

MEETING SUMMARY
PRESIDENT’S CANCER PANEL
IMPROVING RESILIENCE AND EQUITY IN LUNG CANCER
SCREENING: LESSONS FROM COVID-19 AND BEYOND

October 26 and 28, 2020
Virtual Meeting

This workshop was the first in the President’s Cancer Panel’s (the Panel) 2020–2021 series on cancer screening. The workshop brought together stakeholders from several sectors, including clinical care, healthcare systems, insurance companies, government agencies, research, and advocacy. Participants discussed barriers and opportunities related to lung cancer screening, including those relevant to the healthcare system disruptions caused by the coronavirus disease (COVID-19) pandemic. The workshop was available to the public via live feed, and members of the public were invited to submit written comments and questions during and after the workshop. Participants were encouraged to live-Tweet at [#ImprovingCancerScreening](#).

This meeting summary was prepared to satisfy requirements established by the Federal Advisory Committee Act. The summary provides an overview of presentations and discussions occurring as part of the workshop and does not necessarily reflect the views of Panel members.

President’s Cancer Panel

John P. Williams, MD, FACS, Chair

Edith P. Mitchell, MD, MACP, FCPP

National Cancer Institute, National Institutes of Health

Maureen Johnson, PhD, Executive Secretary, President’s Cancer Panel

Lung Cancer Planning Subgroup Co-Chairs

Paul Doria-Rose, PhD, DVM, Chief, Healthcare Assessment Research Branch, Division of Cancer Control and Population Sciences, National Cancer Institute

Mitchell Schnall, MD, PhD, Eugene P. Pendergrass Professor of Radiology, Chair, Department of Radiology, University of Pennsylvania Perelman School of Medicine

Lung Cancer Planning Subgroup Members

Lisa Carter-Harris, PhD, Associate Attending Behavioral Scientist, Memorial Sloan Kettering Cancer Center

Chyke Doubeni, MBBS, MPH, Professor of Family Medicine, Director, Center for Health Equity and Community Engagement Research, Mayo Clinic

Michael Gould, MD, MS, Professor of Health Systems Science, Kaiser Permanente Bernard J. Tyson School of Medicine

Douglas Wood, MD, Henry N. Harkins Professor and Chair, Department of Surgery, University of Washington

Lung Cancer Stakeholder Panel

Otis W. Brawley, MD, MACP, FASCO, FACE, Bloomberg Distinguished Professor, Department of Oncology, School of Medicine, Department of Epidemiology, Johns Hopkins University Bloomberg School of Public Health

Melissa F. Buffalo, MS, Deputy Director, American Indian Cancer Foundation, Meskwaki Nation
Tanner Caverly, MD, Physician Scientist, University of Michigan Medical School and Ann Arbor VA
Center for Clinical Management Research
Joseph Chin, MD, MS, Deputy Director, Coverage and Analysis Group, Centers for Medicare &
Medicaid Services
Sarah Coles, MD, Chair, Subcommittee on Clinical Recommendations and Policies, American Academy
of Family Physicians
Angela Criswell, MA, Associate Director, Quality Screening and Program Initiatives, GO₂ Foundation for
Lung Cancer
Joelle T. Fathi, DNP, RN, ARNP, CTTS, Associate Teaching Professor, University of Washington
Kathleen Fennig, Patient Advocate, Clinical Research Specialist, Wright State University Boomshoft
School of Medicine
Michael K. Gould, MD, MS, Professor of Health Systems Science, Kaiser Permanente Bernard J. Tyson
School of Medicine
Gregory K. Jenkins, MD, Physician, Baptist Memorial Health Care Corporation
Gregory Kane, MD, MACP, Jane and Leonard Korman Professor and Chair, Department of Medicine,
Thomas Jefferson University Hospital
Ella A. Kazerooni, MD, Professor of Radiology and Internal Medicine, University of Michigan
Bryan Loy, MD, MBA, Corporate Medical Director, Humana
Peter Mazzone, MD, Director, Lung Cancer Program, Respiratory Institute, Cleveland Clinic
Ronald E. Myers, PhD, Professor and Director of Population Science, Thomas Jefferson University
Wyatt Pickner, MPH, Research Manager, American Indian Cancer Foundation
Jamie L. Studts, PhD, Professor of Medical Oncology, Scientific Director of Behavioral Oncology
University of Colorado School of Medicine
Betty C. Tong, MD, Associate Professor of Surgery, Cardiovascular and Thoracic Surgery, Duke
University Medical Center
Robert J. Volk, PhD, Professor and Deputy Department Chair, Department of Health Services Research,
The University of Texas MD Anderson Cancer Center
Renda Wiener, MD, MPH, Professor of Medicine, Boston University School of Medicine, Associate
Director, Center for Healthcare Organization and Implementation Research, VA Boston
Healthcare System
Robert Winn, MD, Director, Virginia Commonwealth University Massey Cancer Center

WELCOME AND INTRODUCTIONS

Dr. John Williams welcomed invited participants and other attendees, introduced the Panel members, described the history and purpose of the Panel, and provided an overview of the current Panel series of meetings. The Panel is concerned about the long-term consequences of cancer screenings missed and delayed due to massive disruptions of the healthcare system during the COVID-19 pandemic. The pandemic has created new barriers to screening and exacerbated those that already existed. The current Panel series will explore practices and barriers present before the pandemic, implications of the pandemic on screening, and opportunities to improve the equity and resilience of cancer screening in the United States.

Drs. Williams and Edith Mitchell approved dates for upcoming public President's Cancer Panel meetings and the formation of the Working Group on Cancer Screening During the COVID-19 Era. Cancer type-specific planning subgroups for lung, colorectal, cervical, and breast cancers were established. These

subgroups—comprising clinicians, researchers, and patient advocates—assisted in planning the meeting series by identifying barriers, opportunities, and potential solutions in their respective areas. Several cross-cutting themes were identified across cancer types, including disparities, equity, and inclusion; telemedicine; and access and uptake issues.

Dr. Mitchell introduced the meeting facilitator Mr. Scott Wheeler and the co-chairs of the Lung Cancer Planning Subgroup, Drs. Mitchell Schnall and Paul Doria-Rose. Drs. Schnall and Doria-Rose introduced subgroup members, as well as members of the lung cancer stakeholder panel invited to participate in the meeting. Input received at all series meetings will be considered and inform the development of recommendations to be presented in the Panel’s report to the President.

LUNG CANCER WORKING GROUP PRESENTATION

Drs. Schnall and Doria-Rose provided an overview of the opportunities to improve lung cancer screening that were rated mostly highly by subcommittee and stakeholder panel members based on input provided before the meeting. A noncomprehensive list of barriers and solutions related to each opportunity also was presented. Many barriers and solutions are relevant to multiple opportunities.

OPPORTUNITY 1: IMPROVE SCREENING UPTAKE

Barriers

- Lack of primary care physician time
- Lack of coordination and engagement between primary care physicians and the lung cancer screening infrastructure
- Underdeveloped outreach programs to reach patients eligible for screening
- Insufficient patient and provider education
- Challenges in identifying candidates (lack of standards for documentation of smoking history)
- Lack of established clinic workflows for lung cancer screening
- Mixed messaging about the benefits versus risks of lung cancer screening
- Limited resources available for population health management
- Shared decision-making
- Lack of quality metrics

Solutions

- Incorporate other healthcare professionals into the screening/smoking cessation process.
- Adopt a population health management approach.
- Use telemedicine to improve shared decision-making.
- Engage the National Lung Cancer Roundtable (NLCRT) and American Academy of Family Physicians (AAFP) to implement quality metrics.
- Develop and implement an engagement strategy with primary care, which requires understanding primary care’s challenges.
- Use the *Community Guide* framework to provide culturally resonant education developed through community engagement.
- Create a national “Talk to your doctor about lung cancer screening” campaign similar to flu vaccine and colorectal cancer screening campaigns.

- Require quantification of smoking and not merely presence or absence in electronic health records (EHRs).
- Make smoking a “vital sign.”
- Publicly report performance on quality of documentation.
- Create standardized paper and electronic education tools that serve as a proxy for the documentation of shared decision-making.
- Leave the primary care component simple.
- Call on the National Committee for Quality Assurance (NCQA) to create a preventive service quality metric for lung cancer screening.

OPPORTUNITY 2: HEALTH EQUITY

Barriers

- Systemic social inequalities
- Underdeveloped outreach programs and differential uptake of lung cancer screening
- Poor access to adequate insurance coverage
- Stigma
- Differential support for providers in facilities with different resources
- Burden of returning for follow-up and repeat annual screenings
- Equity in screening guidelines

Solutions

- Provide trained navigators.
- Use telemedicine.

OPPORTUNITY 3: IMPROVE SCREENING FOLLOW-UP

Barriers

- Inconsistent access to high-quality follow-up care
- Limited adherence to nodule follow-up guidelines
- Limited resources (health system/hospital) for population health management
- Lack of quality metrics for follow up to a positive lung cancer screening
- Lack of insurance coverage for follow-up care
- Lack of strong biomarkers
- Lack of coordination of primary and subspecialty care providers

Solutions

- Develop systems interventions.
- Practice facilitation.
- Develop tools and technologies to support appropriate follow-up care.

OPPORTUNITY 4: SMOKING CESSATION

Barriers

- Incomplete or lack of appropriate documentation of smoking history
- Limited time and reimbursement to discuss smoking cessation in the primary care setting
- Poor integration of smoking cessation programs with lung cancer screening
- Nihilistic attitudes toward discussing smoking cessation with long-term smokers
- Logistics of implementing new technologies not reliant on physicians

Solutions

- Create teachable moments to break down silos.

LUNG CANCER SCREENING IMPROVEMENT OPPORTUNITIES

A mind map was used to visually organize and present barriers and potential solutions identified prior to the meeting. Mr. Wheeler facilitated discussion on each of the four opportunity areas. Stakeholders elaborated on previously identified barriers and solutions and offered new suggestions for ways to improve lung cancer screening. Input was recorded in real time through updates to the mind map.

IMPROVE SCREENING UPTAKE

Screening Programs

- Healthcare systems have limited capacity. The benefits of lung cancer screening programs should be balanced with their impact on the rest of the system. Concern was expressed that hospitals may be reducing cervical, breast, or colon cancer screening in order to implement lung cancer screening programs. This could potentially decrease the number of lives saved from cancer. Lung cancer screening should not consume resources currently being used for other cancers. Additional resources are needed for lung cancer screening.
- In the COVID-19 era, there should be focus on the safety of lung cancer screening in the context of clinical care.
- Lung cancer screening programs can be centralized or decentralized, or contain features of both (i.e., hybrid approach). The best structure depends on the location and situation. There are a few excellent centralized screening programs in the United States, but most programs are decentralized or a hybrid model.
- Patients should be in a program of screening that facilitates repeat annual screening and coordinates any necessary follow-up, including diagnostics and treatment. Systems-level interventions and processes are needed to ensure appropriate engagement and follow-up over time.
- Regardless of the screening program model, primary care providers should play a role in communication and decision-making, particularly if a patient undergoes a diagnostic workup or is diagnosed with cancer.

Screening and Management Guidelines

- The most recent U.S. Preventive Services Task Force (USPSTF) guidelines for lung cancer screening expand the eligible population. These criteria should increase the proportion of high-risk African Americans not covered by earlier guidelines, which may help move toward health equity.

- Management of lung nodules detected by screening is complicated. Some patients miss recommended interval scans because of confusion or miscommunication. Education is needed to ensure that everyone involved—patients, providers, and medical staff—understands and follows guidelines.

Quality Metrics

- There should be efforts to measure and address quality of screening in centralized and decentralized programs. Concern was expressed that quality may not be as high in decentralized programs.
- Quality metrics will be the same regardless of program structure. Metrics could include: Are appropriate people being screened? Is appropriate shared decision-making being done? Is tobacco cessation counseling delivered? Are low-dose protocols being used? Are appropriate recommendations being made based on screening results? Is there appropriate and timely follow-up of suspicious findings? Is screening being done annually? It was noted that payors have a particular interest in ensuring that appropriate follow-up is done. If screening is not done appropriately, it may result in harm rather than benefit for the patient.
- NLCRT is preparing a manuscript on lung cancer screening metrics. The Roundtable also is working with the National Committee for Quality Assurance (NCQA) to develop a Healthcare Effectiveness Data and Information Set (HEDIS) measure for lung cancer screening.
- There is concern that quality metrics for lung cancer screening would increase administrative burden and healthcare team burnout without improving screening. Primary care providers have to consider hundreds of quality metrics. It may be more important to focus on outcomes than quality metrics. One participant stated that quality metrics are known to drive behavior. Another questioned whether quality metrics have been shown to improve patient outcomes. There are concerns that metrics could lead to one-size-fits-all care, which is not optimal.

Primary Care and Physician Time

- Primary care providers face competing demands on the limited time they have with their patients. They must manage acute and chronic health issues and are expected to follow USPSTF recommendations for several conditions. Lung cancer screening is only one of many topics that should be discussed during primary care visits. There is not enough time to effectively address all issues. Shared decision-making and discussion of important aspects of lung cancer screening alone can take 15 to 20 minutes.
- Centralized programs can relieve the burden on primary care providers and facilitate the screening process without making patients feel hurried. They can coordinate any necessary follow-up and send results and information to the primary care provider.
- For primary care providers, there is tension between their time constraints and their desire to directly manage their patients' care, including having conversations related to lung cancer screening. Primary care providers can be “possessive” of their patients, but may be more comfortable to refer patients to a trusted centralized resource if there is strong two-way communication between the physician and the centralized resource. This often is not the case when referrals are made to outside resources.
- Patients who have established relationships with their primary care providers will likely be more responsive to a recommendation made by their provider than one made by a third party such as a centralized screening program. Removing primary care providers from the process could result in many eligible individuals not being screened. Referring patients to a centralized program also shifts the burden to the patient. Some patients will not want to make an extra trip to discuss screening.
- One participant expressed caution about the idea that centralized programs can or should be created for decisions normally made in the context of primary care. Decisions about lung cancer screening are not unique; discussions and decisions about other screenings and aspects of care are similar. It was noted that there are not centralized programs for other types of cancer screening.

- Many primary care providers manage large numbers of patients. Addressing the shortage of primary care providers would help reduce the demands on individual providers. Incentives should be created to encourage medical students and clinicians to go into primary care. Reimbursement models and primary care infrastructure should be revisited to ensure they allow providers to administer appropriate care, including cancer screening.
- Resource allocation is a fundamental issue regardless of the role of the primary care provider and/or whether a program is centralized or decentralized. Lung cancer screening is resource-intensive, and appropriate resources are essential to ensure it is done well. Screening referrals should be based on what is best for patients, not concerns about resources.
- Institutional support can help address resource needs and ensure lung cancer screening is prioritized by clinicians. Healthcare systems could take a leadership role in this regard. Someone within health systems must be responsible for providing and/or promoting screening, regardless of whether screening is centralized or decentralized. Healthcare systems could develop collaborative relationships with health plans to help with resources and to help ensure that screening is routine. Relationships also should be built to create learning communities that address screening collaboratively and reduce redundancies. Outreach should be done to educate and support primary care providers and provide feedback needed to support provider-patient relationships.
- Advanced-practice providers, patient navigators, or community health workers could—under the supervision of a physician—perform some tasks related to lung cancer screening, including education, eligibility assessment, and decision support. They could also address other types of screening. These staff could be embedded in primary care practices or employed by centralized programs. Training would be needed to ensure all personnel involved in the process have the necessary knowledge and skills. It was acknowledged that not all primary care practices have the resources necessary to support this approach.
- Developing a centralized provider training program that covers eligibility assessment, patient education, and shared decision-making may be helpful.
- The Current Procedural Terminology (CPT) code for shared decision-making is underutilized. Many primary care providers and even centralized programs are unaware of it. There also is some confusion about who can provide shared decision-making support. Centers for Medicare & Medicaid Services (CMS) regulations require the person ordering the test to take part in shared decision-making. It would be helpful if time spent by ancillary staff on shared decision-making, education, and eligibility assessment were reimbursable.
- Guidance could be developed to help providers identify information that can reasonably be delivered to patients in a short period of time during an appointment (e.g., one minute). This could complement other efforts to reduce the burden on primary care providers.
- Conversations about screening and shared decision-making would be less time-consuming if patients had a baseline awareness and understanding of screening and screening eligibility. There may be opportunities to use EHRs or patient portals to provide or refer patients to potentially useful information. Knowledgeable patients will be more empowered to proactively seek information about screening. Patient education and awareness raising has been successful for breast cancer.
- The fact that lung cancer screening must be done annually to be effective must be taken into account when considering how it should be integrated into primary care.
- Providing primary care providers with their screening program outcomes can help with provider engagement.
- A tool is being developed that will reduce the time needed for shared decision-making and will be showcased at the NLCRT meeting in December 2020.

Population Health, Outreach, and Patient Education

- If the focus is only on reaching people through primary care, many people eligible for screening will be missed. A population health approach is needed to ensure that people without primary care providers and/or who are not integrated into healthcare systems have access to screening. Healthcare systems may be able to expand their reach by working with communities, community organizations, and health plans, and it may be possible to use existing resources to accomplish this goal. Examples could include employer-based education or communications campaigns and use of tobacco quitlines. The international quitline, which receives about 1.2 million calls per year, collects information on age and smoking history. Quitline counselors could encourage callers to speak with their providers about lung cancer screening.
- Healthcare systems, particularly large healthcare systems, are well poised to do outreach. Healthcare systems could identify patients potentially eligible for screening and contact them for education, eligibility assessment, and shared decision-making prior to primary care appointments. The outcomes of this previsit encounter could be documented in the EHR for provider review.
- One participant noted that smaller systems may be concerned that screening promotion would result in demand that exceeds capacity, though he noted this problem has not materialized at his institution.
- Linkage of outreach programs and healthcare systems would be beneficial.
- The idea of lung cancer screening could be introduced during non-primary care encounters. For example, patients could be provided with information about lung cancer screening at the time of hospitalization.
- Use of a *Community Guide* framework for community engagement and education was discussed. When conducting outreach and education, it is important to recognize that resources, capacity, and patterns of care are uneven across health systems. Programs designed for high-resource settings may not translate well to lower resource settings. Messaging must be culturally appropriate. Organizations should partner with communities, help communities build capacity, and engage trusted community leaders to disseminate messages.
- Many people know of someone who has died from lung cancer, but relatively few people are aware there is a screening test for lung cancer. Lung cancer screening is less well known than screening for other cancers.
- It may be helpful to create a centralized online resource that provides comprehensive information on lung cancer screening for patients and providers.
- Any communication campaign should emphasize education and decision-making rather than directly promote screening. Some patients may choose not to be screened, and that is an acceptable decision.
- Before an outreach program is launched, infrastructure must be in place for patients to be screened and receive any necessary follow-up care.
- Outreach should be targeted to people most likely to benefit from screening.
- Communications and education resources should accommodate low literacy and be available in multiple languages.
- There is significant stigma surrounding smoking and lung cancer. A recent NLCRT summit found that stigma contributes to poor outcomes across the continuum of care, in part because people who smoke(d) are less likely to seek care. People should not be blamed for having lung cancer, even if it may be tobacco related. Smoking is highly addictive. The language used in medical settings and communication campaigns contributes to or reduces stigma (e.g., smoker versus person who smoked).

Telemedicine

- Telemedicine has potential to promote efficiency, though it has not been fully optimized. Telehealth could help reach the working poor who may not have time for in-person appointments. For example, shared decision-making could be done using telehealth.
- Telemedicine initiatives may be more amenable to quality measurement than in-office programs, which could help provide insight into factors that influence effectiveness.
- Some populations do not have access to the resources necessary to participate in telemedicine, particularly video-based telemedicine.
- Smoking cessation services have been delivered through state-based tobacco quitlines for years. This is an example of a successful centralized model and use of telemedicine.

Insurance

- Concerns about insurance coverage and cost can influence patients' screening behaviors. For example, some patients may choose not to have a recommended interval scan to monitor a finding because of concern about out-of-pocket costs. Participants also described examples of patients facing issues related to preauthorization or being inappropriately billed for recommended screening. Resolving these problems takes patient and provider time.
- Patients and providers should use the insurance company's appeals process if they believe a charge was inappropriately declined or passed along to the patient. Inappropriate bills could be due to confusion about coding or other issues. There was some speculation that the language about life expectancy in the USPSTF guidelines may lead some payors to decline coverage of screening if the patient is perceived to have a low life expectancy. Medicare does not require preauthorization for lung cancer screening, although this could be an issue for other health plans.
- The activities included in the process of lung cancer screening should be more clearly defined, and there should be increased transparency and clarity about coverage for these activities. Many health plans do not consider interval scans to be part of the screening benefit. Procedures coded as diagnostic often are not covered as preventive care. Consideration should be given to whether bundling could be used to cover expenses associated with screening and all necessary follow-up. This would involve a shift from viewing screening as an episode of care to a process of care. This approach could be relevant for other cancer types as well.
- A recently added billing code for screening may cause confusion.
- Education to help patients understand their insurance benefits, including potential cost sharing, may be helpful.
- CMS requires a pack-year calculation as part of a lung cancer screening order. Once a patient has reached the 30 pack-year requirement, updating this calculation each year adds unnecessary complexity. Once the pack-year requirement has been met, the most important metrics are whether a patient has quit smoking and, if so, how long ago did they quit.

Smoking History and EHRs

- One institution has leveraged its EHR system to promote lung cancer screening. A best practice advisory (BPA) informs staff performing intake if a patient's smoking history is incomplete. Once a smoking history is available, another BPA prompts the primary care provider if lung cancer screening may be appropriate for that patient. This process allows identification of missed opportunities for lung cancer screening and creates opportunity to educate staff clinicians not appropriately responding to the BPA.
- BPAs must appear only when applicable. If a BPA appears when it is not useful, providers will begin to ignore it. Providers receive many alerts, and care must be taken to avoid alert fatigue.

- The value of BPAs depends on the accuracy and completeness of the information in the EHR. It is challenging to ensure the quality and accuracy of smoking history information in EHRs. Documenting smoking history can be complicated. Some individuals quit and restart smoking multiple times; many people do not smoke the same amount over time. EHRs currently are not well suited to collect this type of information. EHR add-ons designed specifically for gathering smoking history and calculating smoking exposure may be useful. Any tool would need to allow regular updates. NLCRT has developed a white paper that defines EHR elements needed to facilitate lung cancer screening, which is intended to be a call to action for EHR vendors.
- Smoking history often is entered by medical assistants, a position that has high turnover. Focused efforts to improve documentation of smoking history by medical assistants have yielded modest improvements.
- Standard processes are needed to collect smoking history, independent of whether and how it is stored in EHRs. Tools developed to assess smoking history for research studies may be useful.
- It may be unrealistic to expect accurate and complete documentation within EHRs given the complex nature of smoking history. An alternative approach may be use of a simple screening tool that is followed by a more in-depth conversation about smoking. For example, outreach could be done to reach all current and former smokers as identified in the EHR.
- It may be possible to determine smoking history using approaches that do not involve the EHR. For example, artificial intelligence could be used to analyze claims. One participant described an attempt to use natural language processing to extract smoking history from progress notes, noting that it was very difficult.

Tobacco Cessation and Related Training

- Primary care providers and others expected to communicate with patients about tobacco cessation should receive training on this topic during medical school, residency, and/or fellowship. This would provide them with resources they can rely on once in practice. This training should continue across the career continuum to ensure all providers—not just those in primary care—have the knowledge and resources needed to effectively administer tobacco cessation.
- Smoking cessation is a key part of family medicine residency training, although implementation is up to individual programs. In nursing education, there is an emphasis on patient education at all levels (undergraduate, graduate, advanced practice); however, tobacco education has not historically been included. The opioid epidemic has led to increased attention on addiction medicine in general, including the importance of discussing this issue with adolescents before they develop addiction, including addiction to cigarettes. There was agreement that there is room for growth in the area of training.
- Use of standardized patients can help teach core clinical skills related to smoking cessation. This approach increasingly is being used, but uptake across the country remains fragmented.
- Tobacco addiction, like other substance use disorders, is a chronic relapsing condition. Tobacco cessation is a process, not a single intervention. It requires attention across the care continuum.

HEALTH EQUITY

Access to High-Quality Care

- Many underserved communities—including rural and some urban communities—have inadequate access to primary care and screening programs. Traveling long distances for healthcare takes time and resources, which poses a substantial barrier for many people.

- Quality of care is an important consideration. The availability of a low-dose computed tomography (CT) scanner does not guarantee high-quality screening. Screening programs and providers need knowledge, skills, and tools to engage patients with respect to lung cancer screening. Both technical and communication skills are needed. Tools are needed to facilitate engagement with patients with low health literacy as well as those who speak different languages.
- Accreditation programs can help promote high-quality care. The American College of Radiology (ACR) Lung Cancer Screening Centers of Excellence designation is primarily based on technical aspects of imaging. However, it was acknowledged that quality depends on overall implementation, not only technical issues. The GO₂ Foundation for Lung Cancer also has recognized more than 770 Screening Centers of Excellence based on criteria that include ACR Centers of Excellence designation, integration of smoking cessation, standards for eligibility assessment, and processes to manage findings. The Foundation gathers data for each of its Centers of Excellence—which range from standalone community hospitals to large academic medical centers—that help demonstrate the impact of early detection. These data can be provided to institutional leadership to make the case for additional resources.
- Providers, particularly those practicing in areas with a paucity of resources, may need support to understand how to manage the lung cancer screening process for their patients. For providers in rural areas, this may mean reaching out to larger health systems or institutions that are geographically distant. One option would be to use Project ECHO to educate providers in remote areas and increase access to specialists in different geographic areas.
- The National Cancer Institute (NCI) has increasingly emphasized the importance of NCI-designated cancer centers engaging with their catchment areas. There may be opportunities for cancer centers to lead efforts to convene and coordinate health systems and providers in their catchment areas to improve access to resources related to lung cancer screening.
- Low-resource institutions that cannot perform all activities related to lung cancer screening may be able to partner with Centers of Excellence (e.g., for management of lung nodules).

Racism and Inequality

- Systemic racism is a significant problem in healthcare. Healthcare systems need to work internally to address problems in order to build trust with the communities they serve.
- A collaborative learning community that includes health systems, health plans, and communities should be created to address social inequalities and develop messaging.

Telemedicine and Mobile Screening

- Access to technology and telemedicine is unequal. Many communities lack reliable broadband access. Reimbursement currently encourages use of video-based telemedicine rather than telephone- or audio-based telemedicine, which would be more accessible in communities with limited broadband. Coverage for telemedicine services should continue to expand outside of health professional shortage areas, and coverage should be provided for audio-only as well as video visits.
- One strategy for facilitating telemedicine in low-resource communities is to partner with provider offices or community facilities and provider telehealth kiosks for patient use in these locations.
- Mobile lung cancer screening units, similar to mammography vans used for breast cancer screening, may increase screening in areas with inadequate screening facilities. Concerns about mobile screening include lack of appropriate follow-up services if there is a suspicious finding. Mobile lung cancer screening has been successfully piloted in Manchester, England. Two GO₂ Foundation Screening Centers of Excellence also have implemented mobile screening. They have built infrastructure to ensure follow-up care, but this is a substantial investment in resources. Private foundation support has helped support this effort.

Outreach

- In general, there is limited awareness and understanding of the availability of lung cancer screening. This is in part because lung cancer screening programs are newer than other screening programs. Awareness and understanding are variable across communities and populations.
- Outreach and engagement are critical components of a successful lung cancer screening program.
- Efforts should be made to support and collaborate with primary care providers to conduct outreach. Care should be taken to treat primary care providers with respect and integrate screening-related activities into their workflows.
- People conducting outreach should have the training and skills to effectively reach and engage diverse populations. Outreach campaigns should be culturally competent and delivered in the languages of target populations.
- Groups conducting outreach should understand the stigma and bias that affect this population. The goal should not be to raise risk perception; scare tactics should not be used. Messages must be crafted that compassionately embrace and avoid alienating those at high risk of lung cancer.
- Support from health plans is needed to ensure outreach activities are sustainable. Consideration should be given to how outreach can be part of value-based care.
- A two-pronged approach to outreach may be needed. Efforts through community organizations can raise awareness and reduce stigma to increase the likelihood that people will be receptive to screening recommendations. Partnerships with local providers and federally qualified health centers (FQHCs) can support targeted patient outreach.
- Ideally, messaging developed by different organizations would be based on a common set of principles. Dissimilar messages can cause confusion among providers and the public. However, it was acknowledged that individual messages often need to be tailored to specific populations.
- Differing views on lung cancer screening should be kept in mind and respected when building partnerships with primary care providers. Recommendations and guidelines vary because organizations weigh various aspects of the evidence differently. The current position of the American Academy of Family Physicians (AAFP) is that there is insufficient evidence to recommend lung cancer screening; however, the AAFP stance does not mean that primary care physicians will not discuss lung cancer screening with patients. AAFP will review the updated USPSTF recommendation when it is released. There was agreement that all organizations support open discussion and shared decision-making with patients.
- Outreach efforts should emphasize that screening is a process, not a single event.
- Education about lung cancer screening should be integrated into smoking cessation programs, which serve many people who may be eligible for screening.
- There was discussion about whether messaging about lung cancer screening should be different for women given that more women than men without a smoking history receive a primary lung cancer diagnosis. There are opportunities to develop positive messaging that builds on the success of breast cancer screening. The time of breast cancer screening can be used as a teachable moment for lung cancer screening. Women also are good targets for education and outreach because they often strongly influence health behaviors of the people with whom they live.

Patient Navigation

- Patient navigation has been effective in helping breast cancer patients. Navigators have been underutilized for lung cancer to date. One participant described strategic partnerships between FQHCs and safety net hospitals that entailed use of navigators from the communities served by these institutions.

- It is important to work with and get to know communities to identify relevant barriers and challenges. Cultural competence is critical, as needs related to lung health may differ across communities and populations. Many communities harbor mistrust of the medical establishment. Engagement with the community and use of navigators from the community can help identify and address sources of mistrust. Appalachian and tribal communities were mentioned as examples of communities with distinct needs.

Insurance

- Lack of insurance and underinsurance affect access to screening and other care. Many Americans are underinsured. Health insurance for people younger than 65 is usually tied to employment; people who get sick and lose their jobs often are left without insurance. There also has been an expansion of high-deductible plans and short-term plans that do not provide comprehensive coverage. Among low-income populations, access to Medicaid varies depending on whether a person's state of residence has expanded Medicaid eligibility.
- Real and perceived costs can deter people from seeking care, particularly preventive care. Increased transparency is needed about costs associated with lung cancer screening, including any potential diagnostic tests or treatment. Transparency and advocacy will help patients understand costs for which they will and will not be responsible. Some patients may assume they cannot afford a screening test or treatment even if they have adequate insurance.
- The full benefits of lung cancer screening will not be realized unless the full screening process is completed. This should provide incentives for payors to create reimbursement policies that view and promote cancer screening as a process rather than a single episode of care.
- If done properly, lung cancer screening can be cost-effective; however, lung cancer screening and other preventive interventions are unlikely to be cost saving at the population level. Health systems and health plans should have discussions on shared return on investment for screening.
- Reimbursement rates for tobacco cessation services are low, creating economic disincentive for lung cancer screening programs to implement high-quality tobacco cessation support. This is unfortunate because tobacco cessation interventions are cost-effective and tobacco cessation has a positive impact on many health outcomes.

Stigma

- Many tobacco users have historically felt judged by the medical establishment for their tobacco use. To build better relationships, providers and others in the healthcare realm must compassionately seek to understand patients and communities.
- Smoking-related stigma affects every aspect of lung cancer, from screening through survivorship. More consideration should be given to messaging and marketing, as well as how clinicians communicate with patients, to avoid "shame and blame." Many people do not seek or return to care because they feel stigmatized. Providers and other medical staff should be trained to recognize and address their own unconscious biases regarding smoking.
- Stigma can discourage patients from sharing their diagnoses, creating feelings of isolation. Early studies of lung cancer screening found that many of those screened did not even tell their spouses they had been screened.
- Stigma also affects funding for lung cancer research. There is hesitance to support research in this area because lung cancer is viewed as a disease caused by a modifiable risk. Although lung cancer is a leading cause of cancer-related death, the National Institutes of Health (NIH) spends less on research for lung cancer than for many other cancers.

- Aggressive antitobacco messaging has contributed to societal stigmatization of tobacco use. The potential harms and unintended consequences of this type of messaging should be considered. Lessons learned should be applied to messaging about lung cancer screening.
- Conducting outreach and education to emphasize the importance of early detection and highlight progress made in lung cancer treatment will help address stigma.
- Tobacco use is viewed differently in different communities. Many Native communities consider tobacco to be medicinal. This perspective should be considered when developing messaging.
- Many patients have a fatalistic response to suspicious findings or a cancer diagnosis. Efforts are needed to counteract this fatalism with hope based on advances in lung cancer diagnosis and treatment, including targeted therapies and immunotherapies. Optimistic messages that focus on innovation can help address stigma.

Incidental Findings

- The increase in chest CT scans has led to an increase in incidental findings of lung nodules. This provides an opportunity for early detection of lung cancer outside the context of screening. Many institutions are creating processes to ensure appropriate follow-up for incidental findings.

IMPROVE SCREENING FOLLOW-UP

Quality of Screening

- Quality metrics related to invasive biopsy complications should be established and integrated into credentialing programs. Lung cancer screening programs should be monitored to ensure the rate of complications is within an acceptable range. The benefits of lung cancer screening may be outweighed by the risks if there are high rates of biopsy complications.
- Screening must be done on an annual basis to be effective. The determination that the benefits of lung cancer screening outweigh the risks was based on the National Lung Screening Trial (NLST), which had more than 90 percent adherence for rescreening. Current rates of annual rescreening are far lower in many settings.

Coordination and Relationship Building

- To be most effective, lung cancer screening programs must be coordinated from the beginning to the end of the process. Centralized programs that provide all aspects of screening may be better able to do this; however, not all communities have the resources and capacity to create centralized programs.
- Decentralized programs can provide high-quality, coordinated care if strong relationships are built between the people and organizations providing various aspects of screening. Ensuring that patients return for annual screens and that those with positive screens receive interval scans and/or biopsies can be particularly challenging.
- Telehealth provides the opportunity for communication and coordination across geographic space. Patient navigators can help ensure that handoffs are completed in a timely manner. There also are a number of software solutions. These types of tools and resources require institutional resources; lack of institutional investment in these resources is a significant barrier. The GO₂ Foundation and NLCRT have economic modeling tools that programs can use to build a case for increased institutional investment.
- Consideration must be given to challenges faced in low-resource settings. A study in Atlanta found that a percentage of poor and disproportionately African American women diagnosed with breast cancer after screening did not receive treatment. This is a failure of the system. Technology can help address systems challenges and increase efficiency in all settings, but solutions must be both high

tech and personally engage patients, particularly when trying to address social barriers to care. Healthcare systems need people to interact with technology and make personal connections with patients to help them overcome their barriers and receive high-quality care. It may be possible to leverage community resources to help deliver this personal care.

- Patients will be more likely to adhere to recommendations if they have relationships with their providers and other members of the healthcare team.
- Communities can be reached through anchor institutions like churches, schools, and libraries. Weekly meetings with African American faith-based communities have been a forum to share information on COVID-19 and cancer screening. Participants in these meetings become advocates in their communities. Community organizations can be important parts of learning communities that can develop practical approaches to improving health.
- Integration of care in large geographic regions is possible. Patients from all over the Pacific Northwest travel to Seattle for treatment. Partnerships between providers and systems in Seattle and those in outlying areas have helped ensure that patients receive the care they need and are transferred back to their communities for follow-up care as soon as possible (e.g., radiation/chemotherapy after surgery). These types of partnerships work if there is open communication and an understanding that everyone is on the same team and working toward the same goals. Technology can facilitate communication and information sharing.
- Increased knowledge of lung cancer screening is needed among the public and people working in healthcare. It also is important to have balanced conversations with patients about both risks and benefits.
- There currently is a paucity of readable and readily accessible information on lung cancer screening. Materials should be available for low-literacy populations and should support informed decision-making.

Resource Limitations and Leveraging of Resources

- Delivery of high-tech, personnel-intensive personalized care comes at a high cost that is not feasible for many low-resource institutions. One option would be to funnel additional resources to geographic areas and communities with the highest lung cancer mortality rates.
- As societal awareness and acceptance of lung cancer screening grows over time, fewer resources may be needed to ensure appropriate screening and follow-up. Resources are needed now to promote high-tech, personal care to normalize lung cancer screening and overcome lack of awareness and stigma.
- Solutions for building effective lung cancer screening programs are not “one size fits all.” Consideration must be given to local and regional needs and resources.
- Federal programmatic grants that support infrastructure development could help groups and organizations in low-resource settings build high-quality programs.
- NLCRT is creating a state-based toolkit that includes examples of pilot projects or other efforts that have been effective. The toolkit is intended to help states identify tools that may help them implement screening programs. The NLCRT State-Based Initiatives Task Group, which includes members from across the country, compiles information on activities and works to build coalitions within states to tackle issues related to lung cancer screening.
- Some state comprehensive cancer plans do not include lung cancer screening. States should make lung cancer and lung cancer screening priorities. The Centers for Disease Control and Prevention (CDC) could provide leadership in this area.

Lessons from Other Cancer Types

- Many tools and resources have been developed for breast cancer screening. Legislative mandates require breast cancer screening programs to meet specific criteria. The same incentive structures are not in place for lung cancer screening and may not be realistic in the current healthcare landscape. However, lessons learned from breast cancer may be applicable to lung cancer screening.
- Breast cancer screening has high levels of cultural acceptance and advocacy. Women often go to the same place every year for their mammograms and develop relationships with the staff. Appointments for the next year often are made before the patient leaves. These patterns are an outgrowth of the powerful grassroots advocacy around breast cancer, which promotes adherence by patients and attracts investments from health systems. The stigma surrounding lung cancer makes it difficult to replicate many aspects of breast cancer screening. Furthermore, women tend to be health seeking, which contributes to high breast cancer screening rates. Smokers often are less likely to seek healthcare, although former smokers exhibit more health-seeking behaviors than do active smokers.
- People’s decisions about cancer screening should be respected. Women sometimes are shamed for deciding against mammography, which goes against the principles of shared decision-making.
- No national figures have provided a “face” for lung cancer. Ms. Katie Couric brought attention to colon cancer screening, but there has not been a similar figure for lung cancer.

Reporting and Monitoring Guidelines

- One participant reported a lack of consistency among lung cancer screening test results. This contrasts with mammography results, which are reported using standard BI-RADS notation. ACR developed Lung-RADS, a reporting and management tool for lung cancer screening that is analogous to BI-RADS. The ACR Lung Cancer Screening Registry requires sites to use Lung-RADS. Since the ACR Lung Cancer Screening Registry is the only Medicare-approved lung cancer screening registry, Lung-RADS use is indirectly linked to Medicare coverage.
- It may be useful to examine why Lung-RADS is not consistently used. One explanation may be that the CT scan is not coded as a screening test. Appropriately coding lung cancer screening orders for both annual and interval screens is important to ensure the correct low-dose CT protocol and Lung-RADS reporting guidelines are used. Data management software can help ensure appropriate processes are followed, but appropriate information must be entered up front. Integrated systems must be put in place so that radiology departments and facilities know how their scans fit into the overall context of care.
- Patients should be directed to accredited screening centers to increase the likelihood that standards for screening and reporting will be followed.
- Clear terminology is needed to distinguish between initial screening, repeat screening, and diagnostic follow-up. Participants noted that some screen-detected nodules should be monitored with interval low-dose CT scans, while patients with larger, more suspicious nodules should undergo a higher dose diagnostic CT scan. The appropriate procedure must be clearly ordered. This can be done through creating distinct orders within systems, but this does not guarantee clinicians will select the correct order. Radiology programs should check patient records to ensure that appropriate scans are being ordered and done. It may be easier for centralized than decentralized programs to do this review.
- Current recommendations for follow-up of screen-detected lung nodules are based on best judgment, not clinical trial data. More research is needed to generate—and then disseminate and implement—robust evidence on nodule management. A Patient-Centered Outcomes Research Institute (PCORI) trial is studying nodule management.

SMOKING CESSATION

- As many as 80 to 90 percent of lung cancers are directly correlated with tobacco exposure. Stigma and other factors deter people who smoke or have smoked from seeking healthcare. At least half of people who are screened for lung cancer are current smokers, which means that screening provides an opportunity to help people quit smoking. Tobacco cessation can improve survival at any stage of the continuum, from screening to advanced cancer.
- It is important that *effective* tobacco cessation services are integrated with screening. Providing people with a handout is insufficient. Combination pharmacotherapy and behavioral counseling substantially increases the likelihood that patients will quit smoking. Unfortunately, behavioral health is often overlooked. Cessation intervention is not a one-time event; it should be delivered across the screening continuum.
- The NCI Smoking Cessation at Lung Examination (SCALE) Collaboration and Cancer Center Cessation Initiative (C3I) should provide insight into how best to incorporate tobacco cessation into lung cancer screening. It will be important to determine what interventions are effective in a variety of real-world settings.
- All members of the healthcare team should play a role in tobacco cessation, including social workers, medical assistants, pharmacists, and others. The burden should not fall solely on primary care providers. All providers should take responsibility to deliver evidence-based care for tobacco use to alleviate the burden of lung cancer and other tobacco-related morbidities in patients. Most team members do not need tobacco treatment certification, although they may benefit from brief training on how to deliver information in empathic, nonstigmatizing ways. Patients can be referred to professionals with more intensive tobacco cessation training.
- It may be useful to engage radiology technicians to talk to patients about tobacco cessation. Their time is relatively unstructured, and they have the opportunity to engage with patients every year.
- Patient navigators could be trained as tobacco treatment specialists, as well as in shared decision-making. Both tobacco cessation and shared decision-making would benefit from the relationships and empathy provided by navigators.
- Smoking cessation should be a priority for institutions and lung cancer screening programs.

PUBLIC COMMENT AND QUESTIONS

Members of the public submitted written comments and questions, which were read and discussed by the Panel, Working Group members, and stakeholder group near the end of each workshop day.

- The mind map developed during the meeting will not be made public. However, a synthesized summary of the meeting that includes key points from the mind map and discussion will be made available.
- A member of the public asked about financial incentives that may support or hinder shared decision-making or other aspects of quality lung cancer screening. One participant cited examples of hospitals diverting resources from breast cancer screening programs to lung cancer screening programs in hopes of increasing revenue. If making money is the primary goal, there is a question of whether pros and cons will be adequately presented and patient decisions respected. Another participant noted that over 1 million lung cancer screens have occurred in the United States since 2015, and there has not been a reduction in breast cancer screening during that timeframe. Other participants stated that optimal screening processes are not always aligned with payment and reimbursement models. Most providers work within a fee-for-service model that promotes volume-based rather than value-based care. A value-based model would provide more support for activities such as shared decision-making.

- A member of the public asked whether CMS could be asked to allow staff other than physicians, physicians assistants, and nurse practitioners to perform shared decision-making for lung cancer screening. With new USPSTF guidance for lung cancer screening on the horizon, organizations will be asking CMS to revisit its coverage decisions, including the shared decision-making requirement. The requirement for shared decision-making is unique among cancer screening tests and puts lung cancer screening at a disadvantage. Some participants stated that shared decision-making may increase screening by improving trust. It was pointed out that many organizations included shared decision-making in their lung cancer screening guidelines because of the deaths observed among NLST participants who had undergone screening. A question to consider is whether shared decision-making is necessary or if informed consent is sufficient to communicate with patients regarding risks of screening.
- A member of the public noted that reducing stigma is very connected to self-esteem and asked about the role of mental health support in seeking, accessing, and following through with lung cancer screening. One participant noted that a large proportion of people with mental illness smoke; better psychiatric care could help address underlying drivers of smoking in this population. Lack of self-esteem can be a barrier to seeking all sorts of care, including screening. Primary care providers should try to identify these patients and educate them about the potential benefits of screening and tobacco cessation. Embedding behavioral health services into primary care or screening programs may help support patients' tobacco cessation efforts. Providers must also interact and communicate with patients in ways that reduce stigma and make patients feel supported and accepted.
- A member of the public noted that, for indigenous communities, there is a difference between commercial and traditional tobacco. There may be differences in cancers caused by natural varieties of tobacco compared with commercial tobacco products, which are more highly processed. It also was noted that traditional Native tobacco use involves less inhalation than normally occurs with commercial tobacco use. However, there are high rates of lung cancer in tribal communities due to commercial tobacco use. Understanding the history and cultural importance of tobacco use among Native populations is a key component of cultural competency. Lung cancer screening programs that address the needs of these populations are needed.
- Changes in cigarettes over time (e.g., filters, menthol) have altered smoking behaviors and corresponded to changes in the location and types of smoking-related cancers. More time and research are needed to determine how current trends in tobacco use, including vaping, affect cancer.

CLOSING REMARKS

Panel members and Lung Cancer Planning Subgroup co-chairs and members thanked the stakeholder panel for its productive input and discussion. Panel members thanked Mr. Wheeler and NCI staff for their roles in planning and implementing the meeting. The Panel and Working Group will consider the information provided during this workshop and others in the series as they develop recommendations to be included in the Panel's report to the President. Additional written testimony and comments can be submitted at any time to the President's Cancer Panel via email (PresCancerPanel@mail.nih.gov) or the Panel website (<https://prescancerpanel.cancer.gov>).

CERTIFICATION OF MEETING SUMMARY

I certify that this summary of the President's Cancer Panel meeting, *Improving Resilience and Equity in Lung Cancer Screening: Lessons from COVID-19 and Beyond*, held on October 26 and 28, 2020, is accurate and complete.

Certified by:

Date: 01/07/2021

John P. Williams, MD, FACS
Chair
President's Cancer Panel