



# COVID: Past, Present and Future

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Dr. Elizabeth Hudson

Regional Chief, Infectious Diseases, KP Southern California

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# COVID: Where we've been

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- COVID (SARS-CoV-2): novel agent first seen in late 2019 in China
- Quickly spread worldwide with catastrophic impacts
- Spring of 2020 saw initial wave of patients
  - Northeastern US hit hardest
    - Early predictor for how many waves would hit in the future
- Blunted due to governmental interventions
  - 'Safer at Home' program
    - School closures/work from home
    - Mask mandates

# COVID: Where we've been

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- Fall and winter of 2020 COVID wave hit the West Coast
  - Delta variant became predominant over original strain
- Unprecedented levels of people admitted with COVID
  - LA County averaged 15,000 daily cases in early January 2021
  - ~6500 Angelenos died in January 2021, alone
- Hospitals strained to the limit
  - Inpatients at KP hospitals almost exclusively COVID +
  - Oxygen reserves teetered on edge of collapse
  - Physicians utilizing novel treatments via study protocols
  - Huge impact on all healthcare workers from mortality levels

# COVID: Where we've been

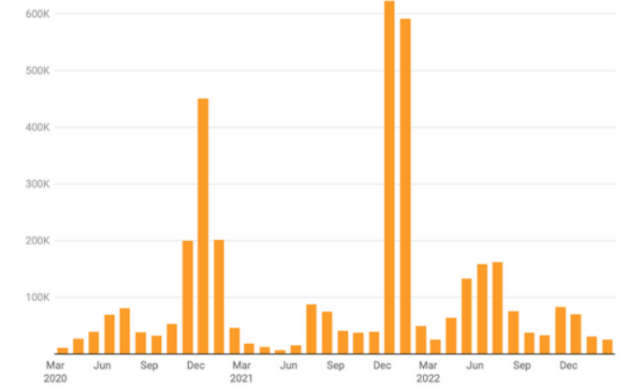
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- First COVID vaccine approved on 12/11/2020
  - Changed the face of the pandemic
  - mRNA vaccine (Pfizer) followed by other protein-based vaccines
  - Unprecedented demand
- KP set up a massive vaccination program for our members
  - Huge outdoor areas set up to ensure ease of access for all who qualified
- LA County did the same with good effect
  - ~85% of LA County residents have received at least initial vaccination!

# COVID: Where we've been

- Spring 2021, we saw the impact of COVID vaccine with decreased case numbers
- KP inpatient cases dropped as did mortality rates
  - Clear pathways to treat patients emerged: -> remdesivir
- Arrival of Omicron, Thanksgiving 2021
- Omicron highly infectious
  - Testing challenging
  - Overwhelming number of cases, but more on the outpatient side
  - Total deaths still very high, but less/capita compared to previous

COVID-19 cases by month in L.A. County



Mar 2020 denotes period from March 15-April 14; similar in following periods  
Source: Los Angeles County Department of Public Health • Created with [Datawrapper](#)



# COVID: Where we've been

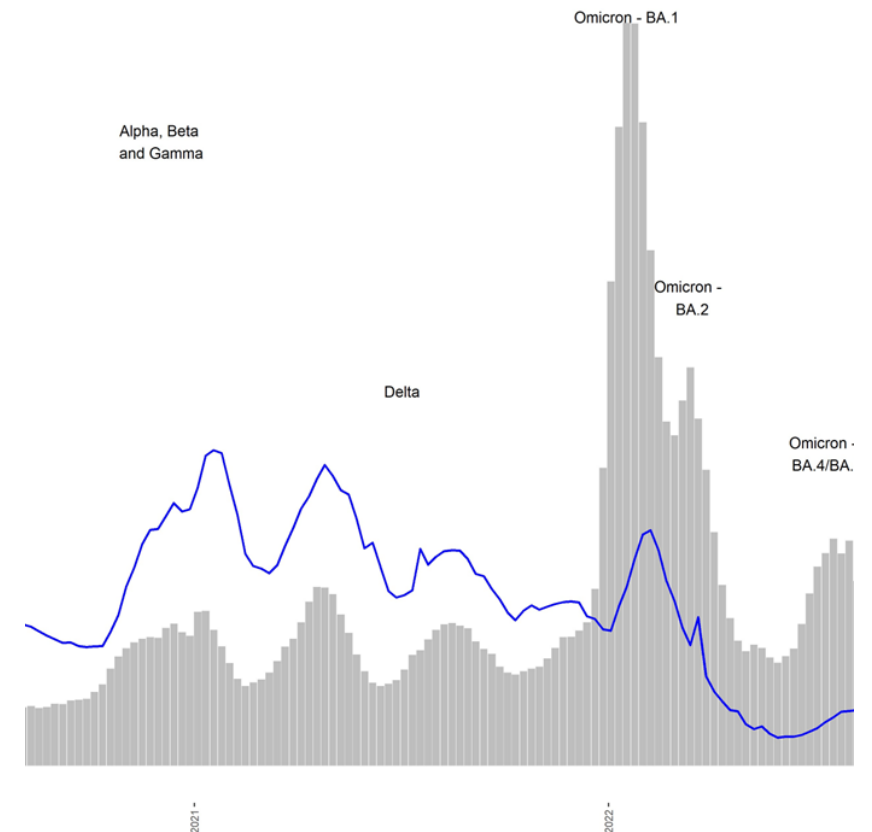
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- Late 2021 saw the approval of Paxlovid
  - First effective oral treatment for COVID
- Changes in public perception of COVID
  - More resistance to masking -> indoor mask mandate rescinded in LA
- Case numbers of COVID decreased as we moved into 2022-2023
  - Desire to return to 'normal'
- KP and LA County worked to navigate this challenging time
  - Political pressures
- Wastewater as proxy for cases

# COVID: Where we were and where we are

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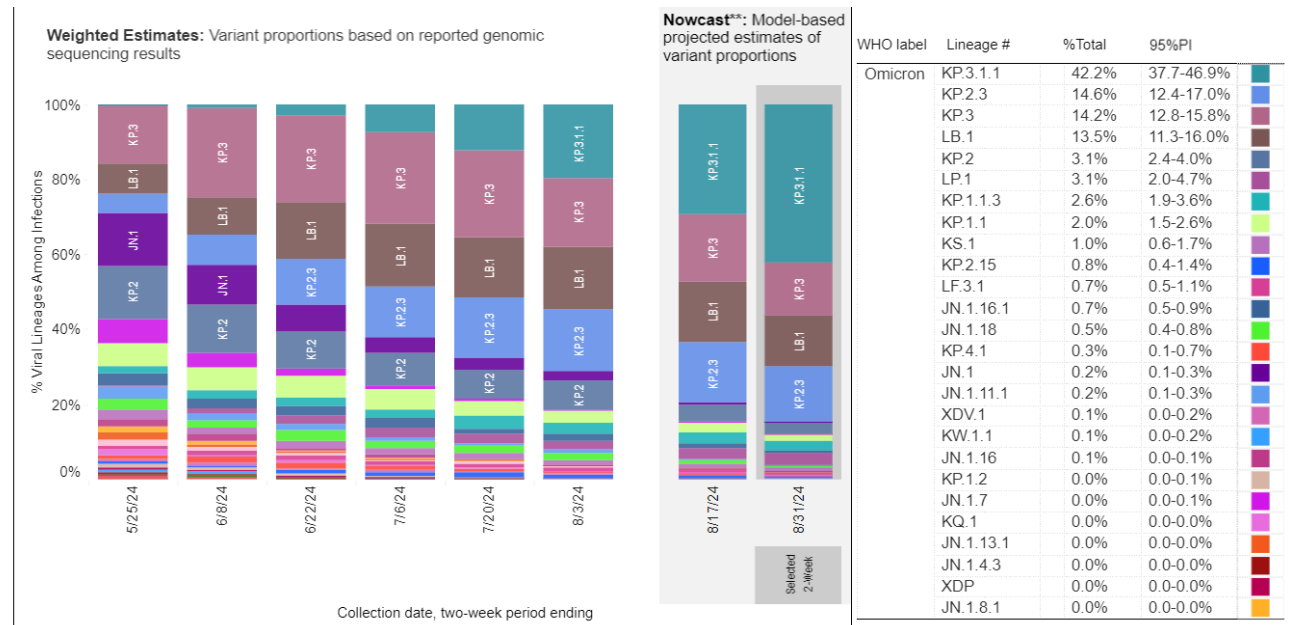
- Since the arrival of Omicron, variants causing infection are derived from it
  - Mutations have led to these subvariants: -> infectiousness varies
- Vaccines, natural immunity and robust treatments are why we see much less mortality



# COVID: Where we are now

## Summer of 2024:

- Emergence of 'FLiRT', 'FLuQE' and 'deFLuQE' variants
  - KP.2 and now KP.3.1.1
- Largest summer wave since 2022
- Primarily outpatient cases





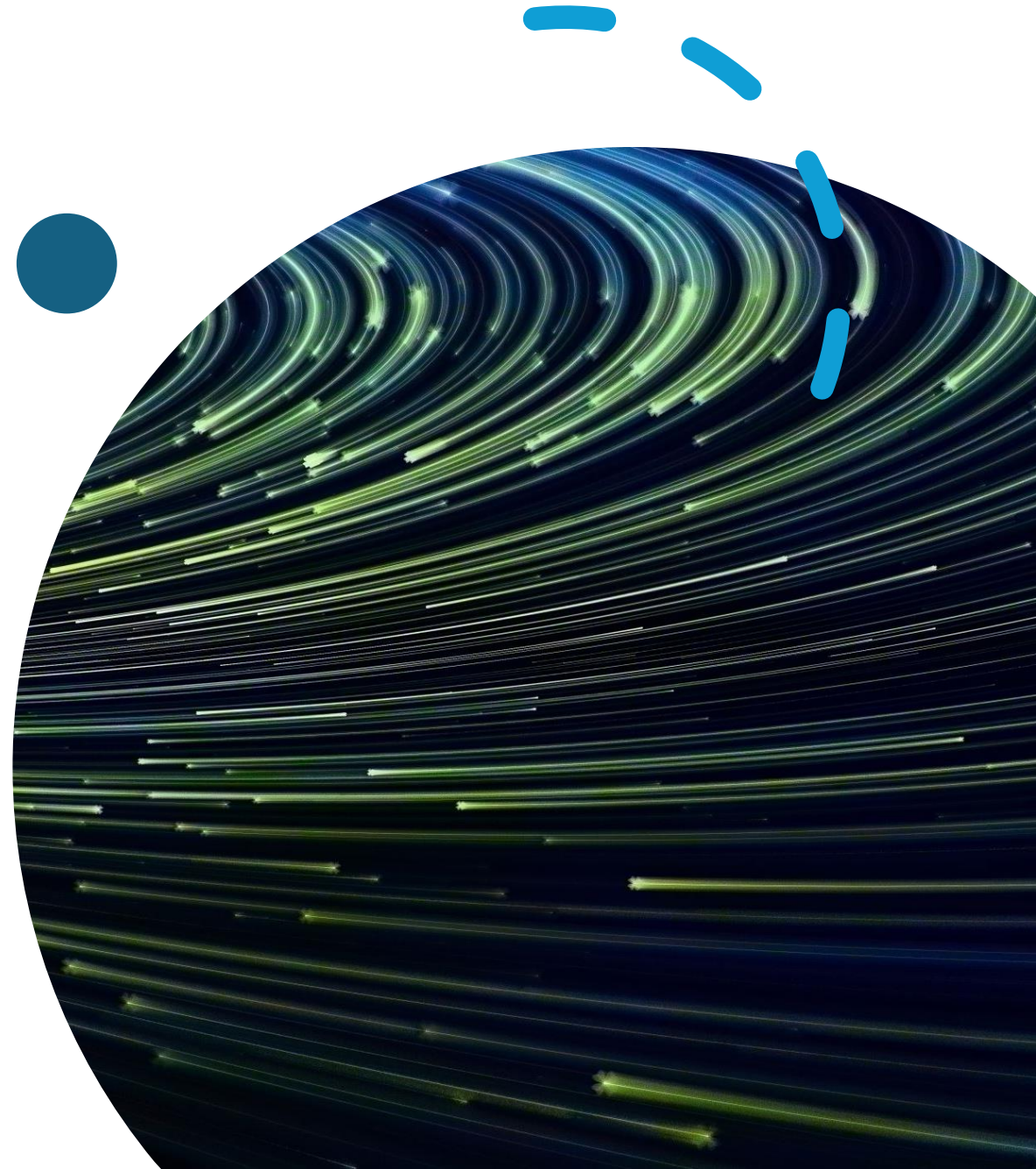
# COVID: Where we are now and where we're going

## New COVID vaccine available

- mRNA and protein-derived versions
- Slightly different coverages (KP.2 vs JN.1)
- Implementing could help to lessen impact of wave

## Winter forecast for COVID

- XEC variant
- COVID, Flu, RSV



# COVID: Lessons learned

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- Interconnection risks and benefits
- LA County public health policies saved lives
  - Masking and vaccine mandates
- KP lessons learned around operations, patient management
  - ID physician's role
- COVID is not going away anytime soon
  - Less mortality, but still present => could change in the future with newer variant
  - Long COVID: 7% of all US Adults

# Questions?

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