



Fall 2021 Update: Navigating COVID Vaccination in Tumultuous Times

ABSTRACT: *The COVID-19 pandemic and subsequent development of COVID vaccines have resulted in unique challenges for nurses. Nurses are being asked to make recommendations about vaccinations that have only been available since December 2020 even as vaccine information evolves on an almost daily basis. Standards of professional care and a Christian perspective on nursing to help guide nurses' practice in the current climate are discussed in this article. An overview of information and research findings published up to October 31, 2021 about COVID-19 vaccination is given to assist nurses in answering vaccination questions.*

KEY WORDS: *COVID-19, COVID vaccination, emergency use authorization (EUA), herd immunity, layered prevention strategies, nursing*

We are living in unprecedented times, one of the most difficult in modern history because of the COVID-19 pandemic and subsequent tumult following release of the COVID-19 vaccines. On January 31, 2020, a nationwide public health emergency from the 2019 Novel Coronavirus (2019-nCoV or SARS-CoV-2) was declared in the United States (U.S. Department of Health and Human Services [HHS], 2020). Since then, 245,373,039 confirmed cases of COVID-19 have been reported glob-

ally with 4,979,421 deaths (World Health Organization [WHO], 2021, October 29a). The highest number of cases (45,445,663) has been reported in the United States with 736,801 deaths WHO, 2021, October 29b).

The first vaccine against COVID-19 from Pfizer-BioNTech received emergency use authorization (EUA) on December 11, 2020 (U.S. Food and Drug Administration [FDA], 2020, December 11). The WHO (2021, October 29a) reports that as of October 29, 2021, a total of 6,838,727,352 vaccine doses have been administered globally of all available vaccines; over 414 million doses have been administered in the United States (CDC, 2021, October 25).

Nurses have never been confronted with such conflict and angst over an illness or a vaccination as is occurring today. We are being asked again and again to make recommendations

about COVID vaccination, even as some nurses may have conflicted thoughts and feelings. Nurses express they are struggling to know and believe what is the best and most accurate COVID vaccine information. The growing controversy related to vaccine mandates is intensifying the need for nurses to have the most credible and timely information concerning the vaccine.

HOW SHOULD NURSES EVALUATE INFORMATION?

COVID-19 vaccine information, like any information we use in professional nursing practice, must be validated. A critical evaluation question is source—where did the information come from? Is the source credible? Credible information from any source can be fully evaluated and verified. What is the background and experience of the group or individual providing the information? Is the source a scientist reporting on research? A neighbor? An unknown person on Facebook, Twitter, or Instagram? Does the individual/group have connections to products or services that will financially or otherwise benefit them in relation to the information shared? Can information be connected with respected experts in the area and/or is it published in respected peer-reviewed journals?

Another critical information question is, what is the context? For example, claims have been made that thousands of people have died after taking the COVID-19 vaccines. This is true. But what did those people die from and was their death related

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to a COVID-19 vaccine? Of the 8,390 reports of death representing 0.0021% of the 396 million people vaccinated between December 14, 2020 and October 4, 2021, a critical review of all available clinical information (medical records, autopsies, death certificates) has not established a causal link to COVID-19 vaccines (CDC, 2021, October 6). A possible relationship has been made between the Johnson

to understand and offer the best, most accurate, and latest information about COVID-19 illness and vaccination.

As nurses of Christian faith, we are called to be faithful Christ-followers. We each are to love God with all our heart, soul, mind, and strength and love our neighbor as ourselves (Deuteronomy 6:5; Leviticus 19:18; Matthew 22:37-39), including real or perceived enemies

COVID-19 vaccination claims. This article is not an opinion paper about COVID-19 vaccination telling people to take or not take the vaccine. It is a discussion of questions arising about vaccination and what research and best evidence reveal. It should be noted that COVID-19 vaccination information evolves on an almost daily basis. This article attempts to give a snapshot of vaccine evidence as of October 31, 2021.

A critical evaluation question is source—where did the information come from?

& Johnson Janssen COVID-19 vaccine and thrombosis with thrombocytopenia syndrome (TTS) that has led to death (CDC, 2021, August 27).

Information from any source should be traced back to the original source and context as much as possible and evaluated. This is not an easy task. It can be difficult to filter and evaluate information. But we must work to be objective researchers and make efforts to accurately interpret information.

HOW DO WE BEST CARE FOR OTHERS?

Our professional *Code of Ethics for Nurses* (American Nurses Association [ANA], 2015) instructs that our role is to promote optimal health and wellness and to respect patient self-determination. We are to give “accurate, complete, and understandable information in a manner that facilitates an informed decision and assists patients with weighing the benefits, burdens and available options in their treatment, including the choice of no treatment” (ANA, Provision 1, p. 2). As professional healthcare providers, we are required

(Matthew 5:44-46). If we love Jesus, we are to love each other (John 15:12-17) and lay down our lives for each other (John 15:13). The apostle Paul further instructed that love is patient, kind, does not boast and is not proud; love is the greatest of faith, hope, and love (1 Corinthians 13). We are to be humble, gentle, patient, and bear with one another (Ephesians 4:2), even as Jesus did for us (Philippians 2). We seek to be like Jesus. We keep our minds and lives focused on Jesus who endured mass suffering and shame to bring us into relationship with God and himself (Hebrews 12). We seek to be filled with the Holy Spirit and pray for wisdom and discernment.

Reflecting on these and related Scriptures can help us remember that we can go to God for discernment, clarity, and support when immersed in such confusing and tumultuous times.

This article was prepared in October 2021 to try to help answer questions nurses are facing about COVID-19 vaccination. Wherever possible, original research was evaluated to discover if and how available research supports

QUESTIONS ABOUT COVID-19 VACCINES

Were COVID vaccines fully tested before the vaccines were approved for administration to the public? The

COVID-19 vaccines currently available in the United States—Pfizer-BioNTech, Moderna, and Johnson & Johnson—all received “emergency use authorization” approval by the U.S. Food and Drug Administration (FDA, 2021, October 29a). This has led to questions about whether the vaccines were fully tested or established as safe. To respond to this concern, we first need to understand what EUA means and how EUA is given.

Before the FDA can issue an EUA, a public health emergency (PHE) must be declared and then a subsequent and separate authorization for medical countermeasures must be made by HHS. When these two criteria have been met, the FDA (2021, October 29a, para 2)

may authorize unapproved medical products or unapproved uses of approved medical products to be used in an emergency to diagnose, treat, or prevent serious or life-threatening diseases or conditions caused by CBRN [chemical, biological, radiological, or nuclear] threat agents when certain criteria are met, including there are no adequate, approved, and available alternatives.



The authorization of medical countermeasures (MCMs) for COVID-19 was first issued by the Secretary of Health and Human Services on March 17, 2020, providing liability immunity for MCMs against COVID-19 effective February 4, 2020 (Federal Register, 2020). This allowed for EUA approval by the FDA for COVID-19 medical devices, drugs and biological therapeutic products, and vaccines. Declaring a PHE and authorizing MCMs does not mean COVID-19 treatments and vaccines did not meet standards of scientific research and testing. The FDA maintains an active and detailed list of all current and expired EUAs, including timelines and fact sheets for each EUA (FDA, 2021, October 29a).

a randomized, placebo-controlled clinical trial and were followed for 2 months after receiving the second vaccine. The vaccine was reported as 95% effective in preventing COVID-19 disease among participants with eight COVID-19 cases in the vaccine group ($n = 18,198$) and 162 in the placebo group ($n = 18,325$; FDA, 2020, December 11).

Emergency use authorization for the Pfizer vaccine in children ages 12 to 15 was issued May 10, 2021 (FDA, 2021, August 23). The Pfizer-BioNTech vaccine, now called *Comirnaty*, received full FDA approval on August 23, 2021 for individuals 16 years of age and older with EUA for children ages 12 to 15 (FDA, 2021, August 23). Children ages 12 to 15 can be given

Were the COVID-19 vaccines adequately tested? Evidence supports that the vaccines were and are being tested according to established scientific methods, and the vaccines continue to be tested.

Are COVID-19 vaccines effective?

Most of us have either heard of or know someone who was fully vaccinated against COVID and later developed COVID illness. Out of 185 million fully vaccinated individuals, 30,177 patients with COVID-19 vaccine breakthrough infection had been hospitalized or died as of October 4 (CDC, 2021, October 5). The 95% effectiveness rate of preventing illness among fully vaccinated individuals during the initial testing of the Comirnaty vaccine (FDA, 2020, December 11) has decreased to between 53% (Tartof et al., 2021) and 86% (Thomas et al., 2021) in the 6 months following EUA and monitoring. Naaber et al. (2021) found that antibody response to COVID-19 spiked at 1 week after the second Comirnaty vaccine dose, declined at 12 weeks, and further declined at 6 months to about the same antibody level as individuals with just one vaccine dose.

After monitoring COVID-19 cases in multiple states across 13 public health jurisdictions from April 4 to July 17, 2021, the Morbidity and Mortality Weekly Report (MMWR) found that vaccinated individuals were five times less likely to become infected with COVID-19 than unvaccinated individuals; 10 times less likely to be hospitalized with COVID-related illness, and 10 times less likely to die from COVID (Scobie et al., 2021). The report noted that vaccination protection from COVID-19 illness was declining from prior evaluations but remained high for preventing serious illness and death. The authors pointed out limitations, like the data represented only 25% of the general population and had other

The WHO has delineated four COVID-19 variants of concern—Alpha, Beta, Gamma, Delta; and two variants of interest—Lambda and Mu.

An EUA does not mean a drug or product does not undergo rigorous testing. Research on vaccines effective against coronaviruses had been in development for years. When the COVID-19 pandemic hit and following MCM authorization by HHS, the FDA issued guidelines in June and October 2020 to manufacturers researching coronavirus vaccines. Manufacturers then submitted Investigational New Drug (IND) applications for potential COVID-19 vaccines to the FDA. Following IND approval by the FDA, manufacturers conducted classic three-phase research trials on human subjects with the vaccines (FDA, 2020, November 20). Before the Pfizer-BioNTech COVID-19 vaccine received EUA, 37,586 individuals aged 16 and older had participated in

the second Pfizer-BioNTech COVID-19 vaccine 3 weeks after the first dose. Dosage dosage for these children is the same as for adults, as there are no weight requirements or varying of dose based on body mass for this age group (CDC, 2021, August 17). On October 29, 2021, the FDA issued an EUA for the Comirnaty vaccine in children ages 5–11. The vaccine is authorized to be given at a lower dose (10 mcg vs 30 mcg), three weeks apart (FDA, 2021, October 29b).

Similar IND and research were conducted on the Moderna and Johnson & Johnson Janssen vaccines prior to EUA. A helpful infographic, *The Path for a COVID-19 Vaccine from Research to Emergency Use Authorization* (FDA, 2021, September 9), details the EUA process that occurs for COVID-19 vaccines.



limitations (Scobie et al.). Oliver (2021) also concluded that Pfizer-BioNTech vaccine effectiveness against infection and milder illness waned over time.

Because of concern for waning vaccine effectiveness (Naaber et al., 2021), on September 2, 2021, the FDA recommended that individuals who are moderately to severely immunocompromised (about 3% of the population) and received two prior doses of the Pfizer Comirnaty vaccine, receive a third dose of the Comirnaty

(or ‘mix and match’) booster dose in eligible individuals following completion of primary vaccination with a different available COVID-19 vaccine” (para 3).

In addition, the specific variant of COVID Sars-CoV-2 may impact vaccine effectiveness. To date, the WHO has delineated four COVID-19 variants of concern—Alpha, Beta, Gamma, Delta; and two variants of interest—Lambda and Mu. Variants of concern are so named because of being more infectious and less

Established systems to monitor responses to COVID-19 vaccines include the Vaccine Adverse Events Reporting System (VAERS; CDC, 2021, August 25), which has been in place since 1990 and monitors all FDA-approved vaccines (VAERS, n.d.). Reporting of adverse events to VAERS is voluntary for the public while healthcare providers are required to report all adverse events caused by vaccines. This does not mean all adverse events have been reported, or that reported adverse events were caused by COVID-19 vaccination. It does mean that adverse events that are reported are monitored. Additional data are collected as available in medical records and from healthcare providers by VAERS staff for serious adverse events such as permanent disability, hospitalization or an extended hospital stay if vaccinated while in the hospital, life-threatening illness, birth defects (congenital anomalies), and death (CDC, 2021, August 25).

Other established monitoring systems include the Clinical Immunization Safety Assessment Project, Vaccine Safety DataLink, Biologics Effectiveness and Safety Systems (BEST), Sentinel Initiative, and special military, veterans, and tribal nations programs. These existing programs are being deployed to monitor COVID-19 vaccination safety and adverse events (CDC, 2021, August 31).

The CDC began new systems to monitor COVID-19 vaccination more closely. The V-Safe After Vaccination Health Checker uses a free smartphone application that prompts vaccinated individuals to self-report side effects after their first and second vaccinations and booster doses (CDC, 2021, September 3). Another new program is the V-Safe Pregnancy Registry (CDC, October 4b).

Common COVID-19 vaccine side effects noted in clinical trials and that continue to be reported are injection site redness, pain, and swelling, and

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vaccine to boost their immunity (CDC, 2021, October 8). Information in emerging research studies supports that being immunocompromised due to high-dose corticosteroids, cancer treatment, stem cell or organ transplant, primary immunodeficiency, or untreated/advanced HIV infection can interfere with normal immune response to the vaccines.

As of October 7, 2021, the CDC recommended a third booster Comirnaty dose for adults aged 65 and older, 50 to 64 years with underlying medical conditions, 18 years and older living in long-term care facilities, and individuals working or living in high-risk situations (i.e., front line, healthcare, prisons, etc.). The FDA (2021, October 20) amended the EUs for the Moderna and Johnson & Johnson vaccines to recommend a third booster dose of the Moderna vaccine 6 months after completing the two-dose series, and a booster J & J/Janssen vaccine at 2 months after the first dose. The FDA also approved mixing of the booster dose, recommending “use of each of the available COVID-19 vaccines as a heterologous

responsive to public health and social measures or to available vaccines, diagnostics, and treatment therapeutics. Variants of interest are viruses that possess genetic characteristics that impact transmissibility, disease severity, immune escape, diagnostic or therapeutic escape; and suggest emerging risk to global public health but are not yet variants of concern (WHO, 2021, September 22). Both the CDC (2021, September 15) and WHO stated that vaccination against COVID-19 provides protection against more severe illness, hospitalization, and death from all variants of COVID-19. The WHO updates SARS-CoV-2 variant information regularly.

Are COVID-19 vaccines safe?
What is known about side effects?
COVID-19 vaccines are undergoing the most intense safety monitoring that has occurred in United States history. Over 414 million doses of COVID-19 vaccines have been administered in the United States (CDC, 2021, October 25), and the vaccines are being monitored through prior established systems as well as new programs (CDC, 2021, August 31).



systemic symptoms of tiredness, headache, fever, myalgia, and nausea. Side effects can be greater after the second vaccine dose (CDC, 2021, September 30). Axillary lymphadenopathy is common after COVID-19 vaccination; therefore, the Society of Breast Imaging (2021) recommends waiting 4 to 6 weeks after vaccination before mammography screening. A not yet peer-reviewed study released July 29, 2021 and sponsored by Pfizer found additional new adverse events of decreased appetite, lethargy, asthenia, malaise, night sweats, and hyperhidrosis (Thomas et al., 2021).

Serious adverse effects of anaphylaxis, myocarditis, and pericarditis (Pfizer-BioNTech and Moderna), TTS (with J & J/Janssen and Moderna vaccines), Guillain-Barré Syndrome (J & J/Janssen), and death have occurred in individuals following COVID-19 vaccination. However, such cases have been classified as extremely rare (CDC, 2021, September 30; 2021, October 6). The CDC and VAERS staff are researching medical records of these events and

groups. Individuals who have any known prior allergies, an allergic reaction to any vaccine, an allergy to an ingredient of the COVID-19 vaccine, or a prior allergic reaction to a COVID-19 vaccine should be triaged carefully before vaccine administration. Such individuals can be referred to an allergist-immunologist. If given a COVID-19 vaccine, they should be monitored for at least 30 minutes for potential reaction. Providers should research vaccine advisories related to patients' current underlying medical conditions and be aware of vaccine ingredients to explore contraindications for vaccination (CDC, 2021, September 27). COVID-19 vaccines can be given concomitantly with other vaccines (CDC, 2021, September 27).

What do we know about COVID-19 vaccination and fertility or pregnancy?

Data are not available on the long-term impact of vaccination on fertility or pregnancy. Vaccine hesitancy in reproductive-aged women has been intensified by social media reports suggesting a similarity between the

and lactating women found no adverse effects in the women or their newborns and no increase in spontaneous abortion rates or complications in pregnancy. A positive finding was that a major amount of anti-SARS-CoV-2 immunoglobulins is transferred through the placenta and breast milk to the newborn, providing humoral immunity (Falsaperla et al., 2021). Shimabukuro et al. (2021) found in an analysis of data from pregnant women in the V-Safe registry from December 14, 2020 to February 28, 2021 that women who received the Pfizer-BioNTech or Moderna vaccines did not experience problems with or loss of pregnancy differently from nonvaccinated women. Theiler et al. (2021) found similar results. Nonpeer reviewed research by CDC researchers of data from the voluntary V-Safe CDC reporting system supports that COVID-19 vaccination has not led to spontaneous abortion in women 6 to 19 weeks pregnant (Zauche et al., 2021).

The long-term impacts of COVID-19 vaccination on fertility and in pregnancy cannot be assessed at this time. To date, no published research that JCN editors could locate has found that COVID-19 vaccine has adverse effects on fertility or in pregnancy. The CDC maintains a collection of published research regarding COVID-19 vaccination in males and females of reproductive age and in pregnancy (CDC, 2021, August 11).

What about alternative views of COVID vaccination? The National Vaccine Information Center (NVIC) is a not-for-profit, nongovernmental clearing house for diseases and vaccine information. The mission of NVIC is to prevent "vaccine injuries and deaths through public education and advocating for informed consent protections in medical policies and public health laws" (NVIC, 2021a, para 2). The organization provides extensive

Research on vaccines effective against corona viruses had been in development for years.

trying to establish connections with the vaccines and these serious adverse events. Researchers also examine how often an adverse event occurs in a comparable population versus similar individuals who received a COVID-19 vaccine to evaluate occurrence rates.

Is COVID-19 vaccination contraindicated for some individuals? As with any vaccination, a current moderate-to-severe illness is a contraindication for receiving COVID-19 vaccines. Vaccines also should only be given for approved age

SARS-CoV-2 spike protein and syncytin-1, a protein critical to the formation of the developing embryo (Lu-Culligan & Iwasaki, 2021, January 26). Available research conducted and reported since December 2020 when COVID-19 vaccination became available supports that neither COVID-19 vaccination or having a COVID-19 infection impacts fertility in females or males (CDC, 2021, August 11; Morris, 2021).

A systematic review of data available up to June 12, 2021 for COVID-19 vaccination in pregnant



information about illnesses that vaccines are intended to combat as well as vaccines. The NVIC states clearly that information is not offered to advise for or against vaccination but is meant to be a resource for people to explore and make informed choices for themselves and their children.

A review of the NVIC site, including detailed information pages for 20 different vaccines, reveals extensive discussion and referencing of risks and side effects of vaccines. No information could be found reporting benefits for any vaccination. The NVIC states that vaccines, as do all pharmaceutical products, “carry two risks: a risk the product will not work and a risk the product will cause harm” (NVIC, 2021b, para 2). Regarding COVID-19 vaccines, NVIC (2021c) offers extensive background and research information about development, risks, and side effects. No information is reported about the effectiveness of COVID-19 vaccines on preventing illness, serious illness, hospitalization, or death from COVID-19 (NVIC, 2021d).

The NVIC organization reports it was banned from Facebook on March

CCDH is an international nonprofit, nongovernmental organization that “seeks to disrupt the online architecture of online hate and misinformation” (CCDH, 2021b, para 1). The CCDH performed an analysis of antivaccine content that was posted or shared 812,000 times on Facebook and Twitter between February 1 and March 16, 2021. They found that 65% of those antivax posts (73% on Facebook; 17% on Twitter) were made by 12 people the CCDH calls “the Disinformation Dozen,” a group of influencers who have a history of posting negative sentiments in general on social media (CCDH, 2021a). The CCDH suggests that the mass amounts of information on social media, which might suggest credibility, do not represent mass sources but the opinions of a few and explains how social media posts spread. The CCDH also suggests that the 12 people are using antivaccination information to raise funding (CCDH, 2021c).

A recent example of disreputable information is mass social media posts claiming that employees of the U.S. government, including the White House, Congress, the CDC, FDA, and

news sources (Lee, 2021; Reuters, 2021).

Some believe *herd immunity* will protect against COVID-19 once the majority of the population has antibodies to COVID-19 from illness or vaccination. Although having most of the population immune could mean fewer people get COVID-19 illness and therefore, fewer people will be exposed to illness, this may not be the safest thinking. How long immunity lasts after illness with COVID-19 or vaccination is not clear, and researchers are discovering antibody response decreases over time. Variants of COVID-19 continue to develop, and it is not known if or how well immunity will protect from new variants. Some health experts estimate that at least 70% of the population would need to have immunity to stop the spread of COVID-19 (Mayo Clinic, 2021a). An outbreak of the more serious COVID-19 Delta variant occurred in a community in Massachusetts with a 69% vaccination rate, although those vaccinated had less serious illness and fewer hospitalizations than unvaccinated individuals (Dyer, 2021).

Suggestions have been made that the mRNA vaccines have microchips, can cause a person to be magnetic, or can alter one’s DNA. Evidence supports the above beliefs are false (CDC, 2021, October 4a; WHO, 2021, May 5). A list of all active and inactive ingredients for all COVID-19 vaccines is available (CDC, 2021, September 27). To date, JCN staff could find no published research to support the above claims.

WHERE DO WE GO FROM HERE?

No long-term evidence about COVID-19 vaccination exists because COVID-19 is a relatively new illness, new variants of COVID-19 continue to emerge, and because COVID-19 vaccinations have only been available since December 14, 2020. We do not

The CDC began new systems to monitor COVID-19 vaccination more closely.

8, 2021, from Instagram in April 2021, and from Twitter in May 2021 (NVIC, 2021e; 2021f). Co-founder Barbara Loe Fisher stated this was censure of the truth by Big Tech and Big Pharma business who partner with the social media giants.

An evaluation by the Center for Countering Digital Hate (CCDH) of antivaccine information reports that the majority of antivaccine information is coming from a small number of individuals (CCDH, 2021a). The

Postal Service, were exempted from COVID vaccine mandates by President Joseph Biden (see for example James Bailey’s blog post on *Z3 News Revealing Mystery Babylon* on October 7, 2021 who quoted [but misspelled] a radio message from Jeff Rense on *Rense Radio*). This information raced across social media with suggestions that the president knows something we don’t know, and COVID vaccines may not be safe. This news later was verified as inaccurate and false by



Web Resources

- **COVID-19 Print Resources**
<https://www.cdc.gov/coronavirus/2019-ncov/communication/print-resources.html>
- **COVID Vaccine Facts for Nurses**
<https://covidvaccinefacts4nurses.org>
- **COVID-19 Vaccine FAQs for Healthcare Professionals**
<https://www.cdc.gov/vaccines/covid-19/hcp/faq.html#vaccine-indications>
- **Johns Hopkins University of Medicine Coronavirus Resource Center**
<https://coronavirus.jhu.edu>
- **Combat COVID**
<https://combatcovid.hhs.gov>
- **Mayo Clinic COVID-19 Vaccines**
<https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/coronavirus-vaccine/art-20484859>
- **American Society for Reproductive Medicine COVID-19 Updates and Resources**
<https://www.asrm.org/news-and-publications/covid-19/>
- **COVID-19 Conversations**
<https://covid19conversations.org>
- **World Health Organization: Coronavirus disease (COVID-19) Pandemic**
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- **Environmental Protection Agency Coronavirus (COVID-19)**
<https://www.epa.gov/coronavirus>
- **Vaccine Adverse Events Reporting System**
<https://vaers.hhs.gov>
- **Evaluating Online Health Information**
<https://www.nia.nih.gov/health/online-health-information-it-reliable>
- **VIRA COVID-19 Vaccine Chatbot**
<https://vaxchat.org>

have answers to questions like, “How will COVID-19 vaccination affect me in five or 10 years?” However, we can study and relay what evidence offers now. Nurses do not have and cannot know all the answers about health and illness. But we can monitor and evaluate the latest research-based evidence to provide the best care and information to our patients and communities. Information about COVID-19 and the available vaccines continues to emerge on a rapid basis. Nurses need to regularly check the CDC, WHO, FDA, and National Institutes for Health websites for the most current information and research. Other COVID-19 vaccine information sites, such as Johns Hopkins University of Medicine Coronavirus Resource Center (2021), CombatCovid (HHS, 2021), and the Mayo Clinic (2021b), can provide guidance and offer patient teaching resources.

Nursing is about serving our patients—individuals, families, communities, society—to promote, maintain, and restore health. Nurses can educate about strategies that promote health—nutritious diet, healthy weight, exercise, adequate sleep, lowering stress, and avoiding unhealthy habits like cigarette smoking or overeating. Research suggests that the better our immune systems function, the better our response will be to illness, including COVID-19. Having adequate micronutrients like zinc and vitamins C and D can help our immune systems function better. For example, a not yet peer-reviewed systematic literature review released September 25, 2021, found that low blood levels of Vitamin D3 were a predictor of COVID-19 infection and mortality (Borsche et al., 2021).

Nurses can teach proper layered, multilevel prevention strategies against COVID-19 and illness in general, along with the rationale behind each strategy. Florence Nightingale, the founder of modern nursing, taught

many of these principles in her 1859 book, *Notes on Nursing: What it Is and What it is Not*, which remains widely available today (Nightingale, 2019). The Bible supports health principles such as eating healthily, quarantine and isolation during illness and after exposure to illness or unclean things, as well as washing (i.e., see instructions in Leviticus).

The layers of protection supported by science for health promotion in general and in a pandemic are these:

- Follow a healthy dietary plan and guidelines throughout life (U.S. Department of Agriculture, 2020).
- Avoid crowds in a pandemic, especially if local rates of illness are high.
- Avoid poorly ventilated spaces.
- Bring fresh outdoor air inside when possible (open windows, doors).
- Wear a well-fitted mask over the nose and mouth when in public.
- Stay about two arms lengths away from others in public.
- Do not touch your eyes, nose, hands, or mouth with unwashed hands.
- As much as possible, do not touch surfaces in public places (door handles, water faucets, etc.); use your shirt, sleeve, or a clean, dry paper towel.
- Wash hands often and use proper technique (scrub 20 seconds with soap and water) (CDC, 2021, June 10).
- Wash hands immediately before food preparation and/or eating, and after toileting.
- If soap and water are not available, use hand sanitizer with at least 60% alcohol content (FDA, 2021, October 12).
- Washing hands and using sanitizer simultaneously is okay and can be helpful; proper hand washing is preferable to hand sanitizer (FDA, 2021, October 12).
- Avoid sharing dishes, glasses, or bedding with other people.




- Cover coughs and sneezes with your mask, a tissue, or your elbow; then change your face mask as soon as possible or immediately discard the tissue; wash your hands after coughing or sneezing or use hand sanitizer if washing is not possible.
- Clean and disinfect high touch surfaces daily with Environmental Protection Agency approved disinfectants; look for “EPA Reg. No.” on the product and check the number on the online EPA List-N tool; don’t use unregistered products (EPA, 2021).
- Isolate after close contact with someone with COVID-19 (closer than six feet for 15 minutes or longer); see guidelines on quarantine (CDC, 2021, October 4c).
- Monitor your health and if you have symptoms of illness (CDC, 2021, February 22), isolate for 10 days after symptoms appear and you are afebrile > 24 hours without anti-febrile medication (CDC, 2021, October 4c).
- If you have concerns that you have been exposed or are sick with COVID-19 symptoms, get tested.
- Seek healthcare if you are ill and experience trouble breathing, cyanosis, and/or have persistent pain/pressure in the chest (CDC, 2021, February 22).

The CDC currently offers 164 posters and one-page infographics to remind yourself and teach others about COVID-19 including illness symptoms, testing, vaccines, layered protection practices, and more. Each poster is dated according to when the information was last updated. Posters are available in multiple languages and created for different age groups, ethnicities, cultures, and for health-care providers and the public (CDC, n.d.).

Nurses advise on health concerns, giving people information to make their own informed decisions. We

answer questions and if we do not know the answers, we seek information and/or refer patients to those who can hopefully help them. We never state and teach information we are not sure is accurate. In relation to COVID-19 and vaccination, we do not argue with or manipulate others. As Christian nurses, we can pray for and with our patients as they request our prayer and spiritual support. We can encourage others to pray and ask God to help them discern what they should do about COVID-19 vaccination. Of utmost importance, we take the apostle Paul’s advice about fixing our attention on God and giving our lives to him:

So here’s what I want you to do, God helping you: Take your everyday, ordinary life—your sleeping, eating, going-to-work, and walking-around life—and place it before God as an offering. Embracing what God does for you is the best thing you can do for him. Don’t become so well-adjusted to your culture that you fit into it without even thinking. Instead, fix your attention on God. You’ll be changed from the inside out. Readily recognize what he wants from you, and quickly respond to it. Unlike the culture around you, always dragging you down to its level of immaturity, God brings the best out of you, develops well-formed maturity in you. (Romans 12:1-2, The Message) 

American Nurses Association. (2015). *Code of ethics for nurses with interpretive statements*. Author.

Bailey, J. (2021, October 7). Interesting list of Covid serum exemptions. *Z3 News Revealing Mystery Babylon*. <https://z3news.com/w/interesting-list-of-covid-serum-exemptions/>

Borsche, L., Glauner, B., & von Mendel, J. (2021). COVID-19 mortality risk correlates inversely with vitamin D3 status, and a mortality rate close to zero could theoretically be achieved at 50 ng/ml 25(OH)D3: Results of a systematic review and meta-analysis. *medRxiv Preprint*. <https://doi.org/10.1101/2021.09.22.21263777>

Center for Countering Digital Hate. (2021a). *About us*. <https://www.counterhate.com/about-us>

Center for Countering Digital Hate. (2021b). *The disinformation dozen: Why platforms must act on twelve leading online anti-vaxxers*. <https://www.counterhate.com/disinformationdozen>

Center for Countering Digital Hate. (2021c). *Pandemic profiteers: The business of anti-vaxx*. https://252f2edd-1c8b-49f5-9bb2-cb57bb47e4ba.filesusr.com/ugd/f4d9b9_13cbbbef105e459285ff21e94ec34157.pdf

Centers for Disease Control and Prevention. (2021, February 22). *Symptoms of COVID-19*. <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

Centers for Disease Control and Prevention. (2021, June 10). *When and how to wash your hands*. <https://www.cdc.gov/handwashing/when-how-handwashing.html>

Centers for Disease Control and Prevention. (2021, August 11). *COVID-19 vaccines for people who would like to have a baby*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/planning-for-pregnancy.html>

Centers for Disease Control and Prevention. (2021, August 17). *COVID-19 vaccines for children and teens*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/adolescents.html>

Centers for Disease Control and Prevention. (2021, August 25). *Vaccine Adverse Event Reporting System (VAERS)*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/vaers.html>

Centers for Disease Control and Prevention. (2021, August 27). *CDC recommends use of Johnson & Johnson’s Janssen COVID-19 vaccine resume*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/jjupdate.html>

Centers for Disease Control and Prevention. (2021, August 31). *COVID-19 vaccine reporting systems*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/reporting-systems.html>

Centers for Disease Control and Prevention. (2021, September 3). *V-safe after vaccination health checker*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/vsafe.html>

Centers for Disease Control and Prevention. (2021, September 15). *Science briefs: COVID-19 vaccines and vaccination*. <https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/fully-vaccinated-people.html>

Centers for Disease Control and Prevention. (2021, September 27). *Interim clinical considerations for use of COVID-19 vaccines currently approved or authorized in the United States*. <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html#Contraindications>

Centers for Disease Control and Prevention. (2021, September 30). *Possible side effects after getting a COVID-19 vaccine*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/expect/after.html>

Centers for Disease Control and Prevention. (2021, October 4a). *Myths and facts about COVID-19 vaccines*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/facts.html>

Centers for Disease Control and Prevention. (2021, October 4b). *V-safe COVID-19 vaccine pregnancy registry*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/vsafepregnancyregistry.html>



- Centers for Disease Control and Prevention. (2021, October 4c). *Quarantine and isolation*. <https://www.cdc.gov/coronavirus/2019-ncov/your-health/quarantine-isolation.html>
- Centers for Disease Control and Prevention. (2021, October 5). *COVID-19 vaccine breakthrough case investigation and reporting*. <https://www.cdc.gov/vaccines/covid-19/health-departments/breakthrough-cases.html>
- Centers for Disease Control and Prevention. (2021, October 6). *Selected adverse events reported after COVID-19 vaccination*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/adverse-events.html>
- Centers for Disease Control and Prevention. (2021, October 7). *Who is eligible for a COVID-19 vaccine booster shot?* <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/booster-shot.html#HighRisk>
- Centers for Disease Control and Prevention. (2021, October 8). *COVID-19 vaccines for moderately to severely immunocompromised people*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/immuno.html>
- Centers for Disease Control and Prevention. (2021, October 9). *United States COVID-19 Cases, Deaths, and Laboratory Testing (NAATs) by State, Territory, and Jurisdiction*. <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html>
- Centers for Disease Control and Prevention. (2021, October 25). *Safety of COVID-19 vaccines*. <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/safetyof-vaccines.html>
- Centers for Disease Control and Prevention. (n.d.). *Print resources*. <https://www.cdc.gov/coronavirus/2019-ncov/communication/print-resources.html>
- Dyer, O. (2021, August 2). Covid-19: Delta infections threaten herd immunity vaccine strategy. *BMJ*, 374, n1933. <https://doi.org/10.1136/bmj.n1933>
- Environmental Protection Agency. (2021). *About list N: Disinfectants for coronavirus (COVID-19)*. <https://www.epa.gov/coronavirus/about-list-n-disinfectants-coronavirus-covid-19-0>
- Falsaperla, R., Leone, G., Familiari, M., & Ruggieri, M. (2021). COVID-19 vaccination in pregnant and lactating women: A systematic review. *Expert Review of Vaccines*. Advance online publication. <https://doi.org/10.1080/14760584.2021.1986390>
- Federal Register Daily Journal of the United States Government. (2020, March 17). *Declaration under the Public Readiness and Emergency Preparedness Act for medical countermeasures against COVID-19*. Health and Human Service Department. <https://www.federalregister.gov/documents/2020/03/17/2020-05484/declaration-under-the-public-readiness-and-emergency-preparedness-act-for-medical-countermeasures>
- Johns Hopkins University of Medicine. (2021). *Coronavirus Resource Center*. <https://coronavirus.jhu.edu>
- Lee, E. (2021, September 20). Fact check: Biden can't mandate vaccinations for Congress; order covers executive branch only. *USA Today*. <https://www.usatoday.com/story/news/factcheck/2021/09/20/fact-check-biden-cant-mandate-vaccines-congress/8384930002/>
- Lu-Culligan, A., & Iwasaki, A. (2021, January 26). The false rumors about vaccines that are scaring women. *The New York Times*. <https://www.nytimes.com/2021/01/26/opinion/covid-vaccine-rumors.html>
- Mayo Clinic. (2021a). *Herd immunity and COVID-19 (coronavirus): What you need to know*. <https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/herd-immunity-and-coronavirus/art-20486808>
- Mayo Clinic. (2021b). *COVID-19 vaccines: Get the facts*. <https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/coronavirus-vaccine/art-20484859>
- Morris, R. S. (2021). SARS-CoV-2 spike protein seropositivity from vaccination or infection does not cause sterility. *Fertility and Sterility Reports*. Available online first. <https://doi.org/10.1016/j.xfre.2021.05.010>
- Naaber, P., Tserel, L., Kangro, K., Sepp, E., Jürjenson, V., Adamson, A., Haljasmägi, L., Rumm, A. P., Marustre, R., Karner, J., Gerhold, J. M., Planken, A., Ustav, M., Kisand, K., & Peterson, P. (2021). Dynamics of antibody response to BNT162b2 vaccine after six months: A longitudinal prospective study. *The Lancet Regional Health – Europe*. Advance online publication. <https://doi.org/10.1016/j.lanepe.2021.100208>
- National Vaccine Information Center. (2021a). *About National Vaccine Information Center*. <https://www.nvdc.org/about.aspx>
- National Vaccine Information Center. (2021b). *Diseases & vaccines*. <https://www.nvdc.org/Vaccines-and-Diseases.aspx>
- National Vaccine Information Center. (2021c). *SARS CoV-2 virus and COVID-19 information*. <https://www.nvdc.org/vaccines-and-diseases/covid-19.aspx#toc>
- National Vaccine Information Center. (2021d). *How effective are COVID-19 vaccines?* <https://www.nvdc.org/vaccines-and-diseases/covid-19/vaccine-effectiveness.aspx>
- National Vaccine Information Center. (2021e). *Statement on Facebook's de-platforming of NVIC March 8, 2021*. <https://web.archive.org/web/20210406113232/https://www.nvdc.org/cmstemplates/nvic/Pdf/pressrelease/nvic-fb-deplatforming-statement-2021.pdf>
- National Vaccine Information Center. (2021f). *NVIC suspended from Twitter*. <https://www.nvdc.org/NVIC-Vaccine-News.aspx>
- Nightingale, F. (2019). *Commemorative edition - Notes on nursing: What it is and what it is not*. LWW. Oliver, S. (2021). *Evidence to recommendation framework: Pfizer-BioNTech COVID-19 booster dose*. <https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2021-9-23/03-COVID-Oliver.pdf>
- Reuters Fact Check. (2021). *Fact Check-White House, CDC, FDA, NIAID, Pfizer and Moderna employees are subject to vaccine mandates*. <https://www.reuters.com/article/factcheck-vaccine-mandate/fact-check-white-house-cdc-fda-niaid-pfizer-and-moderna-employees-are-subject-to-vaccine-mandates-idUSL1N2QX1Y1>
- Scobie, H. M., Johnson, A. G., Suthar, A. B., Severson, R., Alden, N. B., Balter, S., Bertolino, D., Blythe, D., Brady, S., Cadwell, B., Cheng, I., Davidson, S., Delgadillo, J., Devinney, K., Duchin, J., Duwell, M., Fisher, R., Fleischauer, A., Grant, A., ..., Silk, B. J. (2021, September 17). Monitoring incidence of COVID-19 cases, hospitalizations, and deaths, by vaccination status — 13 U.S. jurisdictions, April 4–July 17, 2021. *MMWR. Morbidity and Mortality Weekly Report*, 70(37), 1284–1290. <https://doi.org/10.15585/mmwr.mm7037e>
- Shimabukuro, T. T., Kim, S. Y., Myers, T. R., Moro, P. L., Oduyebo, T., Panagiotakopoulos, L., Marquez, P. L., Olson, C. K., Liu, R., Chang, K. T., Ellington, S. R., Burkel, V. K., Smoots, A. N., Green, C. J., Licata, C., Zhang, B. C., Alimchandani, M., Mba-Jonas, A., Martin, S. W., ..., Meaney-Delman, D. M. for the CDC v-safe COVID-19 Pregnancy Registry Team. (2021). Preliminary findings of mRNA Covid-19 vaccine safety in pregnant persons. *The New England Journal of Medicine*, 384(24), 2273–2282. <https://doi.org/10.1056/NEJMoa2104983>
- Society of Breast Imaging. (2021). *SBI recommendations for the management of axillary adenopathy in patients with recent COVID-19 vaccination*. <https://www.sbi-online.org/Portals/0/Position%20Statements/2021/SBI-recommendations-for-managing-axillary-adenopathy-post-COVID-vaccination.pdf>
- Tartof, S. Y., Slezak, J. M., Fischer, H., Hong, V., Ackerson, B. K., Ranasinghe, O. N., Frankland, T. B., Ogun, O. A., Zamparo, J. M., Gray, S., Valluri, S. R., Pan, K., Angulo, F. J., Jodar, L., & McLaughlin, J. M. (2021). Effectiveness of mRNA BNT162b2 COVID-19 vaccine up to 6 months in a large integrated health system in the USA: A retrospective cohort study. *The Lancet*, 398(10309), 1407–1416. [https://doi.org/10.1016/S0140-6736\(21\)02183-8](https://doi.org/10.1016/S0140-6736(21)02183-8)
- Theiler, R. N., Wick, M., Mehta, R., Weaver, A. L., Virk, A., & Swift, M. (2021, August 20). Pregnancy and birth outcomes after SARS-CoV-2 vaccination in pregnancy. *American Journal of Obstetrics & Gynecology*, 3(6), 100467. Advance online publication. <https://doi.org/10.1016/j.ajogmf.2021.100467>
- Thomas, S. J., Moreira, Jr., E. D., Kitchin, N., Absalon, J., Gurtman, A., Lockhart, S., Perez, J. L., Marc, G. P., Polack, F. P., Zerbini, C., Bailey, R., Swanson, K. A., Xu, X., Roychoudhury, S., Koury, K., Bouguermouh, S., Kalina, W. V., Cooper, D., Frenck Jr., R. W., ..., C4591001 Clinical Trial Group. (2021). Six-month safety and efficacy of the BNT162b2 mRNA COVID-19 vaccine. *medRxiv Preprint*. <https://doi.org/10.1101/2021.07.28.21261159>
- U.S. Department of Agriculture. (2020). *Dietary guidelines for Americans: 2020 – 2025*. https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf#page=31
- U.S. Department of Health and Human Services. (2020, January 31). *Determination that a public health emergency exists*. <https://www.phe.gov/emergency/news/healthactions/phe/Pages/2019-nCoV.aspx>
- U.S. Department of Health and Human Services. (2021). *Combat COVID*. <https://combatcovid.hhs.gov>
- U.S. Food & Drug Administration. (2020, November 20). *Emergency Use Authorization for Vaccines Explained*. <https://www.fda.gov/vaccines-blood-biologics/vaccines/emergency-use-authorization-vaccines-explained>
- U.S. Food & Drug Administration. (2020, December 11). *FDA takes key action in fight against COVID-19 by issuing Emergency Use Authorization for first COVID-19 Vaccine*. <https://www.fda.gov/news-events/press-announcements/fda-takes-key-action-fight-against-covid-19-issuing-emergency-use-authorization-first-covid-19>
- U.S. Food & Drug Administration. (2021, August 23). *FDA approves first COVID-19 vaccine*. <https://www.fda.gov/news-events/press-announcements/fda-approves-first-covid-19-vaccine>



U.S. Food and Drug Administration. (2021, September 9). *The path for a COVID-19 vaccine from research to Emergency Use Authorization*. <https://www.fda.gov/media/143890/download>

U.S. Food & Drug Administration. (2021, October 12). *Q&A for consumers | Hand Sanitizers and COVID-19*. <https://www.fda.gov/drugs/information-drug-class/qa-consumers-hand-sanitizers-and-covid-19>

U.S. Food & Drug Administration. (2021, October 20). *Coronavirus (COVID-19) update: FDA takes additional actions on the use of a booster dose for COVID-19 vaccines*. <https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-takes-additional-actions-use-booster-dose-covid-19-vaccines>

U.S. Food & Drug Administration. (2021, October 29a). *Emergency use authorization*. <https://www.fda.gov/>

[emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization](https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization)

U.S. Food & Drug Administration. (2021, October 29b). *FDA authorizes Pfizer-BioNTech COVID-19 Vaccine for emergency use in children 5 through 11 years of age*. <https://www.fda.gov/news-events/press-announcements/fda-authorizes-pfizer-biontech-covid-19-vaccine-emergency-use-children-5-through-11-years-age>

Vaccine Adverse Events Reporting System. (n.d.). *About VAERS*. <https://vaers.hhs.gov/about.html>

World Health Organization. (2021, May 5). *Coronavirus disease (COVID-19) advice for the public: Mythbusters*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters>


World Health Organization. (2021, September 22). *Tracking SARS-CoV-2 variants*. <https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/>

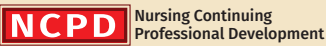
World Health Organization. (2021, October 29a). *WHO coronavirus (COVID-19) dashboard*. <https://covid19.who.int>

World Health Organization. (2021, October 29b). *United States of America situation*. <https://covid19.who.int/region/amro/country/us>

Zauche, L. H., Wallace, B., Smoots, A. N., Olson, C. K., Oduyebo, T., Kim, S. Y., Peterson, E. E., Ju, J., Beauregard, J., Wilcox, A. J., Rose, C. E., Meaney-Delman, D., & Ellington, S. R. (2021). Receipt of mRNA COVID-19 vaccines preconception and during pregnancy and risk of self-reported spontaneous abortions, CDC v-safe COVID-19 Vaccine Pregnancy Registry 2020-21. *Research Square*. <https://doi.org/10.21203/rs.3.rs-798175/v1>

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