Attitudes Toward Adoption of Vaccination Against Respiratory Syncytial Virus (RSV) Among Primary Care Physicians and Pulmonologists

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Introduction

The respiratory syncytial virus (RSV) is a highly contagious pathogen that can cause severe lower respiratory tract disease. RSV infection is associated with the development of bronchiolitis, bronchitis, pneumonia, and increased hospitalization and mortality. [Krilov 2022] Adults at the highest risk for severe RSV infection include older adults; those with chronic heart or lung disease, weakened immune systems, or certain other underlying medical conditions; and those living in nursing homes or long-term care facilities. [Krilov 2022]

Researchers have been working for more than 5 decades to develop an effective RSV vaccine. The efforts finally paid off in 2023 when the United States (US) Food and Drug Administration (FDA) approved two recombinant RSV vaccines for the prevention of lower respiratory tract disease in individuals ≥60 years of age. [FDA 2023A; FDA 2023B] Both are subunit vaccines based on the RSV prefusion (F) glycoproteins; one includes an AS01E-adjuvant and the other is nonadjuvanted. In randomized trials, the efficacy of the adjuvanted and nonadjuvanted vaccines in preventing confirmed RSV-related lower respiratory tract disease were 82% and 67%, respectively, compared with placebo. [Papi 2023][Walsh 2023] Following the approvals, the Advisory Committee on Immunization Practices (ACIP) recommended that people ≥60 years old receive a single dose of RSV vaccine using shared decision-making. [Melgar 2023] The intent of the

recommendation for shared decision-making is to allow flexibility for providers and patients to consider individual risk for RSV disease while taking into account patient preferences. [Melgar 2023]

The new RSV vaccine approvals follow the COVID-19 pandemic and its constant news and updates regarding vaccines. Recent studies have shown that vaccine confidence has dropped among the general population since the COVID-19 pandemic. [Schoof 2021] Within this environment, in addition to assessing knowledge and awareness of new RSV vaccines, it is important to understand clinician perceptions and the challenges they anticipate in effectively integrating RSV vaccines into the preventive care of older adults.

PURPOSE

In this issue of *CHEST Clinical Perspectives*, CHEST is undertaking primary research with primary care physicians and pulmonologists to understand their awareness and knowledge of the recently approved RSV vaccines and their plans regarding these vaccines for their patients. The objectives of this research are to:

- Assess awareness and knowledge regarding RSV vaccines.
- Identify current vaccination practices and barriers to providing vaccinations to patients.
- Assess behaviors related to ordering diagnostic testing of RSV.
- Assess likelihood of recommending RSV vaccination to patients.
- Identify barriers to recommending RSV vaccination.

METHODOLOGY

CHEST conducted an online survey of pulmonologists (n=151), family medicine physicians (n=81), and general internal medicine physicians (n=71). Respondents were screened to ensure they are in active clinical practice and see at least 25 or more patients aged 55 or older in a typical week. Data were collected during June 26-July 3, 2023.

Data were analyzed by specialty, academic vs community-based setting, region of the US, socioeconomic status of their practice service area, familiarity with the recently approved RSV vaccines, current vaccine administration practice, and likelihood of administering RSV vaccine in their practice in the future. Descriptive statistics were used to assess distributions of the data across important demographic variables. Inferential statistics were used

to assess differences in descriptive and behavioral measures by the cross-sections identified above. Depending on data type, a two-tailed independent samples t-test and a chi-square test was used to test for statistical significance ($P < .1$ considered statistically significant).

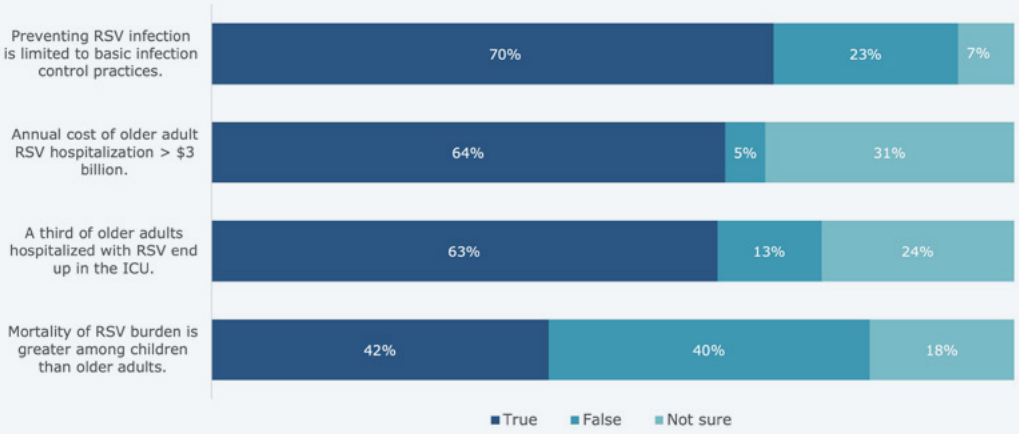
RESPONDENT PROFILE

By design, half of respondents were general adult pulmonologists and half were primary care physicians. Slightly more than half (53%) worked in nonacademic, community-based settings. Nearly all (90%) worked in either suburban (50%) or urban areas (40%). Overall, respondents indicated an average (mean) practice tenure of 20.7 years, with pulmonologists reporting slightly shorter tenures (18.3 vs 23.0 for primary care). Respondents represent the four major US Census regions, commensurate to the US population distribution. The majority (75%) describe patients in their service area as middle income.

DETAILED FINDINGS

Infection Prevention and RSV Burden. With respect to preventing RSV infection, 70% of respondents said prevention is limited to basic infection prevention practices (handwashing, avoiding close contact etc.). Respondent knowledge regarding the burden of RSV varied, and a substantial minority were unable to correctly identify true or false statements or were not sure whether they were accurate. The majority responded correctly that the cost burden of older adult RSV hospitalization is greater than $3 billion per year (64%) and that a third of older adults hospitalized with RSV are admitted to the ICU (63%). However, only 40% correctly indicated that the mortality burden of RSV infection is greater in older adults. Respondents who reported lower overall familiarity with the new RSV vaccines were less likely to accurately respond to the knowledge measures depicted in Figure 1 below.

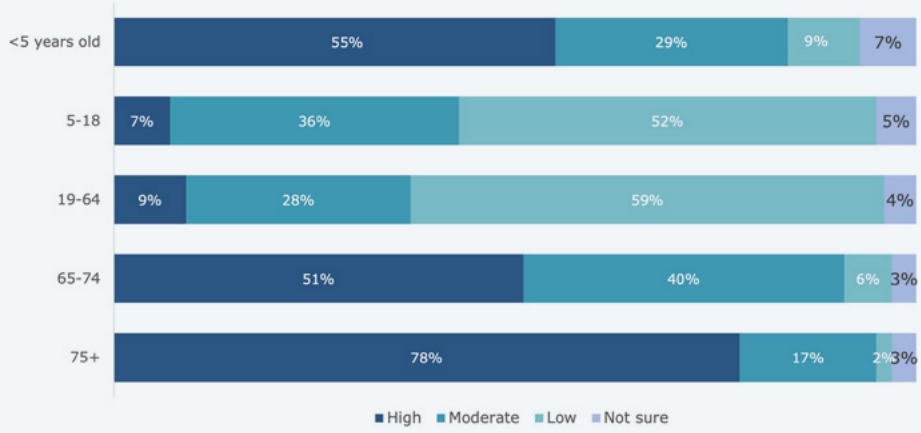
Figure 1: Knowledge Regarding Prevention and Impact of RSV Infection



Q: Please indicate whether the following statements about RSV are true, false or if you are not sure. n=303

Respondents were generally correct in associating higher levels of risk of RSV hospitalization with children under 5 and adults aged 65 or older. However, significant minorities rated the risk of RSV hospitalization as being only moderate or less for these older adult-age categories: 49% moderate or less risk associated with adults aged 65-74 and 22% among adults over the age of 74. Respondents who report lower familiarity with the new RSV vaccines underestimate the risk of RSV hospitalization among older adults.

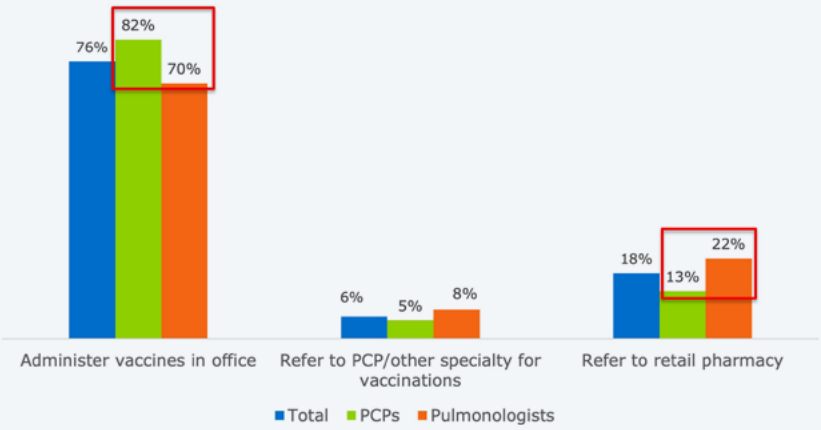
Figure 2: RSV Hospitalization Risk Associated with Different Age Groups



Q: What is the level of risk of RSV hospitalization associated with the following population groups? n=303

Current Respiratory Vaccination Practices. Most respondents (76%) reported administering respiratory vaccinations against influenza, SARS-CoV-2, and pneumococci in their office. Primary care physicians (82%) were more likely to administer them in office compared to pulmonologists (70%). Academic-based practices were more likely to report in-office vaccine administration compared to community-based practices (81% vs. 72%). Nearly a fourth of community-based respondents (22%) indicated that they direct their patients to retail pharmacies for vaccines.

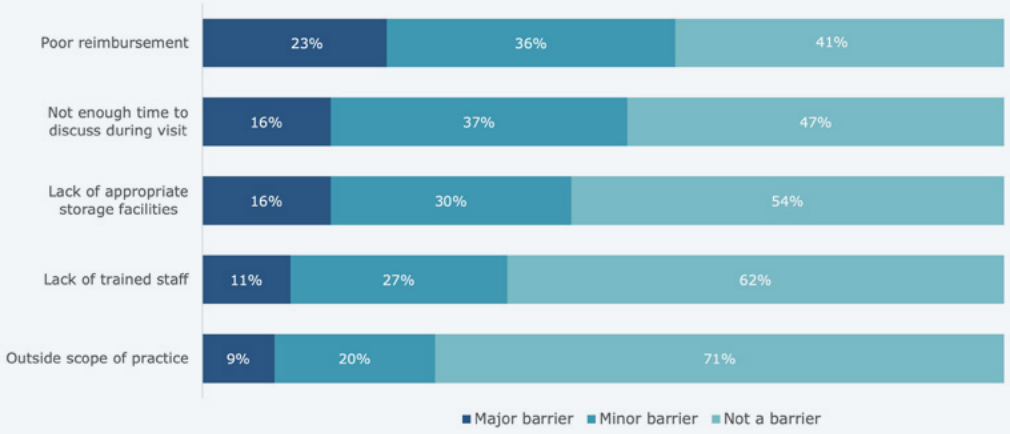
Figure 3: Vaccine Administration



Q: Which of the following statements best describes your approach to getting your patients vaccinated against respiratory viruses?
Base: n=303

Poor reimbursement was the most frequently (23%) cited barrier to administering vaccines in respondents' practices, followed by lack of time to discuss vaccines with patients during their encounter (16%). Respondents who did not administer vaccines in their practices were three times as likely to say that poor reimbursement (47% vs 15% among those who administer), lack of adequate storage facilities (32% vs 11%) and lack of staff trained to handle and administer vaccines (22% vs 7%) were major barriers to vaccination in their offices.

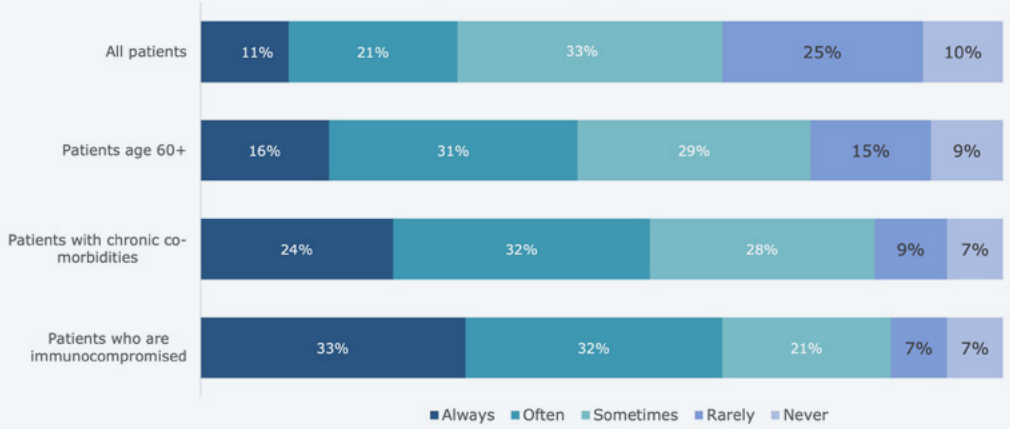
Figure 4: Barriers to Vaccinating Patients in Office



Q: How significant are the following barriers to administering respiratory vaccines in your office? n=303

Current RSV Testing Practices. Respondents were asked how frequently they specifically test for RSV among different categories of symptomatic patients. Even with symptomatic patients who are at high risk for severe RSV infection, ordering RSV testing for all patients was not a common practice. As shown in Figure 5 below, symptomatic immunocompromised patients are most likely to be tested specifically for RSV, but only 65% of respondents say they always (33%) or often (32%) order RSV testing for these patients. Patients with comorbidities (56%) and patients over the age of 60 (47%) are also more likely to be tested than the general patient population as a whole.

Figure 5: Frequency of Testing for RSV With the Following Categories of Symptomatic Patients



Q: How frequently do you specifically test for RSV for the following types of symptomatic patients during usual respiratory seasons? n=303

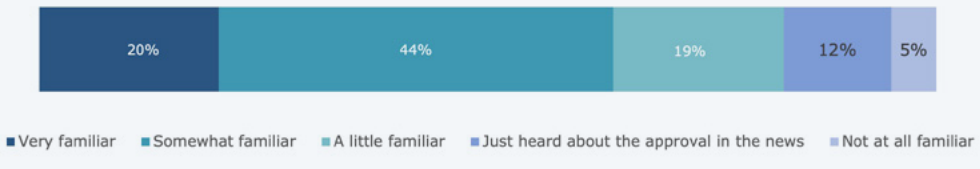
Respondents were asked to rate their level of agreement with the following statement: "I don't typically make a specific decision to test for RSV, but I do get test results because RSV is included in the panel of tests I order to detect other respiratory viruses." A majority agreed, at least in part, that RSV testing is not necessarily a specific choice (23% strongly agree with the statement, 37% somewhat agree). Pulmonologists and those working in academic settings were more likely to agree with the statement. However, no differences are observed in likelihood of recommending RSV vaccination when comparing those who specifically test for RSV with those who receive RSV test results as part of a respiratory panel they ordered.

Figure 6: RSV Testing: Specific Order or Part of Testing Panel?
Agreement: *"I don't typically make a specific decision to test for RSV, but I do get test results because RSV is included in the panel of tests I order to detect other respiratory viruses."*

Q: Please rate your level of agreement with the following statement: "I don't typically make a specific decision to test for RSV, but I do get test results because RSV is included in the panel of tests I order to detect other respiratory viruses." n=303

New RSV Vaccines: Familiarity and knowledge/beliefs. On a self-reported basis assessing their familiarity with the new RSV vaccines that have recently been approved by the FDA, a fifth (20%) assess their familiarity with the vaccines as being very familiar and an additional 44% say they are somewhat familiar with them. Respondents who serve a lower-income patient base express lower levels of familiarity (28% "just heard something in the news") or are not at all familiar compared with only 14% among those reporting a middle-income patient base or higher).

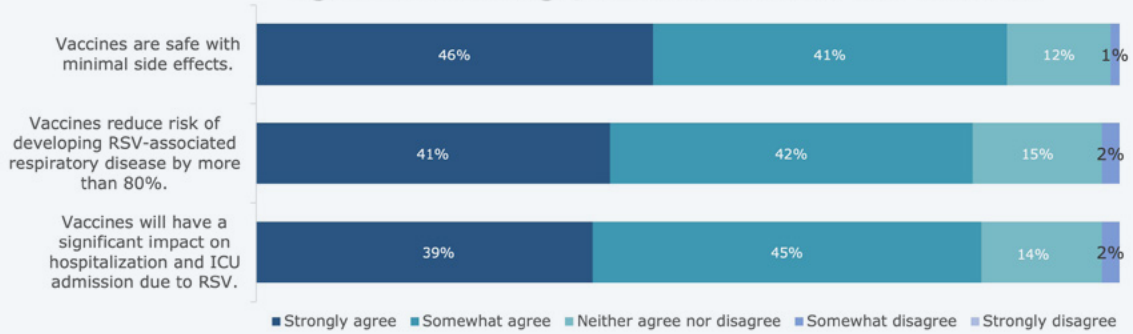
Figure 7: Familiarity with New RSV Vaccines



Q: The FDA has recently approved a vaccine for RSV for use in older adults. How familiar are you with the new vaccine? n=303

Despite variable familiarity with the new vaccines, most respondents expressed positive beliefs about the benefits of the new RSV vaccines. The majority expressed some level of agreement that the new vaccines are safe with minimal side effects (46% strongly agree/41% somewhat agree); they will substantially reduce the risk of developing RSV-associated respiratory disease (41% strongly agree/42% somewhat agree); and they will have a significant impact on reducing hospitalization and ICU admission (39% strongly agree/45% somewhat agree). Those who report lower overall familiarity with the vaccine were less likely to associate any of these benefits with it.

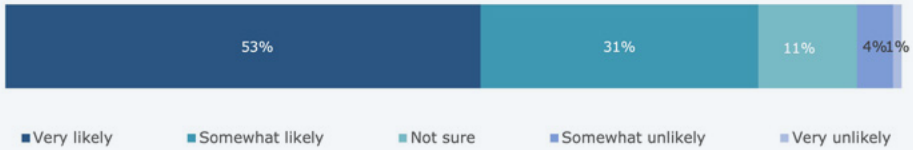
Figure 8: Knowledge/Beliefs About New RSV Vaccines



Q: Please rate your level of agreement with the following statements about the new RSV vaccines. n=303

Likelihood of offering new RSV vaccinations. There was high interest in offering the new RSV vaccinations to patients in-office when they become available. Half (53%) said they were very likely to offer them and an additional third (31%) are somewhat likely. Those who were less familiar with the new vaccines and those who do not currently offer vaccinations in their offices were less likely to make the RSV vaccine available.

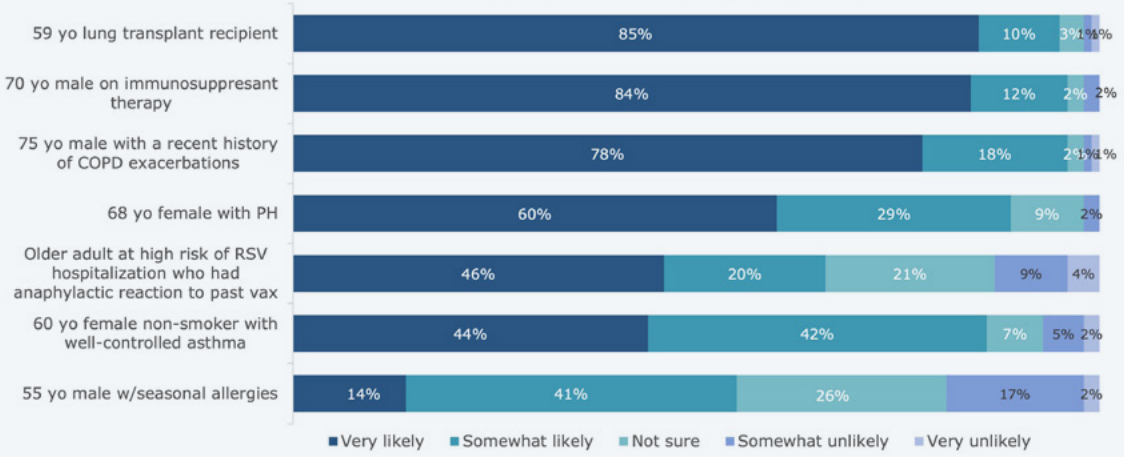
Figure 9: Likelihood of Offering New RSV Vaccinations



Q: How likely are you to offer the new RSV vaccinations to your patients in your office when it becomes available? n=303

Recommending the new RSV vaccines to patients. Respondents were presented with examples of different patients they typically see in their practice and were asked how likely they would be to recommend RSV vaccination to them. The vast majority would recommend the vaccine to lung transplant recipients (85% very likely to recommend), patients on immunotherapy (84%), and those with COPD and a history of recent COPD exacerbation (78%). Results were more variable when it comes to patients with pulmonary hypertension, and those who have had a past anaphylactic reaction to a vaccine (even if they are high risk for RSV) and those with well-controlled asthma.

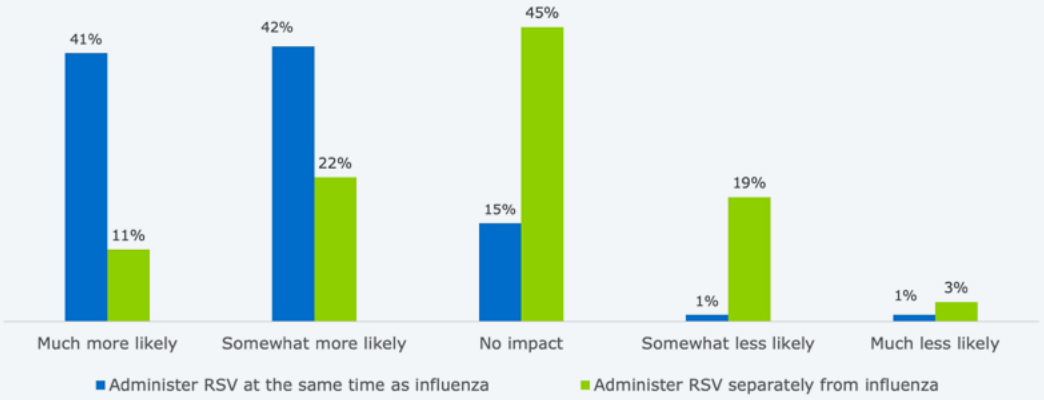
Figure 10: Likelihood of Recommendation of RSV Vaccination to Select Patient Populations



Q: How likely would you be to strongly recommend that the following patients get vaccinated against RSV? n=303

While respondents said that they were more likely to recommend the RSV vaccine if it could be administered at the same time as the influenza vaccine (83%); having to administer them at a separate time appears to be an issue for only a minority (22%). Nearly half (45%) said separate administration would have no impact on their recommendations.

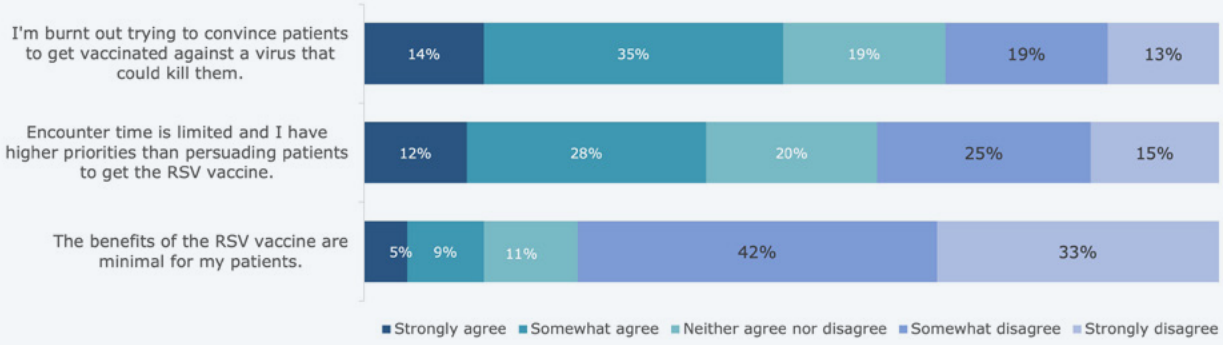
Figure 11: Impact of Timing of Vaccine Administration on Recommendation—RSV vs. Influenza



Q: If the RSV vaccine could be administered at the same time as the influenza vaccine, how would that impact your willingness to recommend? If the RSV vaccine needed to be administered separately from the influenza vaccine, how would that impact your willingness to recommend? Base: n=303

Barriers to counseling older adults about RSV vaccination. Following recent public controversies and misinformation about COVID-19 vaccines, almost half of respondents (49%) reported feeling burnt out trying to convince patients to get vaccinated against a virus that could kill them. In addition, 40% indicate that limited encounter time would cause them to prioritize other needs. Few believe that the benefits of the vaccine for their patients are minimal (14%).

Figure 12: Barriers to Counseling Older Adults About RSV Vaccination



Q: Please rate your level of agreement with the following statements about counseling your older adult patients regarding the RSV vaccines. n=303

DISCUSSION

Awareness and familiarity with RSV vaccines correlated importantly in several domains. The respondents who were least aware of or familiar with the RSV vaccines were also least likely to accurately respond to knowledge measures, less likely to associate benefits with RSV vaccinations, and less likely to make RSV vaccines available in their practices. Furthermore, those serving higher-income patients self-reported higher familiarity with the emerging vaccines.

Almost three-fourths indicated that standard prevention methods are the only way to prevent RSV infection, although a majority reported being aware of the RSV vaccines. As RSV vaccines become available in practice, it will be important for physicians to recognize the important and unique role they can serve in prevention of RSV.

With respect to barriers to administering vaccines in the office, most respondents considered poor reimbursement, lack of time, lack of storage facilities, lack of trained staff, or scopes of practice as either nonbarriers or minor barriers. Poor reimbursement was the most frequently cited major barrier by less than a quarter of respondents; lack of time is the next most frequently cited barrier. Respondents who did not administer vaccines in their practice were more likely to identify each of the factors as major barriers.

Ordering RSV testing is not routine, even in high-risk patients. While respondents were more likely to order RSV testing in immunocompromised patients, almost a third did not routinely order testing in these patients, and even fewer clinicians would test patients with comorbidities or over age 60 who may also be considered in higher-risk categories. RSV testing guidance varies seasonally and geographically, while the Centers for Disease Control and Prevention (CDC) issue alerts with specific testing recommendations when appropriate. It would be interesting to understand to what degree clinicians rely upon the CDC guidance to direct their testing practices.

Respondents were very likely to recommend RSV vaccination to lung transplant recipients, patients on immunotherapy, and those with COPD and recent COPD exacerbation history. However, they were less likely to recommend it to other high-risk patients, including those with pulmonary hypertension, those who have had a past anaphylactic reaction to a vaccine (even if they are high risk for RSV) and those with well-controlled asthma or seasonal allergies.

Only a minority of respondents identify specific major barriers to recommending RSV vaccinations, with burnout surrounding vaccine conversations being the most frequently cited, which is likely lingering effect of the environments created during the COVID-19 pandemic. The finding that respondents who are less aware and familiar with RSV vaccines are less likely to recommend the vaccines, suggests that lack of knowledge is barrier.

EDUCATIONAL OPPORTUNITIES

Studies have shown that inadequate knowledge and low vaccine confidence contribute to vaccine hesitancy among health care providers, who are "vital advocates for patients and public health." [Lin 2021] The results of this survey highlight several areas where education has the potential to address knowledge gaps and overcome barriers to recommending RSV vaccination in older adults.

- Increase awareness about the efficacy and safety of RSV vaccines. Disseminating data can address gaps in several domains including highlighting clinical benefits, the rationale for making RSV vaccination available in office for appropriate patients, which patients are at risk and when to recommend RSV vaccination, as well as the burden and risks among older adults. Since respondents who reported least RSV vaccine awareness and familiarity reported serving lower-income populations, outreach to these health care providers may be especially impactful.
- Increase awareness and knowledge of testing recommendations. Education about which tests are available, which patients to test, when to test, and factors that trigger CDC alerts to increase testing—especially geographically specific alerts—can provide a framework for supporting RSV testing practices.

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ADVISORY WORK GROUP

Ryan C. Maves, MD, FCCP
Professor of Medicine and Anesthesiology
Sections of Infectious Diseases and Critical Care Medicine
Wake Forest University School of Medicine
Winston-Salem, NC

Kelly Pennington, MD
Assistant Professor of Medicine
Division of Pulmonary, Critical Care, and Sleep Medicine
Mayo Clinic
Rochester, MN

Megan Conroy, MD, MAEd, FCCP
Assistant Professor of Medicine, Clinical
Assistant Program Director, Pulmonary & Critical Care Fellowship
The Ohio State University
Columbus, OH

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