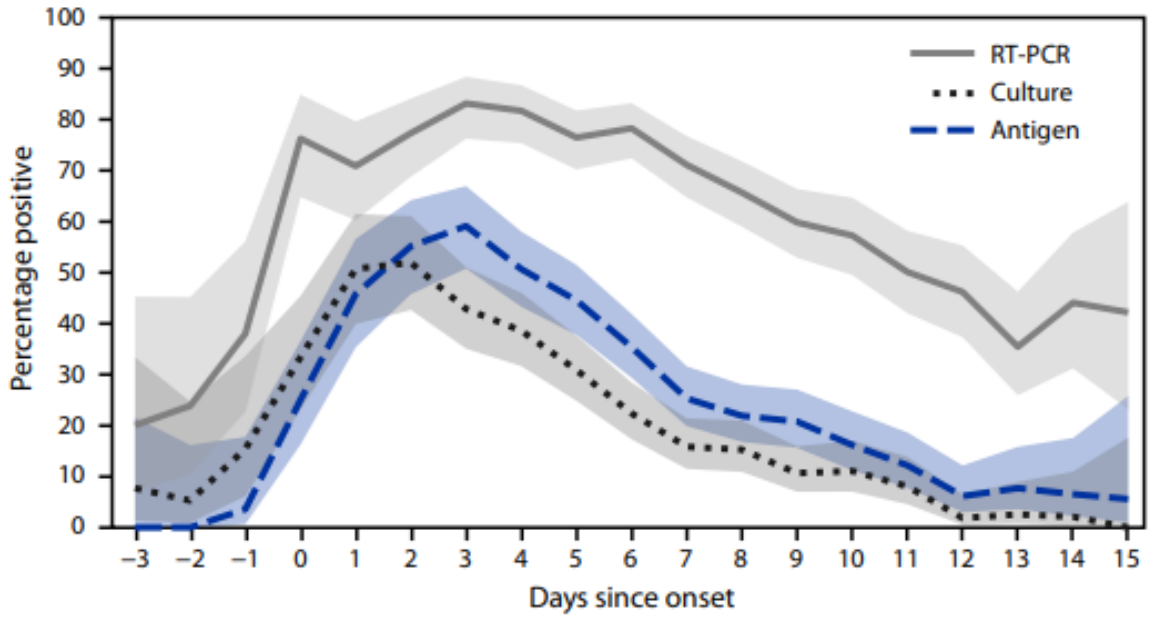


FIGURE 1. Percentage* of rapid antigen, reverse transcription–polymerase chain reaction, and viral culture test results that were positive for SARS-CoV-2 (A) and percentage of antigen test results that were positive, by symptom status† (B) and presence of fever (C) each day since onset§ among participants infected with SARS-CoV-2¶ — Respiratory Virus Transmission Network, November 2022–May 2023

發燒在快篩是陽性率最高的症狀，
但沒症狀的也會有陽性。

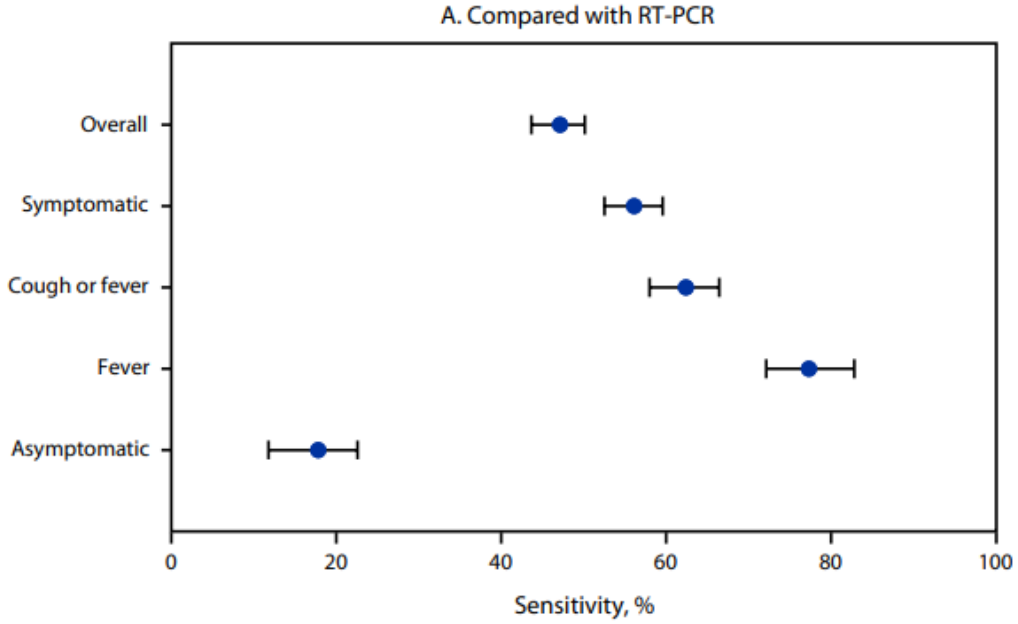
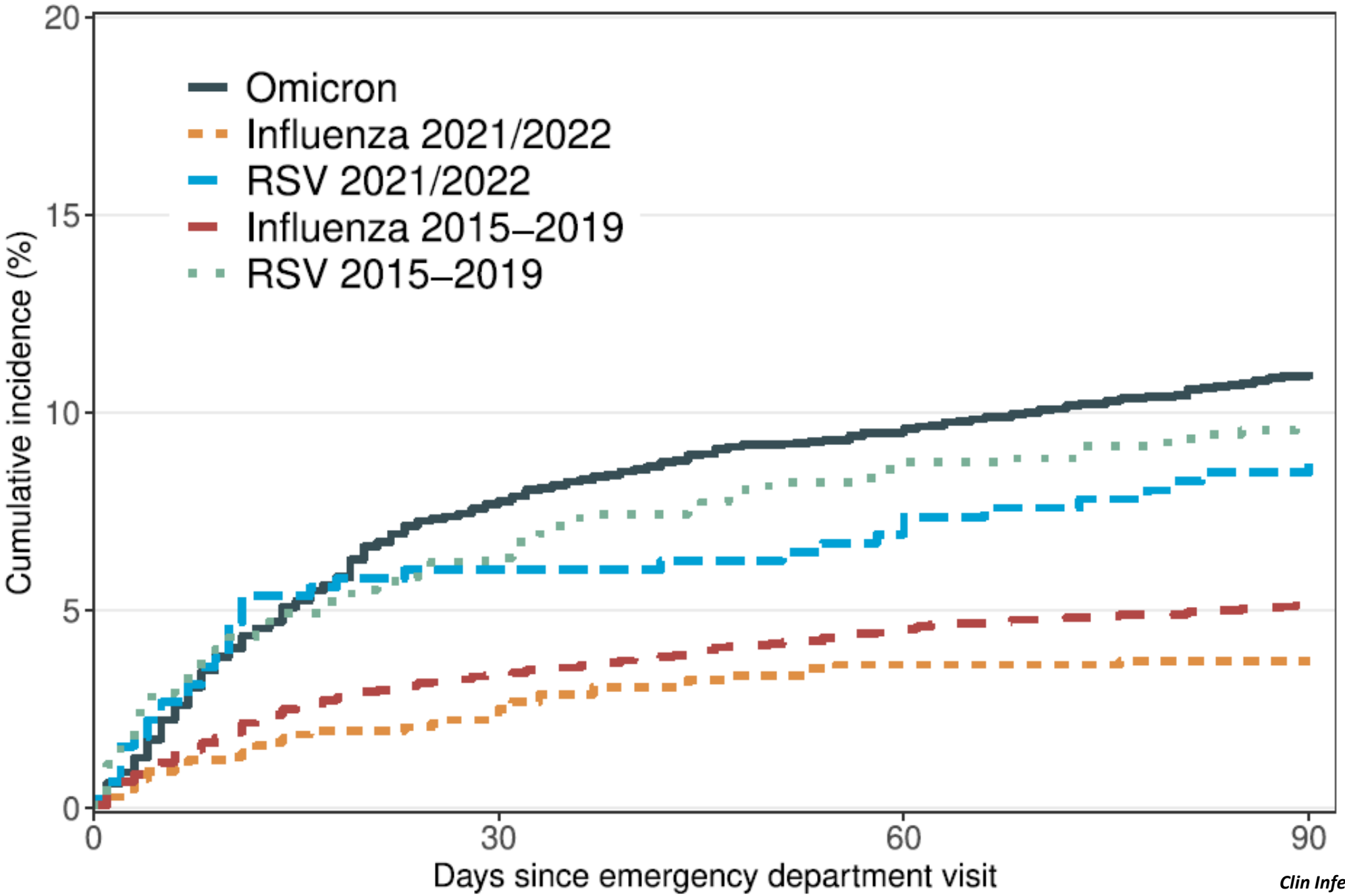


FIGURE 2. Sensitivity* of rapid antigen tests results for diagnosing SARS-CoV-2 infection compared with reverse transcription–polymerase chain reaction (A) and viral culture (B), overall and by presence of symptoms† — Respiratory Virus Transmission Network, November 2022–May 2023

Sarah E Smith-Jeffcoat et al. MMWR Morb Mortal Wkly Rep. 2024 Apr 25;73(16):365-371.

Cumulative incidence of 90–day all–cause mortality



Clin Infect Dis. 2023 Oct 26:ciad660.

Drug Activity Against SARS-CoV-2 Variants and Subvariants – as of 5/28/2024

VDH VIRGINIA DEPARTMENT OF HEALTH

	Omicron KP.2	Omicron KP.3	Omicron JN.1.7	Omicron KP.1.1	Omicron JN.1	Omicron JN.1.16.1	Omicron JN.1.16	Omicron JN.1.13.1
Pemgarda (mAb for PrEP, given intravenously)	Active	Active	Active	Active	Active	Active	Active	Active
Bebtelovimab (mAb for Covid-19 treatment, given IV)	Due to the high frequency of variants/subvariants that are resistant to it, as of Nov 30, 2022, Bebtelovimab is NOT authorized for use in any U.S. Region.							
Paxlovid (nirmatrelvir with ritonavir) (oral Covid-19 antiviral)	Active	Active	Active	Active	Active	Active	Active	Active
Lagevrio (molnupiravir) (oral Covid-19 antiviral)	Active	Active	Active	Active	Active	Active	Active	Active
Veklury (remdesivir) (IV Covid-19 antiviral)	Active	Active	Active	Active	Active	Active	Active	Active

Key:

- Active = drug is currently active or believed to be active against this variant/subvariant
- Not likely to be active = based on testing, drug is not likely to be active against this variant/subvariant
- Not active = based on testing, drug is **inactive** against this variant/subvariant
- No data = no current testing has been reported about this drug against this variant/subvariant

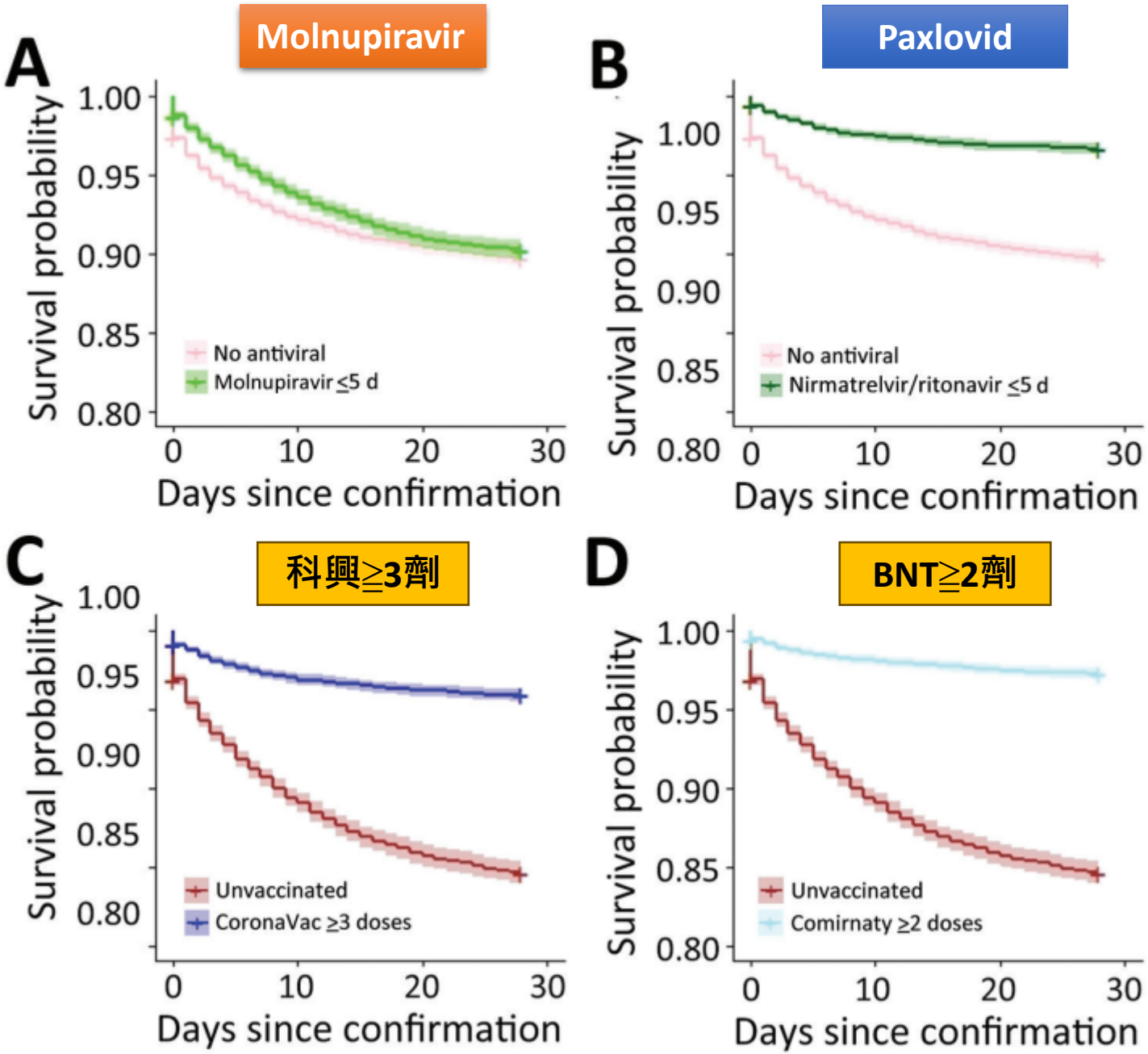
https://www.vdh.virginia.gov/content/uploads/sites/182/2022/11/COVID-19-variants-subvariants-and-drug-activity.pdf

Effectiveness of Vaccines and Antiviral Drugs in Preventing Severe and Fatal COVID-19, HK

A total of 39,627 hospitalized adults who had a confirmed diagnosis of SARS-CoV-2 infection during 2022/03/16-10/31

⇔ 9,616 received molnupiravir

⇔ 10,873 received nirmatrelvir/ritonavir



Emerg Infect Dis. 2024; 30:70-78.

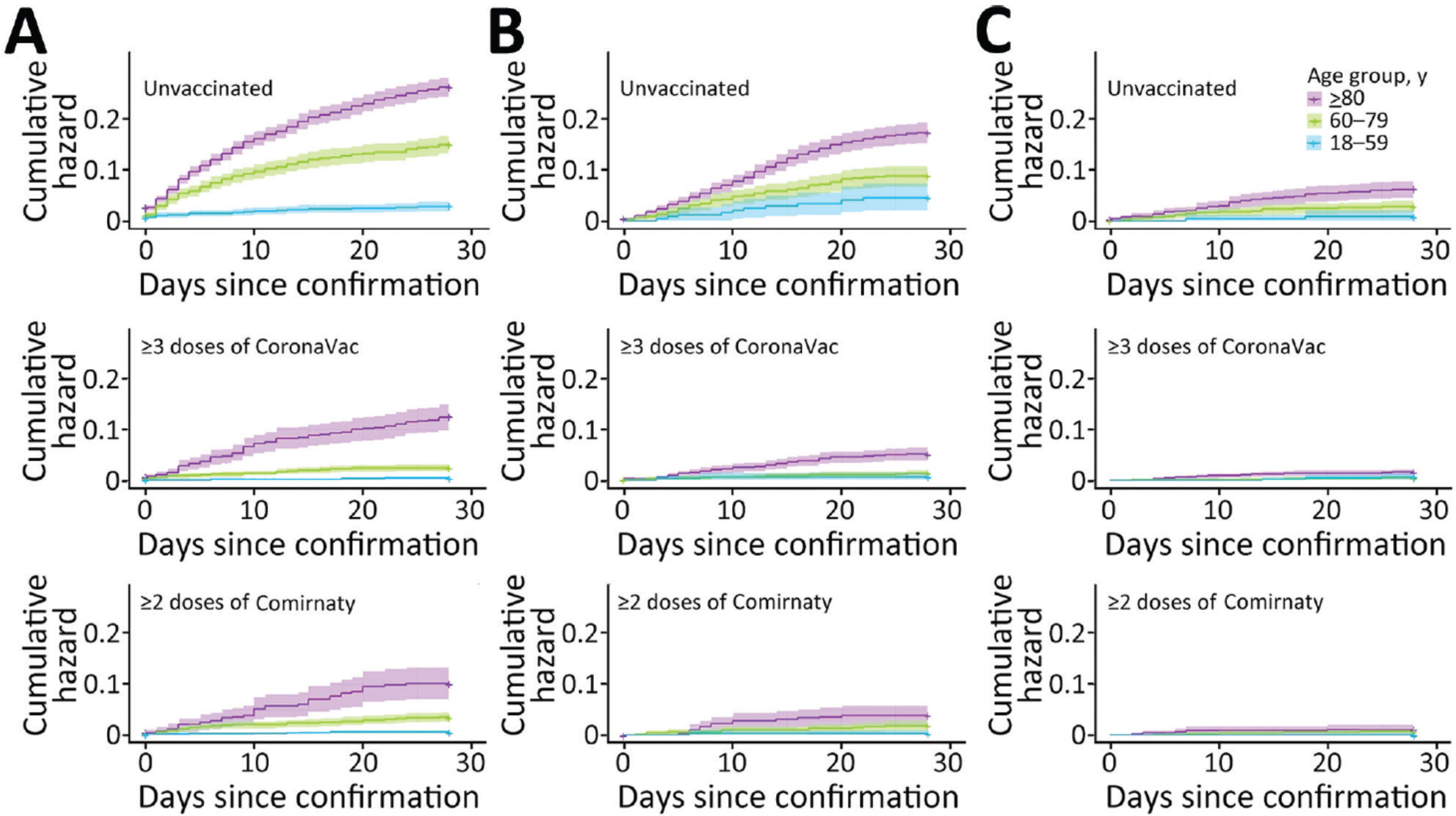
Cumulative hazards for all-cause mortality

沒抗病毒藥物 | Molnupiravir | Paxlovid

沒打疫苗

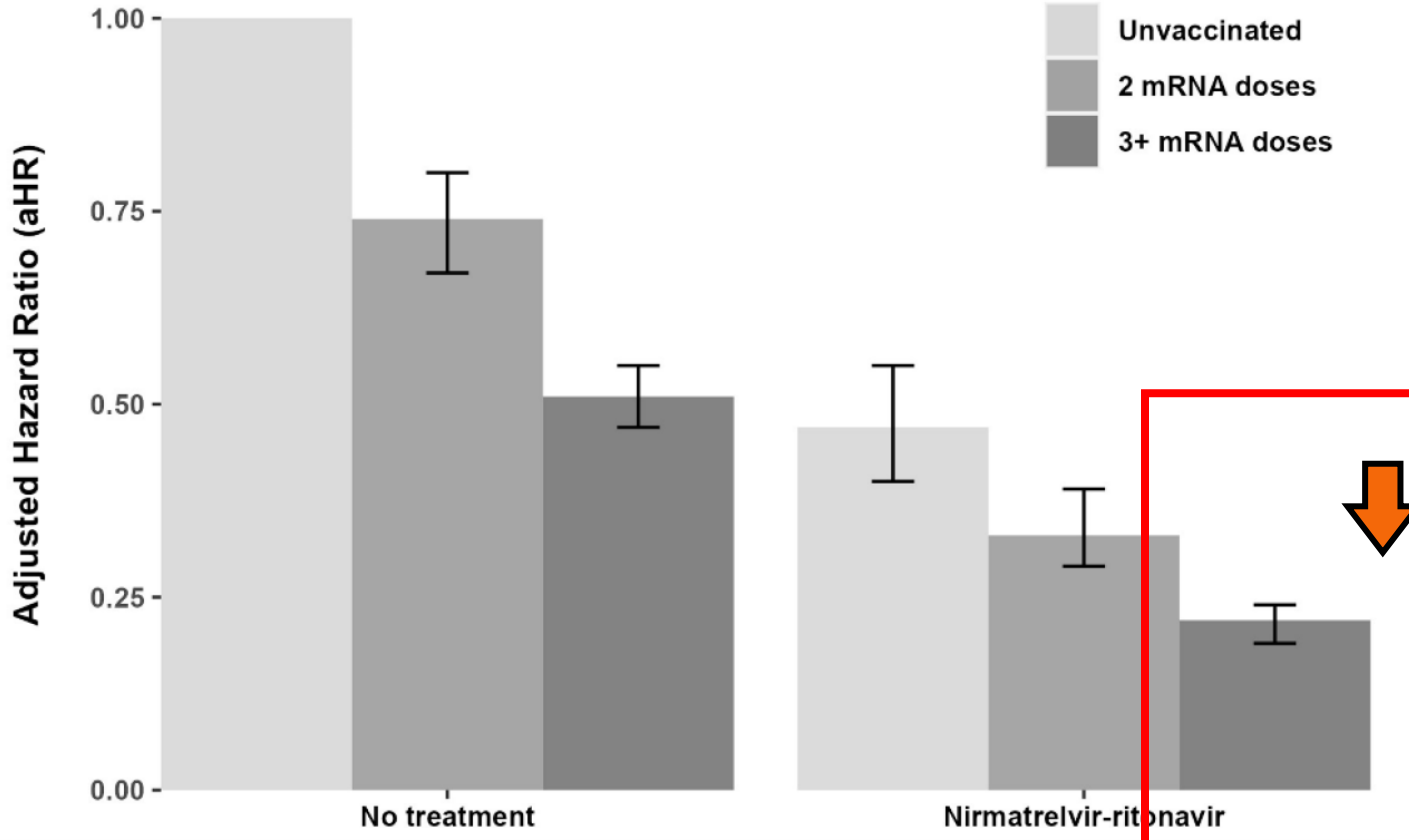
科興≧3劑

BNT≧2劑



RWE: 美國CDC研究顯示

接種疫苗與給予抗病毒藥物為最有效預防重症住院的方式



	No treatment			Nirmatrelvir-ritonavir		
	Unvaccinated	2 mRNA doses	3+ mRNA doses	Unvaccinated	2 mRNA doses	3+ mRNA doses
No. of participants	141,931	114,656	199,670	35,826	42,355	130,778
No. hospitalized	1,316	921	1,671	180	180	481
Hospitalizations per 100,000 person-days	31.1	27.0	28.1	19.7	16.4	14.2
Adjusted HR (95% CI)	Reference	0.74 (0.67-0.80)	0.51 (0.47-0.55)	0.47 (0.40-0.55)	0.33 (0.29-0.38)	0.22 (0.19-0.24)

下降78%住院率

Melisa M Shah et al. Clin Infect Dis. 2024 Feb 27:ciae105.

COVID-19 guidance by Taiwan CDC

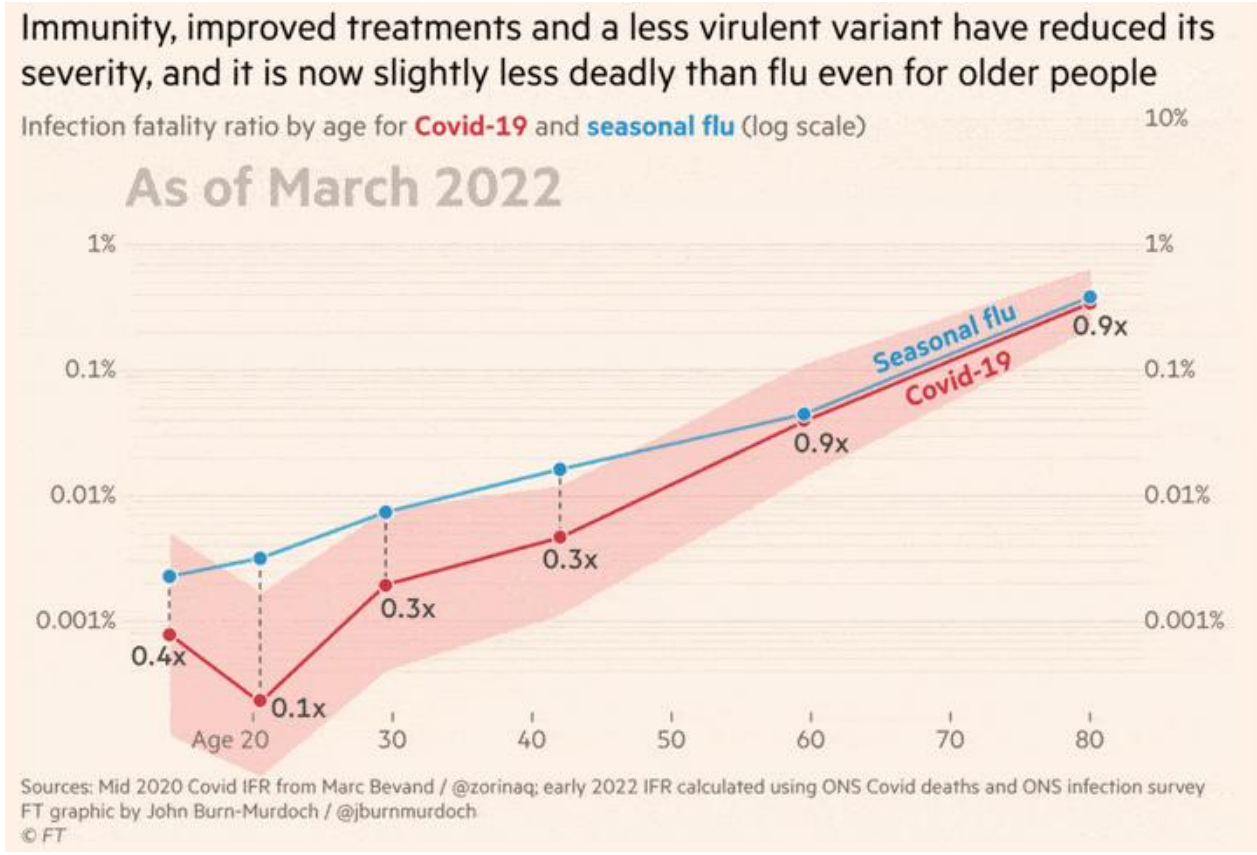
表四、我國診治指引對 SARS-CoV-2 患者治療用藥建議彙整

<table>
<tr><th>用藥建議[1]</th><th>不須用氧且具重症風險因子者</th><th>需吸氧治療</th><th>高流量氧或非侵襲性呼吸器</th><th>插管</th></tr>
<tr><td rowspan="3">優先建議使用[2]</td><td rowspan="3">Nirmatrelvir+ritonavir
Remdesivir
Tixagevimab + Cilgavimab[3]</td><td colspan="3">Dexamethasone</td></tr>
<tr><td colspan="3">Baricitinib 或/及 Tocilizumab</td></tr>
<tr><td colspan="2">Remdesivir</td><td></td></tr>
<tr><td>有條件下使用</td><td>Molnupiravir</td><td colspan="3"></td></tr>
</table>

Drug	Indication
Nirmatrelvir + ritonavir (Paxlovid)	具前述任一重症風險因子*，未使用氧氣且於發病**五天內**之成人或≥12 歲且 體重≥40 公斤輕症患者。
Remdesivir (Veklury)	具前述任一重症風險因子*，未使用氧氣且於發病**七天內**之成人或年齡大於 28 天且體重 3 公斤以上之孩童輕症患者。
Molnupiravir (Lagevrio)	具前述任一重症風險因子* (除懷孕(或產後六周內)外，)，未使用氧氣且於發病**五天內**之 ≧ 18 歲輕症患者，且無法使用其他建議藥物者。

新型冠狀病毒SARS-CoV-2 感染臨床處置指引第二十五版(1121205公布)

Immunity, treatment and less virulent variant



https://www.ft.com/content/e26c93a0-90e7-4dec-a796-3e25e94bc59b

The number of new Covid cases in English hospitals is rising again among all age groups

Daily admissions per 100k people, by age group

Source: FT analysis of UK government Covid-19 dashboard
FT graphic by John Burn-Murdoch / @jburnmurdoch
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表一、照護疑似或感染 COVID-19 病人之個人防護裝備建議

處置項目	基層診所/一般門急診/檢查室等	住院中之收治病室
未直接接觸病人之行為(如詢問相關主訴及 TOCC 等)	醫用/外科口罩	醫用/外科口罩或 N95 口罩[a]
一般性接觸病人之醫療照護行為(如：量體溫/血壓、照 X 光等)	醫用/外科口罩、手套[b]；視需要穿一般隔離衣	醫用/外科口罩或 N95 口罩[a]、手套；視需要[c]穿一般隔離衣
執行接觸病人血液/體液/排泄物等風險之醫療照護行為、呼吸道檢體採集、環境清潔消毒等	醫用/外科口罩、手套、防水隔離衣；視需要佩戴 N95 口罩[a]、護目裝備	醫用/外科口罩或 N95 口罩[a]、手套、防水隔離衣；視需要[c]佩戴護目裝備
執行會引發飛沫微粒產生之處置 (AGPs, Aerosol Generating Procedures)	N95 口罩[a]、手套、防水隔離衣、護目裝備；視需要佩戴髮帽及鞋套	N95 口罩[a]、手套、防水隔離衣、護目裝備；視需要佩戴髮帽及鞋套

環境清潔消毒

病人經常接觸的表面(如：床頭櫃、床旁桌、床欄、及其他病室內的家具等)應每日清潔，並使用適當消毒劑或 1：50 (1000 ppm)的稀釋漂白水消毒。

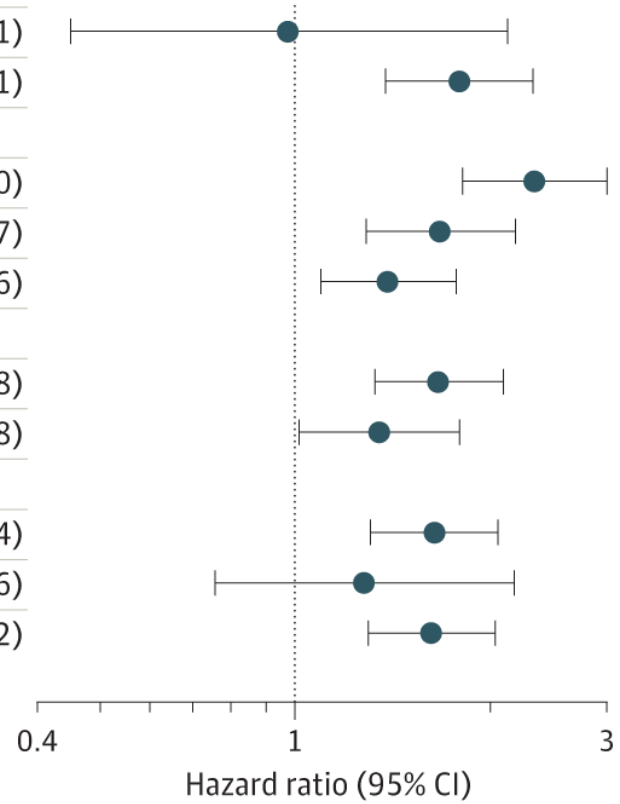
浴室或馬桶表面應每日清潔， 並使用 1：10 (5000 ppm) 的稀釋漂白水消毒。

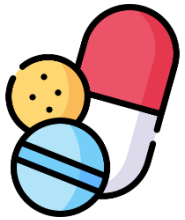
執行清潔消毒工作時，應先以清潔劑或肥皂和清水移除髒汙與有機物質，再使用濕抹布及合適的消毒劑執行有效的環境清消。

有小範圍(< 10 ml)的血液或有機物質時，應先以低濃度(1000 ppm)的漂白水覆蓋在其表面進行去汙作用， 若血液或有機物質的範圍大於 10 ml 以上，則需以高濃度 (5000 ppm)的漂白水進行去汙，再以清潔劑或肥皂和清水移 除髒汙與有機物質，並接續使用濕抹布及合適的消毒劑執行 有效的環境清潔消毒。

Risk of Death in Patients Hospitalized for COVID-19 vs Seasonal Influenza in Fall-Winter 2022-2023

	Death rate at 30 d, % (95% CI)		Excess deaths at 30 d, % (95% CI)	Hazard ratio (95% CI)	*P* value for interaction
	COVID-19	Influenza			
Age, y					
≤65	1.29 (0.77-1.82)	1.33 (0.46-2.20)	-0.04 (-1.06 to 0.98)	0.97 (0.45-2.11)	Reference
>65	6.42 (5.85-6.98)	3.66 (2.77-4.54)	2.76 (1.71 to 3.81)	1.78 (1.37-2.31)	.10
COVID-19 vaccination status					
Unvaccinated	8.75 (7.46-10.01)	3.86 (3.09-4.63)	4.88 (3.39 to 6.37)	2.32 (1.80-3.00)	Reference
1 or 2 doses of vaccine	6.23 (5.22-7.23)	3.79 (3.03-4.56)	2.44 (1.17 to 3.70)	1.66 (1.28-2.17)	.009
Boosted	5.18 (4.55-5.79)	3.77 (3.00-4.53)	1.41 (0.43 to 2.39)	1.38 (1.09-1.76)	<.001
SARS-CoV-2 infection					
Primary infection	6.14 (5.58-6.69)	3.76 (2.99-4.51)	2.38 (1.44 to 3.32)	1.65 (1.32-2.08)	Reference
Reinfection	5.11 (4.11-6.09)	3.85 (3.08-4.62)	1.26 (0.00 to 2.52)	1.34 (1.01-1.78)	.15
Outpatient COVID-19 antiviral treatment					
No	6.03 (5.53-6.53)	3.75 (2.99-4.51)	2.28 (1.37 to 3.19)	1.63 (1.30-2.04)	Reference
Yes	4.81 (2.49-7.07)	3.81 (3.04-4.57)	1.01 (-1.41 to 3.42)	1.27 (0.75-2.16)	.42
Overall	5.97 (5.48-6.46)	3.75 (2.98-4.50)	2.23 (1.32 to 3.13)	1.61 (1.29-2.02)	





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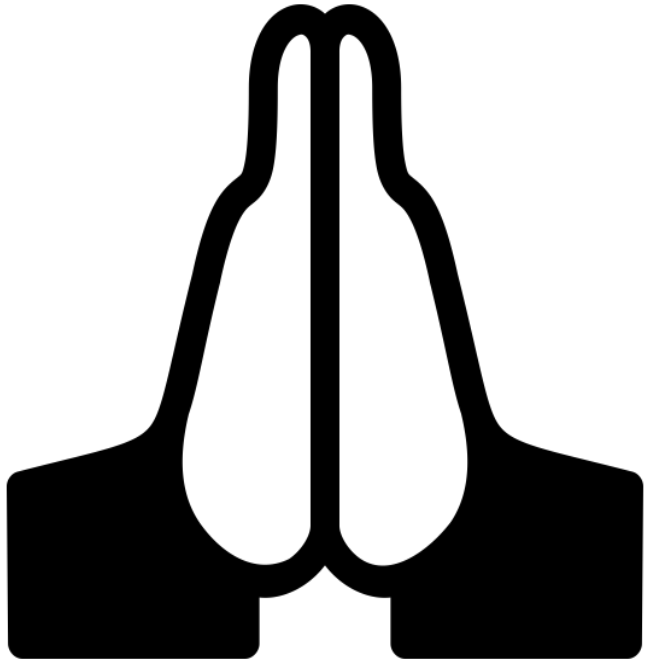

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