

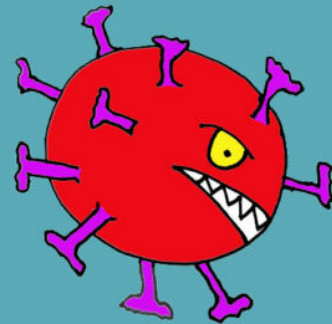
COVID-19 Update

Dr Mark Cunningham-Hill

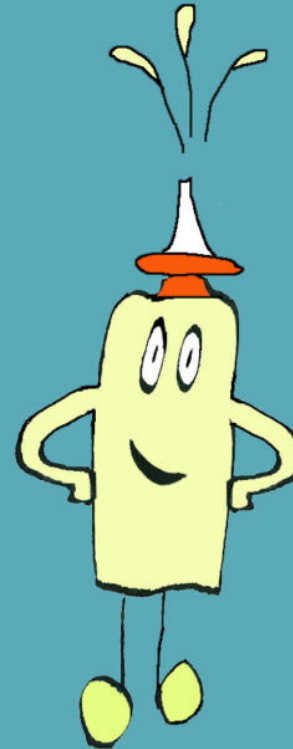
Medical Director NEBGH

Monday, October 3rd, 2022

I'M NOT
SCARED OF YOU,
LITTLE JAB!



I AM NO
JAB!



Statistically-Funny.blogspot.com

Boston

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Sterilizing Immunity

- Sterilizing immunity is a unique immune status, which prevents effective virus infection into the host
- It is different from the immunity that allows infection but with subsequent successful eradication of the virus – Effective Immunity



Mucosal Vaccines

- 4 mucosal Covid vaccines currently authorized for use:
 - First one was Razi Cov Pars, an intranasal protein unit vaccine (Iran)
 - Sputnik Nasal – 2 dose version of the Sputnik vaccine (Russia)
 - CanSino's inhaled vaccine - Convidecia Air (China)
 - iNCOVACC – intranasal version of ChAd-SARS-CoV-2-S manufactured by Bharat Biotech (India)
- 3 possibly reaching authorization in 2022 or early next year:
 - An intranasal viral vector vaccine from Beijing Wantai BioPharm
 - Mambisa, an intranasal protein subunit vaccine from Cuba
 - Patria, an intranasal viral vector vaccine from Mexico, using a vaccine developed in the US
- Later:
 - 2 vaccines developed in the US, a live attenuated intranasal vaccine from Codagenix, and a viral vector vaccine (adenovirus-based) in tablet form from Vaxart

Data



- Reported data from clinical trials is limited
- China has published data on its Phase 1 and 2 trails for Convidecia Air:
 - Response after inhaled version was slower but longer-lasting than injected (which peaked then declined from day 14),
 - Better for Omicron though not as good for original virus.
 - No measure of mucosal immunity used
- BBV154 (iNCOVACC), Viral vector (adenovirus), Bharat Biotech (India)
 - Small amount of neutralizing antibody data only,
 - Lower than for Covaxin on day of administration but higher on day 42.
 - Reportedly satisfactory for Beta, Delta, and Omicron, but no data provided. Reportedly prevents infection in upper airways, but no data provided.
 - Adverse events rate very
- Razi Cov Pars, Protein subunit (Iran) - 41,128 people Razi Cov Pars vs Sinopharm:
 - There were no hospitalizations for Covid in the Razi Cov Pars group and 5 in the Sinopharm group
 - The rate of Covid was reportedly more than twice as high in the Sinopharm group

**THIS WAY OUT
OF THE PANDEMIC**



DR CARLISLE MADE
(JUMPER)

**VACCINATE
THE WORLD**
#EndThePandemic

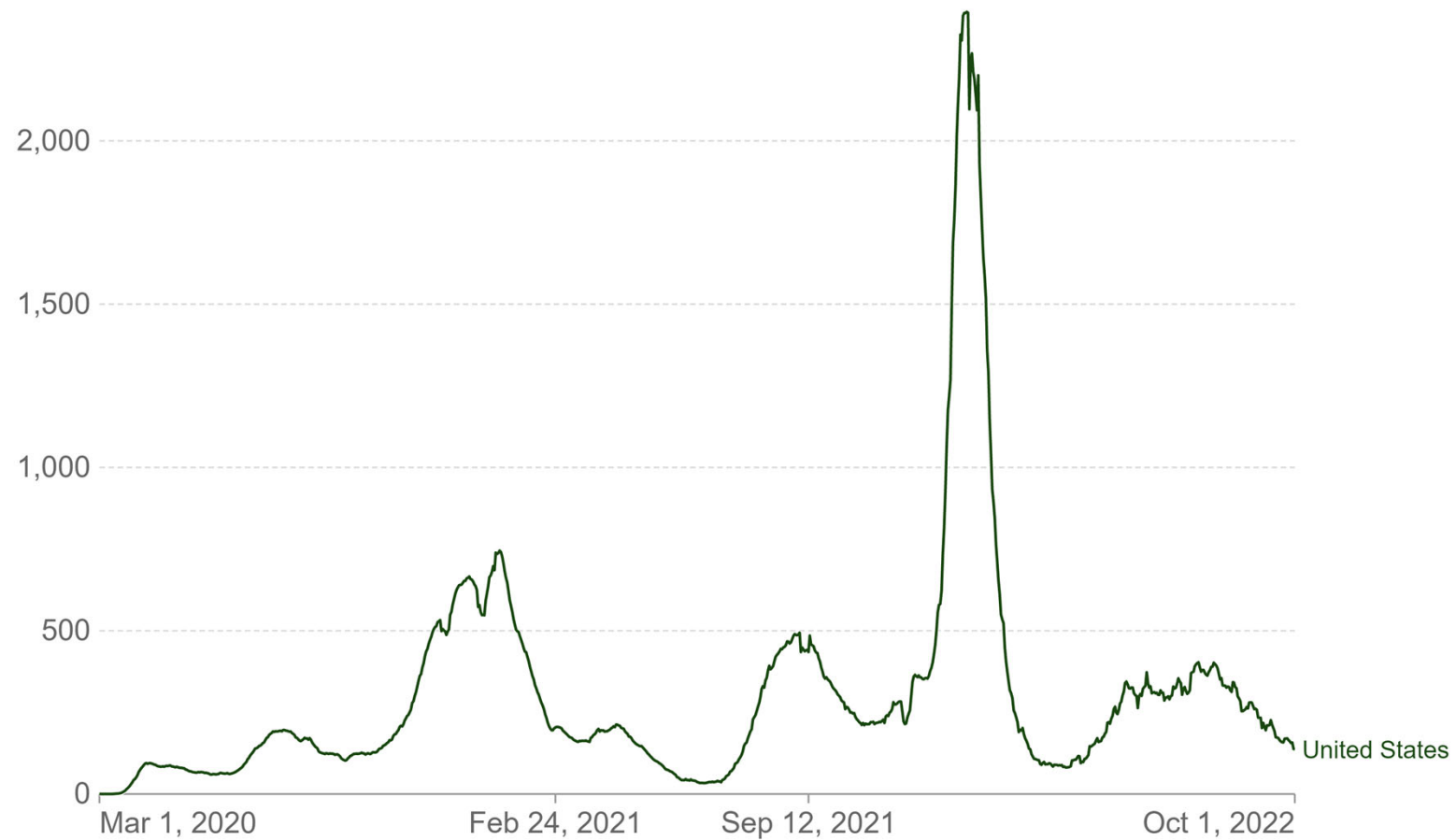
ONE



Daily new confirmed COVID-19 cases per million people

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.

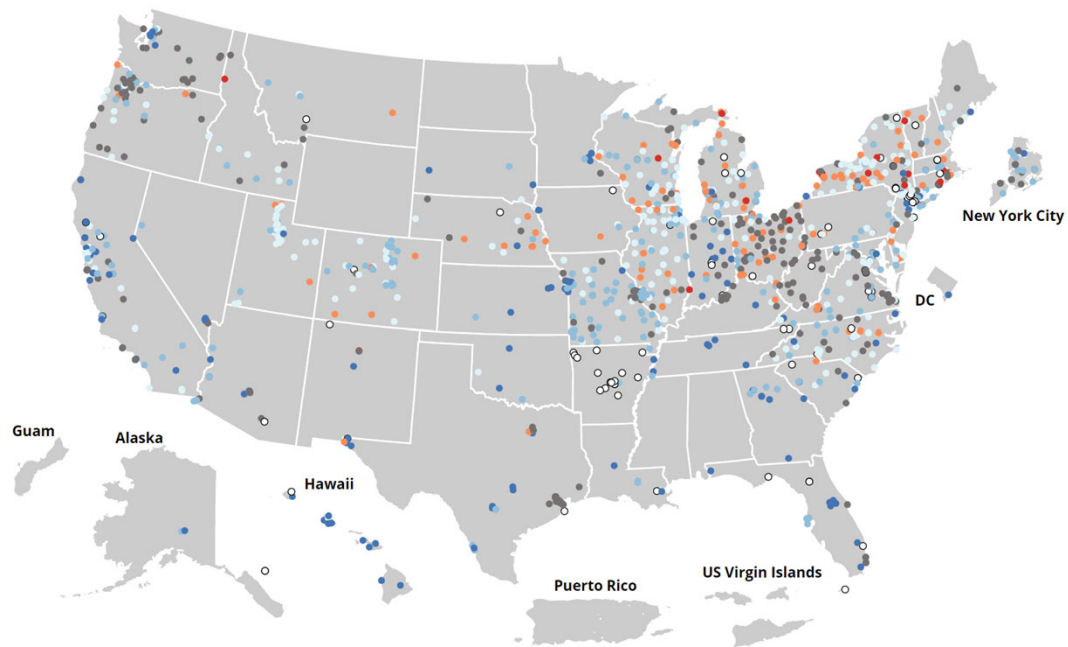
Our World
in Data



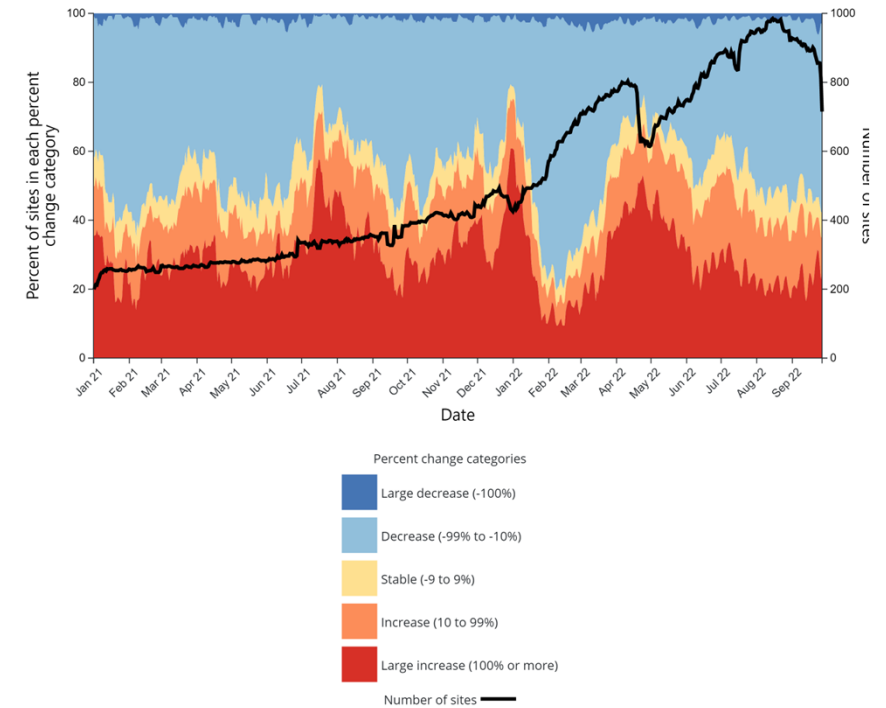
Source: Johns Hopkins University CSSE COVID-19 Data

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Wastewater



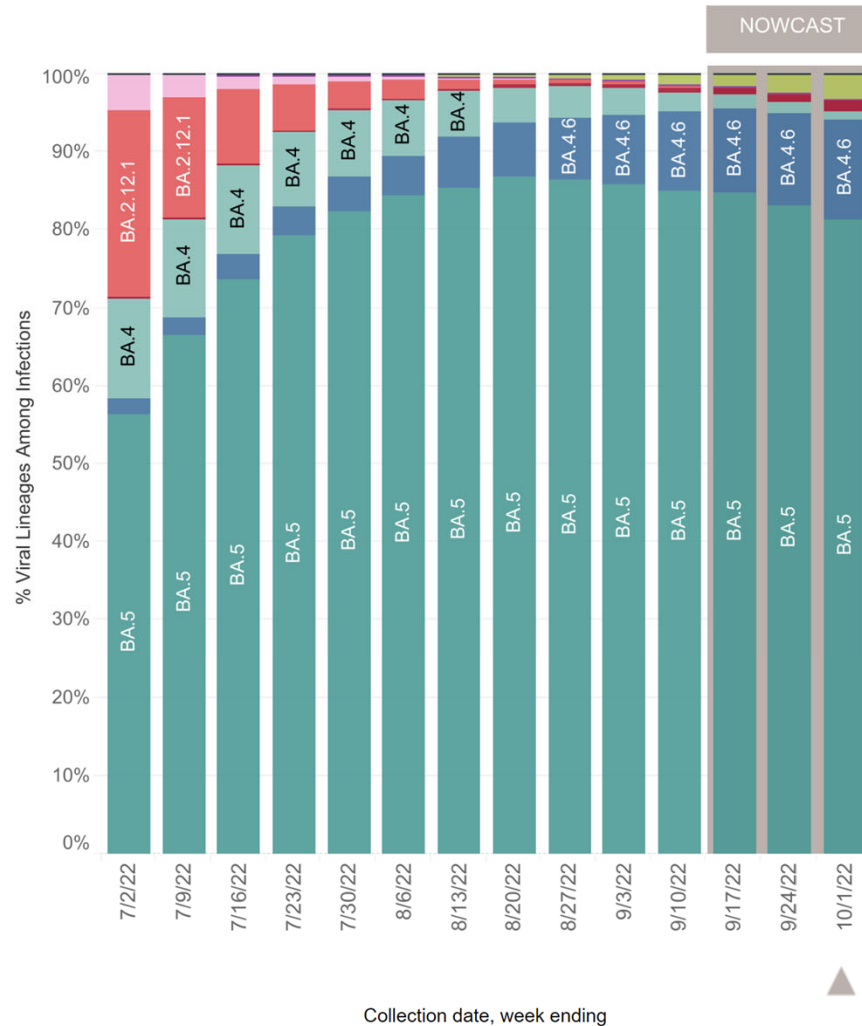
Percent of sites in each percent change category over time, United States



<https://covid.cdc.gov/covid-data-tracker/#wastewater-surveillance>

United States: 6/26/2022 – 10/1/2022

United States: 9/25/2022 – 10/1/2022 NOWCAST



USA					
WHO label	Lineage #	US Class	%Total	95%PI	
Omicron	BA.5	VOC	81.3%	79.6-83.0%	
	BA.4.6	VOC	12.8%	11.5-14.1%	
	BF.7	VOC	3.4%	2.6-4.4%	
	BA.2.75	VOC	1.4%	1.1-1.9%	
	BA.4	VOC	1.1%	1.0-1.2%	
	BA.2.12.1	VOC	0.0%	0.0-0.0%	
	BA.2	VOC	0.0%	0.0-0.0%	
	B.1.1.529	VOC	0.0%	0.0-0.0%	
	BA.1.1	VOC	0.0%	0.0-0.0%	
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%	
Other	Other*		0.0%	0.0-0.0%	

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.

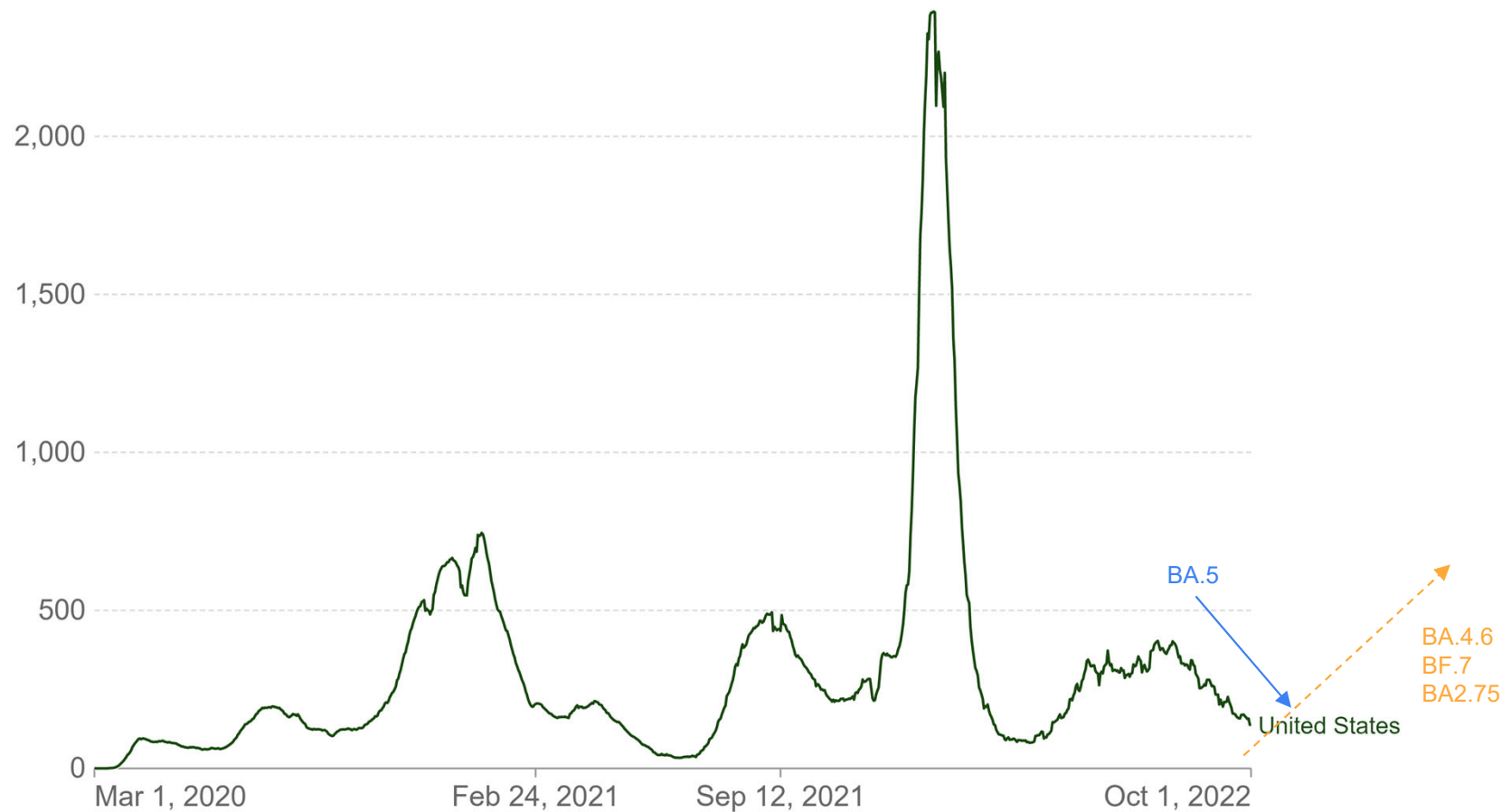
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

AY.1-AY.133 and their sublineages are aggregated with B.1.617.2. BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. Except BA.2.12.1, BA.2.75 and their sublineages, BA.2 sublineages are aggregated with BA.2. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Except BF.7, sublineages of BA.5 are aggregated to BA.5. Sublineages of BA.1.1 and BA.2.75 are aggregated to the parental BA.1.1 and BA.2.75 respectively. Previously, BA.2.75 was aggregated with BA.2, and BF.7 was aggregated with BA.5. Lineages BA.4.6, BF.7, and many BA.2.75 contain the spike substitution R346T.

Daily new confirmed COVID-19 cases per million people

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.

Our World
in Data



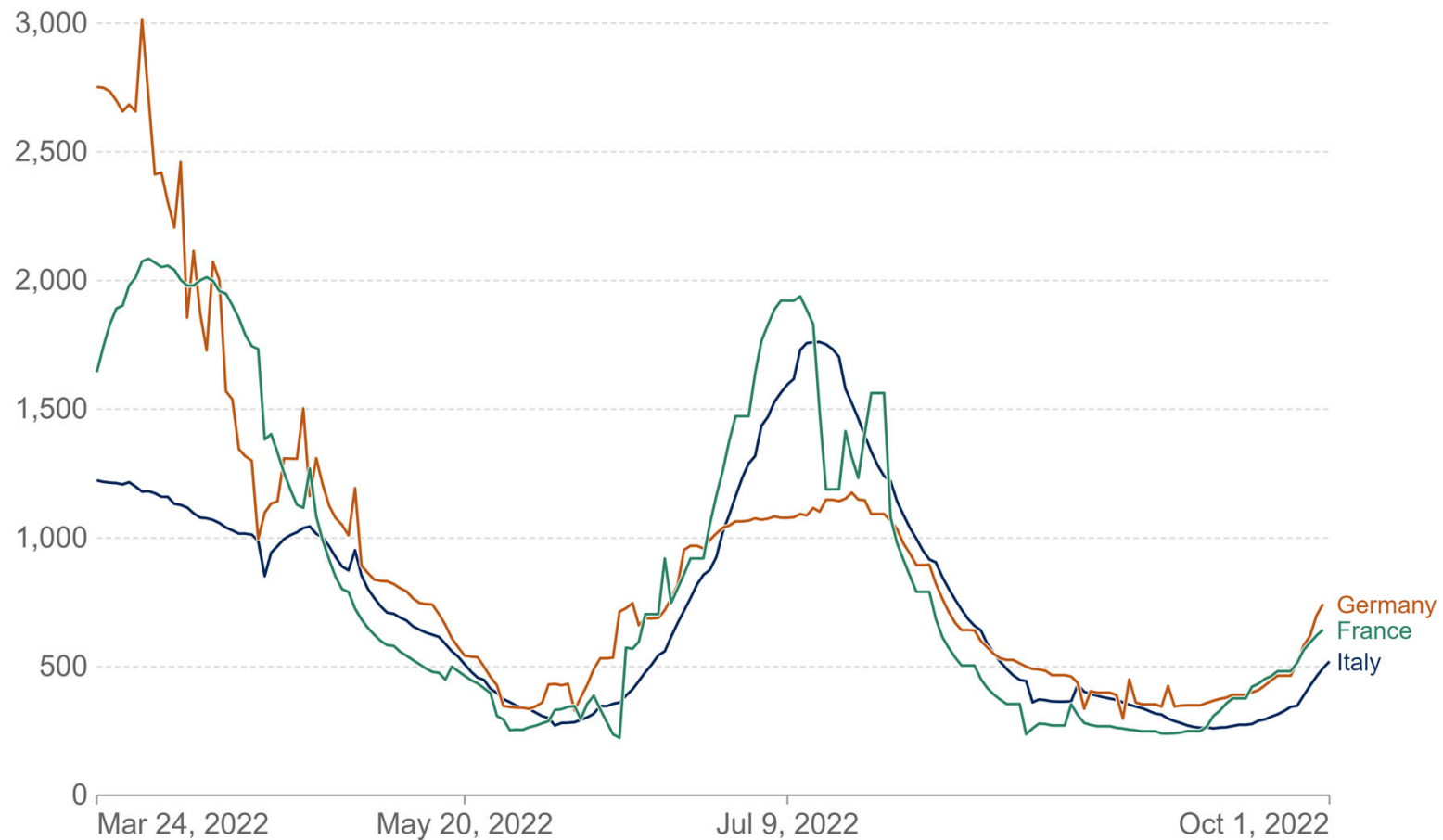
Source: Johns Hopkins University CSSE COVID-19 Data

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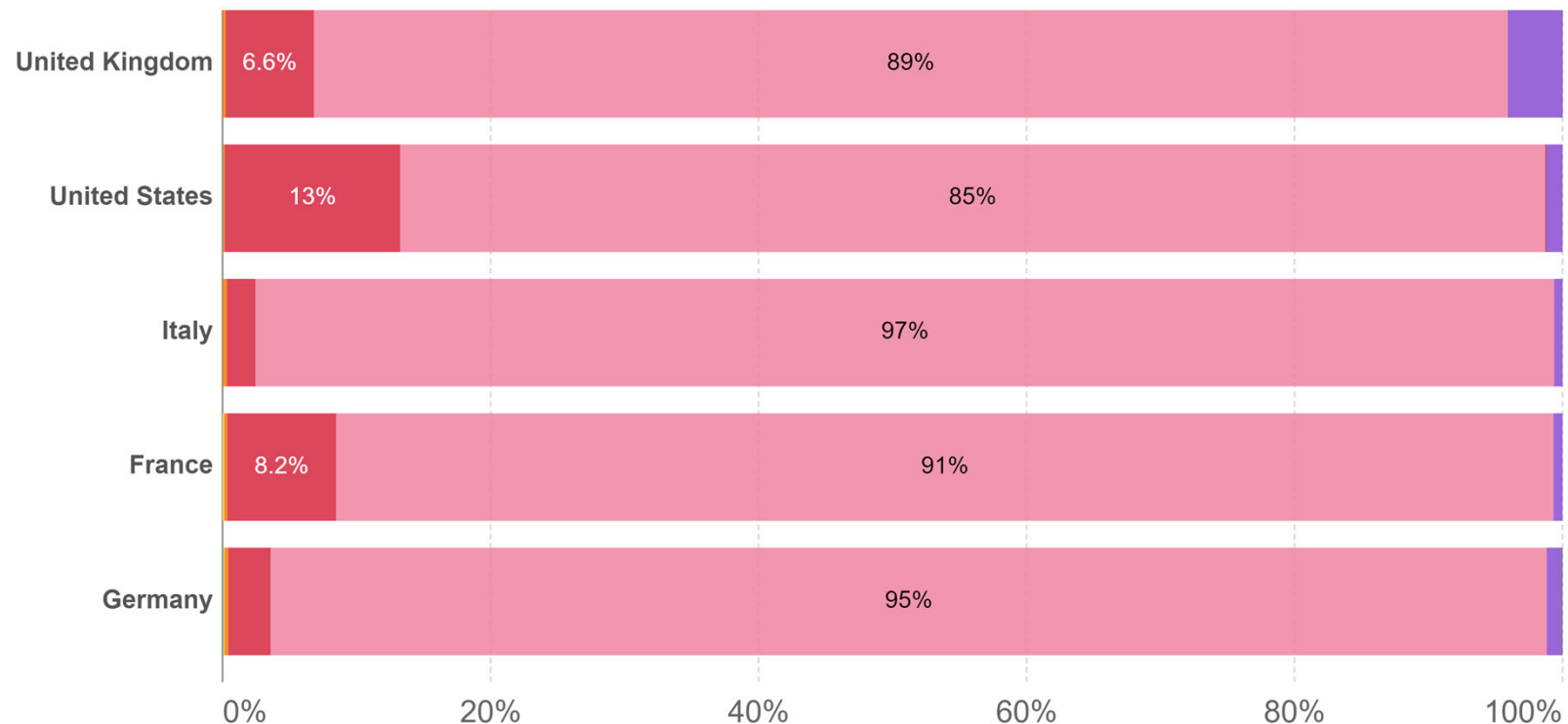
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SARS-CoV-2 sequences by variant, Sep 26, 2022

Our World
in Data

The share of analyzed sequences in the preceding two weeks that correspond to each variant group.

■ Alpha
 ■ Beta
 ■ Gamma
 ■ Delta
 ■ Omicron (BA.1)
 ■ Omicron (BA.2)
 ■ Omicron (BA.4)
 ■ Omicron (BA.5)
 ■ Omicron (BA.2.12.1)
 ■ Omicron (BA.2.75)
 ■ Others



Source: GISAID, via CoVariants.org

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Note: This share may not reflect the complete breakdown of cases, since only a fraction of all cases are sequenced. Recently-discovered or actively-monitored variants may be overrepresented, as suspected cases of these variants are likely to be sequenced preferentially or faster than other cases.



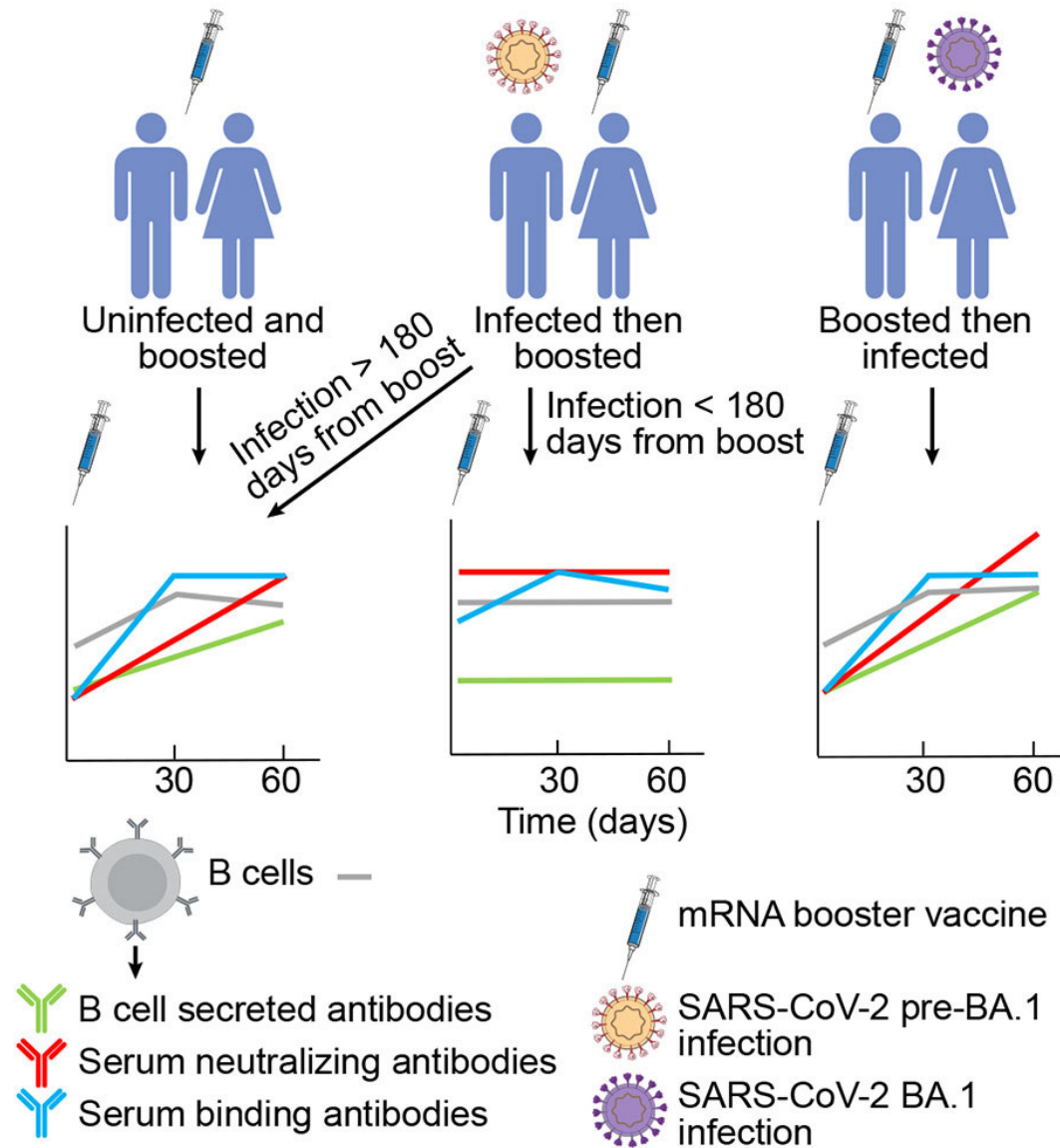
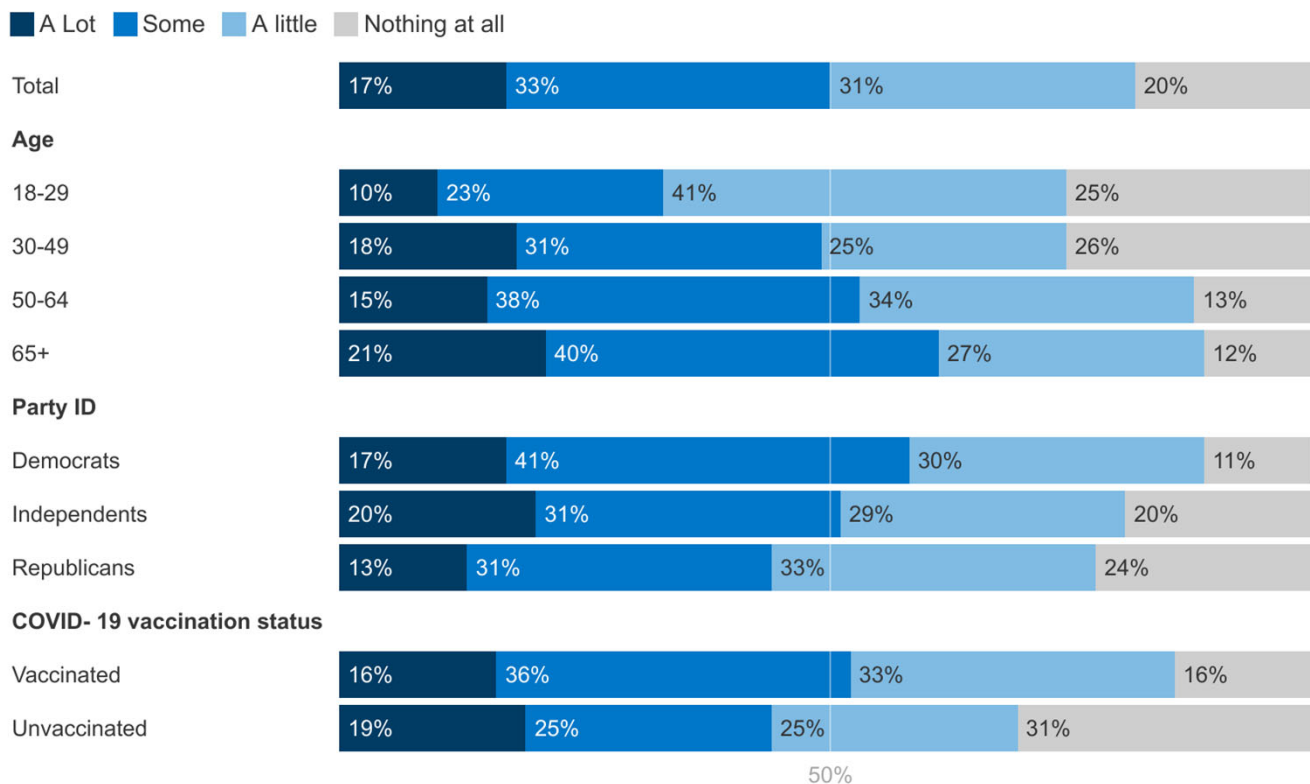


Figure 1

Half Of Adults Have Heard "A Lot" Or "Some" About New, Updated COVID-19 Booster Dose

How much, if anything, have you read or heard about a new, updated COVID-19 vaccine booster that targets both the newer omicron variants and the original strain of the virus?



NOTE: Vaccinated adults are those who have received at least one dose of a COVID-19 vaccine. See topline for full question wording.

SOURCE: KFF COVID-19 Vaccine Monitor (Sept 15-26, 2022)

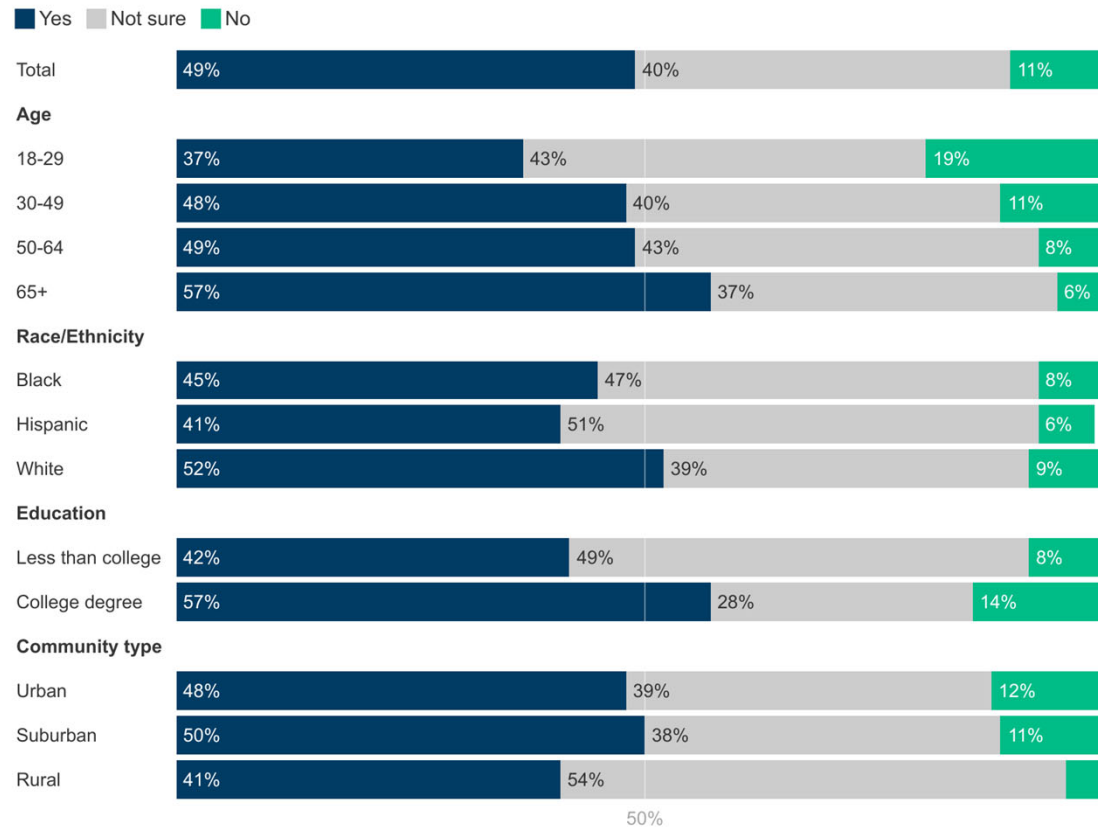
KFF COVID-19
Vaccine Monitor

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Figure 2

Two In Five Fully Vaccinated Adults Aren't Sure If The Updated COVID-19 Booster Dose Is Recommended For Them

As far as you know, has the CDC recommended vaccinated people like you get the new, updated COVID-19 booster, has it not yet recommended the new booster for people like you, or are you not sure?



NOTE: Among those who are fully vaccinated or fully vaccinated and received at least one booster dose, representing 73% of the population. See topline for full question wording.

SOURCE: KFF COVID-19 Vaccine Monitor (Sept 15-26, 2022)

KFF COVID-19
Vaccine Monitor

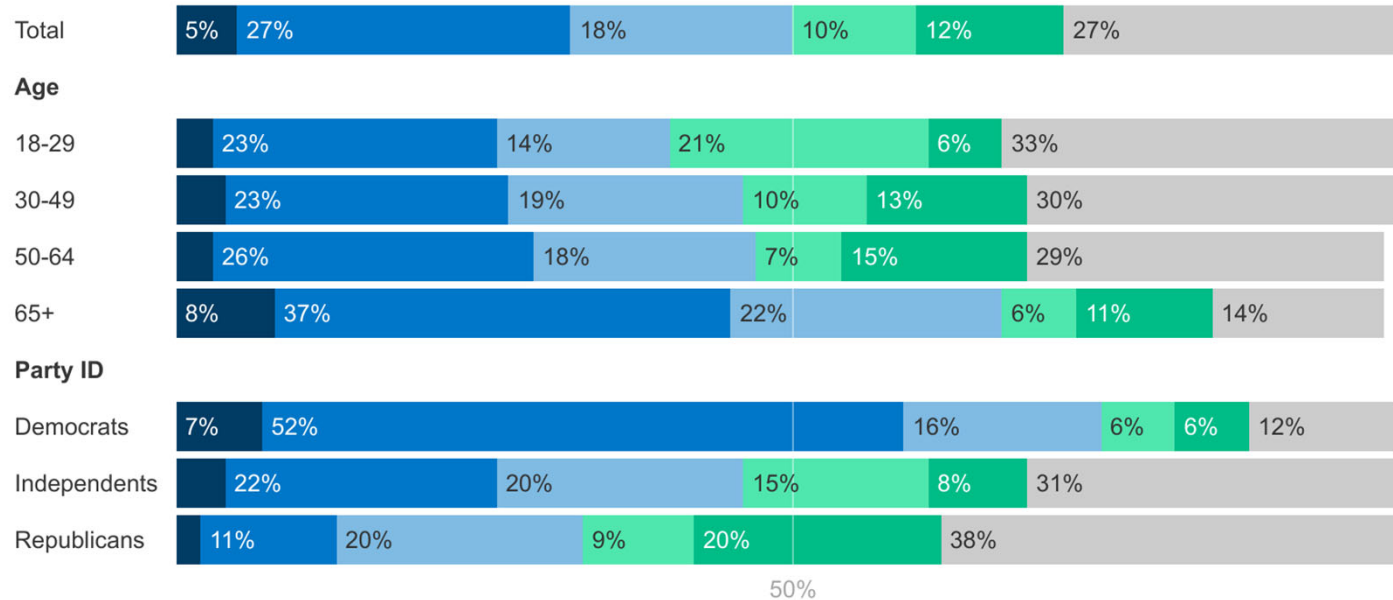
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Figure 3

A Third Of Adults Say They Have Either Gotten The Updated COVID-19 Booster Or Are Planning To "As Soon As Possible"

Have you received a dose of the new, updated COVID-19 booster that has been available since early September, or not? If not, as you may know, the CDC currently recommends that all adults who have received a COVID-19 vaccine get a dose of the new, updated COVID-19 booster after a certain amount of time has passed since their initial vaccination or last booster dose. Do you think you will...?

■ Got updated booster
 ■ As soon as possible
 ■ Wait and see
 ■ Only if required
 ■ Definitely not get updated booster
 ■ Not eligible for updated booster (unvaccinated or partially vaccinated)



NOTE: See topline for full question wording.

SOURCE: KFF COVID-19 Vaccine Monitor (Sept 15-26, 2022)

KFF COVID-19
Vaccine Monitor

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People ages 12 years and older are recommended to receive 1 age-appropriate bivalent mRNA booster dose after completion of any FDA-approved or FDA-authorized monovalent primary series or previously received monovalent booster dose(s)



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Questions

Upcoming NEBGH virtual events:

- R f w # 9 # J X s # d o g # F r p h u # z l k # G h e # P d f n l q
- R f w # 4 # 0 P r o g d | # E 1 0 Z h h n d | # F R Y I G 0 4 < # X s g d w h # z 2 # G u 1 # P d u n # l w # d # w h v g d | \$
- Q r y 1 # : # 0 P r o g d | # E 1 0 Z h h n d | # F R Y I G 0 4 < # X s g d w h # z 2 # G u 1 # P d u n
- Q r y 1 # 3 Û D o p x d e # h p e h u k l s # P h h w l q
- Q r y 1 # 4 : Û X s # d o g # F r p h u # z l k # v d o g l # w h l q