

The graphic features a dark grey background on the right and a lighter grey, smoky background on the left, separated by a curved white line. At the top, there are stylized orange and red flames. The text "EMERGENCY STAND DOWN" is written in large, bold, white capital letters with a red outline and a drop shadow. Below it, the year "2022" is written in a smaller, white, stylized font with a red outline. In the bottom right corner, the text "Call to Action: COVID-19 Vaccines" is written in white.

EMERGENCY STAND DOWN


2022

**Call to Action:
COVID-19 Vaccines**

**COVID-19 Deaths
Compared to
Cardiac Deaths**

Cardiac Deaths: 2012	49
Cardiac Deaths: 2013	39
Cardiac Deaths: 2014	65
Cardiac Deaths: 2015	60
Cardiac Deaths: 2016	44
Cardiac Deaths: 2017	53
Cardiac Deaths: 2018	38
Cardiac Deaths: 2019	36

COVID Deaths 2020 - 2021...

A large collage of 240 individual portraits of firefighters is arranged in a grid-like pattern around a central text box. The portraits show firefighters in various settings: some in full turnout gear, some in dress uniforms, and some in casual attire. The central text box is dark gray with white text. The background of the entire image is a light blue sky with wispy white clouds.

To date,
240 Firefighters
in the United States
have died due to
COVID-19

“If we had seen this many firefighters killed by any other cause, there would be no question about whether a Stand Down was necessary”



Dr. James Augustine

Medical Director for Fire/EMS agencies in Atlanta, Georgia; Naples, Florida; and Dayton, Ohio

Medical expert for the IAFC COVID Task Force

Serves the IAFF in infection control efforts

Original Investigation

Incidence of SARS-CoV-2 Infection Among Health Care Personnel, First Responders, and Other Essential Workers During a Prevalence COVID-19 Surge in Arizona

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Abstract

IMPORTANCE Understanding the relative risk of SARS-CoV-2 infection across occupations can inform guidance to protect workers and communities. Less is known about infection risk for first responders and other essential workers than for health care personnel.

OBJECTIVE To compare the prevalence incidence of SARS-CoV-2 infection among first responders and other essential workers with incidence among health care personnel.

DESIGN, SETTING, AND PARTICIPANTS This was a prospective cohort study of health care personnel, first responders, and other essential workers in Arizona from July 20, 2020, to March 14, 2021. Participants were seronegative at enrollment, had frequent direct contact with others at work, worked at least 20 hours per week, and submitted weekly nasal swab specimens for real-time reverse transcriptase polymerase chain reaction analysis. Data analyses were performed from April 19, 2021, to June 4, 2021.

EXPOSURES Occupation was the primary exposure of interest. Confounders assessed were sociodemographic characteristics, health status, community exposure, and work exposure.

MAIN OUTCOMES AND MEASURES Crude incidence of SARS-CoV-2 infection was defined as the sum of first positive SARS-CoV-2 infections in participants divided by person-weeks at risk. Negative binomial regression was used to model SARS-CoV-2 infection by occupation to estimate unadjusted and adjusted incidence rate ratios (IRRs). The least absolute shrinkage and selection operator (LASSO) method was used to generate a parsimonious multivariable model.

RESULTS The study cohort comprised 1766 Arizona workers (mean age [SD], 43.8 [11.1] years; 1093 [61.9%] female; 401 [22.7%] were Hispanic and 1530 [86.6%] were White individuals) of whom 44.2% were health care personnel, 22.4% first responders, and 33.4% other essential workers. The cohort was followed up for 23 393 person-weeks. Crude incidence of SARS-CoV-2 infection was 6.7, 13.2, and 7.4 per 1000 person-weeks at risk for health care personnel, first responders, and other essential workers, respectively. In unadjusted models, first responders had twice the incidence of infection as health care personnel (IRRs, 2.0; 95% CI, 1.44-2.79). While attenuated, this risk remained elevated in adjusted LASSO-optimized models (IRR, 1.60; 95% CI, 1.07-2.38). Risk of infection among other essential workers was no different than for health care personnel in unadjusted or adjusted models.

CONCLUSIONS AND RELEVANCE This prospective cohort study found that first responders had a higher incidence of SARS-CoV-2 infection than health care personnel, even after adjusting for

Key Points

Question Before COVID-19 vaccine availability, how comparable were rates of SARS-CoV-2 infection among health care personnel, first responders, and other essential workers?

Findings This prospective cohort study of 1766 unvaccinated seronegative Arizona workers using self-administered reverse-transcription polymerase chain reaction testing found that first responders had a significantly higher incidence of SARS-CoV-2 infection than health care personnel, even after controlling for sociodemographic characteristics and underlying health and exposure indicators.

Meaning The findings of this cohort study indicate that first responders warrant greater public health attention in context of the COVID-19 pandemic given their higher rates of SARS-CoV-2 infection.

Author affiliations and article information are listed at the end of this article.



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(continued)

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WHAT IS THE RISK TO FIRE & EMS?

Firefighters are 60-100% more likely to contract COVID-19 than other HEALTH CARE WORKERS



Long COVID is when symptoms last more than 4 weeks

The range of long-term symptoms vary significantly and can include:

- Persistent cough
- Shortness of breath
- Fatigue
- Headache
- Heart palpitations
- Chest pain
- Physical limitations
- Depression
- Insomnia

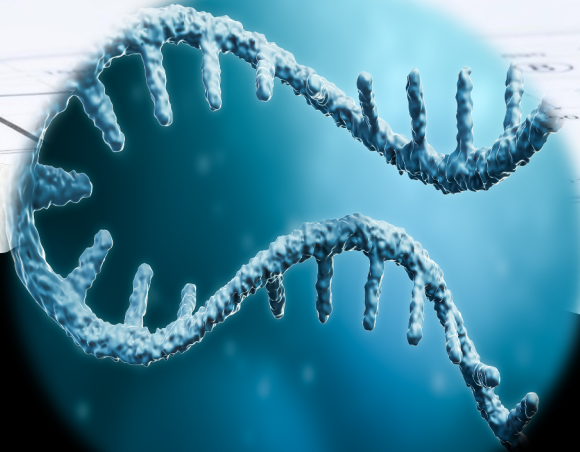
Among those who have not been vaccinated, an estimated 10% of firefighters are experiencing Long COVID – often leading to disability.



What's The Issue with Vaccines For Fire & EMS?

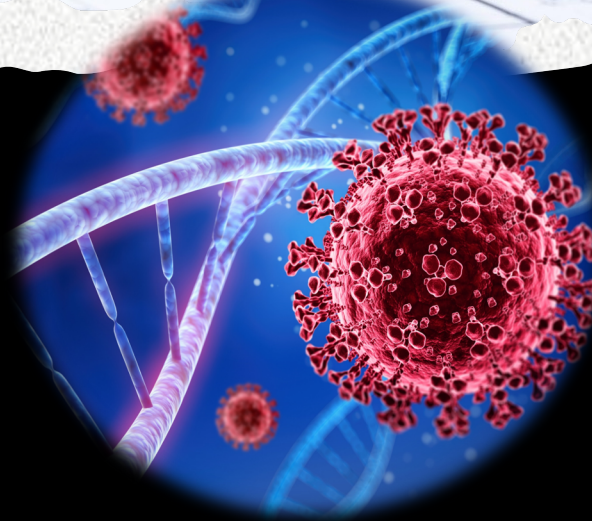
- **Is the vaccine safe?**
- **Is it a vaccine?**
- **How does it work?**
- **If I'm healthy, do I need it?**

How Available COVID-19 Vaccines Work



Pfizer/Moderna

- mRNA
- Requires at least 2 doses



Johnson & Johnson

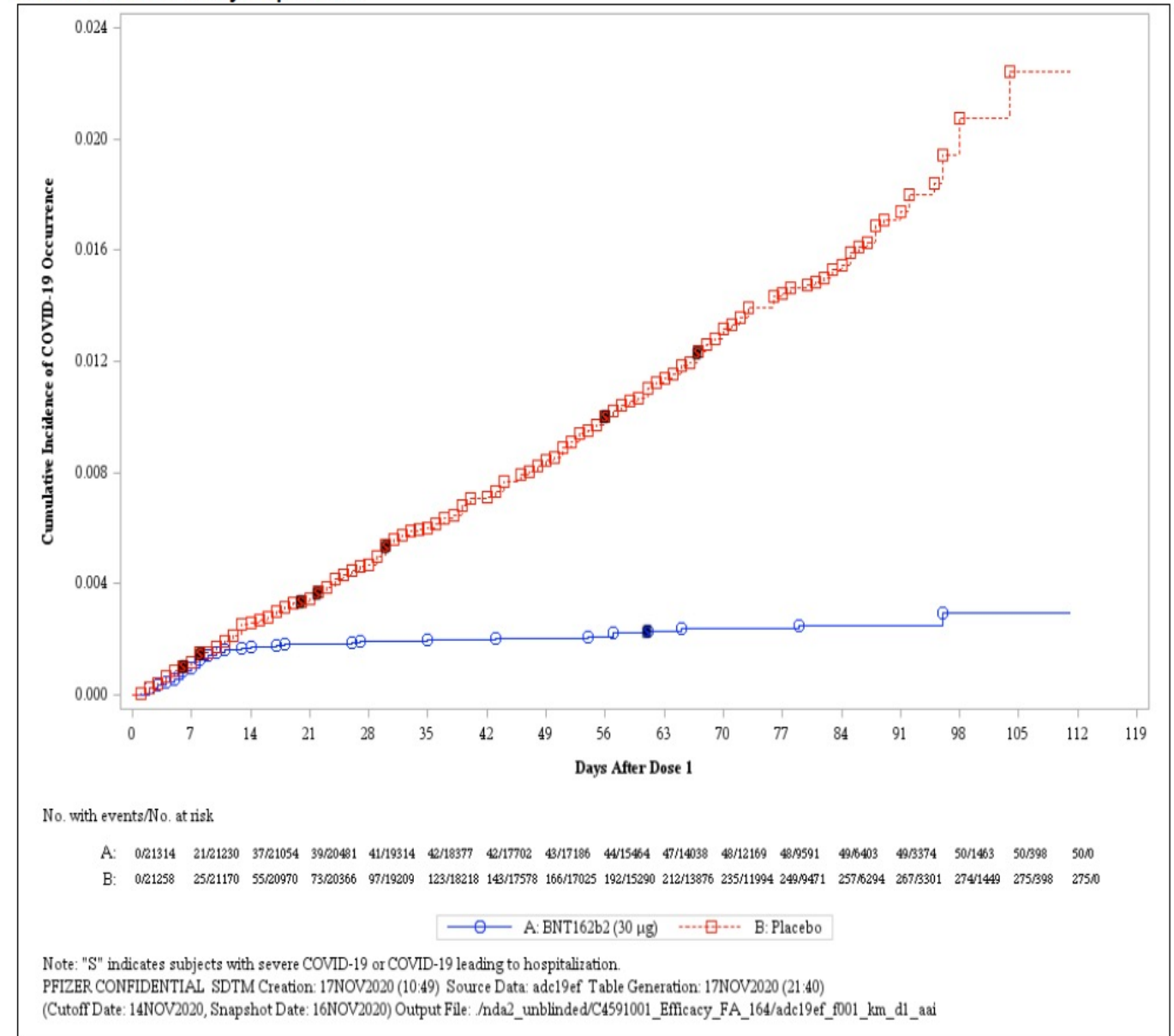
- Viral vector vaccine
- One dose for initial inoculation
- Similar technology to past vaccines

WERE VACCINES DEVELOPED AND BROUGHT TO MARKET TOO QUICKLY TO BE SAFE?

The speed of the vaccines coming to market can be attributed to:

- Existing scientific advances on mRNA and other types of coronavirus vaccines
- Expedited funding
- Fast study recruitment
- Highly effective vaccine and rapid spread of disease
- Expedited review

Figure 2. Cumulative Incidence Curves for the First COVID-19 Occurrence After Dose 1, Dose 1 All-Available Efficacy Population



HOW MANY DOSES OF VACCINE WILL BE NEEDED?



The ultimate number of doses remains a question

Recommendations will be made as data dictates based on careful monitoring of immunity


It is not uncommon for series of vaccines to be necessary for long term immunity

Currently, it is recommended that first responders, who are classified as a “high risk” occupation, receive a “booster” shot

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/booster-shot.html>

How likely is that there will be long term side effects to the COVID-19 vaccine that just aren't identified yet

- Side effects typically occur within the first 72 hours post vaccination
- Nearly every vaccine side effect (for COVID vaccines and all others) occur within the first 2 months post vaccination
- Vaccines leave the body within 72 hours
- No long-term buildup of vaccines



**VACCINE
SIDE EFFECTS**

Is Anyone Paying Attention To The Side Effects Of The Vaccine?

EVERYBODY IS GETTING "THAT VACCINE" ...FOR FIRE FIGHTERS

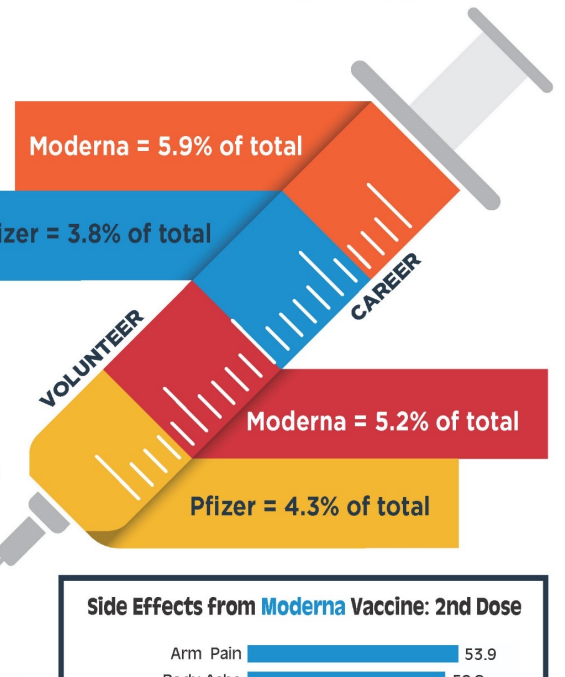
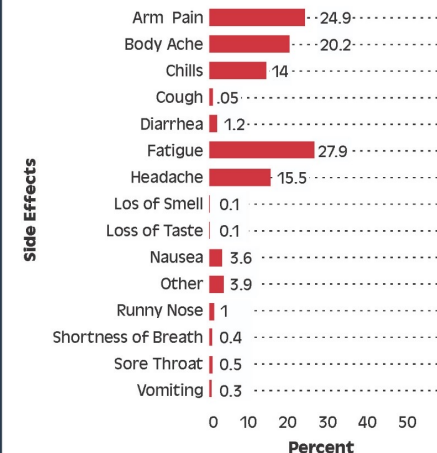


Percentage of fire fighters who, after their second shot, experienced side-effects other than arm pain **AND** whose symptoms lasted more than 2 days*

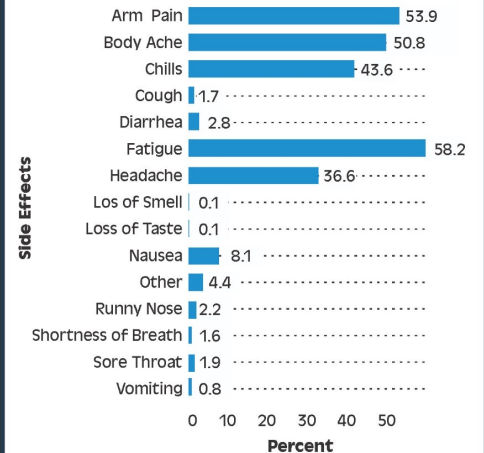
*based on survey of nearly 12,000 Firefighters throughout North America



Side Effects from **Pfizer** Vaccine: 2nd Dose



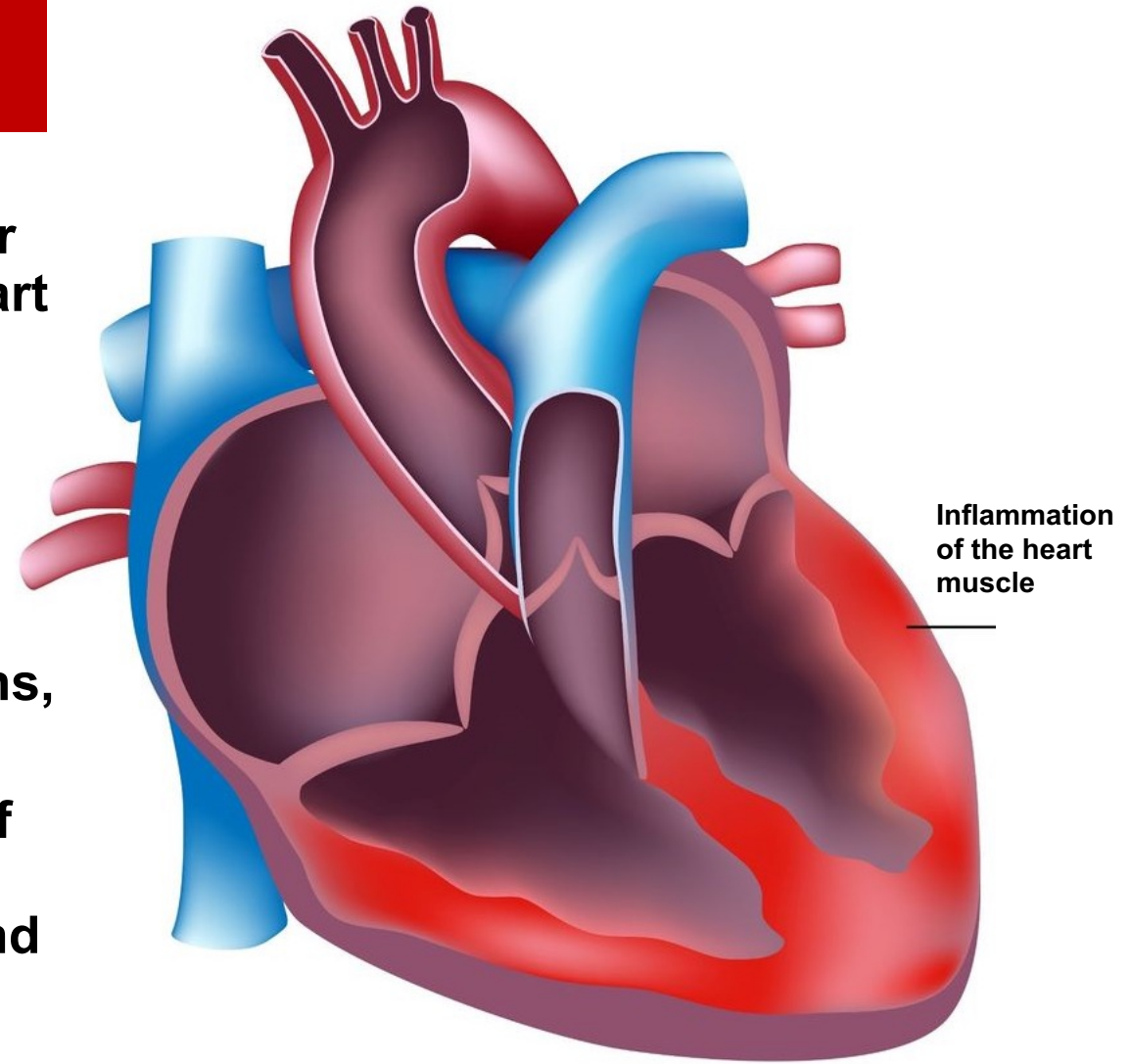
Side Effects from **Moderna** Vaccine: 2nd Dose

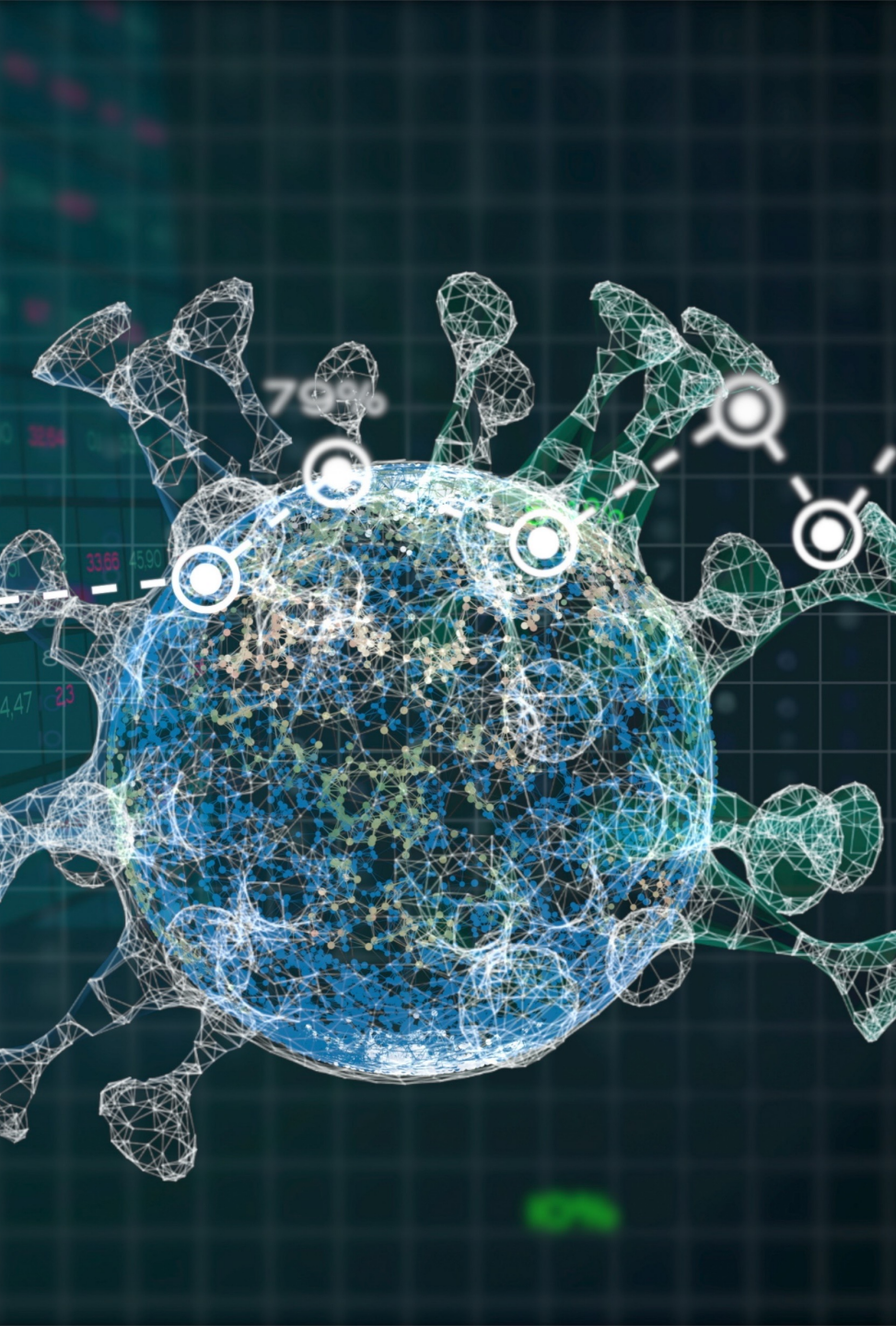


Over 97% of fire fighters, regardless of vaccine type, recommend others get the vaccine

What is Myocarditis?

- Myocarditis is inflammation of the heart muscle, or myocardium, that can result in hospitalization, heart failure, and sudden death.
- Common symptoms include shortness of breath, chest pain, feelings of fast-beating/fluttering/pounding heart.
- Myocarditis is a rare disease (4-6 cases/100,000), usually (50-70% of cases) caused by viral infections, and most common among young adult males.
- Concerns have emerged about the development of myocarditis after the receipt of mRNA vaccines – typically among young adult males after the second dose with symptoms occurring several days post vaccine.





Myocarditis after Vaccine vs. Infection

- Across all age groups, the relative risk of myocarditis is about 16 times higher for people with COVID-19 compared to those who are not infected
- A large study published in the New England Journal of Medicine found that myocarditis risk was 6 times higher after COVID-19 infection than after vaccination
- Among the more than 2.5 million vaccinated people in studies who were 16 years or older, 54 met the criteria for myocarditis. Most cases (about three quarters) were mild and another 22% were moderate
- It is important to note that although the rate of myocarditis is higher among COVID-19 infected individuals, it is still a rare disease in both groups



**Is it really
considered a
vaccine if
people can
still get
COVID-19?**

SHORT ANSWER: “Yes.”

LONG ANSWER: Vaccines are designed to prevent infection or decrease symptoms when someone is infected because the immune system has learned from the vaccine how to fight the virus.

COVID-19 VACCINES vs. OTHER VACCINES

Polio vaccine – 2 doses 90%, 3 doses 99%, 4 doses just under 100%

MMR (measles, mumps, rubella) – 1 dose 93%, 2 doses 97%

Flu – prevents 40-60% of infection

Moderna – Pre-Delta, 91% (100 days after second dose);
Delta 70% (250 days after second dose) in preventing
symptomatic COVID-19
Pre Delta, 94%; Delta 92% effective in preventing hospitalization
67-90% reduction in transmission of COVID-19

Pfizer – Pre-Delta, 80% (100 days after second dose);
Delta 65% (250 days after second dose) in preventing
symptomatic COVID-19
Pre-Delta, 95%; Delta 78% (5 months after full vaccination) in
preventing hospitalization
72-95% reduction in transmission of COVID-19

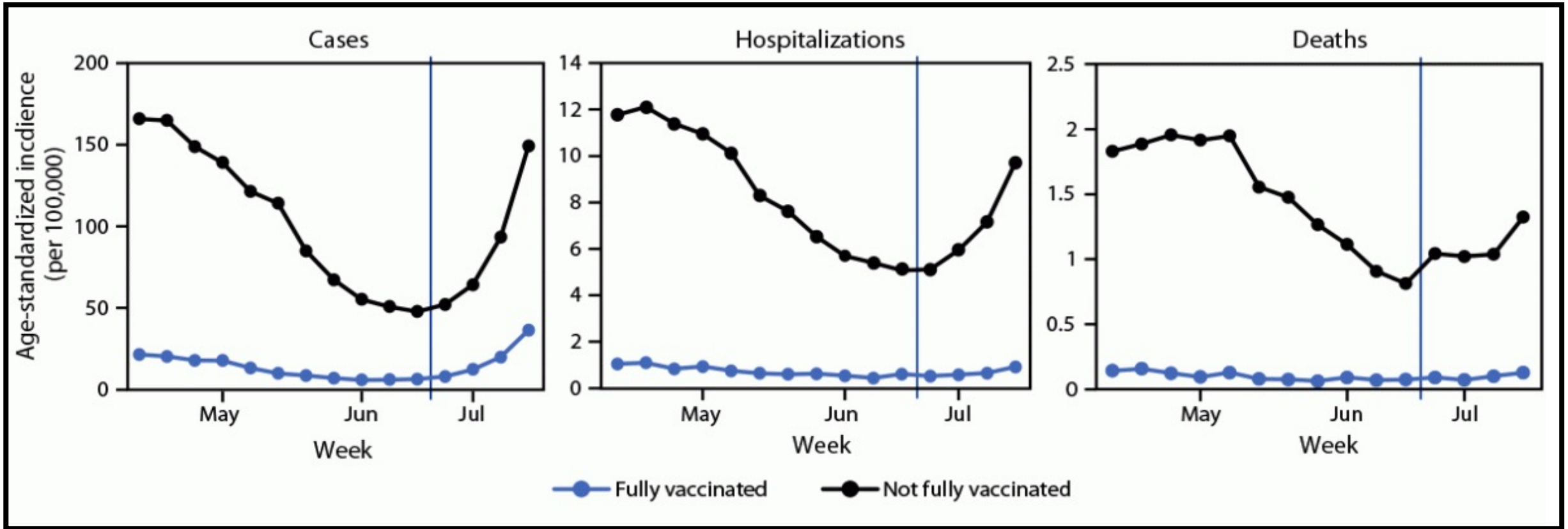
**Johnson &
Johnson –** Pre-Delta, 68%;
Delta 49-78% in preventing symptomatic COVID-19
Pre-Delta, 100% in clinical trials;
Delta, 60-81% in preventing hospitalization
74% reduction in transmission of COVID-19



**HOW DO COVID
VACCINES
COMPARE TO
OTHER
VACCINES?**

WHAT IS THE BENEFIT OF GETTING THE VACCINE?

Weekly trends in age-standardized incidence* of COVID-19 cases, hospitalizations, and deaths, by vaccination status:
April 4–July 17, 2021



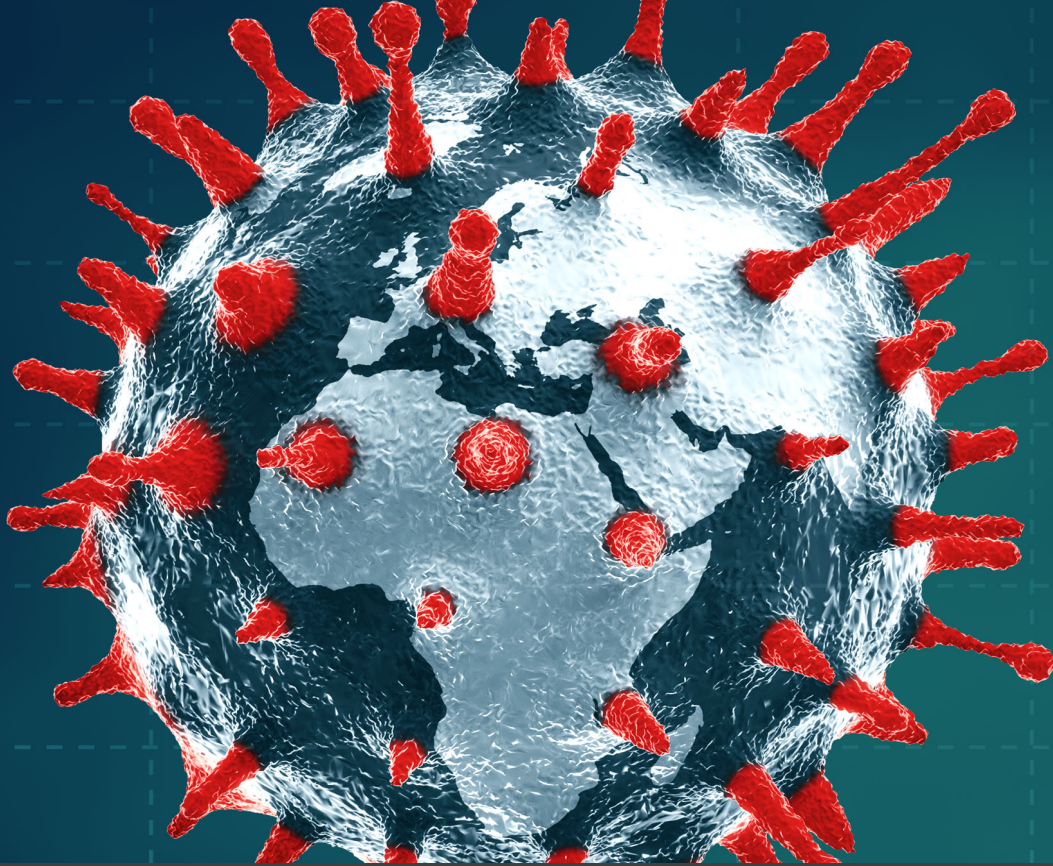
- Rates are standardized by age, according to the enumerated 2000 U.S. Census age distribution. Blue vertical lines indicate when the B.1.617.2 (Delta) variant reached a threshold of >50%, using weighted estimates for 13 jurisdictions combined.

**IF MY IMMUNE
SYSTEM IS IN
GOOD SHAPE,
DO I REALLY
NEED A
VACCINE?**

**WON'T MY
BODY JUST
FIGHT IT OFF?**



- Risk of severe disease is higher for those who are less healthy
- However, those who are healthy can still have severe, negative side effects
- Vaccines reduce spread of infection
- High community spread leads to faster mutations



Although COVID-19 is typically mild in young people, about 30% of youth hospitalized with COVID-19 have no underlying health conditions that would have put them at increased risk.

Amid the recent delta surge, hospitalization rates were about 10 times higher in unvaccinated young people than vaccinated ones.

**Are the treatment approaches
so good that you don't need
to worry about getting sick?**



WHAT ABOUT IVERMECTIN?

“Overall, the reliable evidence available does not support the use of Ivermectin for treatment or prevention of COVID-19 outside of well-designed randomized trials.”



**DO YOU
STILL
BENEFIT
FROM A
VACCINE IF
YOU HAVE
ALREADY
HAD
COVID-19?**









Why Fire & EMS?

**NEED MORE
INFORMATION?**

**If you still have questions,
we are happy to help answer them**

Send questions to:

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Chair, Safety, Health & Survival Section, IAFC

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Developed by:



THANK YOU

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