

Update on COVID-19: Dialysis Patients and Vaccines

This webinar will start shortly

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Today's Presenter

ALAN S. KLIGER, MD

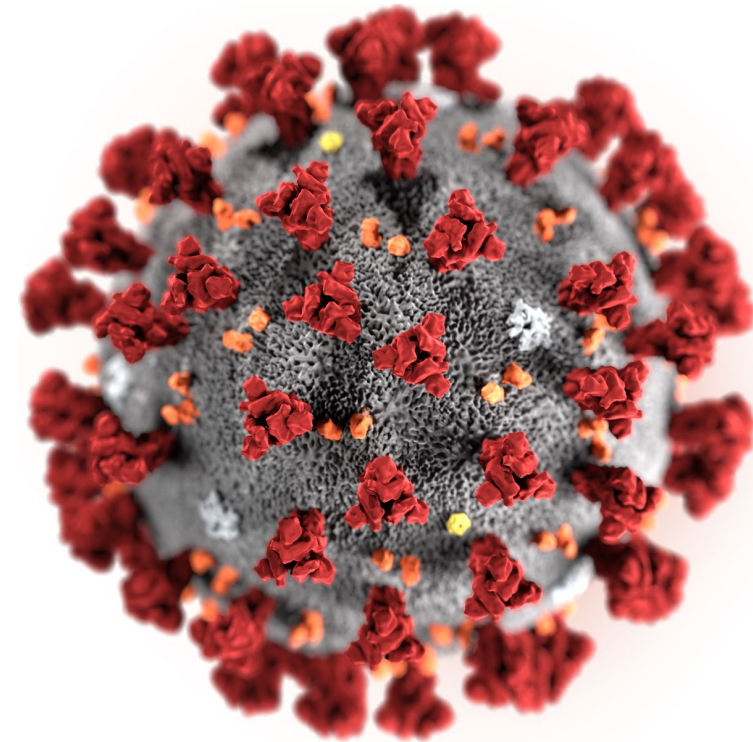
*Clinical Professor Medicine
Yale School of Medicine*

*Co-Chair
ASN COVID-19 Response Team*

Disclosures: None

What We Will Cover

- Are Dialysis Patients at Risk?
- Why Get Vaccinated Now?
- What are mRNA Vaccines?
- Do the Vaccines Work?
- Do Vaccines Work as Well for Dialysis Patients?
- How About a 3rd Dose?
- What About the J&J Single Dose Vaccine?
- The Delta Variant



Average daily Covid deaths

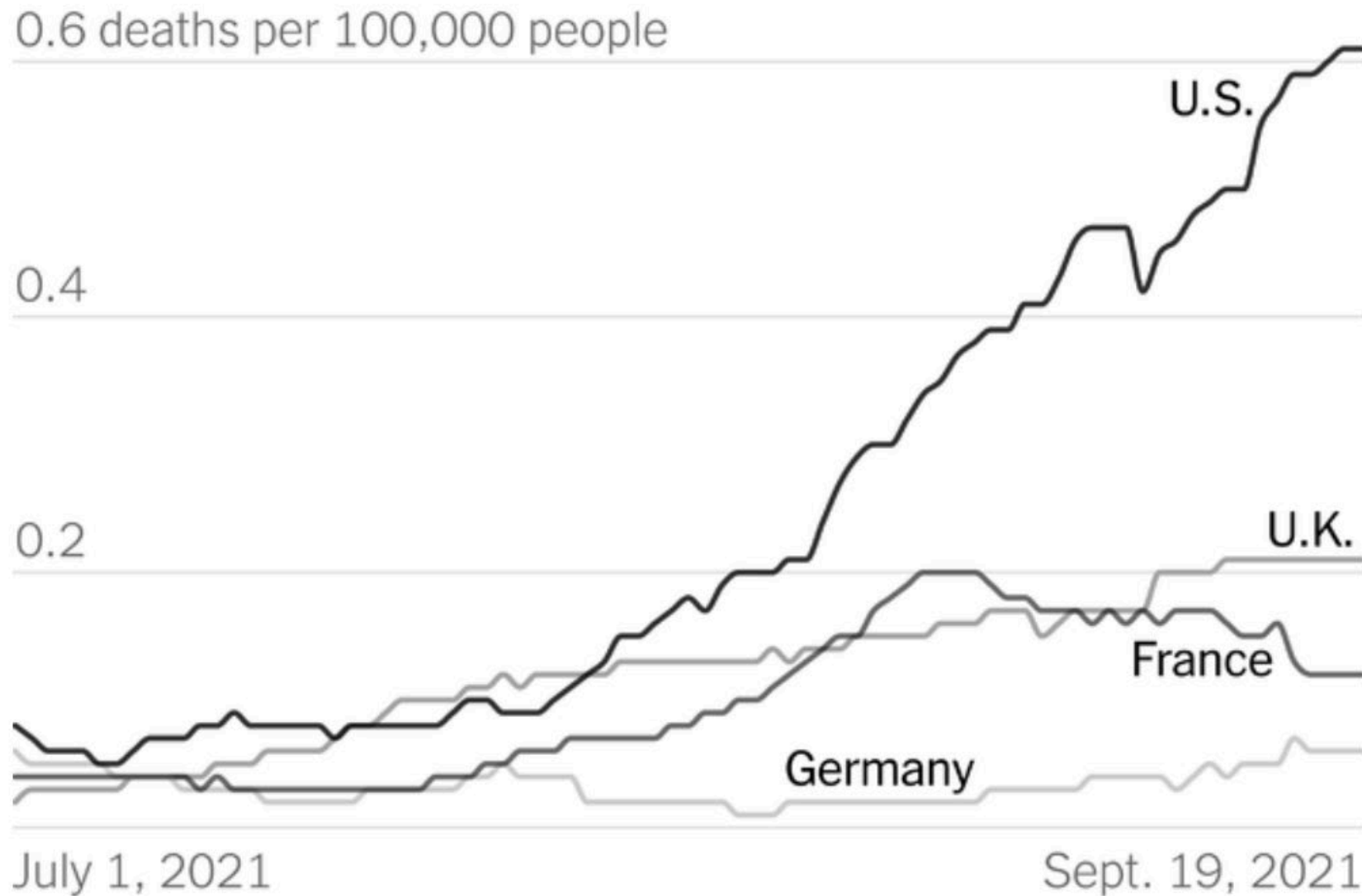
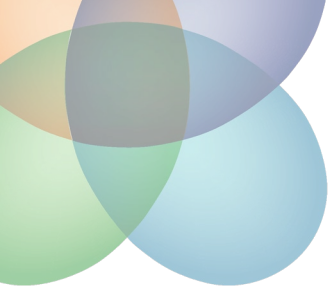


Chart shows the 7-day average. The New York Times



Risk of Infection is Higher for Dialysis Patients

- Older age is associated with higher risk
- Diabetes, High Blood Pressure, Chronic Lung Disease, Chronic Kidney Disease Increase Risk
- In-Center hemodialysis patients cannot stay at home - - risk of contact is present for transportation and for in-center care



28-day case fatality rate Dialysis patients

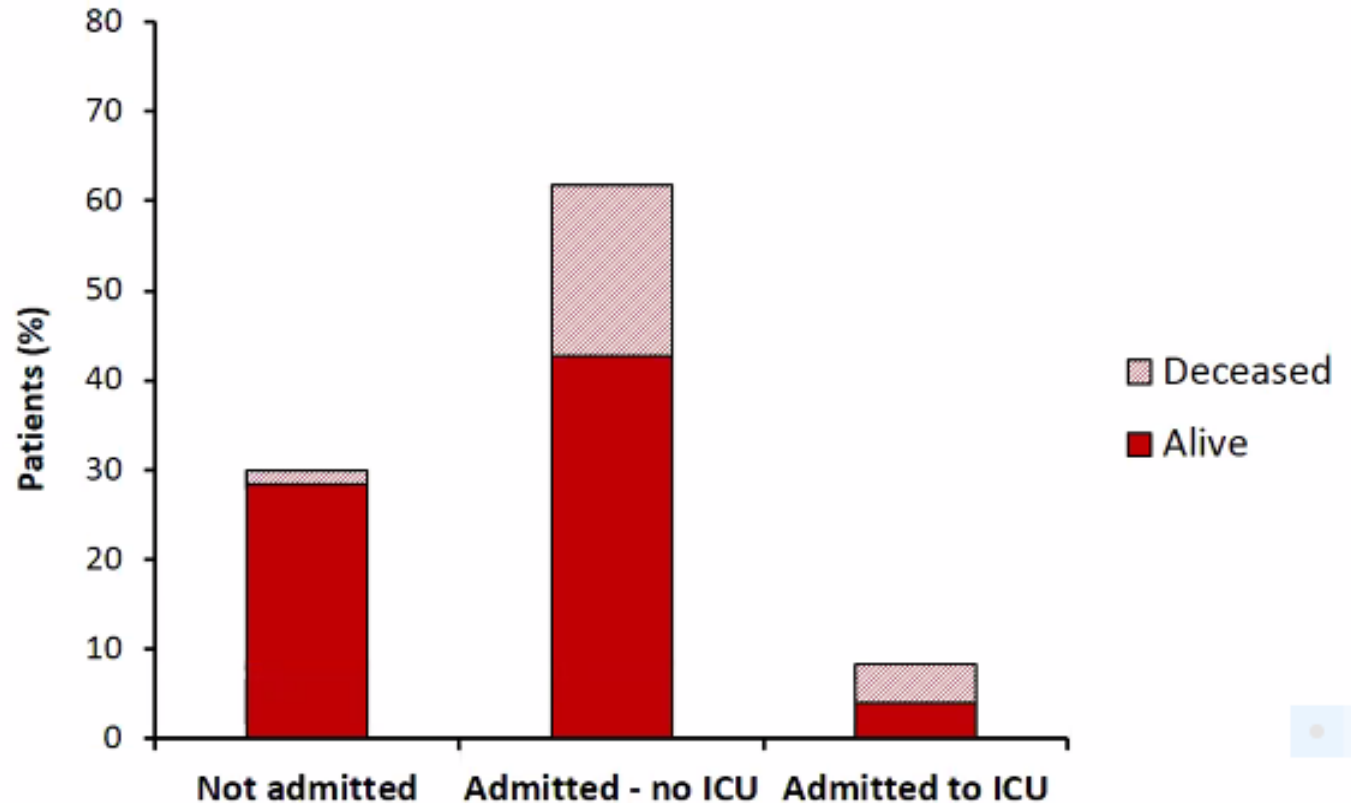
All patients: 25%

Not admitted patients: 5%

Hospitalized patients: 33%

Patients admitted to ICU: 53%

Survival according to admission status



ESRD Network 2 (New York)

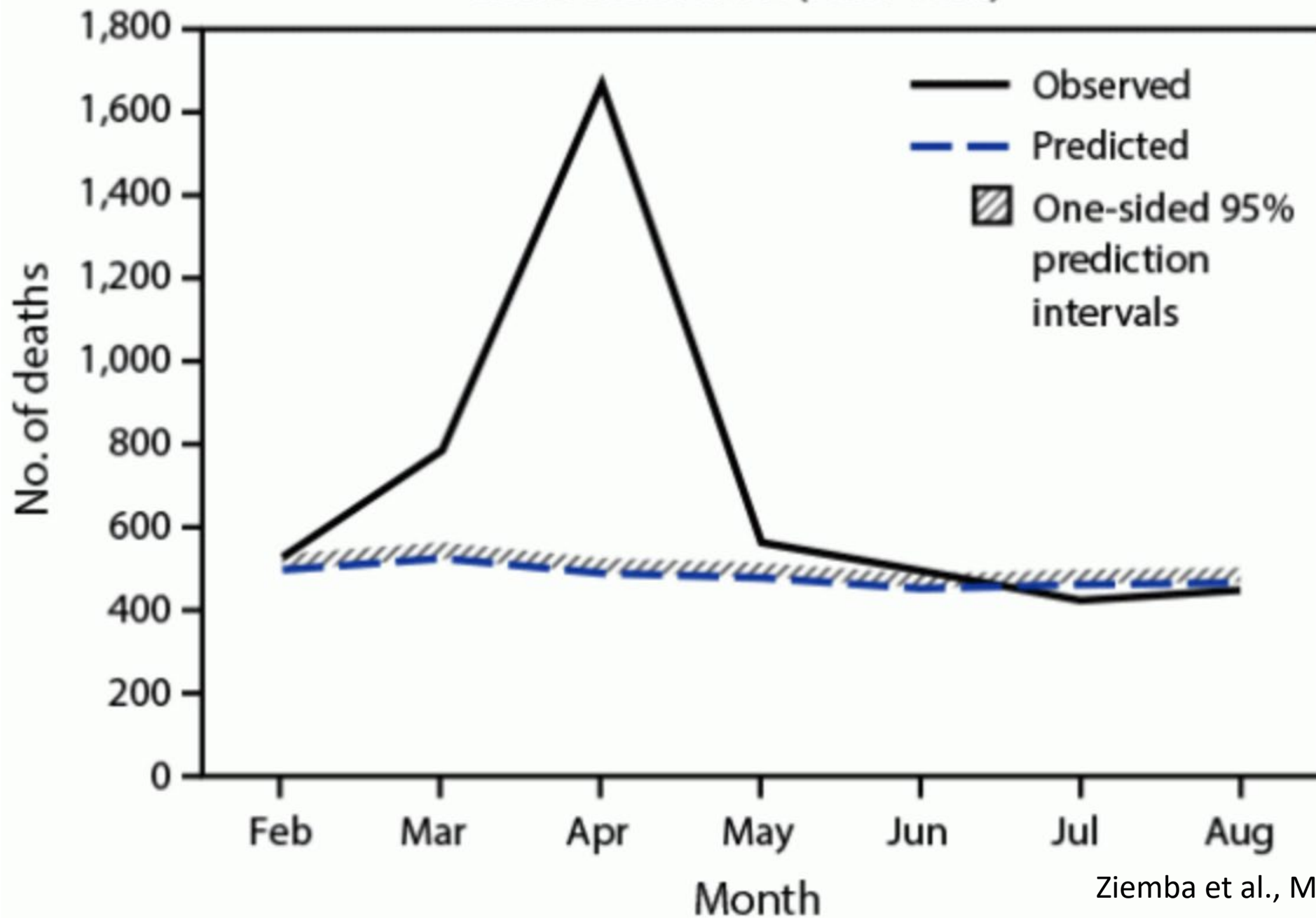
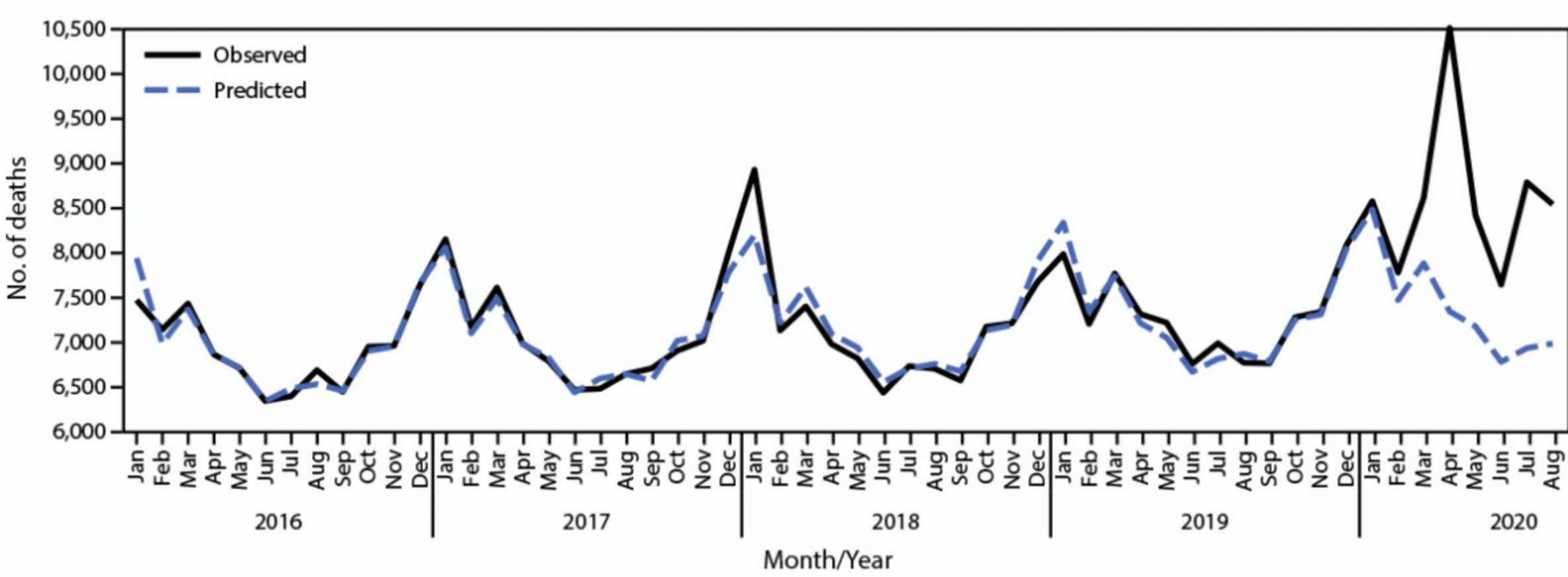


FIGURE 1. Observed* and predicted† monthly deaths among patients with end-stage renal disease — United States, January 1, 2016–August 31, 2020



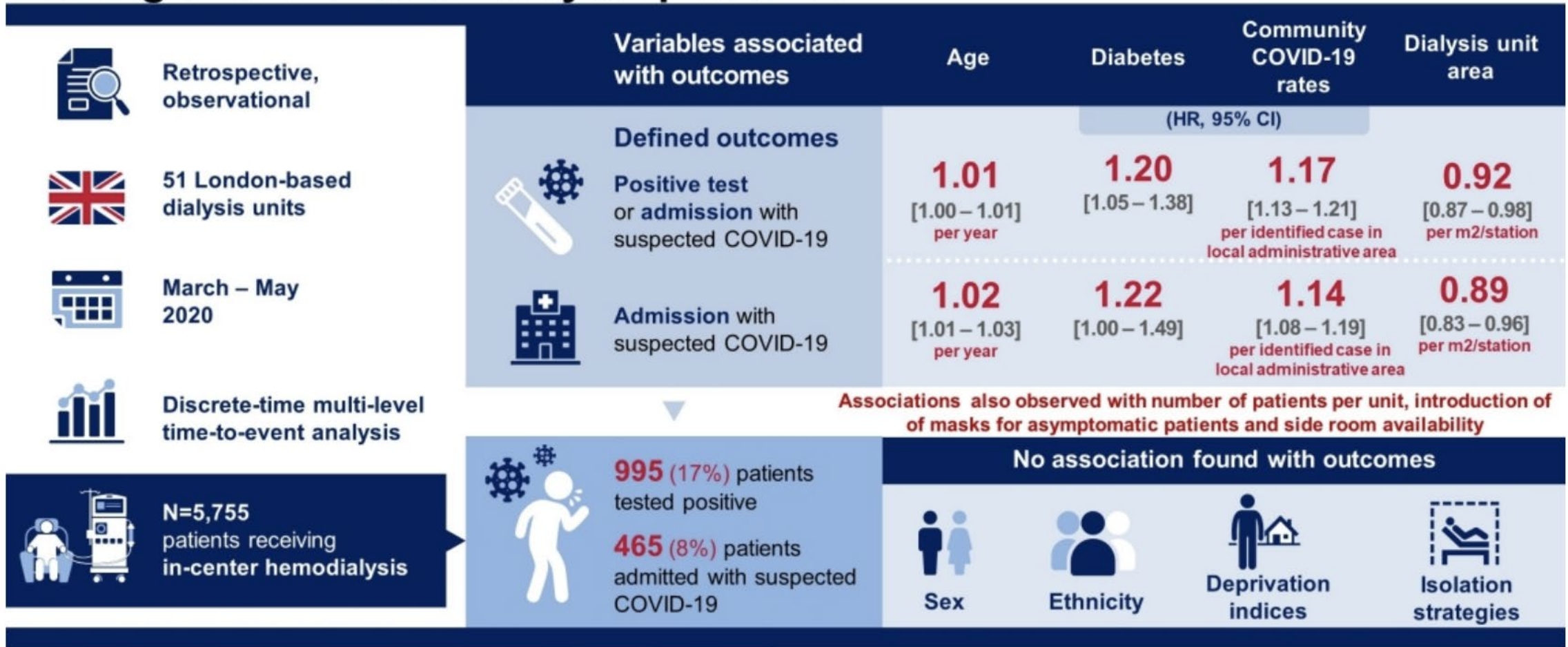


West London Dialysis

Corbett et al, JASN 2020 August 31 (8):1815

- 1,530 dialysis patients
- 300 developed COVID-19 (19.6%)
- More likely among in-center than home dialysis patients
- Clustering in specific dialysis units and shifts
- High rates of nursing staff illness
- Modeling suggested that measures implemented reduced transmission

What variables are associated with the risk of COVID-19 among in-center hemodialysis patients?



Conclusions: Rates of COVID-19 in the in-center hemodialysis population were associated with patient-level factors, underlying community transmission, and unit size.

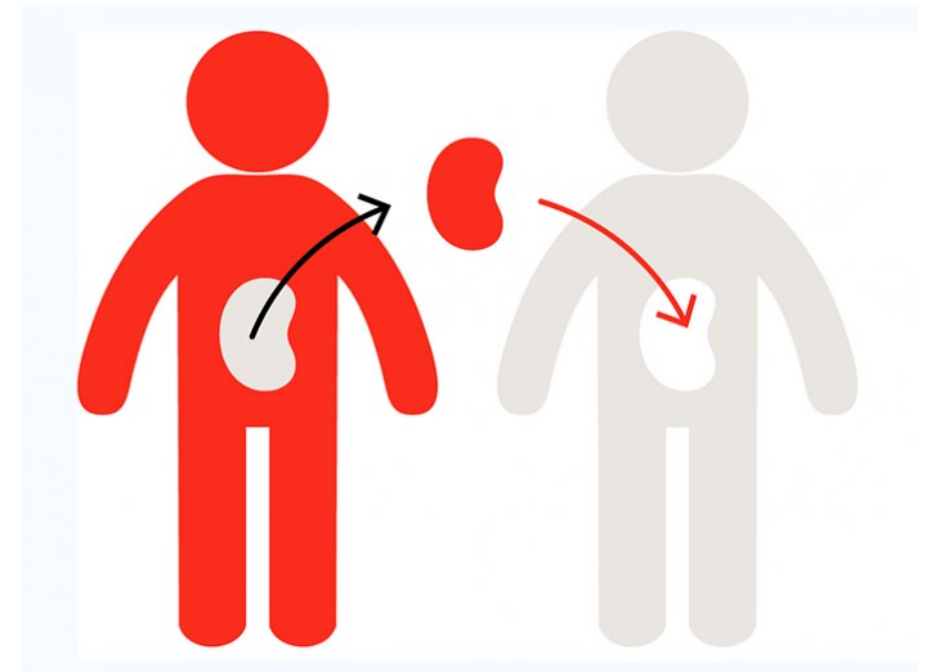
Ben Caplin, Damien Ashby, Kieran McCafferty, et al. *Risk of COVID-19 Disease, Dialysis Unit Attributes, and Infection Control Strategy among London In-Center Hemodialysis Patients*. CJASN doi: 10.2215/CJN.03180321. Visual Abstract by Corina-Gabriela Teodosiu, MD

COVID-19 and Kidney Transplantation

NY Experience

NEJM 2020 382(25):2475-2477

- 36 consecutive transplant patients with +PCR for COVID-19
 - 78% required hospitalization
 - 31% required mechanical ventilation
 - 17% had kidney failure requiring dialysis
 - 33% died



Why Should I Get Vaccinated Now?

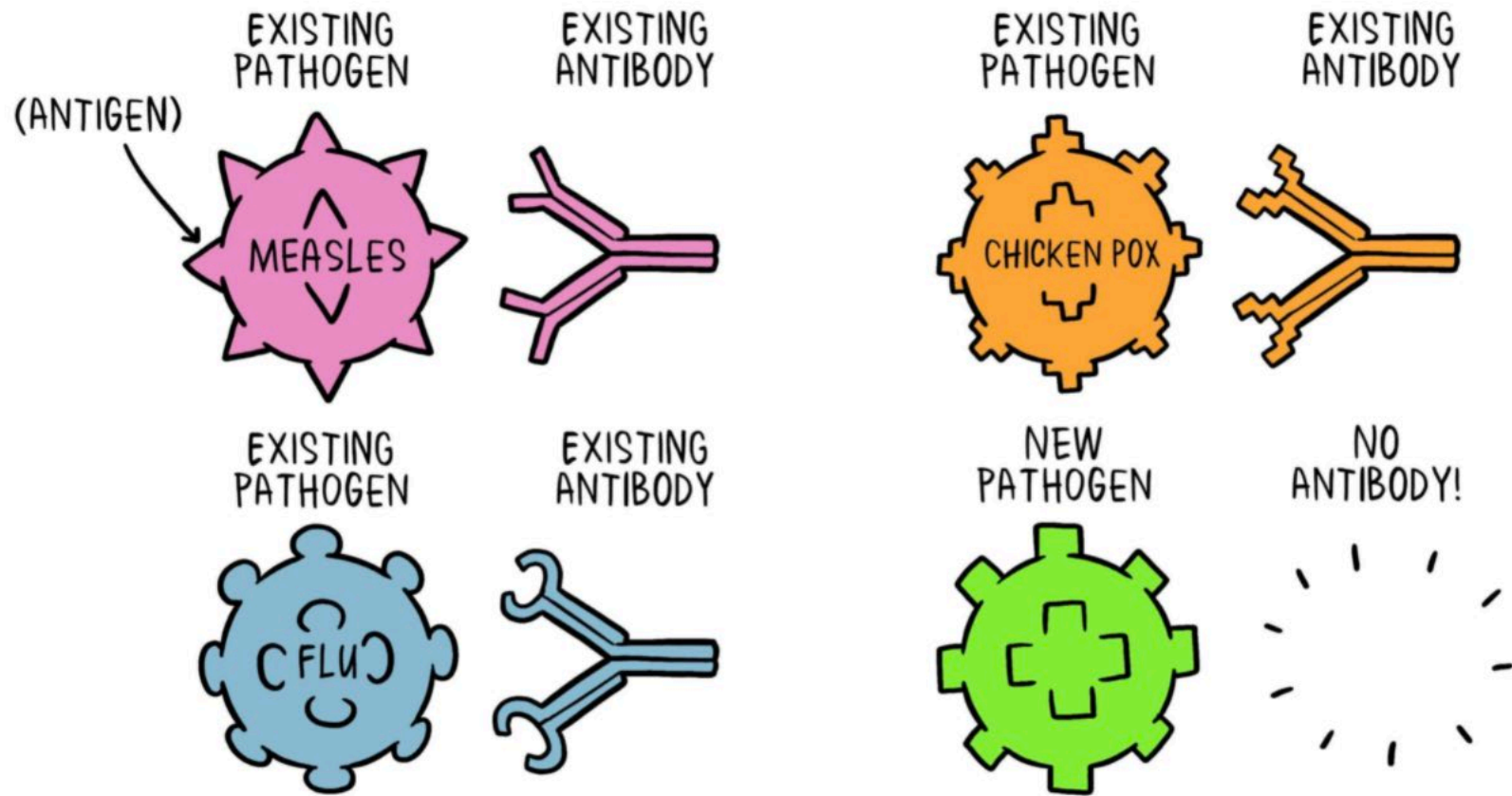
- The vaccines work in dialysis patients
 - Markedly reduce hospitalizations, complications and death from COVID-19
- The vaccines are safe for dialysis patients
 - Hundreds of MILLIONS of doses administered with only mild side effects
 - Don't be fooled by mis-information
- Can vaccinated people get COVID-19 Anyway?
 - Yes, but much less likely
 - If vaccinated people get COVID-19, it is almost always mild without complications
 - The vaccine is highly successful in protecting against serious disease or death



If you have not as yet been vaccinated
GET VACCINATED NOW !!



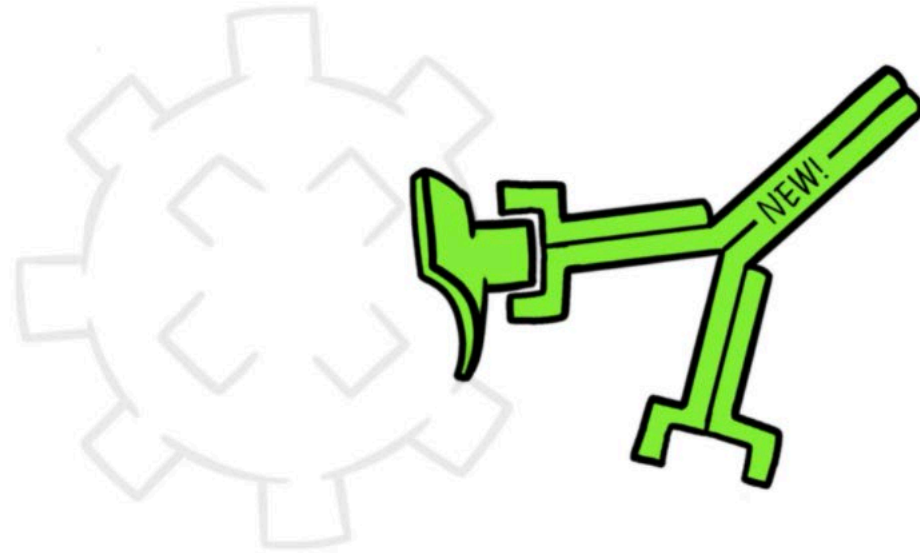
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When a new pathogen or disease enters our body, it introduces a new antigen. For every new antigen, our body needs to build a specific antibody that can grab onto the antigen and defeat the pathogen.

VACCINE

NEW ANTIBODY



A VACCINE is a tiny weakened non-dangerous fragment of the organism and includes parts of the antigen. It's enough that our body can learn to build the specific antibody. Then if the body encounters the real antigen later, as part of the real organism, it already knows how to defeat it.

How mRNA COVID-19 Vaccines Work

Understanding the virus that causes COVID-19.

Coronaviruses, like the one that causes COVID-19, are named for the crown-like spikes on their surface, called **spike proteins**. These **spike proteins** are ideal targets for vaccines.

What is mRNA?

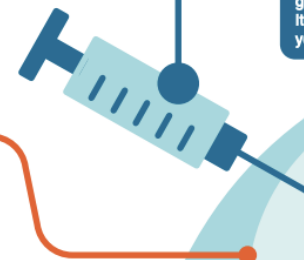
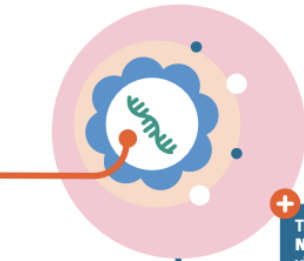
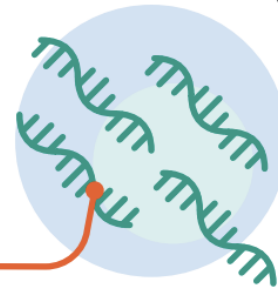
Messenger RNA, or mRNA, is genetic material that tells your body how to make proteins.

What is in the vaccine?

The vaccine is made of mRNA wrapped in a coating that makes delivery easy and keeps the body from damaging it.

How does the vaccine work?

The mRNA in the vaccine teaches your cells how to make copies of the **spike protein**. If you are exposed to the real virus later, your body will recognize it and know how to fight it off.



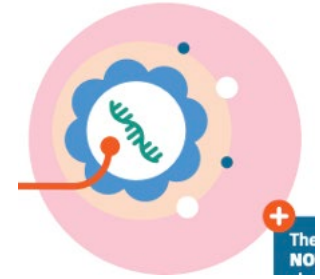
+ The vaccine **DOES NOT** contain **ANY** virus, so it cannot give you COVID-19. It cannot change your DNA in any way.

+ When your body responds to the vaccine, it can sometimes cause a mild fever, headache, or chills. This is completely normal and a sign that the vaccine is working.

+ After the mRNA delivers the instructions, your cells break it down and get rid of it.

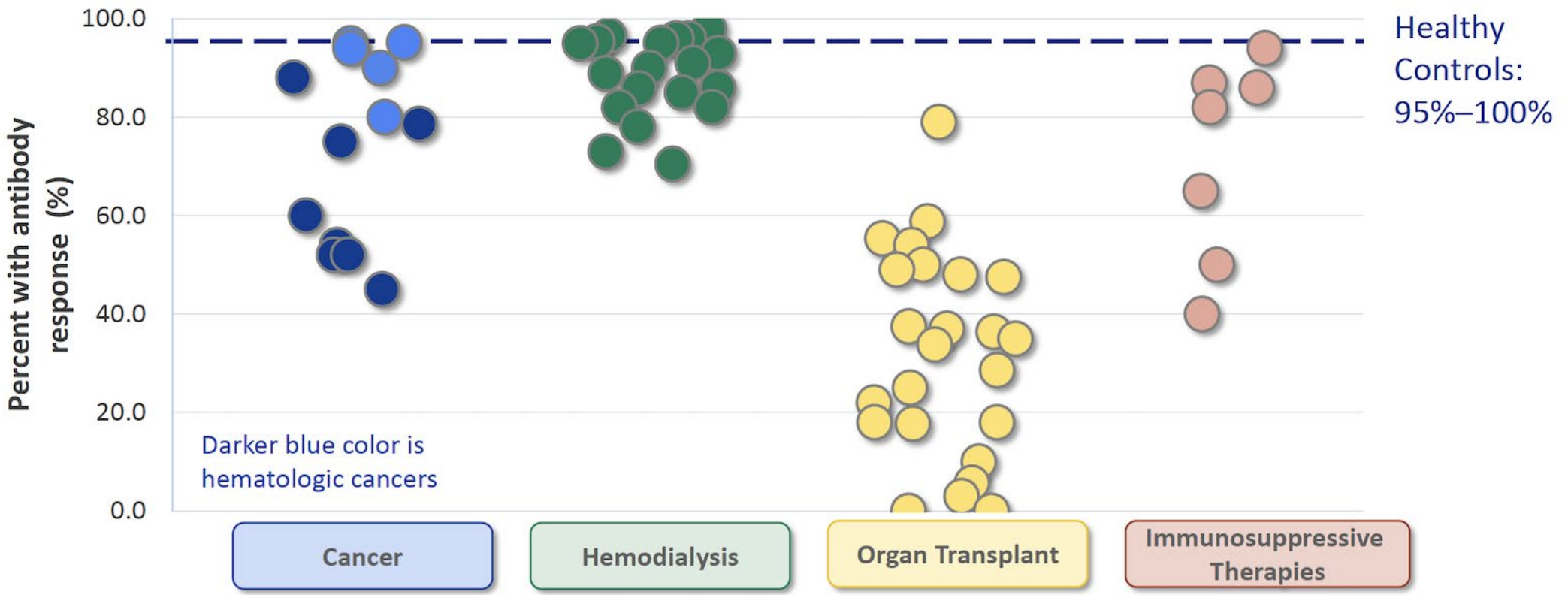


COVID-19 Vaccines Are Safe



- The vaccine DOES NOT contain any virus. It is not alive. It cannot replicate.
- The vaccine CANNOT cause COVID infection.
- The vaccine is a tiny piece of mRNA that teaches our cells to make copies of the spike protein. It cannot make a whole virus.
- These copies of spike protein stimulate our immune system to make antibodies to the COVID-19 virus.
- These antibodies pull the virus into the immune system to destroy it.
- Our cells break down the vaccine after it does its job.
- The vaccine does not enter our cell DNA. It is destroyed.

Percent of subjects with antibody response after two mRNA vaccine doses by immunocompromising condition and study (n=63)



- Studies that compared response after 1st and 2nd dose demonstrated poor response to dose 1
- Antibody measurement and threshold levels vary by study protocol

What Do We Know About a 3rd Dose?

- A third dose of mRNA vaccine may increase antibody levels 10—20x
- Who needs these higher antibody levels?
 - People with impaired immune systems – to get antibody levels up to par
 - Fully vaccinated people whose antibodies go down with time: a “booster”



Single Dose “Vector” Vaccine (J&J)

- Small piece of viral DNA that makes spike protein is put into a harmless adenovirus.
- The viral DNA gives instructions to your cells to make spike protein. Your body then makes antibody to spike protein.
- The adenovirus vector is modified so it cannot replicate.

How Viral Vector COVID-19 Vaccines Work

Understanding the virus that causes COVID-19.

Coronaviruses, like the one that causes COVID-19, are named for the crown-like spikes on their surface, called **spike proteins**. These **spike proteins** are ideal targets for vaccines.

What is a viral vector vaccine?

A viral vector vaccine uses a harmless version of a different virus, called a "vector," to deliver information to the body that helps it protect you.

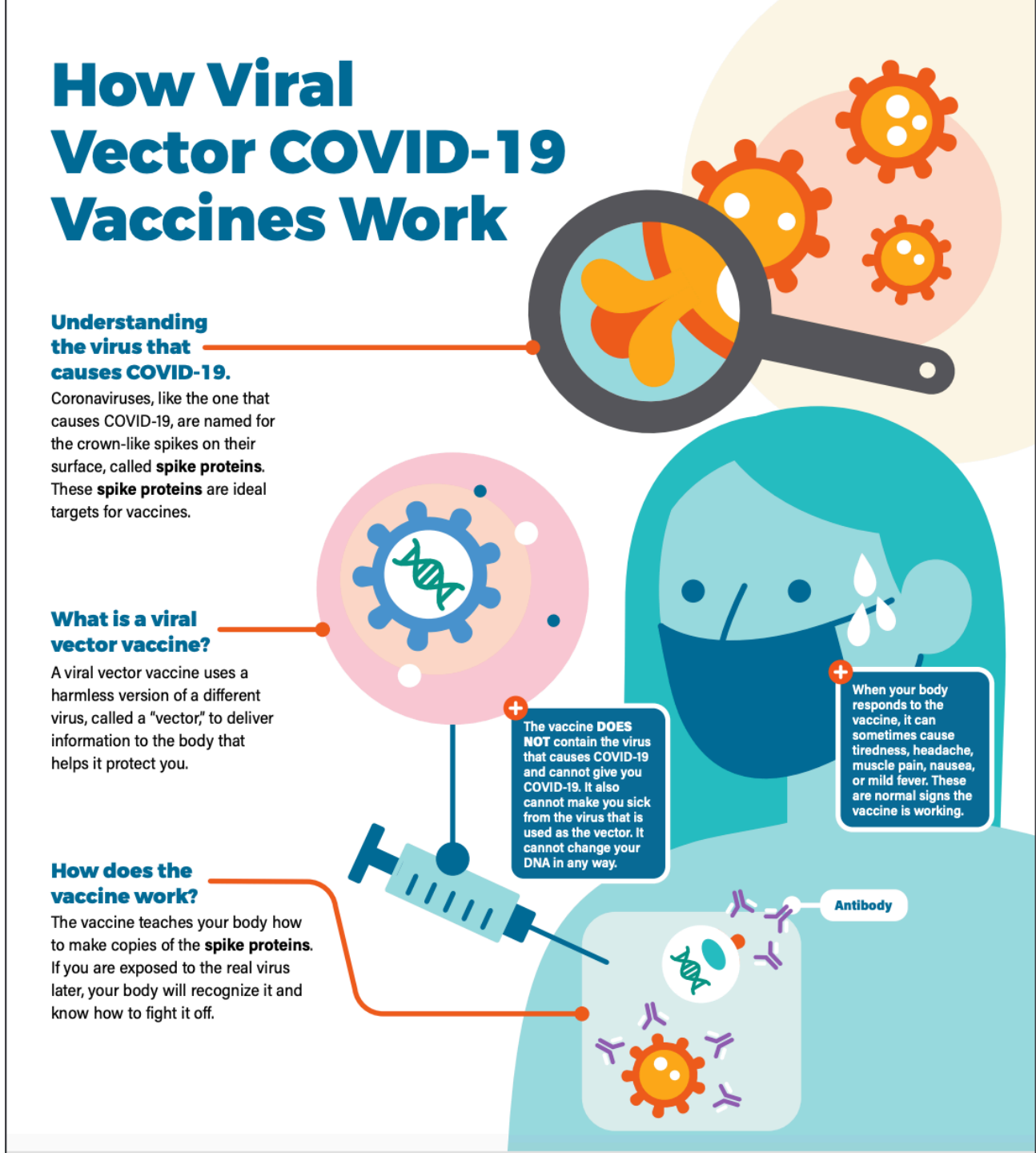
How does the vaccine work?

The vaccine teaches your body how to make copies of the **spike proteins**. If you are exposed to the real virus later, your body will recognize it and know how to fight it off.

The vaccine **DOES NOT** contain the virus that causes COVID-19 and cannot give you COVID-19. It also cannot make you sick from the virus that is used as the vector. It cannot change your DNA in any way.

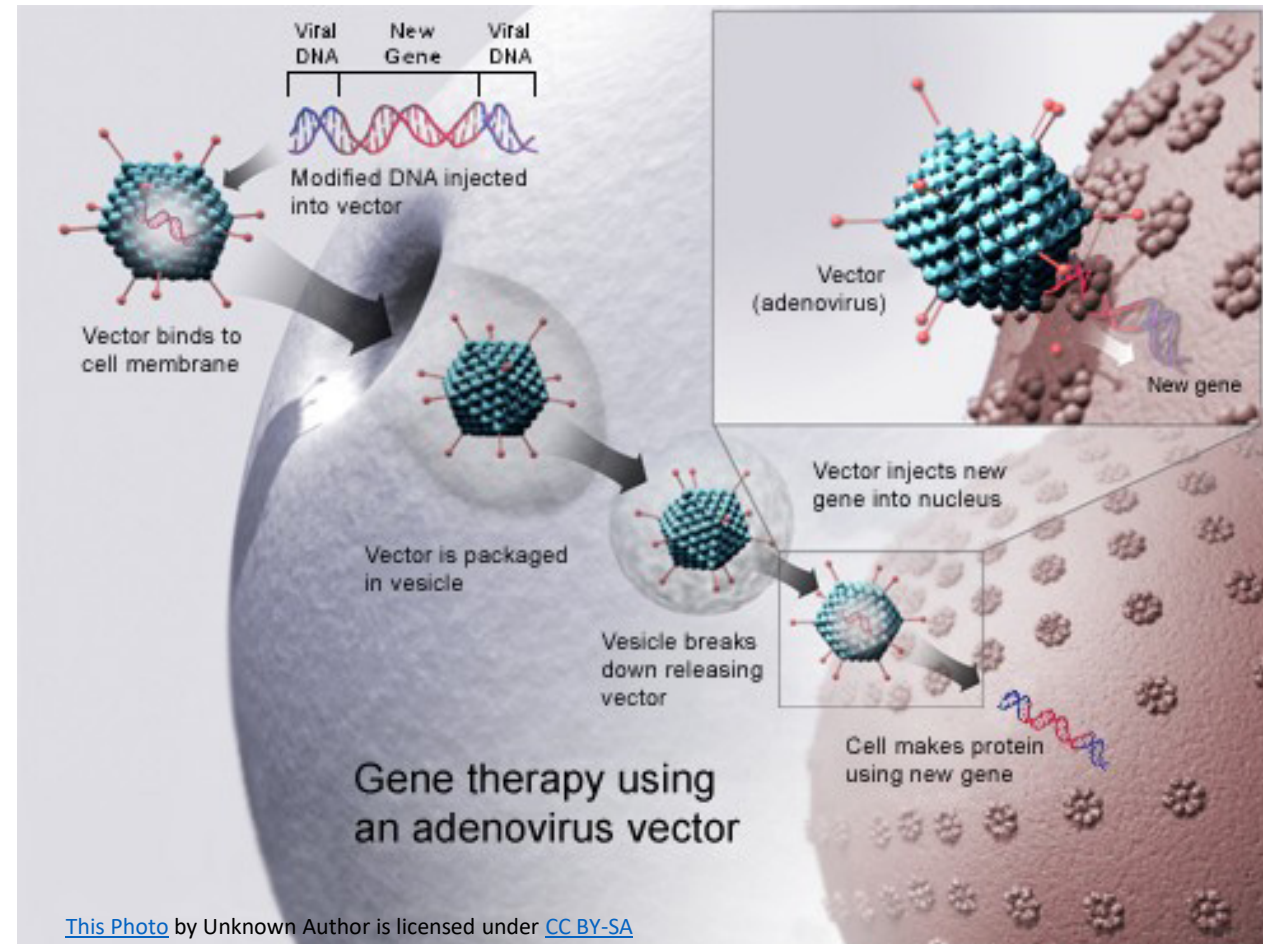
When your body responds to the vaccine, it can sometimes cause tiredness, headache, muscle pain, nausea, or mild fever. These are normal signs the vaccine is working.

Antibody



Single Dose “Vector” Vaccine (J&J)

- Safe and Effective in Dialysis Patients
- Safety and Efficacy of another dose: studies underway
- Some observations suggest that antibody levels may be lower than with mRNA vaccines in some patients



The Delta Variant of COVID-19

- It is highly contagious
 - Twice as transmissible as the original Wuhan strain
 - Viral loads about 1000 times higher than those caused by other variants
- Symptoms are similar to other strains
 - Fever, headache, runny nose, sore throat common
 - Cough, loss of smell NOT common
- Delta variant affects mostly unvaccinated people
- Delta variant causes similar complications, but hospitalization may be twice as high than with the original virus

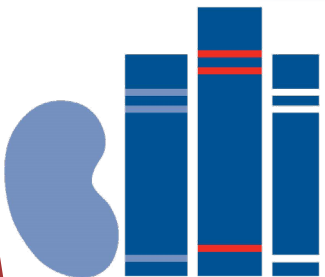
My Advice



- If you have not yet been vaccinated, get vaccinated now.
- If you have an impaired immune system, speak with your doctor about getting a 3rd mRNA vaccine dose
- Wear a mask when with people beyond your household members
 - When you are indoors in stores, restaurants, etc
 - If you are outdoors in large groups close together
- Get your information from reputable sources, like CDC, local health officials and your health care team. Don't be frightened by misinformation
- Stay safe, keep your family safe.

Questions

Please use the Chat Box



Thank You for Attending Today!

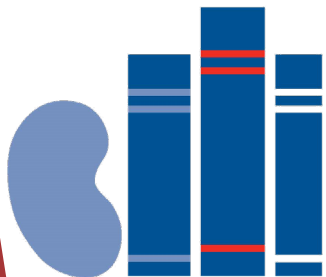
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A promotional poster for a webinar. The title "Building Your Resilience During COVID" is prominently displayed in blue and red. Below the title, the presenter's name "Maureen O'Reilly-Landry, Ph.D." is listed. The date "October 21, 2021" and time "2:00 pm Eastern" are provided with calendar and clock icons. The central illustration shows a person in a white shirt and dark pants pushing large wooden planks up a ramp. In the background, there are stylized buildings and several red, spiky virus-like particles. At the bottom, the logos for the DPC Education Center and the American Psychological Association are shown, along with the text "Learn more and RSVP at www.dpcedcenter.org".

Building Your Resilience During COVID

Presenter:
Maureen O'Reilly-Landry, Ph.D.

October 21, 2021

2:00 pm Eastern

DPC EDUCATION CENTER AMERICAN PSYCHOLOGICAL ASSOCIATION

Learn more and RSVP at www.dpcedcenter.org