



AMNP

Association of Missouri Nurse Practitioners

WINTER 2021



PRESIDENT'S MESSAGE

Julie Long, MSN, FNP-BC, AE-C

2020. A YEAR OF UNCERTAINTY.
A YEAR OF CHANGE. A YEAR OF FIRSTS.

THE "YEAR OF THE NURSE"

What a year it has been for nurses and nurse practitioners alike.

When 2020 began, no one could have imagined that it would be the year of the nurse for the reasons that it turned out to be. This year was supposed to be a celebration of nurses. Nurses of all kinds. Nurse practitioners. Nurse midwives. Registered nurses. And everything in between. Little did we know just how significant the role of the nurse would become in 2020. America's most trusted profession was thrust into a pandemic that will forever change our lives and the face of healthcare. Nurse practitioners throughout Missouri responded just as you would expect, with poise, selflessness, and compassion. NP's have suited up and confronted the pandemic head on, selflessly risking your own well being to protect and save others. Words are not enough to thank you for your sacrifices, strength and dedication to the well-being of Missouri patients.

This year also forced AMNP to reevaluate how we provide benefits and services to our members. Our traditional methods for providing networking and educational opportunities were stopped dead in their tracks. Your association had to reconsider ways to continue to meet the needs of our members in a way that was safe, effective, and still provided opportunities to interact with colleagues throughout Missouri and beyond.

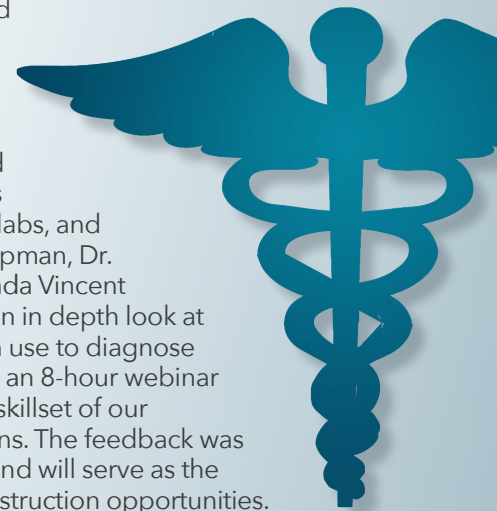
In response to the new normal, AMNP pivoted to virtual formats for nearly all activities. The always engaging Meet & Greets that we have typically held in upscale venues all across Missouri were transitioned into virtual monthly meet and greets that expanded the connection of NP's from their typical regional groups to statewide networking opportunities. In addition to the opportunity to connect, AMNP continued to partner with organizations to bring the latest product and pharmaceutical information to our clinicians. Through our virtual meet and greets, we identified employers looking for talented providers, students looking for preceptors, preceptors willing to mentor, and NP leaders among us who are engaged in advocating for the profession. We also gave away countless prizes as a thank you to those who took time out of their schedules to attend.

AMNP also quickly shifted our annual conference format to adapt to our circumstances. Recognizing that some members would be reluctant and some employers would prohibit attendance at an in-person conference, your association swiftly transformed our traditional conference into a hybrid event that accommodated the needs of all members. When many other associations were abandoning their plans to provide the ongoing education that NP's need, AMNP found a way to safely and effectively deliver educational content that was relevant and beneficial to your continued practice. For those that preferred the traditional in-person learning and networking option at the conference, AMNP hosted them at one of Missouri's most picturesque and premiere destination resorts. For those that were there in spirit, AMNP connected them virtually to the speakers and activities to make sure that they didn't miss out. Vendors and sponsors appreciated AMNP's willingness to press forward with a conference as well. Many companies shared that their ability to get the word out about products and services had been adversely impacted by COVID, and hosting a conference provided them with a forum to interact with providers that they desperately needed.

Additionally, AMNP hosted our very first virtual CE workshop this year. In response to the request to provide education on diagnostics, AMNP hosted the Advanced Diagnostics course focused on EKG's, labs, and radiology. Dr. Shanna Chapman, Dr. Chris Hemmer, and Maranda Vincent provided attendees with an in depth look at some of the tools NP's can use to diagnose and treat patients through an 8-hour webinar designed to enhance the skillset of our advanced practice clinicians. The feedback was overwhelmingly positive and will serve as the catalyst for future virtual instruction opportunities.

Also a first for us this year, AMNP partnered with the iconic Kansas City t-shirt brand Charlie Hustle after the company reached out to AMNP offering to donate a percentage of sales to NP's in response to the challenges faced by nurses in 2020. By partnering on the "Real Heroes Wear Scrubs" t-shirt campaign, Charlie Hustle donated \$8,500 to AMNP to be used for scholarships, continuing education, and awards/recognition of NP's who truly serve as community heroes.

Shifting to 2021, AMNP will continue to evolve and innovate to serve our members and the thousands of nurse practitioners throughout Missouri. As reflected in the last newsletter, AMNP will seat the new Board of Directors in January to lead the organization through 2021 & 2022. While the board will see some returning faces (Dr. Carla Beckerle, Dr. Chris Hemmer,



PRESIDENT'S MESSAGE CONTINUED

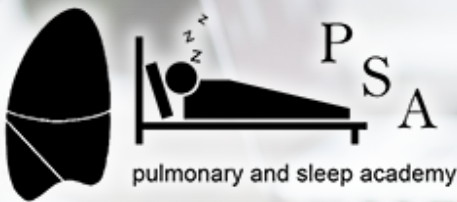
Dr. Laura Kuensting, Karin Riepe, Dr. Scott Barnes, Dr. Kathy Haycraft, Dr. Sarah Knorr, and myself), we are excited to welcome new board members (Dr. Shanna Chapman, Dr. Susan Kimble, Gina Heberlie, Brandon Forester, and Dr. Tammy Vandermolen) to help lead the organization over the next couple of years. The all-volunteer AMNP Board of Directors invests numerous hours each year to guide and oversee the association and provide direction for NP's as a way to give back to their profession. We look forward to working with this prestigious group of leaders to propel the organization and profession forward.

In addition to introducing you to our new board members, we would also like to extend our sincere gratitude to outgoing board members that have helped guide AMNP through 2019 and 2020 (and even prior to that for some). Dr. Lila Pennington has served in multiple roles within AMNP, including President, Past-President, Vice President, and Senior Policy Analyst. Dr. Pennington will continue to serve on the AMNP Advocacy Committee after her departure from the board. Beth Dalton has served as the Membership Chair for AMNP and will continue to serve on the Membership & PAC Committees for AMNP. Regional representatives Anne Voss, Rose Johnson, and Dr. Sue Dawson have each served their respective regions of the state for the past two years and we look forward to their continued involvement as well. These departing board members have given their time, talent, and expertise to AMNP over the past couple of years and we are grateful to them for their innumerable contributions and service to the association.



Last but certainly not least, I would like to sincerely thank our members for your investment and involvement in 2020. We are doing everything we can to be a resource for YOU. We will continue to be YOUR advocate. We will continue to be YOUR voice. We will continue to provide YOU with opportunities to learn, to connect, and to prosper. While we do not know what 2021 has in store, we will make every effort that we can to deliver value to YOU and YOUR patients and appreciate your continued participation in YOUR association.

With Gratitude,
Julie Long
MSN, FNP-BC, AE-C



**32 HOURS OF
COURSES!**

Online CME Courses for Nurse Practitioners

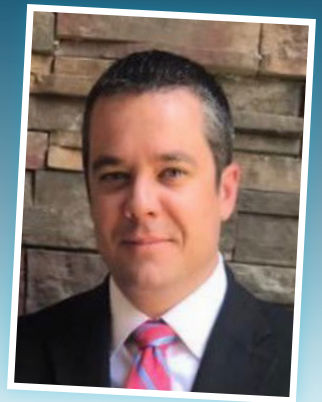
PSA's curriculum covers underlying basic pathophysiology, the diagnostic evaluation and the longitudinal management of patients with pulmonary and sleep disorders. PSA is the only comprehensive, online course offered by recognized physician experts in pulmonary and sleep medicine directed at nurse practitioners. PSA will quickly expand your knowledge of the underlying principles of pulmonary and sleep medicine giving you the confidence to step up your practice of pulmonary and sleep medicine to that of a seasoned practitioner.

Use enrollment code "AMNP" at check out for a special offer for AMNP Members!

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EXECUTIVE DIRECTOR'S REPORT

Derek S. Leffert, *Executive Director/CEO, Association of Missouri Nurse Practitioners*



If 2020 has proven anything, it is that we should expect the unexpected. In the blink of an eye, the world has drastically changed for nearly everyone, and associations are certainly no exception. Information abounds (sometimes misinformation), and people and organizations are doing their level best to adapt to new circumstances with no clear picture of what the world will look like even a few short months from now. This poses significant challenges for associations as we seek to continue to fulfill the needs of members and deliver services in a manner that is safe and effective but aligned with our member needs.

Rather than focus on what we have done (as the AMNP President noted in her column), I'll instead concentrate on where we're headed and what potentially lies ahead for our members. Although it's true that AMNP has quickly reacted and adapted to a COVID-plagued environment, it's also true that this shift compelled us to identify and implement solutions that admittedly, we hadn't necessarily fully considered before. Ultimately what this means is that if and when things do return to some version of a pre-COVID normal, we will have even more ways, more forums, and more opportunities for our members to engage than ever before.

Perhaps the most evident change for us in the coming year will be the association placing more of an emphasis on **virtual learning opportunities**. While events this year necessitated the adoption of virtual learning options, AMNP will be integrating more online learning possibilities to ensure that we are offering relevant CE to our members. Conversely, there will be some courses (i.e. suturing, splinting, etc.) that are not conducive to an online format and will require AMNP to provide a safe, hands-on environment that protects our attendees while providing the clinical format necessary for instruction. Rest assured that we will take every precaution that we can in planning any in-person events just as we did with our annual conference this year. But in order to help us determine the courses and topics that you'd like to see, we'll be asking for your opinion on this and other matters in the days ahead. Possibilities include anything from pediatrics to geriatrics and everything in between. If you would like to serve as an instructor for your fellow NP's in these courses, want to earn some additional income, and would be willing to share your expertise, please reach out to us to let us know.

Also on the horizon for AMNP is our **NP Connect** initiatives that we have been discussing over the last several Virtual Meet & Greets. One of the core functions of your association is to connect you to employment opportunities (for new and experienced NP's) and to connect students and preceptors to help develop future NP's. The Preceptor Connect and Career Connect tools will be available exclusively to members and student members of AMNP and our sincere hope is that we can serve as the link for our members to grow and develop as advanced care providers.

A second endeavor for AMNP in 2021 will be our **Real Heroes** initiative. Back in November, we asked for submissions to nominate NP's that were heroically serving on health care's front lines. As a result of our partnership with Charlie Hustle, we want to publicly recognize and thank the heroes among us. We are confident that there are countless stories of selfless sacrifice among our members, and we encourage you to share those stories with us as part of our #AMNPREALHERO campaign. In addition to recognition in AMNP publications and social media, selected NP heroes will receive gifts made possible by our friends at Charlie Hustle.

A third and similarly important initiative that you will hear more about in the coming days is the **\$20 in 21 Commitment** (\$20/21). In the coming year, AMNP will be asking NP's across the state to contribute \$20 or more to AMNPPAC to help support candidates for office that are committed to advancing the cause for NP's in the legislature. Currently, AMNPPAC is not sufficiently funded to allow contributions to supportive candidates. Senators like Eric Burlison & Cindy O'Laughlin and representatives like

Hannah Kelly, Nick Schroer, and Mike Stephens are actively filing bills and legislative language to improve access to care for patients and practice for NP's. They take these sometimes unpopular positions even when our political opposition uses their massive PAC war chests to support candidates that do NOT align with NP's. Just as we ask these legislators to support us and our priorities, we need to be well-capitalized and well-equipped to do the same for them. If every APRN in Missouri contributed just \$20, nurse practitioners would be an even more formidable political force in the overall health care discussion. With 10,000+ APRN's in Missouri, a simple \$20 contribution from every NP would help level the playing field.

Along those lines, the AMNP Advocacy Committee and Board of Directors has adopted the legislative priorities for the 2021 legislative session slated to begin on January 6th. After consideration of a number of relevant ideas, AMNP will be pursuing the following items to help improve access to care and reduce the restrictions on NP practice:

• ACCESS IMPROVEMENT FOR MISSOURIANS (AIM)

This bill (SB 965 in the 2020 legislative session) provides a period of practice that new NP's would be required to fulfill with a collaborating APRN or physician to ensure that they are experienced and equipped to practice independently. After the practice period, APRN's would be eligible (but not required) to practice without a collaborative practice agreement and would be free of the arbitrary and unnecessary restrictions that currently inhibit the safe and evidence-based delivery of advanced care provided by NP's.

• BARRIER REDUCTIONS

This bill would remove all barriers that are currently imposed on NP's but leave the collaborative practice agreement in place for prescribing. Issues such as geographic proximity, chart reviews, 30-day period of practice with the collaborating physician, two-week follow up with the collaborating physician, signage, and other arbitrary restrictions that constrain NP's from fully utilizing their education and training would be permanently removed under this language.

• APRN LICENSURE

This bill would establish a license for APRN's in Missouri rather than the document of recognition that is current practice.

• HOME HEALTH

This bill will provide NP's with the ability to write a plan of treatment for home health. Currently, state law permits only physicians.

• HOSPICE ATTENDING

This bill would permit NP's to be the attending provider in hospice situations. Currently only physicians are allowed to be the attending (although this law is currently suspended to allow NP's the option).

• DEFENSE AGAINST BOHA OVERSIGHT

Efforts will be made to place APRN's under the supervision of the Board of Healing Arts rather than the Board of Nursing. As advanced practice nurses, this would be catastrophic for nursing practice. We will work to defend against any legislative language that revises the oversight of nurse practitioners.

• DEFENSE AGAINST "TRUTH IN ADVERTISING"

There will once again be an effort to prohibit NP's from using the title "Dr." in practice if they possess a doctorate degree. Additionally, this bill would alter the definition of surgery to prohibit NP's from performing routine procedures (i.e. suturing, biopsies, etc.) that they currently perform in offices across Missouri. AMNP will be actively working to defeat any measure that includes this language.

With the pandemic highlighting the need for more health care providers, we believe that the dynamic in the discussion with the legislature will be different this year. The governor's suspension of rules has proven that the current restrictions were indeed unnecessary. Nurses and nurse practitioners have stepped up amid the pandemic and served with distinction.

Additionally, after a long, divisive, and contentious election period, winning candidates are transitioning into their roles as legislators and will return to the Capitol on January 6th. In the COVID environment, many within the Capitol still have no idea what to expect, and little direction has been given as to how the legislative process will unfold in 2021. While the House will have limited ability to receive virtual testimony, the Senate has not yet adopted similar technology and does not appear inclined to do so before the session begins. Both chambers have discouraged traditional "lobby days" with large groups of grassroots advocates but cannot specifically prohibit them. What this means for associations is that we will have to rely more heavily on individual contacts and in-district events to help communicate our message that NP's are part of the solution to the health care crisis that has only been exacerbated by the COVID-19 pandemic. We encourage you to stay up to date with what is going on in the Capitol relating to NP's by reading the weekly legislative updates provided during session.

All of these things considered, it is my hope that 2021 is a much different, much improved, much more prosperous and fulfilling year than 2020. We will continue to do everything we can to serve you in 2021 and beyond and appreciate the trust you have placed in us. If we can ever be of service to you, please do not hesitate to let us know.

Here's to a better year ahead!

Derek S. Leffert

EXECUTIVE DIRECTOR/CEO

ASSOCIATION OF MISSOURI NURSE PRACTITIONERS



MEMBER SPOTLIGHT

Dr. Susan Kimble

Susan Kimble has practiced at Northland Family Care since 1995, providing acute and chronic care to adults. As the previous Program Director for the MSN and DNP NP programs at the University of Missouri, Kansas City (UMKC) School of Nursing, Susan loved teaching a wide variety of MSN and DNP courses, staying in contact with many alumni over the years. Susan's passion for curriculum development and evaluation includes developing multiple courses and adding specialty track areas, along with the 2006 development of the UMKC DNP program, the first in the region.



Susan's interests include promoting Interprofessional healthcare as evident by the many grant funded projects she led. She enjoyed presenting at conferences from Oxford University, the University of Auckland (New Zealand), Banff Canada, Puerto Rico, and Prague, along with great conferences in the US, including the Keystone Colorado conference last summer.

A South Dakota native, Susan's nursing career started after graduating with an Associate degree from the University of South Dakota with her first job at the University of Nebraska. A love of lifelong learning led to a Bachelor of Social Work degree from UN, moving to Missouri and landing at UMKC for her BSN, MSN, and DNP degrees. Susan enjoys all forms of travel, time at the Lake (now Tablerock), gardening, along with the Chiefs and Royals. Go Patrick Mahomes! Susan has two sons with her husband Steve, one lives in KC, and one is in the Denver area.

I look forward to working with the AMNP leadership team and members, continuing to advocate for expanding the APRN role in Missouri, increasing critical healthcare access.



2020 AMNP ANNUAL CONFERENCE



LIKE EVERYTHING ELSE, THE AMNP ANNUAL CONFERENCE WAS DIFFERENT THIS YEAR.

With many other organizations cancelling their annual events, the Association of Missouri Nurse Practitioners knew that the need for continuing education and networking hadn't disappeared just because COVID had altered our traditional activities. If anything, it made continuing education more important.

As you can imagine, planning a conference takes a significant amount of time and a LOT of

work. From finding speakers, finding vendors, planning networking activities and schedules, marketing the event, and everything in between, the investment of your association staff is substantial. And planning an annual conference only to cancel it later isn't a prudent use of association resources. But with the uncertainty of how the COVID situation would develop and whether or not we'd have any attendees or vendors, AMNP had to move forward cautiously through uncharted waters.



MARGARITAVILLE LAKE RESORT,
OSAGE BEACH, MISSOURI



In short order and without any prior experience with hybrid conferences, AMNP pivoted to a hybrid format that helped meet the needs of all of our members. Those that were able to attend in person enjoyed the networking and face to face interaction with their peers in one of the Midwest's most scenic destination resorts. Those who weren't able to attend in person were still able to take advantage of the learning opportunities provided by a livestreamed conference. While this was the first attempt at a hybrid conference and we anticipated that there would be some challenges, AMNP was able to host the event without significant problems or interruptions, much to the delight of those who were able to attend.

In addition to the educational component, the vendors that attended and helped support our first hybrid conference

were especially appreciative of the opportunity. With COVID severely limiting access to medical offices and health care providers, the ability to educate clinicians about their products and services was nearly non-existent. The hybrid conference, although smaller in attendance than prior years, was their opportunity to showcase products when the pandemic had otherwise stonewalled them. Special thanks to Abbvie, Alexion, Astrazeneca, and Regeneron for the partnership in our 2020 event.

At the end of the day, we are exceedingly grateful that we were able to offer some degree of normalcy in a year that is anything but normal. While we certainly had to improvise and adapt and put aside the traditional way of thinking in planning and executing a conference, we are delighted that we were able to host the event in a safe, effective, and inclusive manner. We look forward to continuing to plan safe and informative events in 2021 and hope you'll be able to join us in person or online.



TELEMEDICINE IS THE FUTURE OF PRACTICE

Article by Justin Allan

Telemedicine is the wave of the future if you like it or not. The COVID-19 health emergency is reshaping how people view healthcare delivery. So many people are staying at home in fear they will catch coronavirus. Well, people still need to be seen for various health issues. Where are they turning? Telemedicine!

Patients, right now as you read this, are seeing medical providers over their tablets, smart phones, and computers. Telemedicine businesses are BOOMING because the demand is so high. What's going to happen is that patients will realize just how convenient seeing a provider online or over the phone has become.

**No commuting • No sitting in crowded waiting rooms
• No waiting in a small exam room for 45 minutes to be seen
• It's cheaper!**

The convenience factor that patients are experiencing by utilizing telemedicine technology should not be underestimated. People have become more and more accustomed to on demand service. Online banking, Netflix, Spotify, Instagram, food delivery, drive thru, and shopping online are all on demand. Do you think healthcare should be different? It's not, and people have come to expect this convenience.

Medicare, Medicaid, and private payers are seeing this trend as well. During the COVID-19 health emergency, the section 1135 waiver granted under the President's emergency declaration is expanding telehealth services with Medicaid and Medicare. Right now, telemedicine services do not require pre-authorizations, the restrictions on where the patient is located have been lifted, the use of non-HIPAA compliant communication technologies has been allowed, and reimbursement is the same as in-person visits. Private payers are also relaxing their rules with telemedicine.

I predict the changes will carry over once the public health emergency is lifted. Will it be immediate? I doubt it, but it will happen over a short period of time. Patient demand for telemedicine services will drive regulatory change across our healthcare system. Even if it does not, this is still an opportune time for the astute nurse practitioner entrepreneur to take advantage of how they deliver medical care.

I believe patients are going to be willing to pay cash for more and more services if they can be delivered via telemedicine. Patients want convenience and on demand service, and that is exactly what telemedicine delivers. Why go to an urgent care or primary care office, pay a \$50 deductible, have their insurance billed, and spend 2 hours out of their day for a medical visit when they can just spend \$45 cash and be seen within 15 minutes utilizing telemedicine? It only makes sense to go with telemedicine for various medical issues. It is more VALUABLE to the patient.

Patients can obtain lab work from a distance. Prescriptions can be sent into a pharmacy down the street or even delivered to their door! The days of having to drive to a medical office, wait around, and then drive to the pharmacy are going to become fewer and fewer.



Don't get me wrong, there will still be a need for in-person encounters. Physical examination and the power of touch are still necessary for a wide range of medical issues, but for a common cold, rash, simple prescription refill follow up, etc., it is not.

The prescription of controlled substances also requires at least one in-person encounter per DEA regulation. During this health emergency though, that rule has been waived. Once the declaration has been lifted, the in-person requirement will take effect once again.

The Special Registration for Telemedicine Act of 2018 grants the DEA the authority to start issuing telemedicine specific DEA licenses. This will change how certain services are delivered, predominately opioid addiction treatment and testosterone replacement. We have no idea when these licenses will be available though, so it is a waiting game. Regardless, I see many of my men's health and testosterone patients one time in person during the initial evaluation, and then I see them via telemedicine after that. It is convenient for the patient and me and is totally permitted via current regulation.

The main benefit for nurse practitioners utilizing telemedicine is the ability to practice in full practice authority states even if you live in a restrictive one. You can live in Georgia and practice 100% independently in Oregon. Very few nurse practitioners realize this, but it is true.

Another advantage nurse practitioners have utilizing telemedicine is the low overhead of a telemedicine practice. You don't need to pay rent, payroll, utilities, general liability insurance, and other various expenses that come along with a brick and mortar practice. All you need to have to practice telemedicine is a phone, internet service, and a computer. What does this mean for the practice owner? More money in their pocket.

Telemedicine is changing the game for patients, providers, and practice owners.

If you are looking to start a niche side practice, right now is the time to seriously consider a telemedicine practice. Telemedicine is getting ready to explode with growth. I believe those that can get in on the ground floor now, will profit significantly.

AMNP 2021-2022 BOARD OF DIRECTORS

Please join us in welcoming our new and returning AMNP Board of Directors for 2021–2022

Beginning in January 2021, the Association of Missouri Nurse Practitioners will be under new leadership with the election and seating of the following slate of board members that were elected this Summer. These NP leaders will serve Missouri's nurse practitioners through the 2021-2022 term and be charged with overseeing policy and strategy for the state's only association dedicated exclusively to APRN's.

We would be remiss if we didn't recognize the contributions of Dr. Lila Pennington (Immediate Past President), Beth Dalton (Membership Chair), Anne Voss (Southeast Region Representative), Rose Johnson (Southwest Region Representative), and Dr. Sue Dawson (St. Louis Region Representative). These board members committed their time and talent to AMNP as board members in 2019 and 2020 (and longer for some), and we are grateful for their leadership and contributions to leadership for Missouri's NP's.



Julie Long
President



Shanna Chapman
Vice President



Carla Beckerle
Secretary



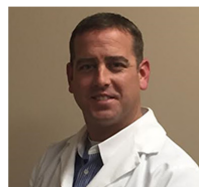
Chris Hemmer
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Advocacy Chair



Karin Riepe
Membership Chair



Scott Barnes
Central Region



Susan Kimble
KC Region



Sarah Knorr
NW Region



Kathy Haycraft
NE Region



Gina Heberlie
SE Region



Brandon Forester
SW Region



Tammy
Vandermolen
STL Region

COVID-19 CXR

Article by Dr. Chris Hemmer

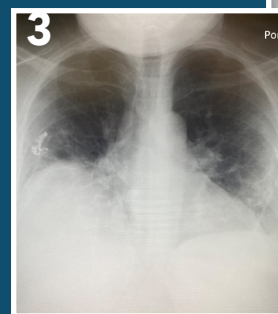
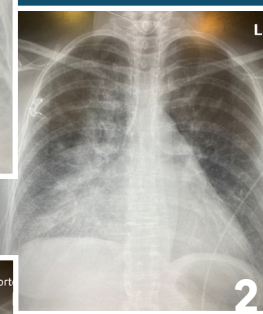
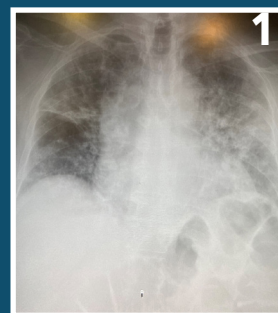
In this time of a global pandemic, it is important to separate fact from fiction. This brief article will review the typical presentation of COVID-19 from a chest radiograph perspective. COVID-19 symptoms can appear in a whole myriad of ways but some of the most commonly reported are respiratory symptoms such as cough, shortness of breath, fatigue, fever & chills, and myalgia.¹

When patients present with these types of symptoms it is common for the practitioner to order a chest x-ray. Keep in mind that your setting will typically dictate which type of chest film is being completed. For example, in the ambulatory setting a PA view and lateral is typically completed. This provides the clinician with a true picture of the heart and lungs and

avoid the magnification that occurs from AP view. However, patients that are hospitalized or acutely ill many times the PA view is completed without a lateral. Unfortunately, this view can magnify the heart and mediastinum making them appear larger than they really are. This is a common view used in emergency departments and some urgent cares. This view is quickly obtained and does not need the patient to exert any significant energy.

History is always important as upper respiratory infections both bacterial and viral can present similarly. COVID-19 which is viral typically has multifocal consolidations which appear more in the peripheral regions and often is bilobular. A typical description on both CXR as well as CT scan is a ground glass appearance.^{2,3}

It is wise for the provider to consider multiple etiologies when evaluating the patient with these broad complaints. The CXR may appear as pneumonia but have no elevation in white count at all. Below are three examples of patients ranging from mid 40's to 65 that all presented with cough and shortness of breath. All had completely normal labs and grossly abnormal CXR. All three patients below were found to be positive for COVID-19 on PCR nasopharyngeal testing.



¹CDC web site retrieved 12/11/20

²Durrani, M., Haq, I. U., Kalsoom, U., & Yousaf, A. (2020). Chest X-rays findings in COVID 19 patients at a University Teaching Hospital - A descriptive study. *Pakistan journal of medical sciences*, 36(COVID19-S4), S22-S26. <https://doi.org/10.12669/pjms.36.COVID19-S4.2778>

³Rousan, L.A., Elobeid, E., Karrar, M. et al. Chest x-ray findings and temporal lung changes in patients with COVID-19 pneumonia. *BMC Pulm Med* 20, 245 (2020). <https://doi.org/10.1186/s12890-020-01286-5>