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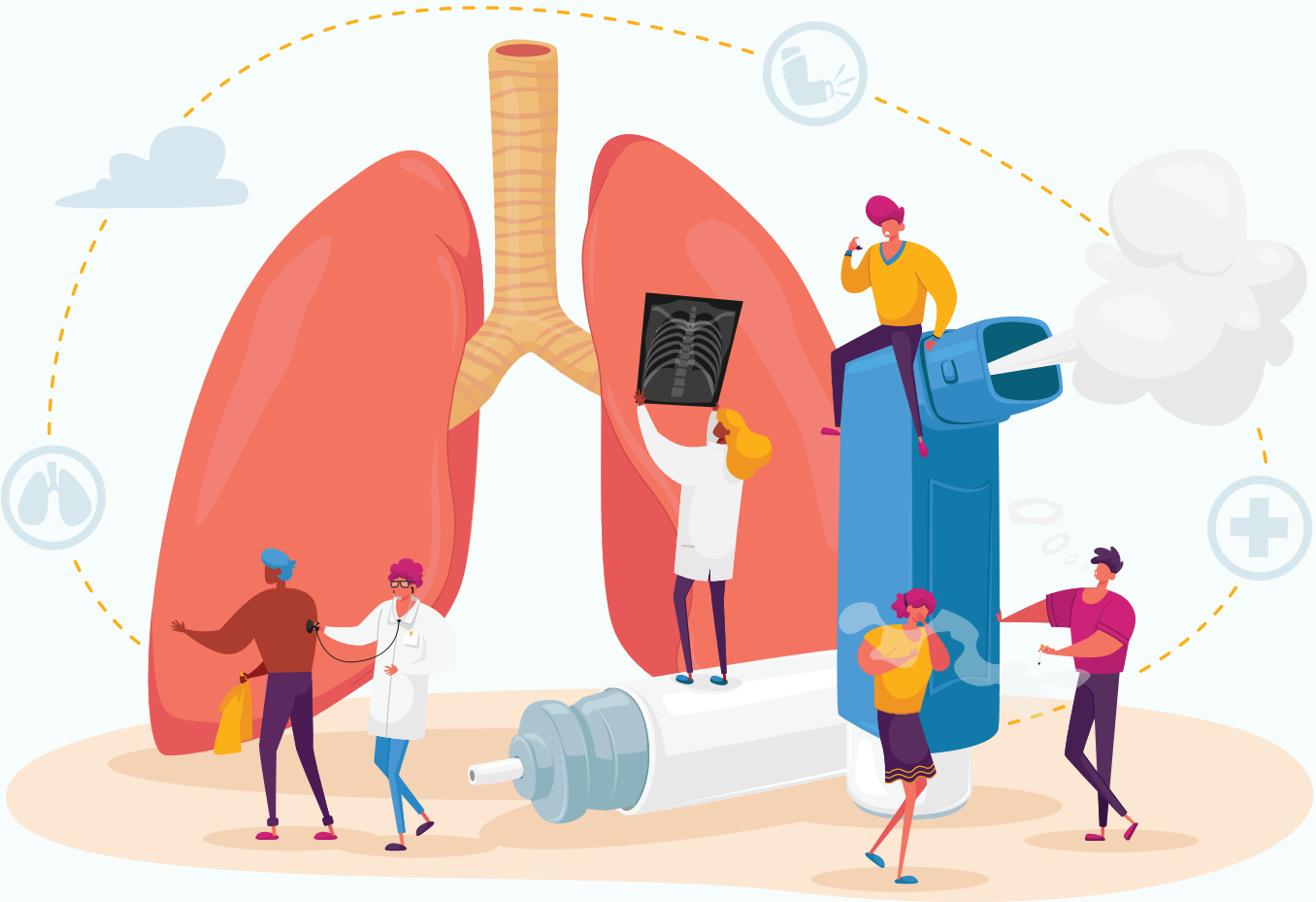
CMA™ Today

Breathe Easy

Early Detection and New Treatments Give Hope to Lung Cancer Patients



Looking to the Future of the AAMA

Adapted from the inaugural address of AAMA President Patty Licurs, CMA (AAMA), CPC, at the 2021 AAMA Annual Conference.

Wow, the time is finally here to serve as your AAMA president for 2021–2022. It seems like it has taken a long time and a lot of hard work for this day to come, but then again, it seems that time has gone by so fast. I am very honored to be your AAMA president.

The mission of the AAMA is to "provide the medical assistant professional with education, certification, credential acknowledgment, networking opportunities, scope-of-practice protection, and advocacy for quality patient-centered health care."

The AAMA is the only organization dedicated solely to the profession of medical assisting. We must therefore make sure we are the organization we say we are: one dedicated to the profession of medical assisting, not just CMAs (AAMA)®.

Yes, CMA (AAMA) certification is a huge part of who the AAMA is and should always be, but we are also supposed to be the organization for *all* medical assistants. We must remember those medical assistants who have no eligibility pathway to becoming a CMA (AAMA) but still want to be a part of our organization and serve the profession.

I know this is a touchy subject, but we must start thinking outside the box, to the future, and of those members who truly want to serve but are not allowed to.

I think of my fellow SCSMA [South Carolina Society of Medical Assistants] member, Marvitta Brooks. She is an RMA(AMT) dedicated to her local chapter and to the SCSMA. She is an all-around great worker but is not allowed to serve as a delegate to the AAMA House of Delegates. She will not get the chance to experience what it is like to represent her state society at an AAMA Annual Conference.

I think of Betty Jones, who is not allowed to run as trustee or officer to the [Board of Trustees]. She is a dedicated AAMA member of the NCSMA [North Carolina Society of Medical Assistants] and has a wealth of knowledge that would benefit the BOT.

With that being said, some restrictions need to be in place to protect the AAMA and the credential. But if we all would work together, change our mindset just a little, and look to the future of the AAMA, we will become the No. 1 nationally recognized organization—which also sponsors the No. 1 medical assisting credential—[that] we have all been striving to become. Granted, nothing will happen overnight, but we need to start taking steps now to reach that goal and fulfill our mission.

I hope you will please join me and the BOT in working toward the future of the AAMA!

Patty Licurs, CMA (AAMA), CPC

Patty Licurs, CMA (AAMA), CPC
2021–2022 AAMA President

AAMA® Mission

The mission of the American Association of Medical Assistants® is to provide the medical assistant professional with education, certification, credential acknowledgment, networking opportunities, scope-of-practice protection, and advocacy for quality patient-centered health care.

CMA (AAMA)® Certification

The CMA (AAMA) is awarded to candidates who pass the CMA (AAMA) Certification Exam. The National Board of Medical Examiners constructs and administers the exam. The CMA (AAMA) credential must be recertified every 60 months by the continuing education or exam method.

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CMA Today

Breathe Easy

Early Detection and New Treatments Give Hope to Lung Cancer Patients

By Kathryn Taylor

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Unless otherwise noted, articles are authored by professional writers who specialize in health-related topics. News blurbs are compiled by AAMA staff.

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AAMA update

Mission Complete!

Hundreds of medical assistants from across the country took their education to new heights at the 65th AAMA Annual Conference in Houston, Texas. A little more than 400 people networked and connected with their fellow star attendees, while also reaching for the moon to improve their clinical and administrative knowledge. Many thanks to the Annual Conference Education Committee and the members of the Texas Society of Medical Assistants for making the event out of this world!

Best in Showcase

Visitors to the Publishers Showcase discovered the latest developments in the world of health care literature and technology. The AAMA thanks all the 2021 exhibitors:

- Accrediting Bureau of Health Education Schools
- Elsevier
- Excelsior College
- Gateway Genomics
- Jones & Bartlett Learning
- Platinum Educational Group
- Relentless Healthcare Performance Advisors
- Trajecsys Centralized Clinical Recordkeeping
- University of Nevada, Reno/ Medical Assistant FASD Practice Improvement Collaborative

Three Cheers

Volunteers from the North and South Carolina societies once again delighted the conference crowd with the 2021 CMA (AAMA)® Knowledge Bowl. Attendees competed in teams to test their medical assisting expertise in one of the most popular events of the conference. ✦

Bylaws Amendments

The House adopted 14 bylaws amendments: 21-01 through 21-04, 21-06 through 21-07, 21-09, 21-13 through 21-18, and 21-20. Read *2021 Proposed Bylaws Amendments for the AAMA Bylaws* via the "Member Downloads" section of the website (sign-in required) for details on each amendment. ✦

Passing the Torch

At the Presidents Banquet, 2019–2021 AAMA President Debby Houston, CMA (AAMA), CPC, congratulated incoming AAMA President Patty Licurs, CMA (AAMA), CPC. The AAMA extends its appreciation to Past President Houston for her excellent leadership and wishes the best to President Licurs as she leads the association through the coming year! ✦

House Highlights

The House of Delegates elected the following officers and trustees:

Vice President
Deborah Novak, CMA (AAMA)

Speaker of the House
Monica Case, CMA (AAMA)

Vice Speaker of the House
Aimee Wicker, CMA (AAMA), PCMH CCE

Trustee
Sherry Bogar, CN-BC, CMA (AAMA)
Natasha Geno, ATS, CMA (AAMA)
Candy Miller, CMA (AAMA)
Jane Seelig, CMA-A (AAMA)
Sandra Williams, CMA (AAMA)

On the Web

CMA (AAMA) Fact Sheet
Under Downloads/About the Profession and Credential
Share this document on the advantages of the CMA (AAMA) credential with employers and those who make hiring decisions. (Visit the "Downloads" page for a PDF or order print copies through the online store, within the "Complimentary Marketing Materials" section.)

Follow Your Leaders
Under Volunteers/National Volunteer Leaders
See the roster of committed members leading this association!

Reports from the CEO
Under News & Events/Reports from the CEO
Access past reports of AAMA CEO and Legal Counsel Donald A. Balasa, JD, MBA, to the House of Delegates.

Save the Dates
Under Calendar
Find dates for upcoming board meetings, annual conferences, and MARWeek in the AAMA calendar. ✦

Supporting the Profession

Conference attendees gave generously to the Endowment funds:

Maxine Williams Scholarship Fund
$3,012

Ivy Reade Relkin Surveyor Training Fund
$2,002 ✦

Donald A. Balasa, JD, MBA
AAMA CEO and Legal Counsel

How Will Medical Assistants Be Impacted by the CMS COVID-19 Vaccination Rule?

Several lawsuits challenging the Centers for Medicare & Medicaid Services (CMS) Medicare and Medicaid Programs; Omnibus COVID-19 Health Care Staff Vaccination Interim Final Rule and other federal regulations discussed in this article are being litigated as of the date of this article's publication. The outcomes of these lawsuits will determine the enforceability and effects of the various federal COVID-19 vaccination rules. Therefore, the verbs in this article are in the future tense.

On November 5, 2021, the CMS issued its interim final rule with comment period titled "Medicare and Medicaid Programs; Omnibus COVID-19 Health Care Staff Vaccination"[1] (hereafter referred to as "CMS vaccination rule" or "IFC"), which requires staff of Medicare- or Medicaid-certified providers and suppliers to be vaccinated against COVID-19. There has been considerable confusion and misinformation about whether, and how, this IFC and other federal vaccination rules will affect medical assistants. The purpose of this article is to explain the provisions of this IFC and dispel any uncertainty about the applicability of federal vaccination laws to medical assistants.

What Is the Scope of the Vaccination Rule?

The United States Congress has given the CMS authority over many, but not all, health care providers and suppliers. In a frequently asked questions[2] (FAQs) document for its vaccination rule, CMS explains the scope of its rule as follows:

> The staff vaccination requirements apply to Medicare- and Medicaid-certified provider and supplier types (collectively, "facilities") that are regulated under the Medicare health and safety standards known as Conditions of Participation (CoPs), Conditions for Coverage (CfCs), or Requirements. Facilities are required to have a process or policy in place ensuring that all applicable staff are vaccinated against COVID-19.[2]

The following is a non-exhaustive list of Medicare- and Medicaid-certified provider and supplier types[2]:

- Ambulatory surgical centers
- Federally qualified health centers
- Home health agencies
- Hospices
- Long-term care facilities, including skilled nursing facilities
- Rural health clinics

Which Medical Assistants Are and Are Not Covered by the CMS Vaccination Rule?

Medical assistants working in Medicare- or Medicaid-certified providers and suppliers (such as those listed in the previous section) are required to meet the requirements of the CMS vaccination rule. Medical assistants who do not work in CMS-certified providers and suppliers are not covered by the CMS vaccination rule. However, as explained below, medical assistants may be required to be vaccinated under other federal regulations. Note the following from the interim final rule with comment period:

> This IFC directly applies only to the Medicare- and Medicaid-certified providers and suppliers. … *It does not directly apply to other health care entities, such as physician offices, that are not regulated by CMS* [emphasis added]. Most states have separate licensing requirements for health care staff and health care providers that would be applicable to physician office staff and other staff in small health care entities that are not subject to vaccination requirements under this IFC.[1]

Why Does the CMS Vaccination Rule Not Cover Physician Practices and Other Settings?

This important question is answered in the CMS FAQs document:

> CMS is using the authority established by Congress under the Social Security Act to regulate Medicare- and Medicaid-certified health facilities. Sections 1102 and 1871 of the Social Security Act (the Act) grant the Secretary of Health and Human Services general authority to make and publish such rules and regulations, not inconsistent with the Act, as may be necessary to the efficient administration of the functions with which the Secretary is charged. … This authority does not extend to certain facilities nor independent physicians/clinicians.[2]

Are Some Medical Assistants Required to be Vaccinated under Other Federal Regulations?

Medical assistants not covered by the CMS vaccination rule may be covered by other federal regulations—such as the executive order on COVID-19 safety protocols for federal contractors.[3]

Increasing numbers of physician practices and clinics are being purchased by hospitals and large health systems, some of which may employ hundreds or even thousands of staff—including medical assistants. Medical assistants working for employers with more than 100 staffers may be required to be vaccinated by the Occupational Safety and Health Administration (OSHA) COVID-19 Healthcare Emergency Temporary Standard.

Are There Exemptions from the Vaccination Requirement of the CMS Vaccination Rule?

As is the case with other federal COVID-19 vaccination programs, the CMS vaccination rule allows for legitimate medical and religious exemptions. Exemptions must be supported by the appropriate documentation. A religious exemption must be based on sincerely held religious beliefs, observances, or practices.

Does the CMS Vaccination Rule Allow Staff to Opt Out of the Vaccination Requirement?

Unlike the OSHA COVID-19 Healthcare Emergency Temporary Standard, the CMS vaccination rule does not allow unvaccinated staff to choose the option of periodic COVID-19 testing and practicing protective measures such as physical distancing and mask wearing.

How Can the CMS Vaccination Rule Affect Externing Medical Assisting Students?

If an externship or practicum site for a medical assisting academic program is subject to the CMS vaccination rule (or another federal or state vaccination rule), the externship site is required to ensure that externing students are vaccinated (or are granted a medical or religious exemption). A CMS FAQ directly addresses this scenario:

> This vaccination requirement applies to eligible staff working at almost all CMS-certified facilities that participate in the Medicare and Medicaid programs, regardless of clinical responsibility or patient contact. The requirement includes all current staff as well as any new staff who provide any care, treatment, or other services for the facility and/or its patients. This includes facility employees, licensed practitioners, *students, trainees,* and volunteers [emphasis added].[2]

If the CMS Vaccination Rule Conflicts with the Laws of the State in Which a Medical Assistant Is Working, Which Law Must Be Followed?

One of the legal challenges to the CMS vaccination rule (and the other federal vaccination laws) is whether they usurp the constitutional authority of states to pass laws to protect the health, safety, and welfare of their residents. However, if the CMS vaccination rule is upheld by the federal courts (probably the United States Supreme Court), the Supremacy Clause of the United States Constitution provides that federal statutes are the highest law of the land and supersede any state laws.

OSHA COVID-19 Healthcare Emergency Temporary Standard

The requirements of the OSHA COVID-19 Healthcare Emergency Temporary Standard are different in some respects from those of the CMS vaccination rule. A description of these differences is beyond the scope of this article. However, feel free to email me at DBalasa@aama-ntl.org with questions.

Conclusion

Medical assistants should not assume that—because they work in a physician practice or outpatient clinic and are not covered by the CMS vaccination rule—they need not be mindful of any federal vaccination requirements. With increasing numbers of medical assistants being employed by large health systems with more than 100 employees, medical assistants might be required to be vaccinated under the OSHA COVID-19 Healthcare Emergency Temporary Standard. ✦

Questions about COVID-19 vaccination requirements under one of the federal regulations should be directed to AAMA CEO and Legal Counsel Donald A. Balasa, JD, MBA, at DBalasa@aama-ntl.org.

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Stopping the Stigma

End Biases in Health Care

By Brian Justice

People are bombarded by messages about how to be healthy and why—namely that good health contributes to a happy life. At the same time, messages about what it means to be unhealthy can be even more powerful and negative.

Some health conditions, such as obesity, substance abuse, or mental health issues, impose another burden on patients: shame, which comes from feeling that somehow they are at fault for being ill and do not have enough character, strength, or willpower to get better.

"There's a worry that others are seeing us, judging us, and finding us so wanting that they will reject us," writes Kate Virant, MSW, JD, LCSW, in *Psychology Today*. "When we're ashamed of being ill, we don't talk about our illness to others. We may try to 'pass' as healthy, constantly monitoring appearance, speech, and behavior so that we can keep shame at bay."[1]

And that practice does not benefit anyone's health.

The Prejudice That Won't Go Away

A common example of health stigma centers around obesity. Advertisers and marketers are embracing more body types, but prejudice around weight still exists, and it starts early. Researchers have found that children as young as three years old have negative attitudes towards their overweight peers, and those views are often accompanied by discrimination and bullying.[2] Another study found that children's implicit bias towards overweight people is at about the same level as racial bias in adults.[3]

"Although modern societies approach prejudices as inherently evil, weight stigma largely escapes this view," writes Scott Kahan, MD, medical director of the STOP Obesity Alliance. "Indeed, obesity has been called the last socially acceptable form of prejudice."[4]

Addressing the issue requires an extra level of sensitivity. "Health issues around obesity can be truly difficult," says Stacy Byers, CMA (AAMA), of Statesville, North Carolina. "Many patients are sensitive about not being at a healthy weight, which can lead to many comorbidities that affect their overall health. Addressing those topics can help them understand how making better choices that reduce those concerns can impact their weight as well."

Health care professionals need to take extra caution to avoid stigma, which can cause patients to adopt unhealthy behaviors and gain weight.[4] To achieve this, health care professionals should be mindful of their language, develop a better understanding of obesity, be a patient advocate, and care for the whole person.[4]

Silent Sufferers

Infertility is another common source of stigma. More than 10% of women ages 15–44 and 27% of women ages 35–44 experience fertility issues.[5] Likewise, 12% of men ages 25–44 have impaired fertility.[5]

"Men see infertility as a condition that questions their masculinity and their virility," says Barrett Cowan, MD, chief medical officer of Posterity Health and assistant clinical professor at the University of Colorado School of Medicine. "But … it is a medical issue that can be diagnosed and treated."

Psychological consequences regardless of sex or gender may include guilt or shame, which is further exacerbated by social stigma.[5] That stigma may prevent patients from seeking out support systems that can help reduce their stress.[5]

Two Stigmas for Two Eras

Martina Clark, the author of a memoir about COVID-19 and HIV, remembers how virulent the stigma around an HIV diagnosis was in 1992.

"I was certain that I was the only woman with HIV, and I felt a lot of shame," she says. She experienced insensitive treatment by her physician and even her own family. "The broad stigma has diminished, to be sure, but it still lingers even today."

"I have been astonished that several people have said something to the effect of, 'I'm sure you didn't have as much fun getting COVID-19 as you did HIV,' which is such a weird and inappropriate thing to say," she recalls. "It reminds me that the stigma around HIV is still there, even if it's less frequently mentioned."

And, new forms of insensitivity exist around COVID-19.

A quarter of Americans associate COVID-19 with shame, which stops people from accessing health services and measures needed to control the disease.[6] The recent arrival of COVID-19 is part of the reason that stigma has been attached to it, writes Laura Murray for the Johns Hopkins Bloomberg School of Public Health.

"COVID-19 is a new virus that experts have learned more about over time with the science constantly evolving," she writes. "This leads to changes in recommendations with new understandings, which can create confusion, frustration, and mistrust."[7]

Put Stigma to Shame

Stigma can start a patient on a bad path that goes beyond their health issue.

"Shame promotes more shame, as we become ashamed of the fact that we are feeling shame," explains Virant. "This shame spiral is characteristic of the experience of shame and intensifies the painful nature of the emotion."1 In turn, this can affect patients' willingness to seek out necessary health resources.

Health care professionals can take a stand against stigma by taking key actions[8]:

- Maintain the privacy of patients
- Correct false language that contributes to stigma by offering accurate information
- Speak out against negative language or behaviors
- Suggest useful resources and support services to those who may be experiencing stigma
- Promote diversity in communication that avoids stereotypes

The best medicine of all can simply be empathy. "Acknowledge to patients that there is more to taking care of themselves than just taking their medicine," recommends Clark. "Ask them how they are doing overall. Acknowledge that showing up to fight any stigmatized health issue is a full-time job and praise them for rising to the challenge.

"I never want to be babied," she continues. "But I do appreciate it when any caregiver acknowledges that taking care of myself is a lot and that it involves so much more than swallowing pills." ✦

What to Do and Say; When to Say and Do It

Health care professionals offer advice for showing compassion to patients who may be feeling shame:

"Listening and understanding where [patients'] concerns come from help you and the patient feel more comfortable about sharing details. Empathy is something that every patient needs, and it creates a welcoming environment for any person. Mentoring and teaching your coworkers this approach builds your team's capacity for care and the patient's trust in them." —Stacy Byers, CMA (AAMA)

"Don't try to mitigate the shame the patient is feeling, because shame is a subjective quality to the patient. ... Instead, show that you understand the shame that they're feeling, and let them know that you're there to support them in any way that they need." —Ben Spielberg, MS, neuroscientist and CEO of TMS & Brain Help

"What if, instead of trying to make things better, we just ask, 'What do you need right now to feel safe and included?' By asking that simple question, we are staying present and acknowledging that something hurts. We don't have to fix the problem this very minute. We first have to comfort." —JoAnn Stevlos, MS, MPH, public health consultant and advisor

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Improve Patient Outcomes with a Three-Step Nutrition Intervention

Nutrition health is an essential and yet often overlooked facet of health care. Nutrition health not only improves health outcomes but has a significant impact on health care costs, reports Physicians Practice. The cost of disease-associated malnutrition is estimated to be about $147 billion per year in the United States. Further, hospitalized patients who are malnourished may incur costs that are double those of adequately nourished patients.

A three-step approach can help health care professionals quickly screen patients for malnutrition and address any issues:

- **Screen.** Providers ask patients questions to assess for under- or overnutrition.
- **Communicate.** Providers create and discuss a personalized nutrition plan with patients.
- **Educate.** Providers deliver education on the value of nutrition and compliance with nutrition recommendations.

This model has proven effective in multiple settings by reducing costs, lengths of hospital stays, and readmission rates. Significantly, the quality of care was also improved in the clinics where this model was evaluated. Nearly 82% of patients reported high levels of satisfaction with their nutrition health care. ✦

Health Disparities Persist in the U.S.

The Commonwealth Fund recently released its new health equity report, *Achieving Racial and Ethnic Equity in U.S. Health Care: A Scorecard of State Performance*. This scorecard analyzed data on 24 indicators of health system performance grouped in three categories: health outcomes, health care access, and the quality and use of health care services.

Overall, the scorecard revealed continued racial and ethnic inequalities across the United States, summarizes Drug Topics. Specifically, it found that Black patients were more likely to die from preventable, treatable conditions than White patients. This was true even in states that often perform well on overall state scorecard rankings. Similar inequalities were noted for other racial and ethnic populations.

The scorecard identified the chief factors contributing to these disparities as structural racism and continued disinvestment in communities of color. In order to address these issues, the authors of the scorecard recommend specific actions:

- Ensure universal, affordable, and equitable health care coverage
- Strengthen primary care and improve the delivery of health services
- Reduce barriers, such as inequitable administrative burdens
- Invest in social services

Mutually Supportive Relationships Boost Health

Although it has long been assumed that receiving social support benefits individuals' health, researchers from the Ohio State University have investigated this theory further. Their findings, published in *Brain, Behavior and Immunity*, suggest that *giving* support as well is a crucial factor for receiving health benefits.

Their study collected questionnaire data from more than 1,000 adults aged 34–84. Researchers collected and examined participants' blood tests after two years. They found that people who had positive relationships in which they both received and gave support had lower levels of inflammation—an important measure of health.

"It may be that when people believe they can give more support to friends and family," says Baldwin Way, an associate professor and a study author, "these relationships are especially rewarding and stress-relieving, which reduces inflammation." ✦

Increased Drug Overdoses

Recent data from the Centers for Disease Control and Prevention (CDC) show a large increase in deaths caused by drug overdoses in the United States. From April 2020 to April 2021, drug overdoses resulted in more than 100,000 deaths during a one-year period for the first time. This marks a 29% increase from the previous year. Opioids are responsible for more than 75% of overdose deaths.

In October 2021, the CDC launched four new education campaigns to combat overdoses. In addition to their other drug overdose prevention efforts, the CDC is using their new campaigns to target young adults between the ages of 18 and 34. Because drug overdoses have accelerated during the COVID-19 pandemic, these and other timely prevention campaigns can be used to help people make informed decisions. ✦

Adolescent Activity Tied to Osteoporosis Prevention

High-intensity physical activity during early life may positively affect bone strength, reports a study in *JAMA Open Network*. More than 2,500 participants were assessed at ages 12, 14, 16, and 25 for bone mineral density (BMD).

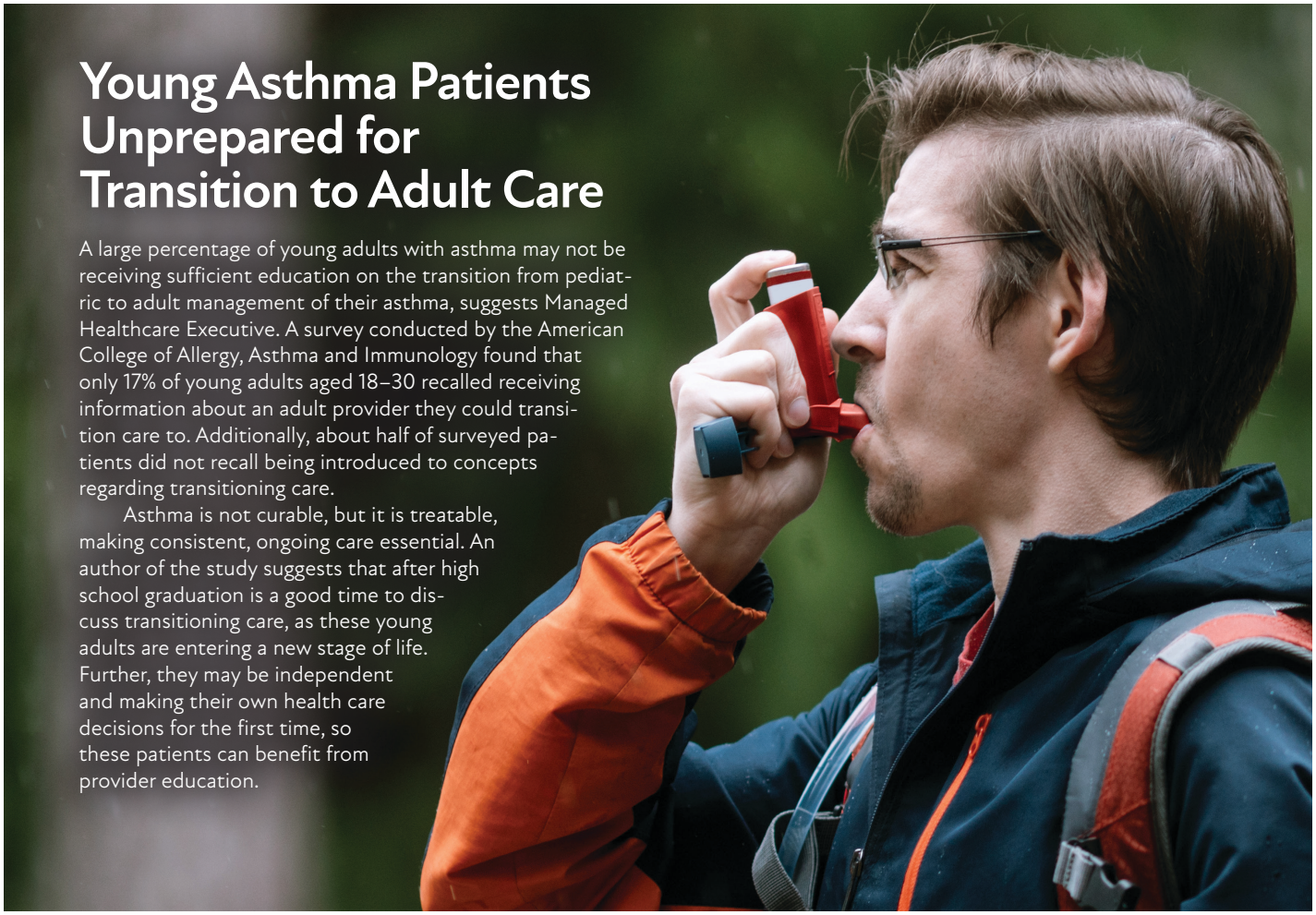
While light-intensity physical exercise had no association with BMD, moderate-to-vigorous exercise resulted in greater hip BMD at 25 years. Because peak bone strength during early adulthood is an important marker of osteoporosis and fracture risk later in life, researchers suggest that high-intensity exercise during early adolescence may be a significant way to prevent osteoporosis.

Further, this kind of exercise has additional benefits. "Physically active adolescents are more likely to become physically active adults who are less susceptible to all-cause mortality," says Rodrigo Antunes Lima, PhD, of the University of Graz in Austria. "Thus, it is important to increase the physical activity level of the adolescent population."

Young Asthma Patients Unprepared for Transition to Adult Care

A large percentage of young adults with asthma may not be receiving sufficient education on the transition from pediatric to adult management of their asthma, suggests Managed Healthcare Executive. A survey conducted by the American College of Allergy, Asthma and Immunology found that only 17% of young adults aged 18–30 recalled receiving information about an adult provider they could transition care to. Additionally, about half of surveyed patients did not recall being introduced to concepts regarding transitioning care.

Asthma is not curable, but it is treatable, making consistent, ongoing care essential. An author of the study suggests that after high school graduation is a good time to discuss transitioning care, as these young adults are entering a new stage of life. Further, they may be independent and making their own health care decisions for the first time, so these patients can benefit from provider education.



Breathe Easy

Early Detection and New Treatments Give Hope to Lung Cancer Patients

By Kathryn Taylor

Lung cancer is the second most common, and most fatal, type of cancer, accounting for almost 25% of all cancer deaths—more than breast, prostate, and colon cancer combined.[1,2] In 2021, an estimated 235,760 people were diagnosed with lung cancer and 131,880 died of the disease.[1] The overall five-year survival rate for those with lung cancer is only 21%.[3] That's not surprising, since lung cancer doesn't present symptoms until the disease has reached an advanced state.[4] Early-stage lung cancer is more readily treated, leading to a better prognosis.[3] The five-year survival rate for lung cancers diagnosed at a localized state is 56%.[5] Yet, only 16% of lung cancers are diagnosed in that state.[5] For that reason, it's essential that medical assistants help patients reduce their risk of lung cancer and get screened whenever appropriate.

Breathtaking Cells

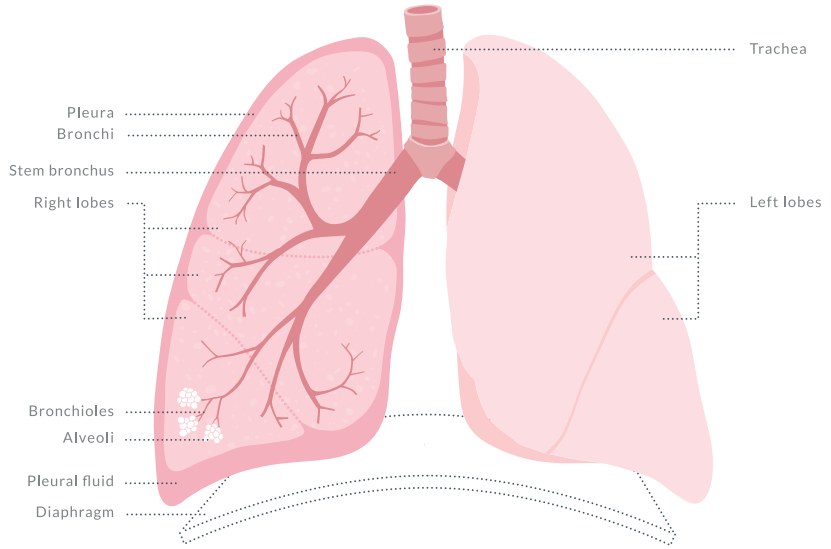
Lung cancer is defined as malignant cells (i.e., cancer) developing in lung tissue[6] and multiplying uncontrollably.[1] It usually originates in the cells lining the bronchi and parts of the lung.[1]

There are two main types of lung cancer: non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC). The different subcategories of lung cancer are assigned to these two main groups according to commonalities in treatment and prognoses.[1]

Approximately 84% of lung cancers fall under the category of NSCLC. There are various types of NSCLC, each originating from different types of lung cells.[1]

Adenocarcinoma, which starts in cells that ordinarily secrete mucus

Anatomy of the Lungs



The lungs resemble two cone-shaped[6] sponges.[1] The right lung has three lobes, while the left one has only two, which leaves room for the heart on that side.[1]

Air breathed in travels to the lungs through the trachea, or windpipe. The trachea divides into tubes, or bronchi, which enter the lungs and then divide into smaller bronchi. These smaller bronchi divide yet again to form even smaller tubes called *bronchioles*, which have tiny air sacs called *alveoli* at their tips. Alveoli absorb oxygen from inhaled air into the bloodstream and extract carbon dioxide from blood upon exhale. This turnover of oxygen and carbon dioxide is the main function of the lungs.[1]

A thin lining, the pleura, encases the lungs as protection and allows them to expand and contract against the chest wall during breathing. The diaphragm—a thin, arched muscle—lies between the chest and abdomen and moves up and down during breathing to alternately push air out of the lungs and then allow air back in.[1]

and other substances, is typically found in the outer parts of the lungs. Adenocarcinoma is the most common type of lung cancer in nonsmokers and younger people. Yet, current and former smokers are more prone to developing it, as are women. Adenocarcinoma is more likely than other types of lung cancer to be found before it can spread. A type of adenocarcinoma called *adenocarcinoma in situ*, formerly called *bronchioloalveolar carcinoma*, has a better prognosis than other kinds of lung cancer.[1]

Squamous cell carcinomas initiate in squamous cells, flat cells lining the lungs' airways. These carcinomas are usually found in the central part of the lungs and close to a core airway, or bronchus, and correlate to a history of smoking.[1]

Large cell (undifferentiated) carcinoma can develop in any part of the lung and usually grows and spreads quickly, making treatment difficult. Large cell neuroendocrine carcinoma—a subtype of large cell carcinoma—grows quickly and has similarities to SCLC.[1]

Other, less common subtypes of NSCLC include adenosquamous carcinoma and sarcomatoid carcinoma.[1]

SCLC, also known as *oat cell cancer*, is the other main type of lung cancer and accounts for approximately 13% of lung cancer cases.[1] "When looking at the cells under a high-powered microscope, they often look like oats," explains Christine J. Conti, RN, ONN-CG, RN navigator at Thoracic Oncology, Huntington Cancer Center in Pasadena, California.

SCLC tends to grow and spread faster than NSCLC. In fact, SCLC will have spread in approximately 70% of patients by the time they're diagnosed with it.[1]

"[SCLC] is a very aggressive type of lung cancer that tends to grow and spread quickly in the lung tissue," says Conti. "These cells have the ability to rapidly divide and reproduce. It is thought that small cell lung cancer cells have mutations that inactivate tumor suppression genes, thus allowing the cells to grow quickly."

Such fast-growing cancers typically respond well to chemotherapy and radiation therapy but usually return.[1]

Cancers that begin in other organs can metastasize to the lungs, but these aren't considered lung cancer, and treatment corresponds to wherever the cancer originated.[1]

Lung tumors that fall outside the main categories include lung carcinoid tumors, which are slow-growing and are at the root of less than 5% of lung tumors; adenoid cystic carcinomas; lymphomas; sarcomas; and, rarely, benign lung tumors such as hamartomas. Treatment for these rare types of lung tumors differs from that for the more common types.[1]

Getting Wind of Cancer

Regardless of type, once symptoms of lung cancer finally do appear, they may include a persistent cough, coughing up blood, shortness of breath, headaches, pain in the bones, unintentional weight loss, hoarse throat, chest pain,[2] wheezing, fatigue, loss of appetite, trouble swallowing, and swelling of the face and/or neck veins.[6] Some people may feel a general malaise, and some may have recurring pneumonia or enlarged lymph nodes inside the chest, between the lungs.[4]

Shortness of breath can result from cancer that has grown to the point of blocking the major airways or pleural effusion, which is fluid accumulation in the pleural space—the chest cavity space surrounding the affected lung.[2]

Older people are more likely to have lung cancer: the average age of diagnosis is around 70 years.[1]

Where There's Smoke ...

Cigarette smoking is to blame for 80% to 90% of lung cancer fatalities. Of the more than

7,000 chemicals in tobacco smoke, many of which are poisons, at least 70 have been identified as carcinogens. Cigarette smokers are 15 to 30 times more likely to get or die of lung cancer than nonsmokers. The risk of getting lung cancer increases with the daily number of cigarettes smoked and number of years smoking. Even minimal smoking increases the risk of lung cancer. Those who quit decrease their risk of cancer, but they are still more likely to get lung cancer than those who have never smoked. Other tobacco products also increase lung cancer risk.[7]

In the United States, an estimated 5,840 non-smoking adults were diagnosed as having acquired lung cancer through exposure to secondhand smoke in 2014.[5]

Genetic differences may make some people more susceptible to lung cancer if they smoke or are exposed to secondhand smoke.[1]

The second leading cause of lung cancer is radon exposure, which causes approximately 20,000 cases of lung cancer annually.[7] Radon is a natural gas[7] that is produced during the natural breakdown of uranium in soil, rock, and water.[2] It mixes with our air[2] and becomes trapped in buildings, including homes.[7] Almost 1 in 15 homes in the United States is believed to have high concentrations of radon.[7]

Asbestos, arsenic, diesel exhaust, and certain types of silica and chromium can increase the risk of lung cancer—with some presenting a higher danger than smoking.[7] These substances may be found at certain workplaces; arsenic may also be found in drinking water, mainly that from private wells.[7] They especially increase the risk of lung cancer for smokers.[2]

Living in an area with a high level of air pollution[6] and radiation therapy to the chest increase the risk of lung cancer, as can beta-carotene supplements for smokers.[7]

Smoking combined with one or more other risk factors increases the risk of developing lung cancer.[6]

Lung cancer survivors are at risk of recurrence, particularly if they continue to smoke, as are those whose immediate family members have had lung cancer.[7]

Not smoking is the best way to avoid getting lung cancer, as well as avoiding other carcinogens.

In fact, the number of new lung cancer cases in on the decline, partly due to the growing unpopularity of smoking.[1] Deaths attributed to lung cancer have declined by 48% since 1990 for men and 23% since 2002 for women. That positive trend is picking up speed, and between 2012 and 2016, the rate decreased approximately 4% annually for men and 3% each year for women.[5]

Laws preventing smoking in public places have decreased lung cancer cases due to secondhand smoke and smoking in adults and youth. Non-smokers' exposure to secondhand smoke declined in the U.S. from 84% during the period from 1988 to 1994 to 25% during 2011 to 2012. Still, such exposure is much higher for low-income nonsmokers.[5]

Sigh of the Times

Low-dose computed tomography (LDCT) is the only recommended screening test for lung cancer.[8] LDCT produces a detailed image of the lungs using a lose dose of radiation.[8] Its 3-D images can detect very small tumors and ascertain whether the cancer has spread to the lymph nodes encircling the lungs.[8] "[LDCT] protocol uses between 75% and 90% less radiation than the conventional CT," says Ricardo E. Blanco, MD, FCCP, medical director for respiratory services and staff pulmonologist at St. Tammany Parish Hospital in Covington, Louisiana.

LDCT screenings have reduced lung cancer mortality by approximately 20% among current heavy smokers or former heavy smokers who have quit within the past 15 years.[5] But while lung cancer must be caught early if it's not to be fatal, overscreening can be an issue in and of itself.

Although the screening test is quick and painless, the test has risks.[8] "Screening should be offered only to those healthy enough to derive benefit if a cancer is found," says Dr. Blanco, also a diplomate of the American Board of Internal Medicine in internal medicine, pulmonary disease, critical care medicine, and sleep.

LDCT can result in a false-positive, leading to unnecessary follow-up tests and surgeries, all with their own risks.[8] It may also lead to overdiagnosis, finding cases of lung cancer that are not bothering the patient and leading to unnecessary treatment.[8] Finally, the radiation from multiple LDCT tests can, ironically, lead to cancer in the healthy.[8] This is why only high-risk, asymptomatic individuals should be screened.[8]

In 2021, the U.S. Preventive Services Task Force widened its screening recommendations.[3,8] The task force now recommends annual screenings for patients between 50 and 80 years of age who have smoked or quit within the past 15 years and have a 20 pack-year or more smoking history.[3,8] A *pack-year* is defined as smoking an average of one pack of cigarettes daily for a year.[8] For instance, 20 pack-years could mean smoking one pack a day for 20 years or two packs a day for 10 years.[8]

Other organizations offer their own screening recommendations with slight variations on these, sometimes including other risk factors.

Sometimes those who fall outside of these parameters should be tested. "Each patient may have an individual circumstance that warrants a lung screening and should be discussed with their primary physician to see if screening is appropriate for their individual history," says Conti. "In my opinion, there are various levels of secondhand smoke exposure. If you feel that your exposure was significant, you should advocate for yourself by discussing your ability to get a low-dose screening with your primary care doctor."

Screening should stop when someone turns 81, hasn't smoked for 15 years, or develops a health issue that either reduces their life expectancy significantly or makes them a poor or unwilling candidate for surgery if lung cancer is indeed discovered.[8]

Still, for those at risk of having lung cancer who may benefit from treatment, annual screenings are worth it. "Yes, repeated low-dose over a period can result in cancer, but that risk is very low," says Rashmi Benda, MD, a radiation oncologist with the Lynn Cancer Institute of Boca Raton Regional Hospital in Boca Raton, Florida. "And the benefit far outweighs any of that risk."

Smoke Out

Tobacco use and dependence is considered a chronic, relapsing condition.[15]

Patients who receive counseling and medication double their chances of quitting smoking successfully.[15] Even brief counseling from a health care provider increases the likelihood that a patient will attempt to quit smoking.[15]

Incorporating a tobacco cessation clinical intervention protocol can add as few as three minutes to a patient visit and can be accomplished by anyone on the clinical care team.[16]

First, ask patients about current tobacco use. If they respond that they don't use tobacco products, discuss the dangers of starting to use them.[16] If they say they've quit in the past one to twelve months, ask about any challenges or ways that the clinical team can support attempts to quit.[16]

If they reply that they do currently use tobacco products, they should be advised to quit and their willingness to stop should be assessed.[16] If they are unwilling to quit at the time, the health care team should try to provide motivation to do so and express their willingness to help in the future.[16]

"Patients do not want preaching," says Nancy L. Brown, CMA (AAMA), certified medical assistant/phlebotomist with Access Health Care Physicians in Fort Pierce, Florida, "but to know someone is there when they are ready."

Those willing to quit should be provided assistance, whether through counseling, medication, or resources.[16] A combination of behavioral counseling and medication is more effective than either of these treatments on their own.[16]

Patients should set a quit date that's no more than 30 days into the future, and health care professionals should discuss potential withdrawal symptoms and triggers—and how to deal with each—with patients.[16]

Following up either in person or via telephone is key.[16] The first appointment should occur within a week of the quit date, while a second should follow within the first month of quitting.[16]

Donna Fontana, CMA (AAMA), a recently retired medical assistant in Connecticut, lost her father, a long-term smoker, to lung cancer. This led to her quitting her own smoking habit. She shared her experience quitting and the reason she quit with her patients who smoked.

"When given the opportunity, I would remind patients of the successful outcomes of treatments that I had the pleasure of witnessing and always looked for words of encouragement," says Fontana, "even if it provided the patient a little bit of hope."

Kicking the habit isn't easy, and often takes multiple attempts and long-term support. "Some patients quit cold turkey, others over time, and still others will bounce back and forth with quitting," says Brown.

Yet, the effort is worth it: 3 out of 5 American adults who have ever smoked were able to quit in the end.[15]

Aprés Screening

Once a suspicious mass has been observed on a CT scan, a biopsy is typically conducted to confirm whether it is indeed cancer.[6] In a biopsy, small portions of the suspicious tissue or fluids are extracted.[6,9] Usually, biopsies are performed on a lung tumor, but they also may be done on tissue from the chest lining or lymph nodes or on fluid from the chest cavity or lungs.[9] Certain types of biopsy do not necessarily require removal of tissue or fluids, but use a small camera to examine the noted masses inside the body.[9]

Studying the tissue under a microscope, a scientist can determine the cancer's type and subtype.[9]

Types of biopsies include needle biopsy or aspiration, bronchoscopy, autofluorescence bronchoscopy, endobronchial ultrasound mediastinoscopy, thoracentesis, thorascopy, electromagnetic navigation, and surgery.[9]

MRI can also be used to determine the presence of cancer and is the best instrument for determining whether lung cancer has metastasized to the brain.[9] With positron emission tomography (PET), a special sugar solution is injected intravenously.[9] If the solution collects at a site, cancer may be present there, as cancer typically uses more energy than other types of cells or tissue.[9] This information shows whether lung cancer has metastasized to other parts of the body.[9]

The size and location of the suspicious mass determines what type of biopsy is performed.[9] "There are malignancy risk calculators that are available and help us determine how to proceed," says Dr. Blanco. "The Mayo Clinic model is one of the most used and takes into account a patient's age, diameter of the nodule, history of smoking, history of extra thoracic cancer greater than or equal to five years prior, location of the nodule in the upper lobe, appearance ..., and whether a PET scan showed hypermetabolic activity. This determines low, intermediate, or high risk. Low risk findings—<5% risk of malignancy—are followed in 6 to 12 months; intermediate risk—5% to 65%—is followed with a PET scan and, if a PET scan is not available, a nonsurgical biopsy. If the risk of malignancy is high, or >65%, then a surgical biopsy is recommended."

Biomarker testing—sometimes called *tumor*, *molecular*, or *genomic testing*—tests tumor tissue for DNA abnormalities and levels of specific proteins.[10] Changes in DNA include mutations, additions, deletions, or rearrangements.[10] The DNA changes are not genetic but occur over time, sometimes in response to environmental factors, such as carcinogens, but can be random or with no known cause.[10] During the biopsy, extra tissue should be extracted to perform biomarker testing if indicated.[10]

If biomarker testing has not been done and may be useful, but no remaining tumor tissue is available, a clinician may do an additional biopsy or a liquid biopsy. Done via a regular blood draw, a liquid biopsy can quickly identify many different biomarkers and be used in conjunction with the tissue biopsy to identify appropriate treatment.[10] Because lung cancer tumors can change in response to treatment, additional biomarker testing on either blood or tissue after treatment has begun can help redirect treatment for tumors that have become resistant to the existing therapeutic strategy.[10]

Staging of cancer takes into consideration the growth and spread of the cancer, which is important in determining therapeutic strategies and the patient's prognosis. The TNM staging system evaluates growth and spread via size or extent of the primary tumor (T), whether regional lymph nodes are involved (N), and whether there are distant metastases (M). Ratings go from Stage 0, meaning the cancer is in situ, to Stage I for cancer that is in its early state, and through Stage IV, advanced disease.[5]

Air Support: Treatment

When deciding on a course of treatment, "we have to decide whether the cancer is resectable and whether the patient is operable," says Dr. Blanco. "In general, Stages I and II are directed toward surgery. Stages III and IV require systemic therapy with chemotherapy or chemo-radiation."

Early-stage NSCLC is usually treated via surgery, sometimes alongside chemotherapy, either on its own or combined with radiation therapy.[5]

Advanced-stage NSCLC is typically attacked with chemotherapy, targeted drugs (sometimes combined with chemotherapy), or immunotherapy.[5]

SCLC is generally treated with chemotherapy, either unaccompanied or combined with radiation. Many patients experience a brief remission through this course, although the cancer often returns.[5]

Targeted Therapy

Tailored, or targeted, therapy has given renewed hope to some advanced lung cancer patients. Targeted therapies target the cancer cells with biomarker abnormalities that cause them to grow, reducing damage to normal, healthy cells.[10,11] The list of biomarkers with treatments approved by the Food and Drug Administration (FDA) is growing.

"Since 2004, the number of actionable mutations has increased to the point that 1 in 5 or 1 in 6 non-squamous cell lung cancers can be treated with tailored therapy. This has been an exciting development in the treatment of lung cancer," says Dr. Blanco. "When patients are found to have actionable mutations, they have a better response with less toxicity than if they received standard chemotherapy."

Currently, markers targeted with FDA-approved treatments are epidermal growth factor receptor mutation, anaplastic lymphoma kinase gene rearrangement, ROS1 rearrangement, BRAF V600E mutation, NTRK gene fusion, MET amplification or MET exon 14 skipping, RET arrangements, and KRAS mutation. These mutations are most common in patients with adenocarcinoma, a subtype of NSCLC.[10,11] Biomarker testing is generally not done, therefore, for squamous cell lung cancer or SCLC, except in those who have never smoked.[10,11]

Other gene changes are being studied in clinical trials.[10]

Immunotherapy

"Immunotherapy has been the biggest game-changer in Stage III and Stage IV patients," says Dr. Benda.

Immunotherapy uses the power of the body's immune system to attack cancer cells.[12] While the immune system typically tackles harmful foreign agents in the body, it also knows not to attack the things that should be within the body, like organs.[12] Lung cancer cells, as formerly normal lung cells, present a conundrum to the immune system because they still have some of their former attributes—although they have also acquired new features that make them harmful to the body.[12]

Immunotherapy drugs, administered via infusion, allow the body to recognize cancer cells as dangerous and foreign so that the immune system will fight them.[12]

Immunotherapy includes immune checkpoint inhibitors, which target molecules on the immune cells that should start or stop immune responses, depending on whether it recognizes something as normal or foreign, but which are sometimes eluded by cancer cells.[12] Some inhibitors ensure the immune system fights cancer by blocking contact between the PD-L1 protein and PD-1 receptor on the T cell, as this contact can prevent the immune system from responding.[12] One inhibitor blocks immune checkpoint CTLA4 to increase the number of immune cells available to fight cancer cells.[12]

Biomarkers can indicate the level of PD-L1 protein in tumors to determine whether a tumor may respond well to appropriate immunotherapy drugs.[10]

Immunotherapy "can be used by itself or together with chemotherapy and has shown progression free survival and improved overall survival in unresectable Stage III [NSCLC]," says Dr. Blanco.

Real-Time Tumor Imaging

Surgery and radiotherapy on lungs is particularly difficult because the object necessarily presents a moving target—lungs move up and down as the patient breathes. Four-dimensional CT takes a continuous scan of the chest for approximately 30 seconds, resulting in an image that shows where the tumor is in relation to other objects in the chest as the patient breathes.[1] Surgeons and radiation oncologists can thereby predict more or less where the tumor will be at any given point in the course of respiration.

Surgery

There are four types of lung cancer surgery: wedge resection, where the tumor and some of the normal tissue surrounding it is removed (called *segmental resection* when a little more tissue is removed); lobectomy, when an entire lobe is removed; pneumonectomy, when an entire lung is removed; and a sleeve resection, when part of the bronchus is removed.[6]

Robotic-assisted surgery, in which the surgeon uses a control panel to move long surgical instruments via robotic arms, is being used in some operating rooms.[1]

Video-assisted thoracic surgery helps surgeons use smaller incisions for small lung tumors.[1]

Radiation

Radiation therapy utilizes photons (high-energy X-rays) or protons (particle beams) to kill, shrink, or control the growth of tumors and prevent them from metastasizing. This therapy can also be used palliatively to reduce cancer symptoms.[13]

"I used to tell patients, 'I can treat you with radiation because you can't have surgery, but the best I can give you is maybe 50% local control,'" says Dr. Benda. "'So, there's about a 50/50 chance that this radiation is going to control your cancer.'"

Dr. Benda credits four-dimensional CT real-time tumor imaging and stereotactic body radiotherapy (SBRT), which she notes has been around for at least 15 years, for improving patients' chances since that time.

SBRT, also known as *stereotactic radiotherapy* or *stereotactic ablative radiotherapy*, directs radiation very precisely, targeting the tumor while avoiding nearby healthy tissue.[13] SBRT is usually delivered over one to five sessions.[13] Fiducials (gold markers), usually placed during an outpatient procedure, can help guide radiation to the tumor during SBRT.[13]

"CyberKnife is one of the machines that we do it on," Dr. Benda notes. "The advantage of CyberKnife is that it can latch onto the tumor, either by just seeing the tumor or gold markers, and [the machine] can track [the tumor] with the breathing. That allows me to treat a small area, and therefore I can give it a very high dose, and that's more ablative. Previously, we couldn't give it as high a dose because we were treating a bigger area. Now, with the newer techniques, we have higher doses and a smaller target, treated over a very short period. Now, it's about one week compared to six to eight weeks. Control rates have gone above 90% for tumors that are two centimeters or less. That's a big, dramatic improvement."

There are additional brands of SBRT devices.

External Beam Radiation therapy, in which radiation enters the body through the skin, can be done via the following[13]:

- 3-D conformal radiation therapy, which uses imaging scans to map the tumor before delivering a steady stream of photon radiation to it
- Intensity-modulated radiation therapy, in which the radiation strength is varied
- Image-guided radiation therapy, which uses imaging during therapy
- Particle beam therapy, which is currently used in only a small group of cancer centers

In brachytherapy, also known as *internal* or *implant radiation therapy*, radioactive material is sealed in needles, seeds, wires, or catheters that are placed in or near the tumor.[13]

Brain metases are common in lung cancer patients. Radiation can target them or be used to prevent them.[13]

Chemotherapy

Chemotherapy uses chemicals to kill cells that divide or grow rapidly, but normal, healthy cells that also divide and grow rapidly often get caught in the crosshairs, unfortunately.[14]

Inhale the Future; Exhale the Past

"This is a very exciting time in lung cancer research," says Christine J. Conti, RN, ONN-CG. "In the past 10 years, many new treatment options have become available for lung cancer patients. Targeted therapy and immunotherapy have greatly improved that prognosis in lung cancer patients. Genetic and molecular testing have become increasingly helpful in the treatment of lung cancer as well."

In late May of this year, Amgen received FDA approval for a pill that targets the KRAS mutation—one of the most common mutations, but one that had eluded treatment for so many years that researchers considered it "undruggable."[17]

No FDA-approved vaccines specifically for lung cancer exists yet, but are in clinical trials. Rather than prevent cancer, cancer vaccines are therapeutic, improving the immune system's ability to kill cancer cells. They may do this by targeting an individual's unique cancer proteins or those shared by many people.[17]

Also being studied in clinical trials, but not yet FDA-approved, is adoptive T cell therapy. T cells—a type of white blood cell found in the immune system—are removed from the body through plasmapheresis and modified in a laboratory to enhance their proficiency at attacking a person's specific cancer cells once they're reintroduced into the body.[17]

"With each clinical trial providing more and more treatment options," says Conti, "there is more and more hope that we can control this disease."

Initial chemotherapy is also called *first-line chemotherapy*. Additional rounds are called *second-line chemotherapy*.[14] Drugs used may include platinum-based drugs such as cisplatin or carboplatin plus an additional medication, such as paclitaxel (Taxol), docetaxel (Taxotere), etoposide (VP-16), gemcitabine (Gemzar), or vinorelbine (Navelbine). Pemetrexed (Alimta) and bevacizumab (Avastin) may be used instead or in combination with the above.[14]

Neo-adjuvant chemotherapy is used before another treatment, usually to shrink the tumor to a point where surgery is possible, and adjuvant chemotherapy refers to chemotherapy used after another treatment, usually to kill any remaining cancer cells after surgery.[14]

Chemotherapy patients may receive maintenance chemotherapy after their initial treatment of four to six cycles.[1] Maintenance therapy involves an additional four to six cycles with a single chemotherapy or targeted drug.[1] This extended treatment may lengthen some patients' life-spans, but the side effects may make maintenance therapy untenable for others.[1]

Advances in treatment and screening are improving mortality rates for cancer patients, but more can be done from the front-end.

"We need to ramp up screening," says Dr. Benda. "It has not become part of our culture, like mammograms for women or [prostate-specific antigen] levels for men. It's time we educate the public that these CT scans are something that are helpful and can save lives." ✦

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T F

☐☐ 1. A correlation exists between a history of smoking and squamous cell carcinoma.

☐☐ 2. Neo-adjuvant chemotherapy refers to chemotherapy that is used after another cancer treatment and can be used to kill cancer cells that remain after surgery.

☐☐ 3. Low-dose computed tomography has been effective in detecting small lung cancer tumors and thus reducing mortality rates, but sometimes radiation from this modality results in cancer in healthy patients.

☐☐ 4. Lung cancer is the most common form of cancer and accounts for almost 30% of all cancer deaths.

☐☐ 5. The average age for detection and diagnosis of lung cancer is 50.

☐☐ 6. Hamartomas are rare, benign lung tumors.

☐☐ 7. Frequently, symptoms of lung cancer are not evident during the early stages of the disease and only manifest during the later stages of the disease.

☐☐ 8. Laws forbidding smoking in public places have not been shown to reduce lung cancer cases resulting from secondhand smoke.

☐☐ 9. Exposure to diesel exhaust, asbestos, and radon increases the risk of lung cancer.

☐☐ 10. Cancers that originate in organs other than the lungs are not classified as lung cancer and are treated according to the source of the cancer.

☐☐ 11. The risk of lung cancer for those who have quit smoking for twenty or more years is approximately the same as those who have never smoked.

T F

☐☐ 12. Non-small cell lung cancer generally grows faster than small cell lung cancer.

☐☐ 13. Immunotherapy has been shown to be especially effective in treating patients with Stage III and IV cancer.

☐☐ 14. For younger people and nonsmoking people, the most common form of lung cancer is large cell carcinoma.

☐☐ 15. Small cell lung cancer is also referred to as *oat cell cancer* because there is a correlation between a diet high in oats and contracting this type of lung cancer.

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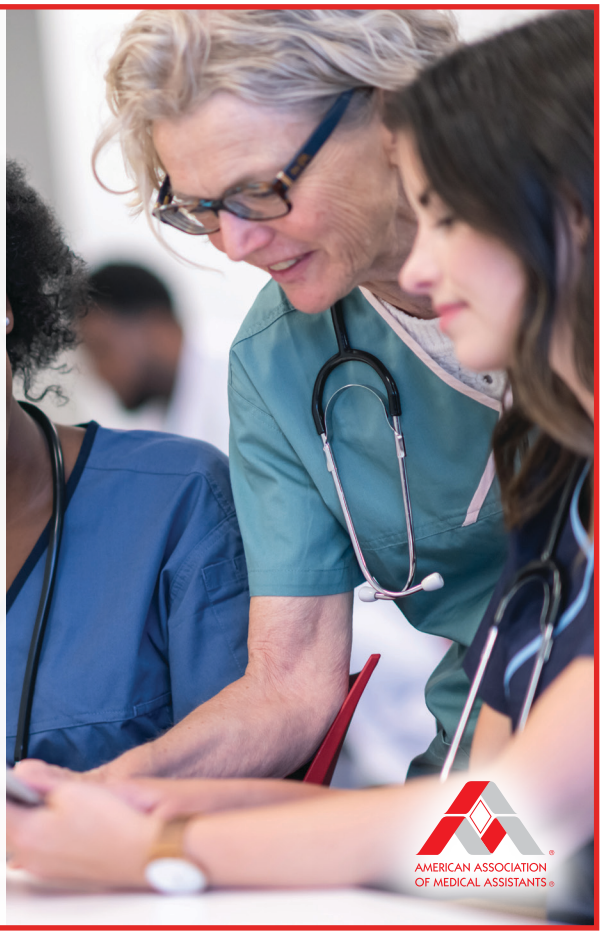

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Can-Do with Coffee

Caffeine can do much more than help you wake up in the morning. A mug of coffee—or an equivalent amount of caffeine—before a workout can also help boost your exercise in two ways.

First, the caffeine will improve your overall performance, according to Nutrition Action. Because its effects reduce fatigue, those who drink it before their workout may be able to exercise longer or at a slightly more difficult pace.

Additionally, MedicalNewsToday reports that studies have confirmed that consuming caffeine 30 minutes before exercise increases maximum fat oxidization.

However, both sources offer a word of caution: while caffeine can be a buzzworthy boost to your workout, it should be consumed in moderation. Too much caffeine can disturb sleep and cause other unpleasant side effects. Further, some health conditions such as irregular heart rhythms can be worsened by caffeine. ✦

On Your Guard

The immune system helps your body defend against infection, but how can you support your immune system? Cleveland Clinic breaks down strategies for raising your defense into four areas:

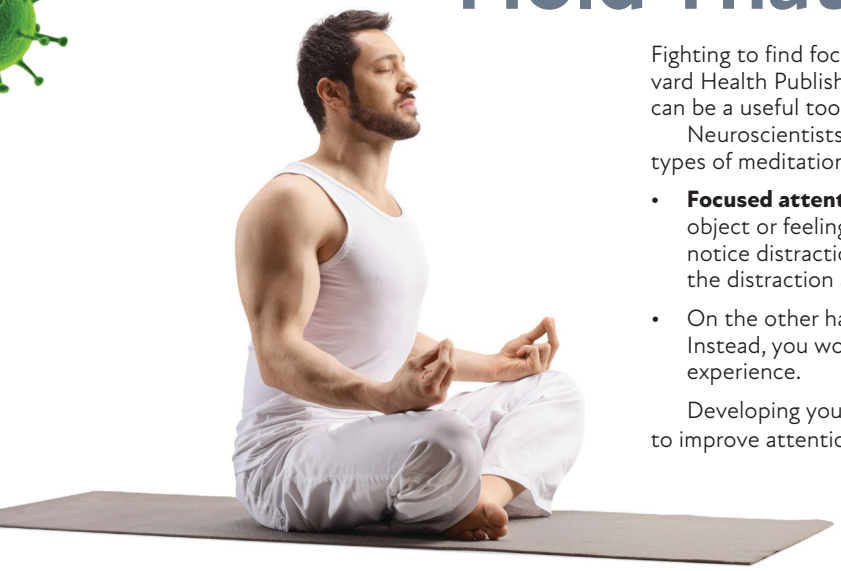
- **Bite back.** Certain foods can strengthen your immune system and overall health. Examples include raw or roasted garlic, prebiotics (specifically those containing fiber), foods rich in vitamin C (e.g., oranges, broccoli, and kiwi), and antioxidants found in certain fruits and vegetables (e.g., carrots, spinach, and berries).
- **Get out from under pressure.** Even low amounts of stress can lower your immune system over time. Counter stress's ill effects by getting sufficient sleep, meditation, and exercise on a daily basis.
- **Find silver linings.** Positive thoughts can reduce stress and inflammation, while also preventing infection. Conversely, negativity can make you more vulnerable to catching a cold or influenza.
- **Do daily doses.** Taking certain supplements can bolster the nutrients you're already getting from food. In particular, vitamin D supplements can prevent deficiencies that cause susceptibility to infections.

'Tis the Season

It's a kale as old as time—eating nutritious vegetables is a vital part of maintaining health. While fresh fruits and vegetables are easier to procure during the spring and summer, a plethora of in-season options is still available during the colder months. Go green in winter with these ideas from Healthline:

- **Carrots** may be good all year but are especially sweet during winter. Further, they provide significant amounts of vitamin A for eye health and carotenoid antioxidants for reducing the risk of chronic disease.
- **Rutabagas** also get more sugary in winter—and have sweet health benefits! They are rich in potassium, which supports heart function.
- **Brussel sprouts** are a good source for a large variety of nutrients, but Brussel sprouts are especially high in vitamin K (which supports bone, heart, and brain health) and fiber (which keeps blood sugar levels stable).
- **Kale** thrives in cold weather and packs a nutritional punch—just one cup fulfills the daily recommendations for vitamins A, C, and K.
- **Parsley** is one of the few herbs hearty enough to survive winter and offers vitamin A, C, and K, as well as flavonoids that may help prevent or slow down memory loss.

Hold That Thought



Fighting to find focus? Strike back at distractedness with meditation, suggests Harvard Health Publishing. Practicing meditation—even just a few minutes each day—can be a useful tool for avoiding distraction and maintaining focus.

Neuroscientists have found links between enhanced cognitive processing and two types of meditation:

- **Focused attention meditation** requires you to keep your attention on a specific object or feeling. While practicing focused attention meditation, you learn to notice distraction and shift your attention back to the focal point, while reframing the distraction as just a passing thought.
- On the other hand, **open monitoring meditation** requires no specific focus. Instead, you would allow your attention to flow without reacting or labeling the experience.

Developing your ability to practice either form of meditation can teach your brain to improve attention, focus, and concentration. ✦

Slumber Tardy

Night owl? This news may be heart to hear. A data analysis conducted by the *European Heart Journal – Digital Health* found that falling asleep at the right time can impact cardiovascular health. The data came from more than 88,000 adults over the course of six years and found the most positive effect on heart health occurred when people fell asleep between 10 p.m. and 11 p.m.

Risk increased by 12% for people falling asleep between 11 p.m. and 12 a.m. and by 25% for people dozing off after midnight. Meanwhile, starting your shut-eye earlier than 10 p.m. could mean a 24% risk increase.

The relation to bedtimes and heart health may have to do with the body's internal clock, with early and late times being more disruptive, according to NBC News. However, the study does not confirm causation and acknowledges gaps need to be studied further.

In any case, when you're counting sheep, you can also count on sleep being an important factor in heart health. ✦

Bit by Bite

Here's some food for thought: snacks aren't always a bad thing, as they are sometimes perceived. MedlinePlus notes that healthy snacking can provide necessary energy throughout the day, particularly when exercising. Further, snacking can prevent overeating during mealtime.

Mindfully put snacks back on the menu with these tips from Nutrition Action:

- Consider calorie density when choosing a snack. One medium apple has the same number of calories as two tablespoons of trail mix.
- Choose foods that are nutrient-dense such as fruits (oranges, pineapples, and berries) and vegetables (carrots, cauliflower, and edamame).
- Pair vegetables with healthy dips, such as hummus and guacamole.
- Substitute nuts, seeds, and legumes for chips when you're craving something salty or savory.
- Keep unhealthy snacks hidden away and out of reach, while storing healthier options in more accessible locations. ✦

It takes a village

Rural Health Clinic Certification Offers Benefits to Practitioners and Patients

By John McCormack

When asked about delivering care in a rural environment, Lisa Higuera, CMA (AAMA), a medical assistant who works in a town with a population of 846, pointed to access to health care as a modern-day challenge. Nearly a half century ago, former President Jimmy Carter had such limited access in mind when he signed the Rural Health Clinic Services Act of 1977 into place.

"[The American health care system's] uneven distribution leaves millions of our people without access to adequate care. … Two-thirds of the people in areas without adequate health care live in rural America," Carter noted. "One of the most sensible and efficient ways to cope with this problem is to enable physician assistants and nurse practitioners to provide regular and high-quality care in small convenient outpatient clinics. … The legislation … will correct this defect in our public health insurance programs by requiring that the Medicare and Medicaid programs pay for the services of physician assistants and nurse practitioners in clinics and rural areas without adequate care."[1]

Indeed, the regulation addressed two rural health access challenges, suggests Nathan Baugh, BA, director of government affairs for the National Association of Rural Health Clinics in Alexandria, Virginia. "There were all these areas of the country that weren't getting primary care, and simultaneously there were nurse practitioners and physician assistants wanting to bill Medicare without a physician," he says. "So that's been baked into the statute since the 1970s."

With more than 4,500 organizations currently enrolled in the Rural Health Clinic (RHC) program,[2] access has improved. However, many rural patients still find it difficult to get needed services. Unfortunately, while "awareness of the program and its benefits has gotten better, there are still people who are practicing in outpatient offices in rural areas that aren't enrolled," Baugh notes. If leaders familiarize themselves with RHC certification advantages, requirements, and enrollment processes, access to care in rural areas could improve substantially.

Possible and Profitable

To qualify as an RHC, an organization must meet several requirements[3]:

- Operate in a rural, medically underserved community
- Be staffed at least 50% of the time with a nurse practitioner, physician assistant, or certified nurse midwife
- Provide outpatient primary care and basic laboratory services

Meeting minimum RHC requirements is just step one. Practice managers should also evaluate whether RHC certification makes financial sense. To make that decision, practice managers should work with a consultant who can conduct a thorough financial analysis.

Certified RHCs typically qualify for increased Medicare and Medicaid reimbursement. Medicaid reimbursement varies by state. "The analysis usually starts with a payer mix breakdown," Baugh says. "You look at what your organization is getting reimbursed currently and then what it would get reimbursed if it was certified as an RHC. The very general rule of thumb is if your organization has high Medicare and Medicaid populations, it's worth it."

Practice managers should also weigh the benefits associated with becoming an RHC versus a federally qualified health center

(FQHC), a community-based provider that receives funds from the Human Resources and Services Administration (HRSA) to provide care in underserved areas. In the past, "some organizations opted for the FQHC route because, quite frankly, they got more generous support" from the federal government, notes Baugh.

However, with the FQHC designation, health care professionals "can't own the clinics," explains Baugh. "The clinics need to operate as nonprofit organizations and need to be governed by a board. That's really not attractive to some people who want to open and run their own practice."

After determining that RHC certification makes sense, practices need to complete both the RHC application and the Centers for Medicare & Medicaid Services 855A Provider/Supplier Enrollment application.[4] A surveyor then assesses whether the organization meets requirements. Being surveyed by the state is free, but Baugh points out that it "can sometimes take a while depending on how backed up the state surveyors are." Thus, some clinics opt to pay private companies for the assessments.

Running an RHC Right

After becoming certified, practice managers can help RHCs succeed by taking certain actions:

Engaging with a capable auditor. An RHC is required to file a cost report annually. "Revenue cycle is incredibly important," says Brock Slabach, MPH, chief operations officer of the National Rural Health Association. "So, it's important to work with an auditor who understands RHCs and, more importantly, the cost reporting in RHCs."

Focusing on mental health. Frequently, RHCs deal with "behavioral or mental health pathology in patients," says Slabach. To address these concerns, Slabach suggests practices should follow the lead of trailblazing RHCs that have "hired a behavioral health specialist to see every patient … and do an evaluation for any signs or symptoms of a behavioral or mental health [issue] that needs to be addressed."

Coordinating services. RHCs should consider team-based care and collaborative care models that make care delivery more patient-centric, according to Slabach. Becoming certified as a patient-centered medical home (PCMH), a model that leverages a team-based approach to coordinate care, is one way to provide this coordination. The PCMH model is associated with effective chronic disease management, increased patient satisfaction, cost savings, and improved quality of care.[5]

Relying on medical assistants. "Medical assistants can very much help patients navigate care by making the connections that they need to improve the patient's health," explains Slabach. "Medical assistants are [part of] the glue that … helps keep everything together and helps to improve satisfaction with the care received."

Taking on such responsibilities can, in turn, bring a high level of satisfaction to medical assistants. "I travel 50 minutes to be a part of this rural setting. I couldn't imagine providing care anywhere else, even on my worst days," concludes Higuera, who works at River Valley Community Health in Mossyrock, Washington. "I take pride in knowing we are offering many services for people who haven't been to a physician's office in years, and they leave feeling validated, cared for, and knowing this is a safe place to return to. Days can be long and challenging, but they are always worth it." ✦

COVID-19 Brings Additional Funding to Rural Health Clinics

"Staffing was a huge challenge before COVID-19 hit, and unfortunately that trend is being exacerbated by COVID-19," says Nathan Baugh, BA. Indeed, rural health clinics (RHCs) not only deal with staffing issues but also an array of mounting challenges such as complicated care management and low levels of health literacy during the pandemic.

Fortunately, the federal government responded to COVID-19 by offering certified RHCs additional assistance. For example, in June 2021, the HRSA provided $424.7 million to about 4,200 RHCs for COVID-19 testing and mitigation.[6] Additionally, the American Rescue Plan Act of 2021 provided $500 million to help broaden access to COVID-19 testing and vaccines in rural areas.[7]

"[Before COVID-19], RHCs didn't have a lot of direct funding appropriations or grants that they were eligible for. But during [the COVID-19 pandemic], it's been beneficial to be an RHC because they've gotten these extra buckets of money," Baugh says. [RHCs] are now getting recognized by the federal government as a facility type that should be supported much more than it was in the past."

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Happy Accidents

Mistakes Offer Students Opportunities to Grow and Learn

By Pamela M. Schumacher, MS

The only real mistake is the one from which we learn nothing," Henry Ford aptly said.

Failure is a necessary part of learning, and teaching students to embrace errors and missteps is key to making them resilient in the classroom and later as medical assistants.

Research suggests that educators and learners alike should be open to making mistakes and actively use them to prepare for real-life situations.[1] Additionally, setting the expectation that mistakes will—and should—occur has been shown to help students overcome their fear of mistakes and can improve their ability to learn.[2]

Don't Fuss Over Faux Pas

"Students think that making mistakes, even in class, is a bad idea," says Janet Metcalfe, PhD, a professor of psychology at Columbia University in New York City. "However, during training is when you want students to make mistakes so that they don't make the same errors on the job when it counts."

Melanie Shearer, MS, MT(ASCP) PBT[CM], CMA (AAMA), an associate professor of medical assisting for Cuyahoga Community College in Cleveland agrees: "No one likes making mistakes. However, it's always better to accept mistakes and learn from them. There is a negative connotation with the word *mistake*. [Students who make mistakes] may feel like they are being singled out; however, [educators] focus on mistakes to help students improve."

"I don't want students to get stuck feeling feel like they've failed. That's not the point," says Sarah Chojnacki, BS, CMA (AAMA), a medical assisting program director and practicum coordinator at Mid-State Technical College in Marshfield, Wisconsin. "I want them to recognize a mistake and learn how to not make it again. I saw this meme on LinkedIn that referred to *FAIL* as [an acronym for] 'first attempt in learning.' I teach my students to look at mistakes that way."

Few Downsides to Screwing Up

Research shows that failure is an integral part of how humans learn.[2] Further, responding to mistakes can improve student motivation and self-esteem.[3]

"I love students who embrace making mistakes, because it's the best way to learn," says Dr. Metcalfe. "If a student tries something and they are corrected, … that's not a bad thing. It's even better if the student can correct themselves. Then the next time the situation occurs, the correct response has been very well learned."

"A mistake can absolutely stimulate the learning process," says Shearer. "I've had many students say, 'I remember that because I did it wrong last time.' The communal aspect of learning is important too. Students explain their mistakes to others and how they went about correcting it. This reinforces the correction and teaches other students how to avoid making the original mistake."

In addition to the benefits for students, educators gain valuable insight into student progress and comprehension from classroom mistakes.[3] "Any time I have a student that repeatedly makes the same mistake,

I go through a routine," explains Shearer. "First, I ask myself, 'Is there a better way to teach this?' Next, I have the student walk me through their thought process to see if there is a theory they are not fully understanding. Then, I ask other students if they have suggestions for better ways to present the material. Some of my best teaching strategies have originated from my students."

Failing Forward

Teaching students to learn from mistakes begins by creating a learning environment in which students feel safe to try things out. This, in turn, helps students "fail forward," meaning they learn from their mistakes to eventually be successful.[3]

"We learn by doing, so set the stage as an [educator] by creating a positive and active learning environment. Let students know it's OK—and even expected—to fail," advises Chojnacki. "Tell students, 'We're going to make mistakes in a controlled manner, learn from those mistakes, and move forward.' Deeper learning occurs when we experience a situation and then talk about what worked and what didn't work from multiple viewpoints. This approach enriches learning."

"You want students to feel comfortable making mistakes around the teacher and their fellow students," agrees Shearer. "I tell students I'm not perfect, and I make mistakes. In fact, I encourage them to bring grading errors to my attention, and then I thank them for correcting me. In addition, how an educator presents [themself] in class directly influences how students react to mistakes. If a student makes a mistake and the educator reacts negatively, the student will feel less confident moving forward. By encouraging students to try new skills without fear of repercussion, they feel more comfortable."

Minimizing Mistakes

Mistakes in many situations, while annoying or embarrassing, may have little-to-no lasting effects. However, in a medical practice, mistakes can have life-or-death consequences. Chojnacki emphasizes that while educators should encourage mistakes, they also need to provide students with practical ways to work through them.

"It's important to identify and correct mistakes along the way," she says. "You don't want students to get too entrenched in the wrong way of doing something. For example, we use a scaffolding approach for teaching skills such as venipuncture because we don't expect students to know how to do it on the first day. First, we teach the anatomy and physiology. Then we analyze the procedure and how to go about it correctly. Next, students practice on a mannequin and, finally, on a classmate. This step-by-step approach helps them prepare for the hard stuff."

Additionally, note-taking can be a useful practice. "As part of the learning journey, I require students to keep a venipuncture log in which they record every poke they administer," says Chojnacki. "They record what size needle was used, which arm was poked, and if it was successful. Then they record comments as to why the procedure did or didn't work. This gives students the opportunity to see when they were successful and helps them understand why."

Not learning from mistakes can also have serious consequences for medical assistant certification, cautions Shearer. "Accrediting bodies require schools to provide students with guidelines on how to meet competency requirements," she explains. "The guidelines state how the student will be evaluated, how many chances they have to master the skill, and what the passing criteria is for a particular skill. If a student makes too many mistakes and doesn't pass the exam, educators can use the guidelines to create a plan for understanding how the requirements weren't met and determine how to move forward based on the particular program's handbook."

By using the classroom as a safe space for mistakes, students are presented with the opportunity to improve their skills and knowledge in a way that will help prevent missteps during their careers. ✦

We All Make Mistakes

- Encourage students to view mistakes as a source for understanding and insight. Help students recognize and understand the reason for the mistake.[3]
- Provide timely feedback so mistakes can be corrected. The learning process usually follows these steps: practice activities, make errors, get feedback, think over the feedback, try again.[3]
- Have students analyze their mistakes by asking themselves these questions[4]:
  - What was I trying to do?
  - What went wrong?
  - When did it go wrong?
  - Why did it go wrong?
- Teach students to put lessons learned into practice. Instead of letting them fall into bad habits, teach them to identify and practice the right way of doing things.[4]
- Learn to detect failure early. Look out for small mistakes that add up to larger mistakes.[5]
- Share failure. Encourage discussion about mistakes among students so everybody learns and understands what went wrong.[5]

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Granting Wishes

Medical Assistant Receives Grant for Creating Care Packages

By Cathy Cassata

When homeless patients come into the urgent care facility where Jaime Armstrong, CMA (AAMA), works, she often greets them with a care package.

"Years ago, when my daughter was young, we were living in a homeless shelter for a short period of time because of a bad situation we were in with my first husband. Helping patients in need like this—vulnerable patients—is near and dear to me," says Armstrong. "I want them to know that they have somebody who cares, because I know the smallest thing in that situation helps so much."

Armstrong named the packages CARES, which stands for "compassionate awareness and response with essential supplies." While content varies based on supplies, each package usually contains socks, hand sanitizer, hygiene wipes, tissue, soap, a toothbrush, toothpaste, and a snack. Depending on the season, Armstrong may add in a hat and gloves or sunscreen and lip balm.

In 2019, when she started working at Providence Immediate Care in Portland, Oregon, the practice had a stash of socks to give patients in need. She decided to build on the idea and add more supplies.

"My clinic is really close to homeless camps, so we have a lot of patients who come in who are homeless, and a lot will ask for socks. When the pandemic hit, the stock of socks was depleted," she says.

As COVID-19 cases began to plateau, she asked her manager if she could create the CARES packages. She was given permission to present her idea to providers in the practice. After hearing about her cause, they gave her the go-ahead.

At first, Armstrong paid for the supplies herself. She also received monetary and supply donations from coworkers and staff at her clinic.

"A medical assistant I work with has a friend who works in a dental office, and they had a bunch of little toothpaste packets they were going to get rid of, so he networked to get the dentist to donate them to us," she says.

To keep the supplies coming in, Armstrong applied for a grant from Providence, which gives monetary support to its clinics for various projects, technology, or equipment.

"They granted me $3,000 for the packages to be used in our urgent care, and they also want me to supply the packs to the two other clinics in our building—internal medicine and family medicine," she says.

In 2020, the urgent care clinic gave away about 100 packages. With the grant, she hopes to increase that number. The response from patients so far keeps her going.

"We've had patients who we recognize might benefit from this, and when we give them packs, they are surprised and excited and so thankful because we treat them with kindness and show them we care," says Armstrong.

Interacting with patients in the urgent care setting is her favorite part of the job. Although she worked in pain, family medicine, and internal medicine clinics for the first eight years of her career, Armstrong was interested in urgent care since her medical assisting program.

"During school, I got treatment at an urgent care facility," she says. "As medical assistants were rooming me, I got to talking to them about what they do. I thought it was intriguing because of the variety they see."

In 2017, she got the opportunity to work in urgent care and has not looked back.

"I never know what's coming through the door, which is one of the appeals," says Armstrong. "But I always know I'm there to help patients no matter their circumstance." ✦

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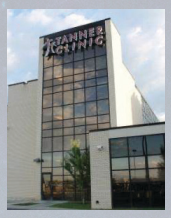

Tanner Clinic (D), represented by Jill Johnson

Sections by Employee Totals

Section A = 1–25 employees
Section B = 26–50 employees
Section C = 51–75 employees
Section D = 76 employees or more

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Section B = 201–500 members
Section C = 501–800 members
Section D = 801 members or more

Publishing

Excel

***The Michigan Medical Assistant Journal*,** published by **Michigan** (D), Cristle Weissmiller, MHA, CMA (AAMA), CHCO, editor

Achievement

***SDSMA Messenger*,** published by **South Dakota** (A), Maggie Olson, BS, CMA (AAMA), editor

***NYSSMA Today*,** published by **New York** (B), Heather Kazmierczak, BFA, CMA (AAMA), editor

***Bee Well in the Beehive*,** published by **Utah** (B), Matthew Reyes, CMA (AAMA), editor

***PSMA WAVE*,** published by **Pennsylvania** (C), Diana Rogers, CMA (AAMA), editor

Website Development

Excel

South Dakota (A), Maggie Olson, BS, CMA (AAMA), web chair

Texas (C), Sherry Bogar, CN-BC, CMA (AAMA), and Donna Gibbins, CMA (AAMA), web chairs

South Carolina (D), Sandra Williams, CMA (AAMA), web chair

Achievement

Pennsylvania (C), Kellie Humma, CMA (AAMA), web chair

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North Carolina (D), Amber Greer, BS, CMA (AAMA), PBT(ASCP), web chair

Ohio (D), Jennifer Dietz, MS, CMA (AAMA), web chair

Marketing, Promotion, and Recruitment

Excel

"2021 SDSMA State Convention," conducted by **South Dakota** (A), Erica Arends, CMA (AAMA), campaign director

"TSMA Keeping It Alive during COVID," conducted by **Texas** (C), Lisa Connelley, CMA (AAMA), Donna Gibbins, CMA (AAMA), and Angela Hensley, CMA (AAMA), campaign directors

"NCSMA Member Feature," conducted by **North Carolina** (D), Amber Greer, BS, CMA (AAMA), PBT(ASCP), campaign director

Community Service

Excel

"Ronald McDonald House Charities of South Dakota," conducted by **South Dakota** (A), Erica Arends, CMA (AAMA), campaign director

"HopeTree Family Services," conducted by **Virginia** (B), Karen Nichols-Skoff, AAS, CMA (AAMA), campaign director

"TSMA Warriors Battle Mental Health," conducted by **Texas** (C), Lisa Connelley, CMA (AAMA), campaign director

Membership Retention

South Dakota (A); **Utah** (B); **Maine** (C); **Iowa** (D)

Membership Recruitment

Arkansas (A); **Missouri** (B); **Texas** (C); **Georgia** (D)

Student Membership Recruitment

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