Public health messaging and the impact of social media

Dr. Meghan Martin AKA "Dr.Beachgem10"

Pediatric Emergency Medicine

Objectives

- Discuss the changing ways that people get information
- Discuss the prevalence of social media use
- Evaluate how misinformation impacted public health measures during the Covd-19 pandemic
- Provide simple take aways to improve your social media performance

Disclosure

- I am on tiktok as Beachgem10, IG/Facebook/Youtube as Dr. Beachgem10
- I do get paid by some of these platforms based on video views and engagement, but my goal here is to educate about my experience with these platforms and the changing ways people consume information

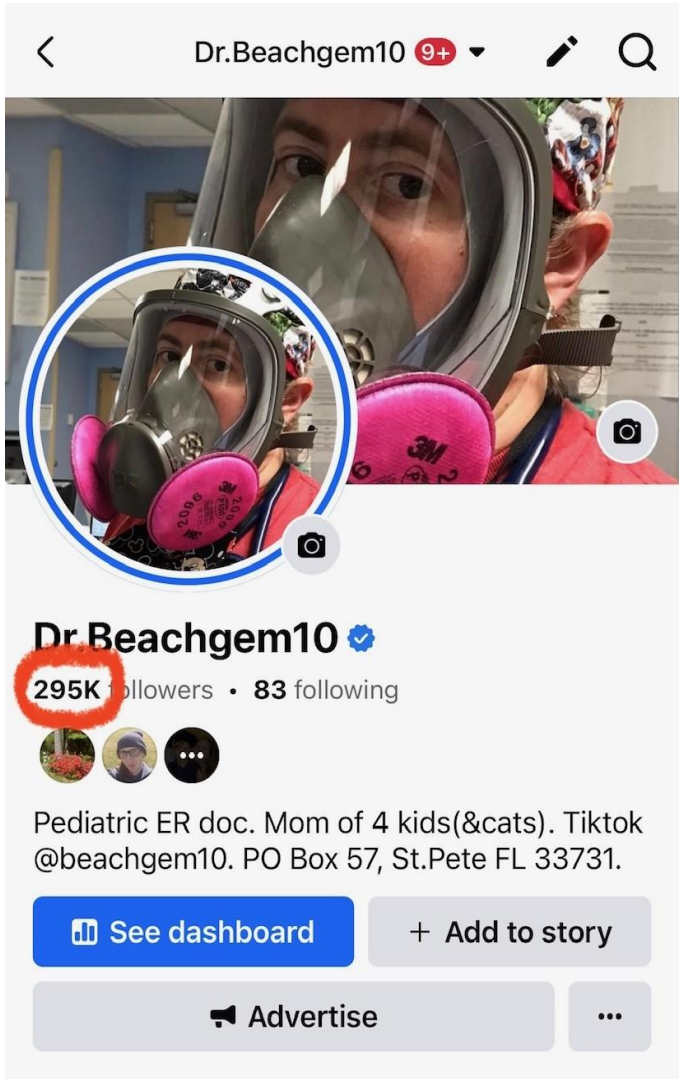
- I have no other financial disclosures
- There is some bias in this presentation
  - Poll data presented was collected very 'unscientifically'

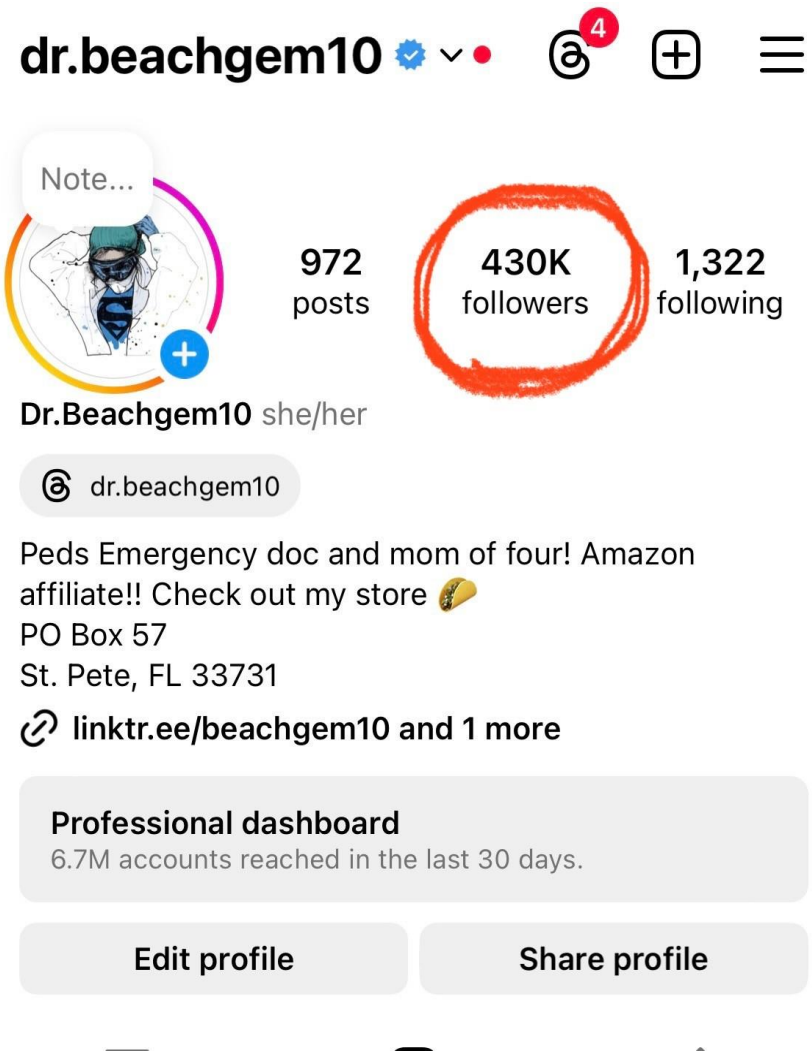
- I'm going to talk about Covid-19 vaccines

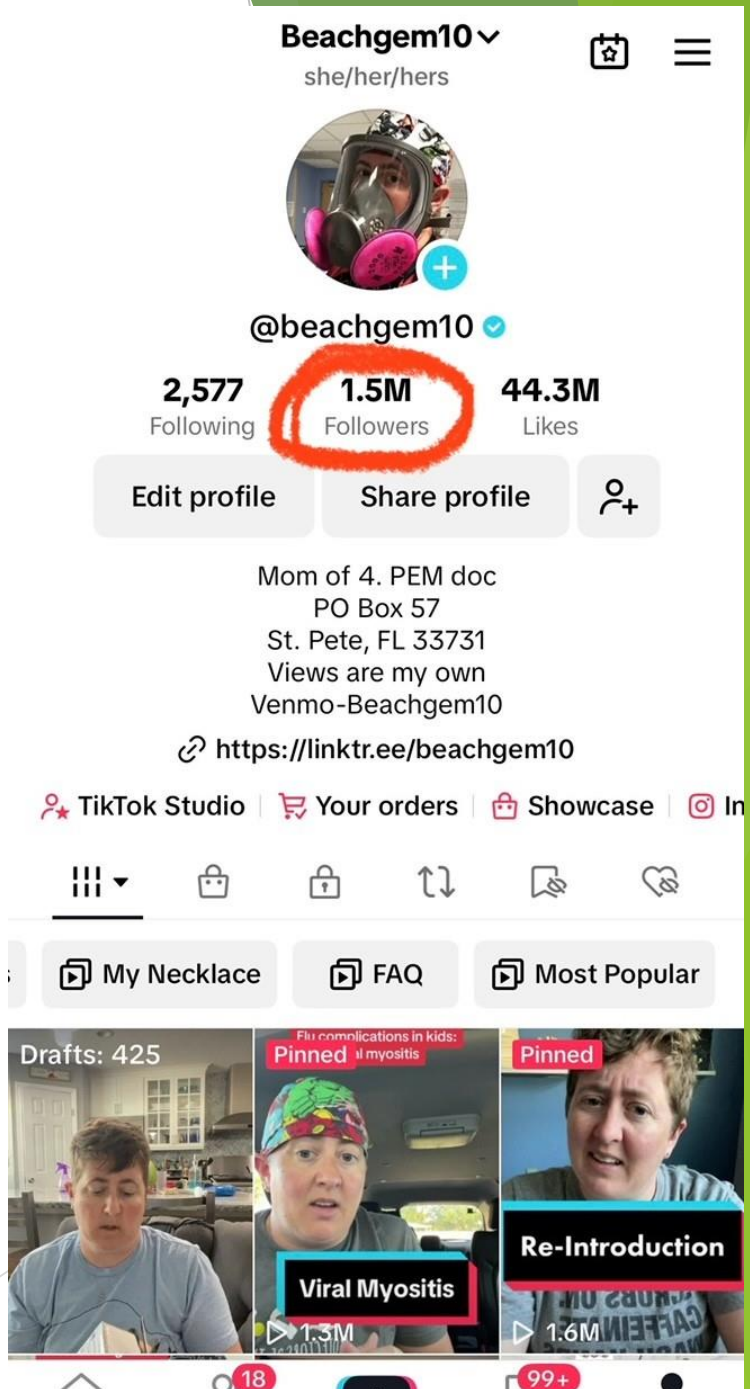
How did I end up here?

- I have no idea...
- Downloaded Tiktok June 2020
- Saw lots of videos anti-science & myth buster videos
- Quickly gained traction discussing the science of Covid-19, virus spread, mask use and myth busting misinformation
  - Often with my kids buzzing around
  - Wearing my scrub cap
  - Sometimes in the trauma room
- First viral video November 2020
  - 15K to 100K+ in 36 hours

And now…


Dr.Beachgem10 9+
Dr.Beachgem10
295K followers • 83 following
Pediatric ER doc. Mom of 4 kids(&cats). Tiktok @beachgem10. PO Box 57, St.Pete FL 33731.
See dashboard
Add to story
Advertise

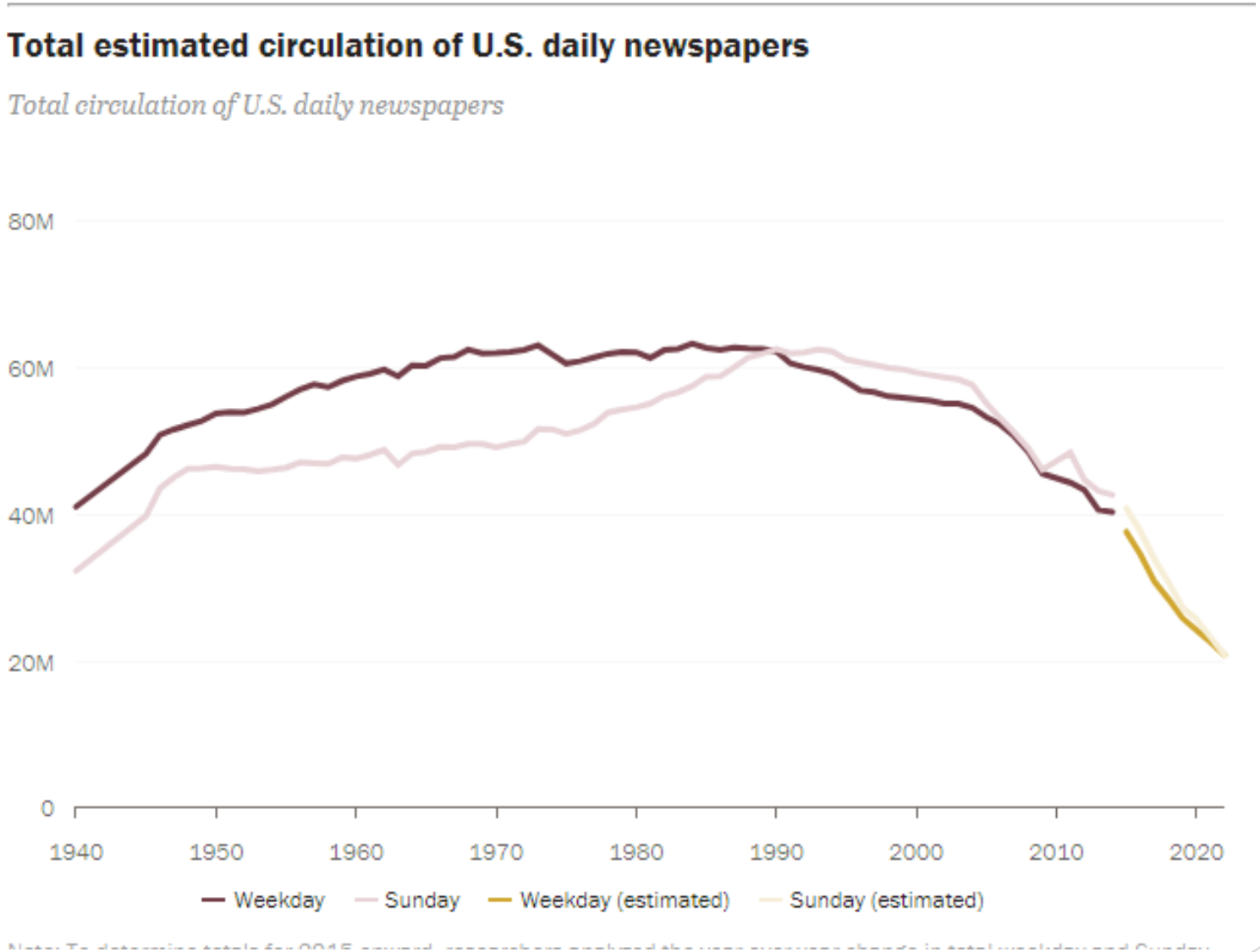

dr.beachgem10
Note...
972 posts
430K followers
1,322 following
Dr.Beachgem10 she/her
dr.beachgem10
Peds Emergency doc and mom of four! Amazon affiliate!! Check out my store
PO Box 57
St. Pete, FL 33731
linktr.ee/beachgem10 and 1 more
Professional dashboard
6.7M accounts reached in the last 30 days.
Edit profile
Share profile


Beachgem10
she/her/hers
@beachgem10
2,577 Following
1.5M Followers
44.3M Likes
Edit profile
Share profile
Mom of 4. PEM doc
PO Box 57
St. Pete, FL 33731
Views are my own
Venmo-Beachgem10
https://linktr.ee/beachgem10
TikTok Studio
Your orders
Showcase
My Necklace
FAQ
Most Popular
Drafts: 425
Pinned
Viral Myositis
1.3M
Pinned
Re-Introduction
1.6M

I think I'm a Creator?

- Post at least one video daily
  - Patient case presentations
  - "Talking head" education
  - "Lifestyle" and parenting
  - Dabble in cat content
- Monetizing on multiple platforms
- Several "viral" videos
  - "Grill Brush"
  - 400K+ followers
- Full "Bonus job" status

How has information been distributed in the past?

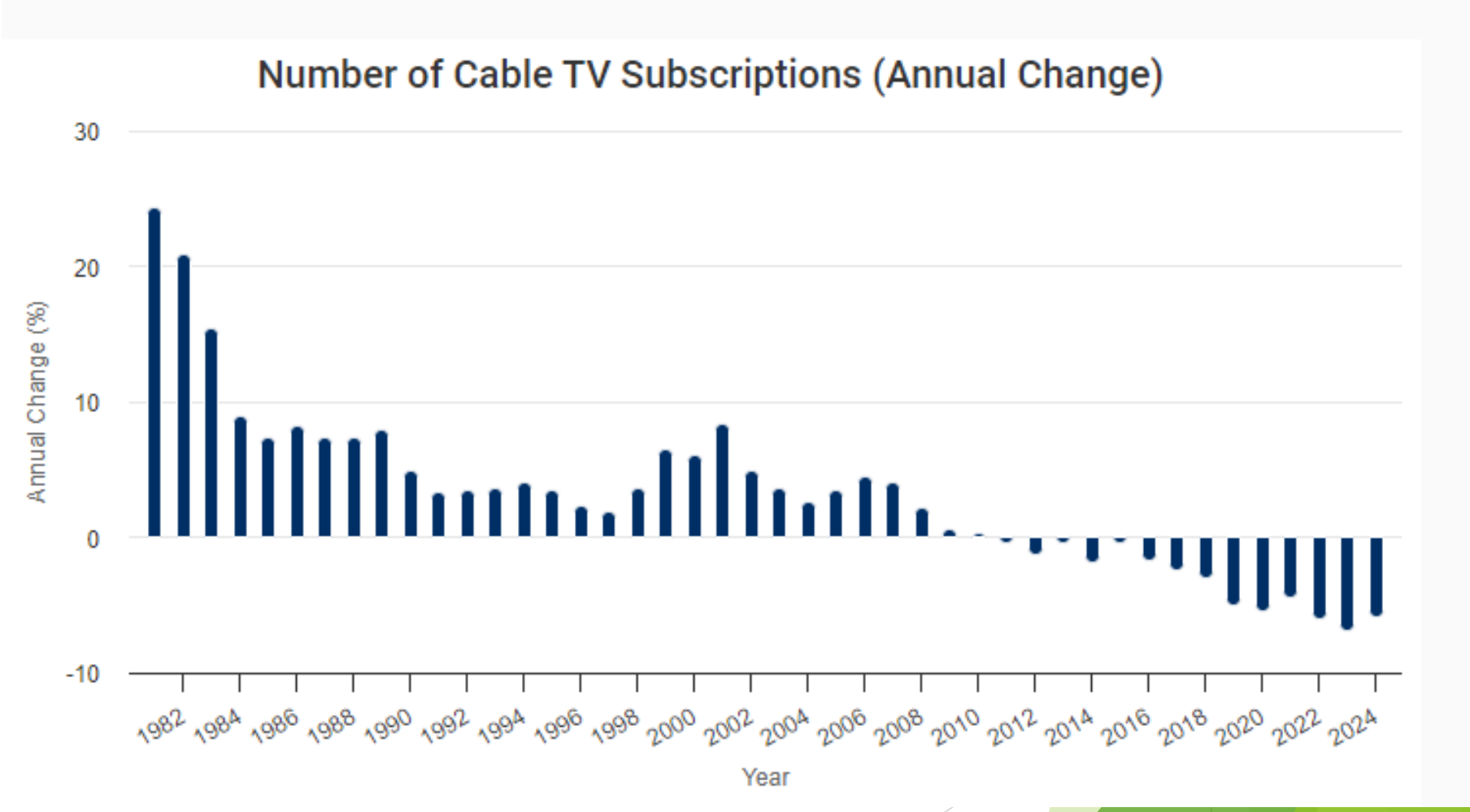


Newspaper circulation

https://www.pewresearch.org/journalism/fact-sheet/newspapers/

Ditching Cable?

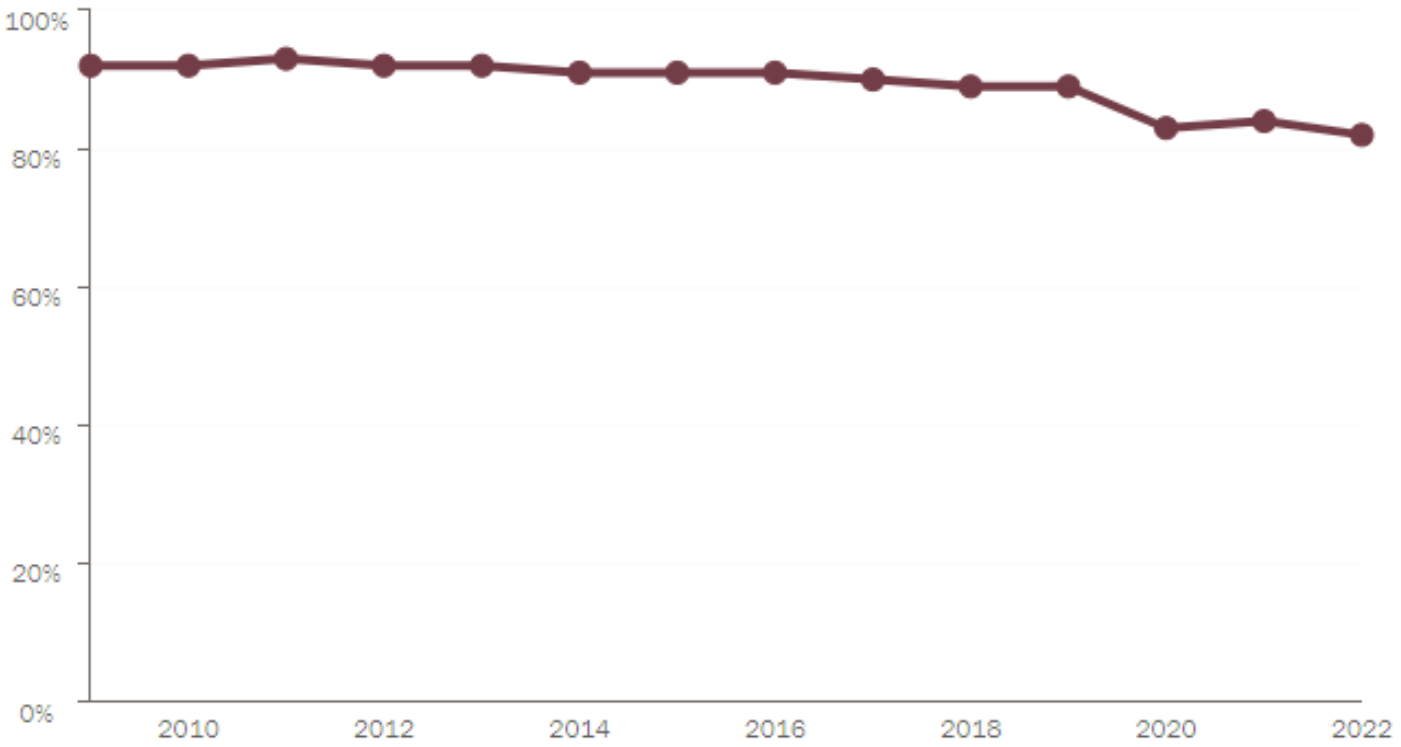
Trend of growth flops to trend of decline around 2010



https://www.ibisworld.com/us/bed/number-of-cable-tv-subscriptions/4625/

Weekly terrestrial radio listenership

% of Americans ages 12 and older who listen to terrestrial (AM/FM) radio in a given week



Source: Nielsen Audio RADAR 156, March 2023, publicly available via Radio Advertising Bureau.

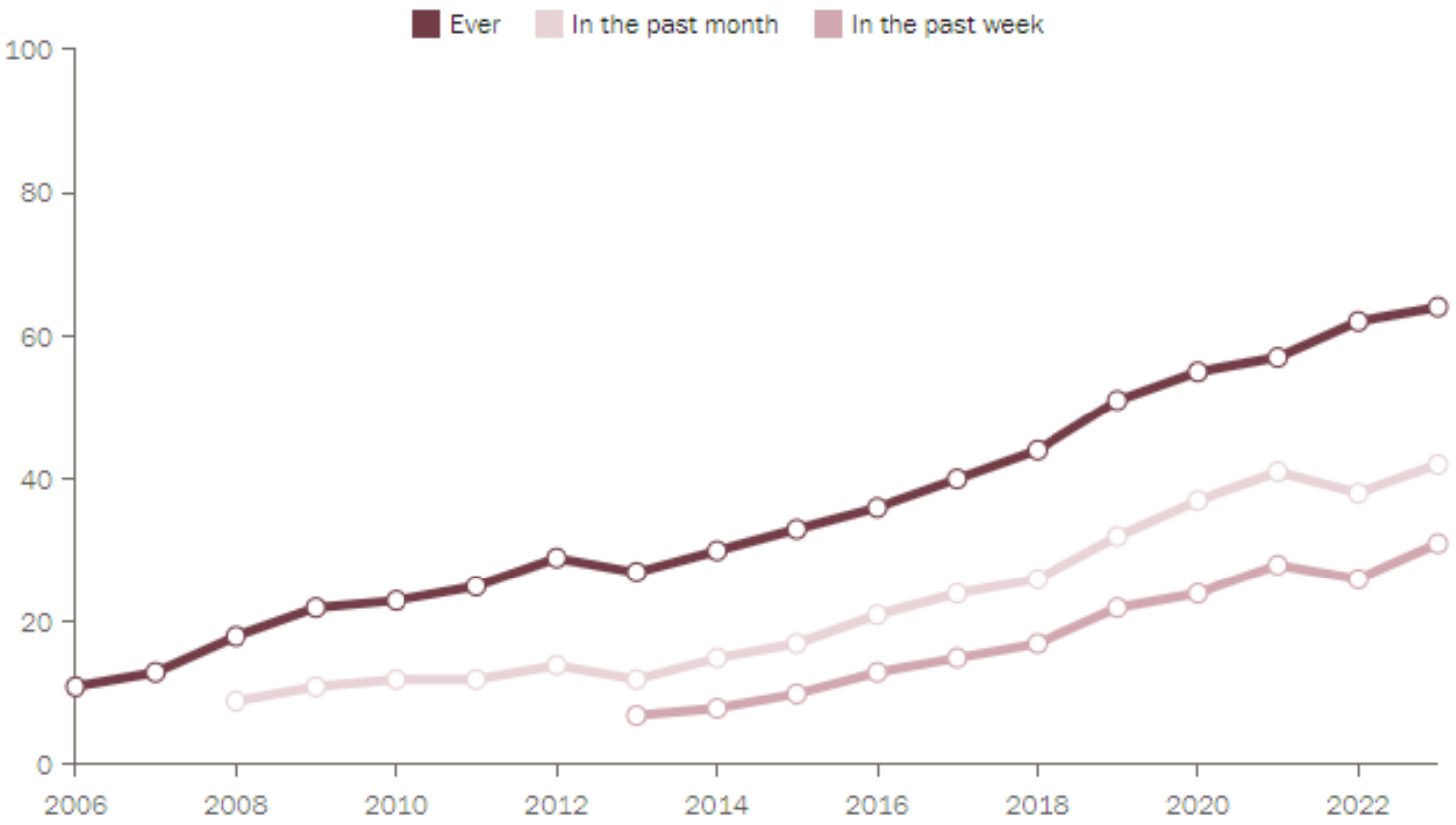
PEW RESEARCH CENTER

Relatively steady listenership, but showed a 10% decline over 13 years

https://www.pewresearch.org/journalism/fact-sheet/audio-and-podcasting/

Podcast listenership

% of Americans ages 12 and older who have listened to a podcast ...



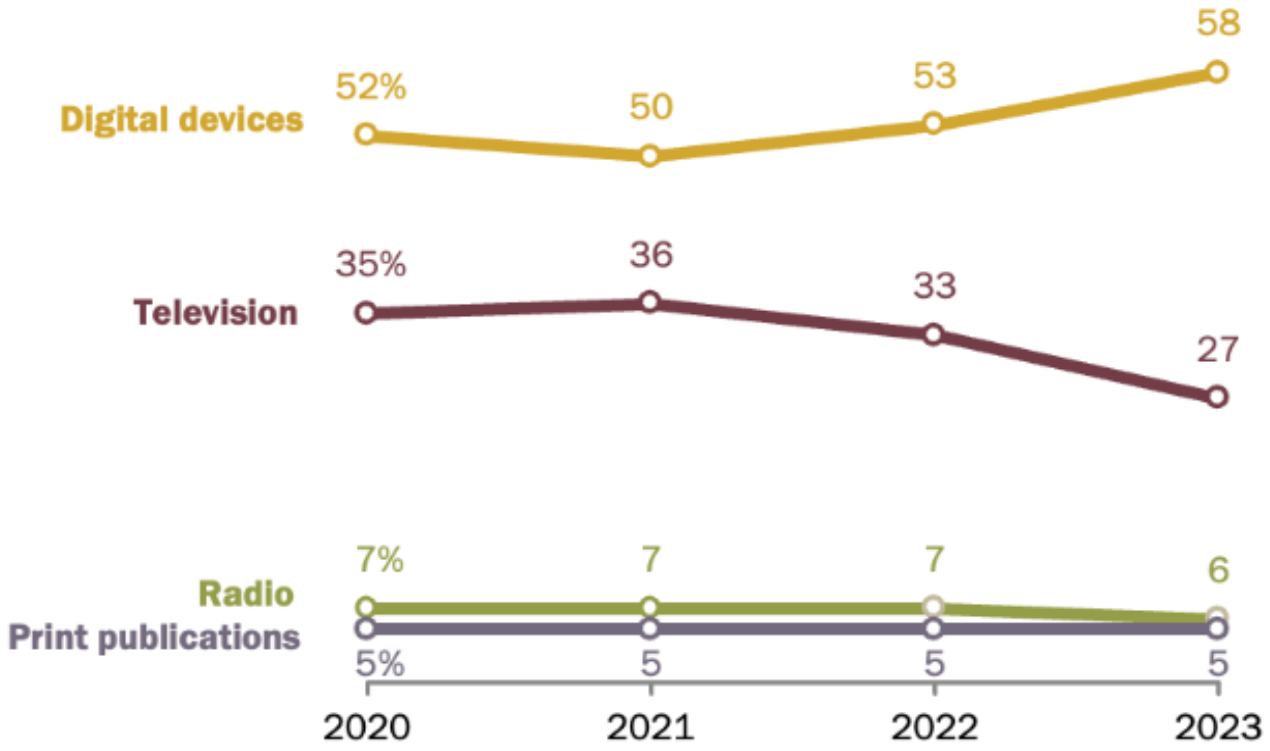
Note: Edison Research's survey is conducted in January/February of every year. Between 2014 to 2021, Edison Research partnered with Triton Digital to conduct this survey and produce "The Infinite Dial" report. Weekly podcast listening data was first reported in 2013.
Source: Edison Research, "The Infinite Dial 2023."

More podcast listenership among the younger population

https://www.pewresearch.org/journalism/fact-sheet/audio-and-podcasting/#:~:text=Weekly%20listenership%20dropped%20from%2089,by%20the%20Radio%20Advertising%20Bureau.

News platform preferences

*% of U.S. adults who **prefer** ____ for getting news*



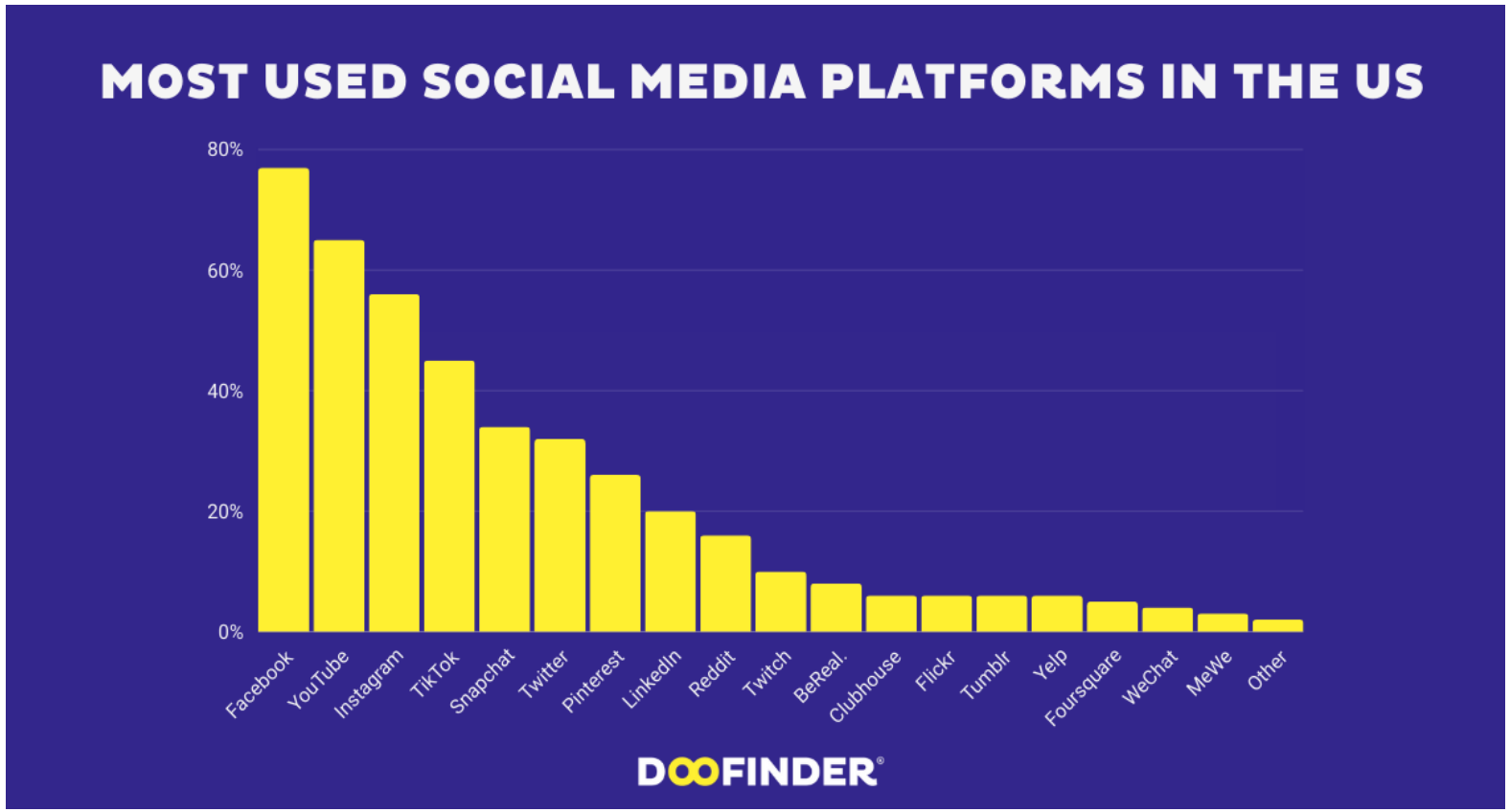
Source: Survey of U.S. adults conducted Sept. 25-Oct. 1, 2023.

https://www.pewresearch.org/journalism/fact-sheet/news-platform-fact-sheet/pj_2023-11-15_news-platforms_0-02-png/

Rise of social media

- Facebook was born February 2004, opened to the public in 2006
- Instagram was created Oct 2010
  - 25,000 users within 24 hours
- Twitter/X started in 2006, increased in popularity in 2007
- Youtube was born December 2005
  - Initially clips were limited to 100 megabytes or ~30 seconds
- TikTok born Sept 2016
  - Over 3 billion downloads and 1 billion active users

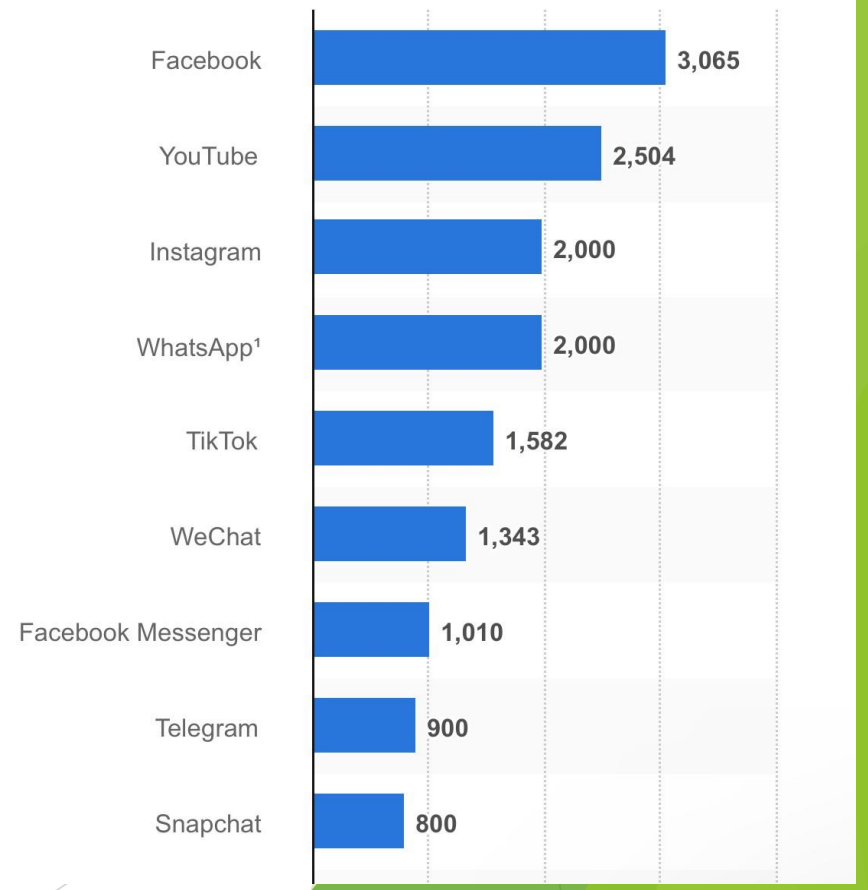
Social Media Platform Popularity



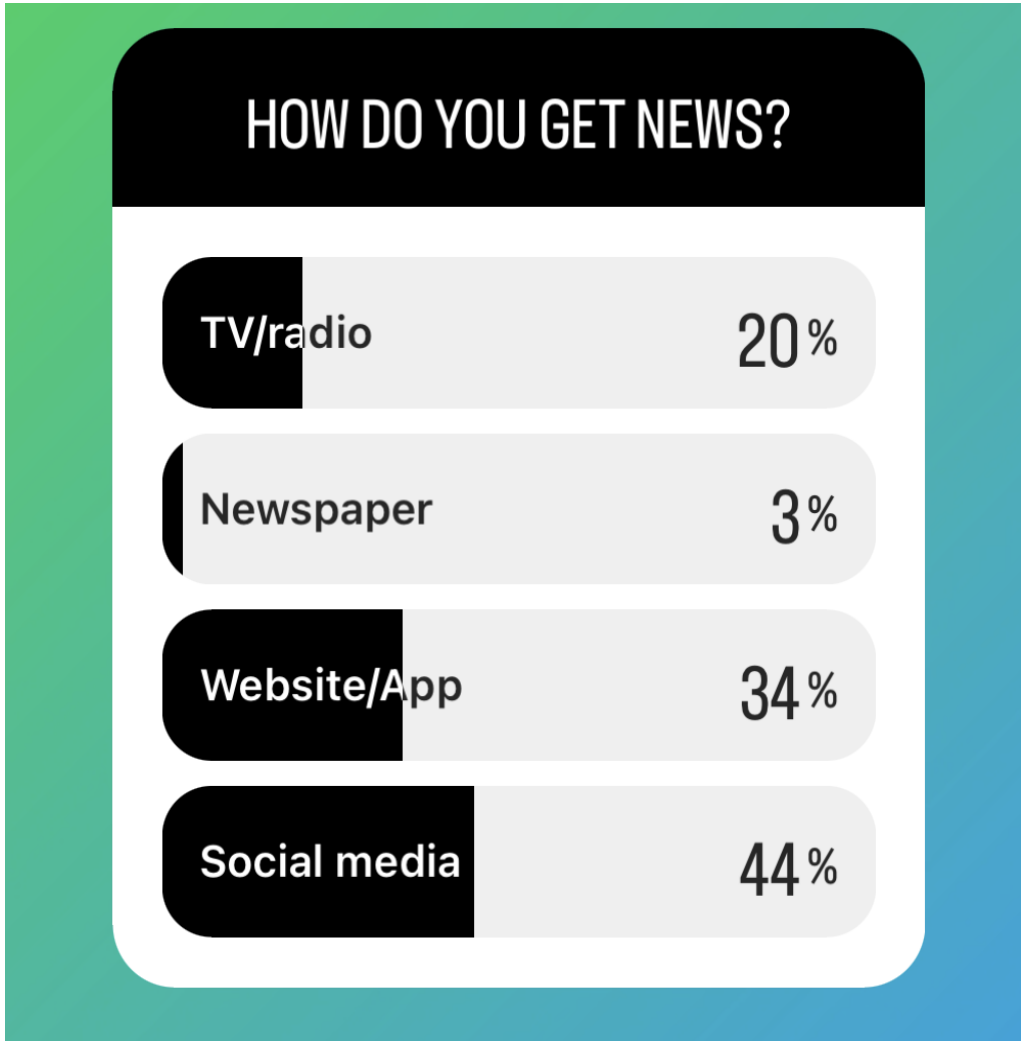
https://www.doofinder.com/en/statistics/most-popular-social-media-platforms-united-states

Most popular social networks worldwide as of April 2024, ranked by number of monthly active users

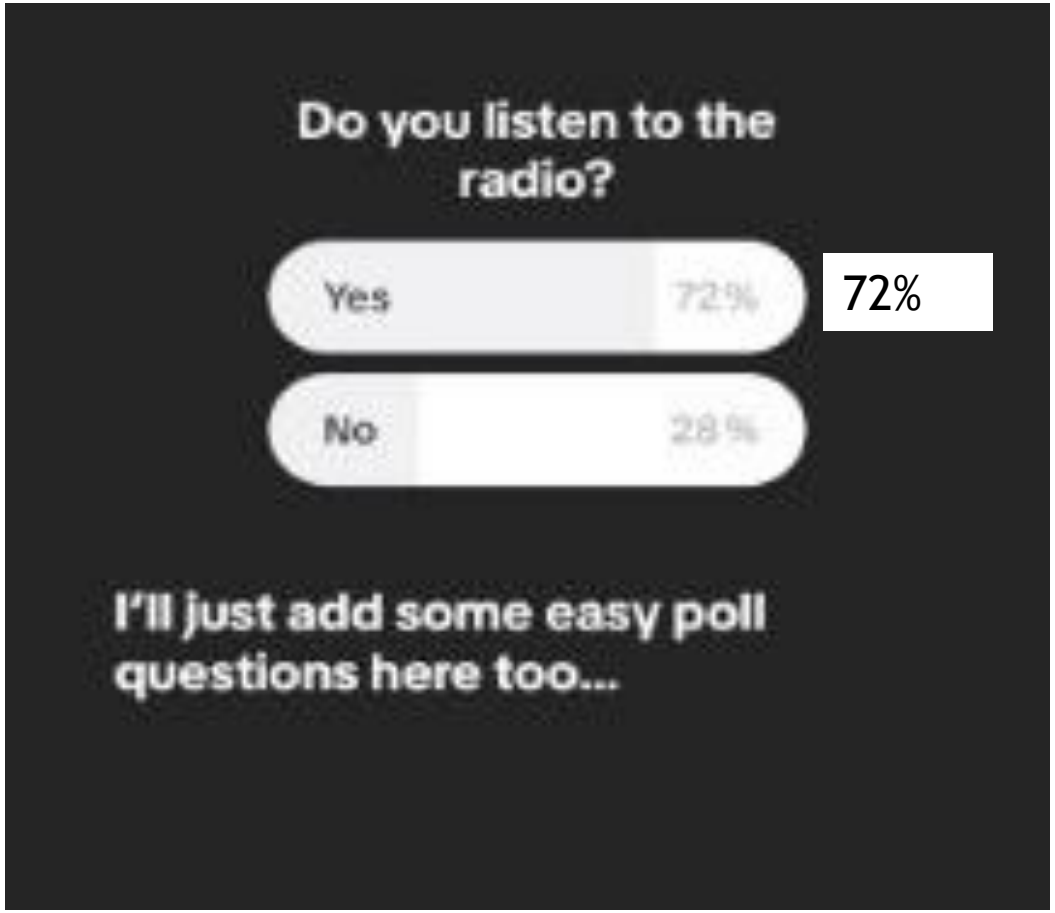
(in millions)



https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/



Admittedly 'unscientific' data



72%

41%

TikTok Responses

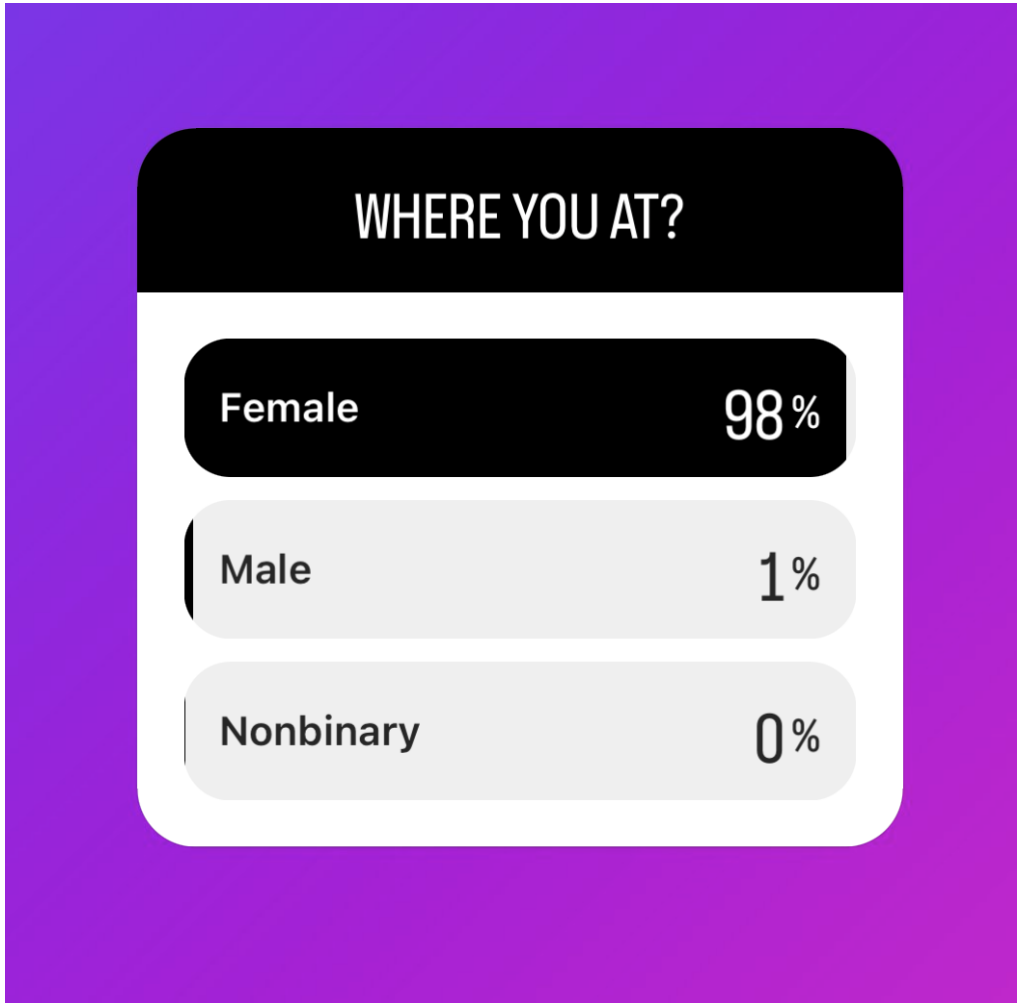
Wow, that was unscientific...

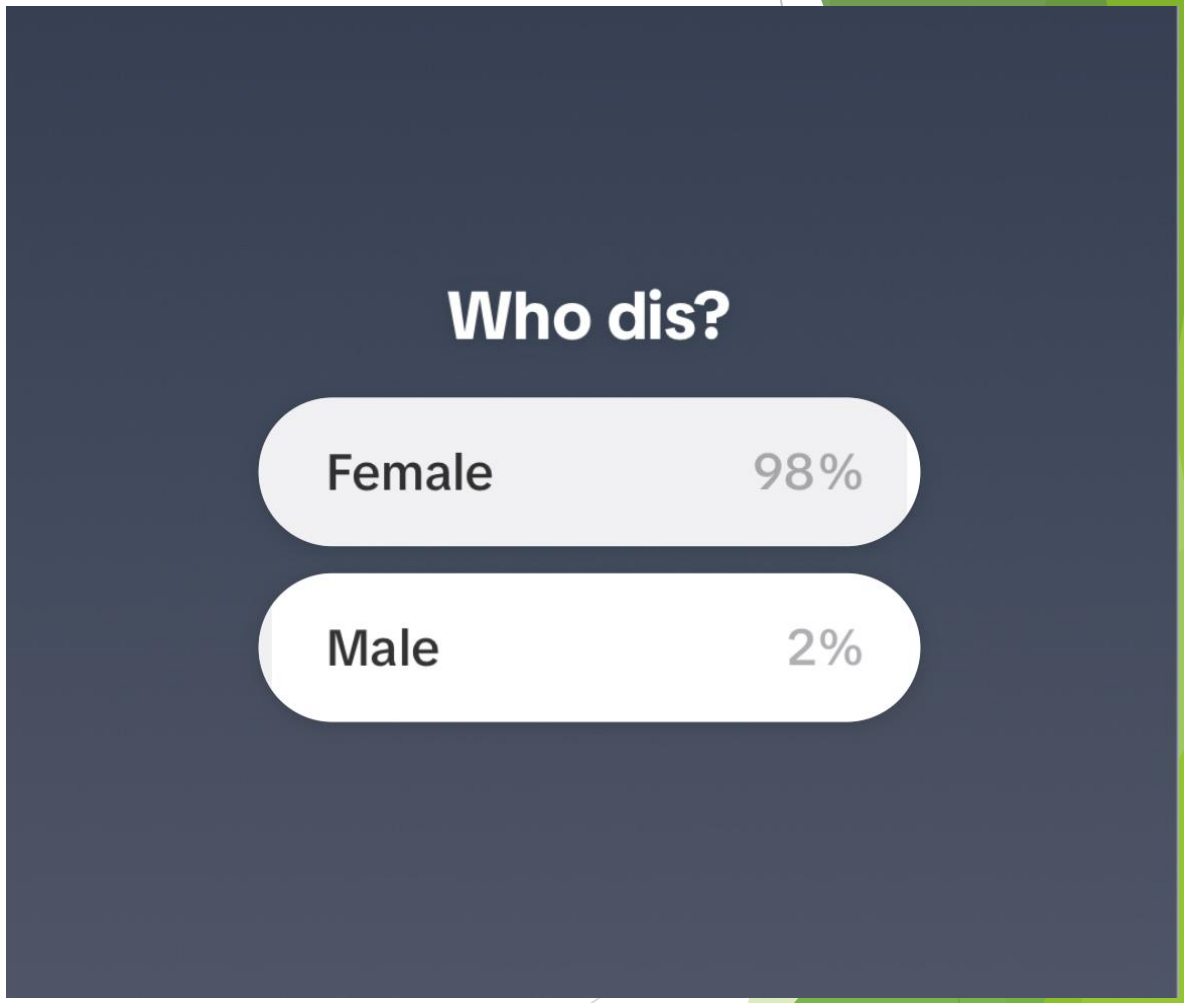
Instagram

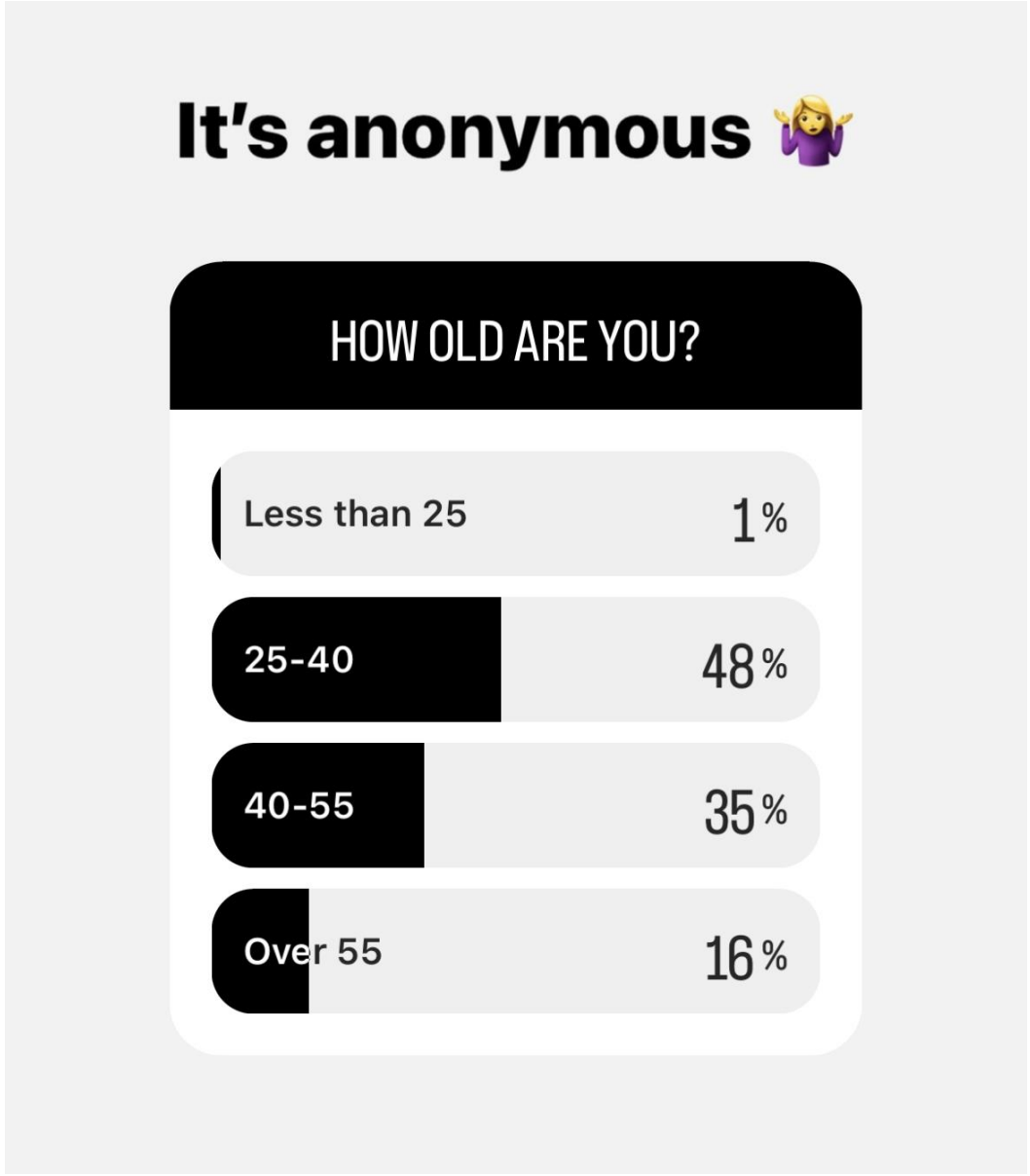
- 371K
- Around 30,000 responses
- 4 poll answer options
- USA 81.5% (Canada 7.3%)
- 95.2% Women

Tiktok

- 1.5 M
- Around 3,000 responses
- 2 poll answer options
- USA 87% (Canada 5.3%, UK 3.2%)
- 87% Women

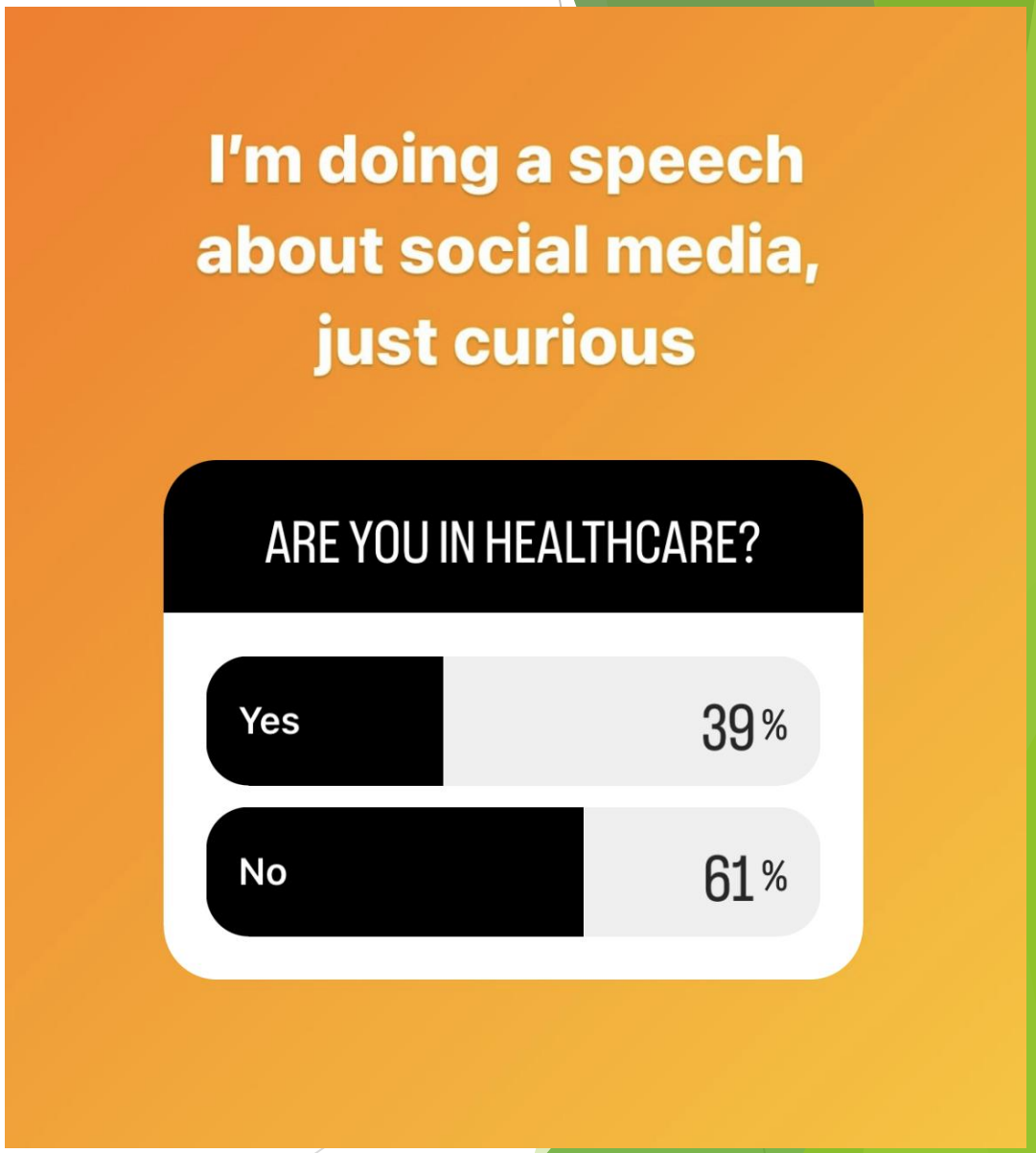

WHERE YOU AT?
Female 98%
Male 1%
Nonbinary 0%

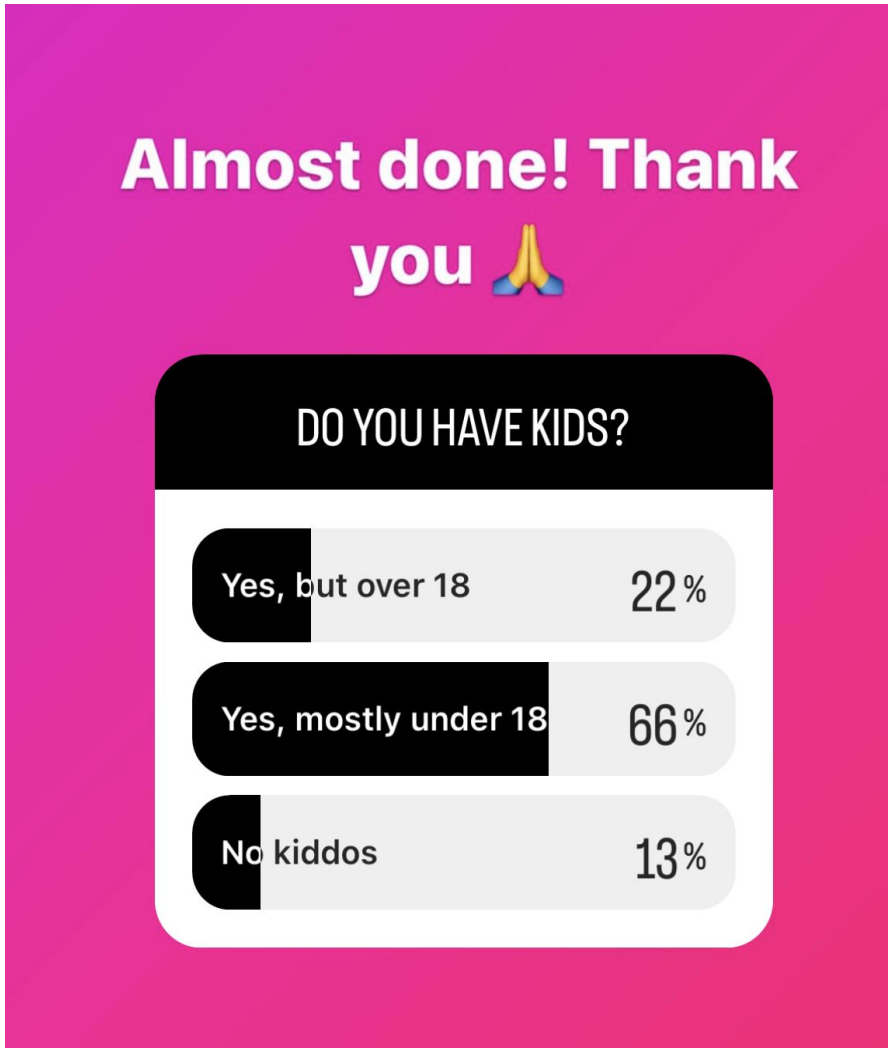

Who dis?
Female 98%
Male 2%


It's anonymous 🤷‍♀️
HOW OLD ARE YOU?
Less than 25 1%
25-40 48%
40-55 35%
Over 55 16%

Are you over 40 years old?
Yes 61%
No 39%

Are you in healthcare?
Yes
37%
No
63%


I'm doing a speech about social media, just curious
ARE YOU IN HEALTHCARE?
Yes
39%
No
61%


Almost done! Thank you 🙏
DO YOU HAVE KIDS?
Yes, but over 18
22%
Yes, mostly under 18
66%
No kiddos
13%

Do you have kids?
Yes
74%
No
26%

Tiktok and Covid-19

- Q1 2020 was the biggest growth quarter for the company
  - 315 million downloads
- Lines up with quarantine and global shut down
  - Schools shut down
  - Extracurricular activities cancelled
  - Only essential and virtual workers
  - High stress!!
  - Seeking entertainment and connection

Covid-19

- People are anxious and seeking information
- Science literacy in the general public is low
  - The ability to read, interpret and critique clinical research is an advanced skill
- Information about Covid spread quickly, but there was no fact checking
- Some videos that went viral:
  - "If you can small a fart through the mask, how can it stop viral molecules?"
  - Ways to take veterinary ivermectin to prevent/treat Covid
  - Masks cause people to retain CO2
  - Kids can't get sick/Can't get Covid-19 more than once
  - It's spread by 5G

Early Covid-19 vaccine conspiracies

- The vaccine will change your DNA
- People who get vaccinated will "shed"
- Literally everything about Bill Gates
- The vaccine will cause infertility
- There are microchips in the vaccine that will be tracking you
- The vaccines are made from aborted fetus cells
- The vaccine injects metal and now magnets will stick to your arm
- People who get vaccinated will be dead in one year/three years/Five years
- The vaccine is toxic

It's just not true

- Misinformation
  - False or inaccurate information—getting the facts wrong
- Disinformation
  - False information which is deliberately intended to mislead—intentionally misstating the facts

RESEARCH ARTICLE

COVID-19 vaccine rumors and conspiracy theories: The need for cognitive inoculation against misinformation to improve vaccine adherence

Md Saiful Islam[1,2¤*], Abu-Hena Mostofa Kamal[3,4], Alamgir Kabir[2,5], Dorothy L. Southern[6], Sazzad Hossain Khan[1], S. M. Murshid Hasan[7], Tonmoy Sarkar[1], Shayla Sharmin[8], Shiuli Das[1], Tuhin Roy[9], Md Golam Dostogir Harun[1], Abrar Ahmad Chughtai[2], Nusrat Homaira[10], Holly Seale[2]

1 Infectious Diseases Division, Program for Emerging Infections, International Centre for Diarrheal Diseases Research, Dhaka, Bangladesh, 2 School of Population Health, University of New South Wales, Sydney, Australia, 3 Khulna University of Engineering and Technology, Khulna, Bangladesh, 4 Department of Sociology, University of Saskatchewan, Saskatoon, Canada, 5 Centre for Primary Health Care and Equity, University of New South Wales, Sydney, Australia, 6 Independent Scientific Writing Consultant, Mandalay, Myanmar, 7 Department of Society and Health, Mahidol University, Salaya, Thailand, 8 Independent Researcher, Sydney, Australia, 9 Sociology Discipline, Khulna University, Khulna, Bangladesh, 10 School of Women's and Children's Health, University of New South Wales, Sydney, Australia

¤ Current address: School of Population Health, Faculty of Medicine, University of New South Wales, Kensington, Australia

Early 2021 as the Covid-19 vaccines were starting to be available to the general public

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8115834/pdf/pone.0251605.pdf

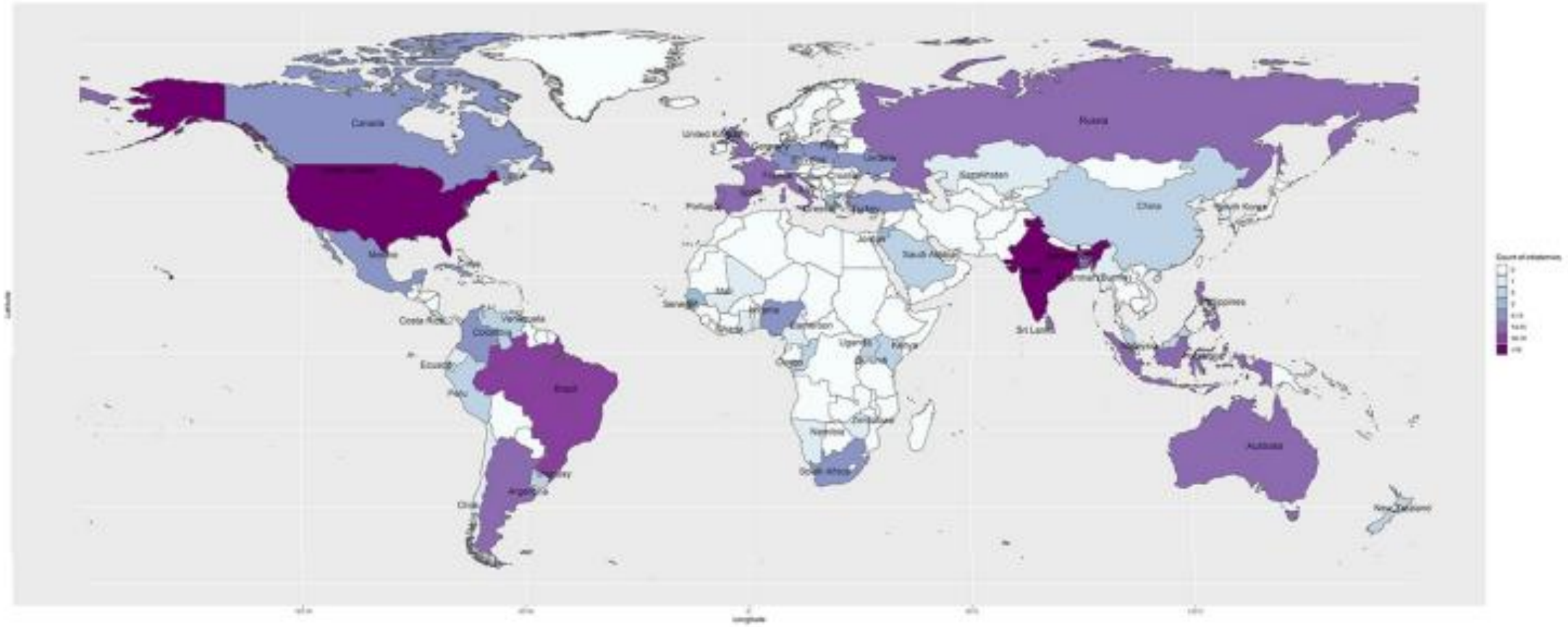


Fig 1. Global distribution of rumors and conspiracy theories related to COVID-19 vaccine, 31 December 2019–30 November 2020.

https://doi.org/10.1371/journal.pone.0251605.g001

Covid Vaccine misinformation

- Rumors and conspiracy theories, have been identified as precipitators for vaccine hesitancy
- In the absence of fact-based information, the circulation of rumors on multiple social media platforms has the potential to be misinterpreted as credible information
  - Low supply of evidenced-based COVID-19 vaccine information allowed the opportunity to generate and spread misinformation
- The unsubstantiated claims of morbidity and mortality related to COVID-19 vaccine circulating online may affect COVID-19 vaccine confidence
  - Spoiler alert...

Covid Vaccine misinformation

- For a novel vaccine such as COVID-19 to be successful, the safety and efficacy of the vaccine and its wide acceptance needs to be ensured

- While some national and international health agencies and fact-check organizations debunked these claims, the time gap between tracking and debunking misinformation, and its limited reach, may have left some populations vulnerable to vaccine hesitancy
  - Misinformation videos pushed to thousands in real time

Closing the information gap

- According to Tim Nguyen, the head of high impact events preparedness unit at WHO, **“You need to have a certain degree of good information out there to reach populations so that they are inoculated and not susceptible to fake news or disinformation**. . .we believe we need to vaccinate 30% of the population with good information in order to have a certain degree of herd immunity against misinformation”
- Websites that provide evidence-based information on COVID-19 vaccines should be developed and disseminated globally as the use of such trusted sources of information have been found effective against misinformation and conspiracy theories

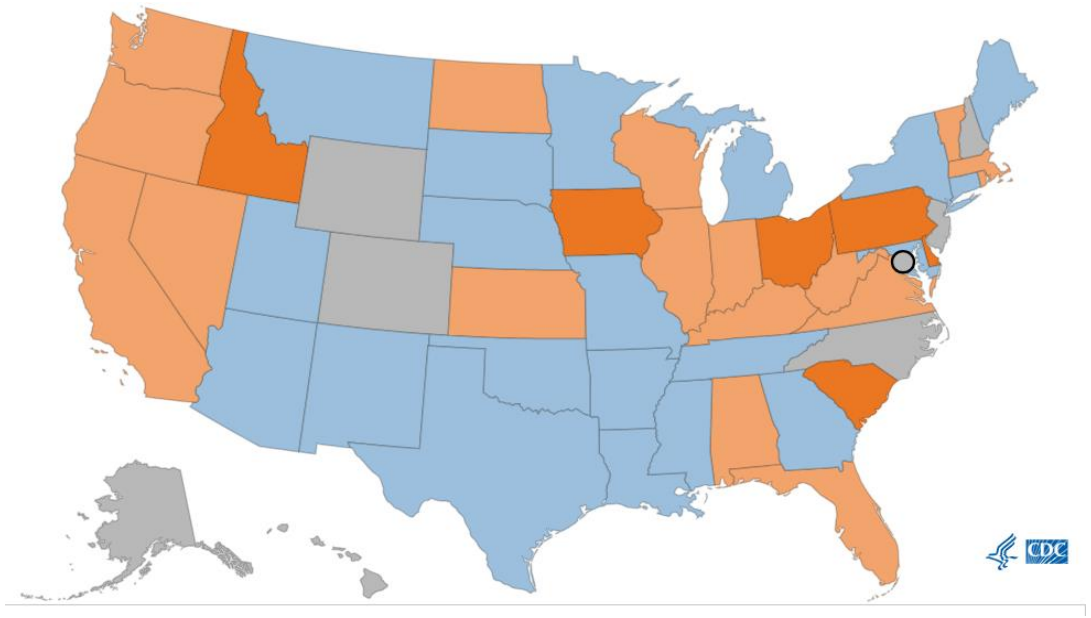
Covid is simmering, why does this matter?

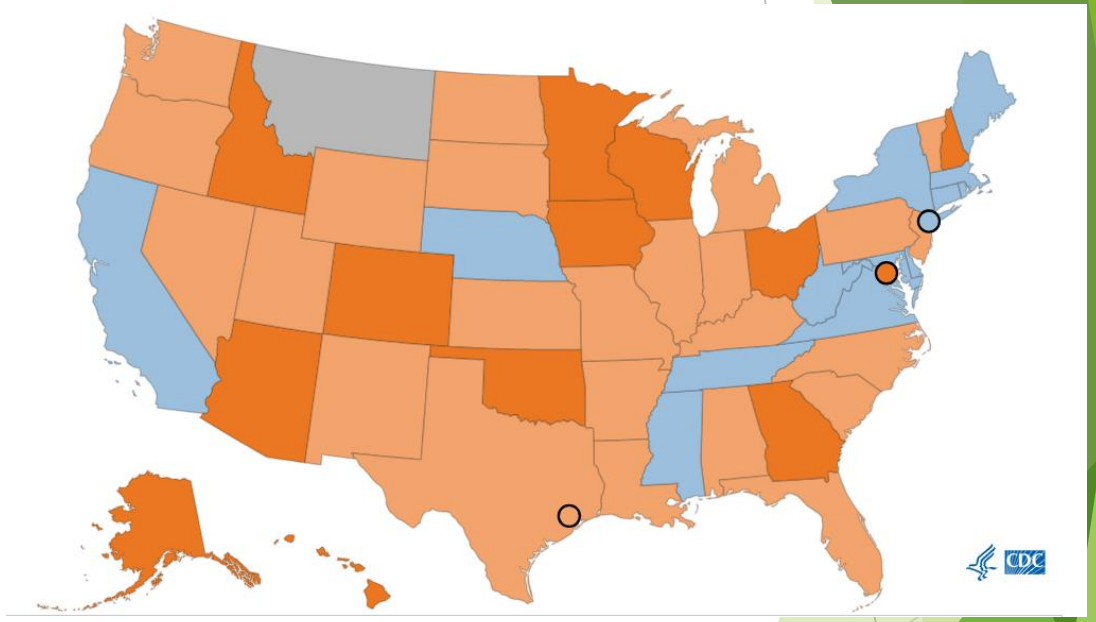
- Measles outbreak in multiple states
- Keeping a close eye on Avian Flu
  - Several human cases
- The next Pandemic?
  - Likely RNA virus
    - High pathogen mutation rate
    - Creates adaptability
  - Zoonotic spillover
    - Urbanization and habitat destruction
  - 17-44% chance in our lifetime

Measles

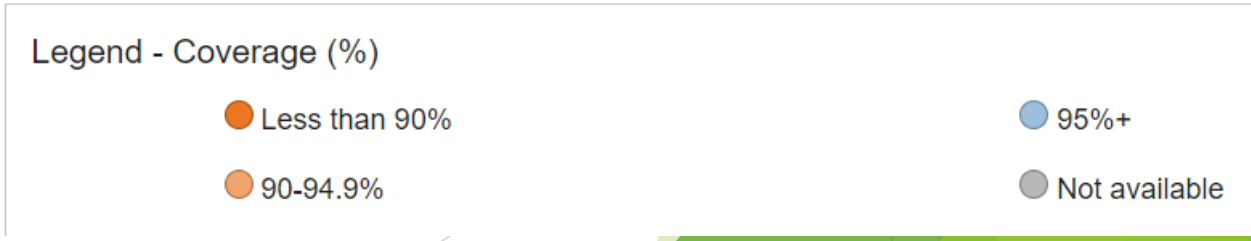
- As of June 13, 2024, a total of 151 US measles cases
- 54% of cases hospitalized (82 of 151)
  - Isolation or for management of measles complications
- Ages
  - **Under 5 years: 68 (45%)**
  - 5-19 years: 34 (23%)/ 20+ years: 49 (32%)
- Vaccination Status
  - **Unvaccinated or Unknown: 83%**
  - One MMR dose: 12%/Two MMR doses: 5%
- Measles vaccination rates are dropping
  - 95.2% during the 2019–2020 school year to **93.1% in the 2022–2023 school year**

MMR Vaccination rate for Kindergarteners 2009-2010 vs. 2022-2023





95% vaccination rate is needed for herd immunity against Measles



https://www.cdc.gov/measles/data-research/index.html

Avian Influenza

- Avian influenza A (H5N1), or bird flu, has killed millions of wild birds and caused sporadic outbreaks among poultry.
- In the past few months, there has been an ongoing multistate outbreak among cows in the United States. Three dairy workers have been infected with the virus, marking the first cow-to-human transmissions.

- “In the short term, there is very little threat,” says Yale Medicine infectious diseases specialist Scott Roberts, MD. “In the long term, in the coming years or decades, however, I’m much more concerned.” He gives two reasons: One is that there has been a mortality (or death) rate of about 50% in the almost 900 people around the world who have been infected with bird flu between 2003 and 2024.

https://www.yalemedicine.org/news/h5n1-bird-flu-what-to-know

AMERICAN PSYCHOLOGICAL ASSOCIATION

APA RESOLUTION on Combating Misinformation and Promoting Psychological Science Literacy

FEBRUARY 2024

WHEREAS the amount of misinformation a person encounters as part of their overall media consumption may vary, there is evidence to demonstrate that up to 20% of political media content can be classified as misinformation (Yang et al., 2023), and other findings that specify health misinformation is highly prevalent and a growing and pernicious threat to public well-being, especially with the potential for rapid spread on social media (Gallotti et al., 2020; Wang et al., 2019); and

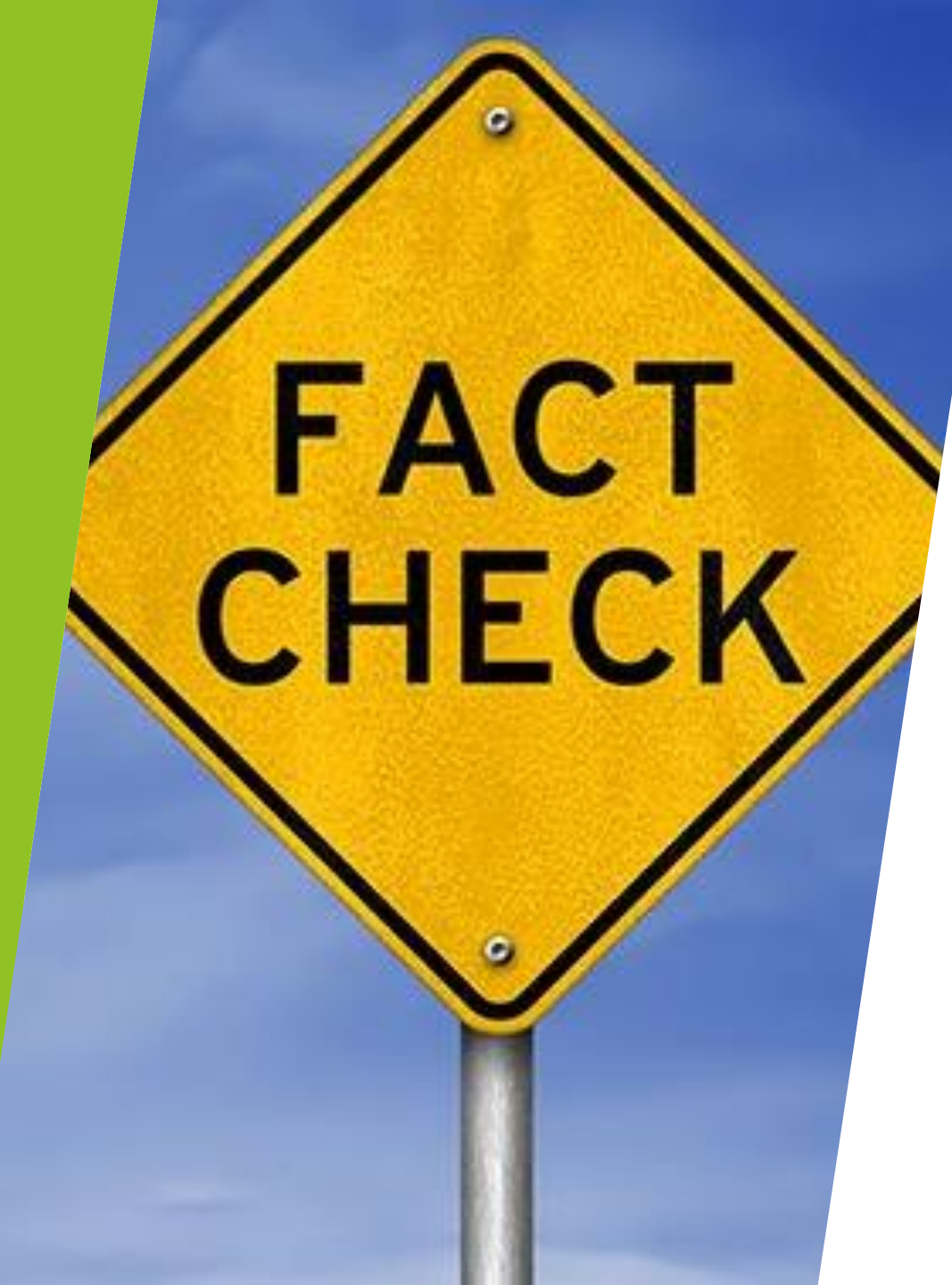
WHEREAS regardless of prevalence, misinformation has been found to promote discord by increasing political polarization (Van

promote accurate health information, science literacy, and counteract misinformation; and

THEREFORE, BE IT RESOLVED THAT the American Psychological Association encourages the inclusion of psychological science perspectives in public health campaigns, educational programs, and policy initiatives addressing health misinformation; and

THEREFORE, BE IT RESOLVED THAT the American Psychological Association commits to actively disseminate psychological science findings and recommendations across its networks and

https://www.apa.org/about/policy/combating-misinformation-promoting-literacy.pdf



"WHEREAS the amount of misinformation a person encounters as part of their overall media consumption may vary, there is evidence to demonstrate that up to 20% of political media content can be classified as misinformation, and other findings that specify health misinformation is highly prevalent and a growing and pernicious threat to public well-being, especially with the potential for rapid spread on social media"

Among respondents who expressed a “great deal” of trust, that trust was not related primarily to agencies’ ability to control the spread of COVID-19 but, rather, to beliefs that those agencies made **clear, science-based recommendations and provided protective resources**

RESEARCH ARTICLE | PUBLIC HEALTH

HEALTH AFFAIRS > VOL. 42, NO. 3: PUBLIC HEALTH DURING COVID-19 & MORE

Trust In US Federal, State, And Local Public Health Agencies During COVID-19: Responses And Policy Implications

Gillian K. SteelFisher, Mary G. Findling, Hannah L. Caporello, Keri M. Lubell, Kathleen G. Vidoloff Melville, Lindsay Lane, Alyssa A. Boyea, Thomas J. Schafer, and Eran N. Ben-Porath

AFFILIATIONS

PUBLISHED: MARCH 2023 No Access https://doi.org/10.1377/hlthaff.2022.01204

VIEW ARTICLE PERMISSIONS SHARE TOOLS

Lower trust was related primarily to respondents’ beliefs that health recommendations were politically influenced and inconsistent.

https://doi.org/10.1377/hlthaff.2022.01204

What can we do?

- Avoid the information gap
  - Provide clear, timely, factual information
- Be a trusted authority for this information
  - This means rebuilding the trust lost in scientific/public health community
  - Consistent and frequent communication
    - Acknowledge uncertainty
- Meet people where they are
  - Speak in terms that can be understood by a layperson
  - Avoid being condescending
  - TV, radio, social media, etc
- Be engaged and listening
  - Respond quickly

What can we do?

- Look at other who are similar and finding success
  - National Park Service
  - Wendy's
- Collaborate with others
  - Build partnerships and trust
  - Multiplies your audience
- Start building a platform now
  - If you are making content on one platform, you can easily take the same information and repost to other platforms
  - No fancy equipment required
  - Tiktok platform is easy to shoot and edit

Considerations for content

- ANYTHING can be content!
  - Vlog style, a day in my life, education, behind the scenes, seasonal, "Talking head" or demonstration
- Capture attention/Baiting
  - Average you have less than 2 seconds before they scroll
  - Good lighting
  - Something interesting on screen or background
  - Attention grabber ("Did we just figure out Covid?")
- Efficiency
  - Speak quickly
  - Use movement

The algorithm

- Consistent posting is important
- May help initially to post at the same time
  - Evening is better?
- Get verified
- Know your audience
  - Your followers may not be your viewers!
- People want to be entertained
  - Funny content?
  - Interesting?
  - Critical information?
  - Mystery?
  - Variety (within your scope)

Holding attention

- Use captions!
  - Accessible
  - Loud environments or unable to use sound (in a meeting or in bed)
- Graphs, tables, diagrams, pictures, movement, words on the screen
- Speak quickly but clearly
- Response videos encourage engagement
  - Polls
  - Opinions
  - Ideas
  - People want to contribute and be heard

Looking forward...

- There will be another public health crisis
- We need to earn the trust of the general public
  - Clear, consistent messaging
- People are spending more time on social media
  - Consuming content and news
- Consistent, timely and frequent communication to avoid the information gap
- Need to address misinformation, disinformation and educate to create more science literacy
  - Inoculate with education to protect from conspiracy theories

Thank you for your time!

References

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8115834/pdf/pone.0251605.pdf
- https://www.apa.org/about/policy/combating-misinformation-promoting-literacy.pdf
- https://www.pewresearch.org
- https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2022.01204
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8022693/