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RESEARCH NOTES

Pharmacists' response during a pandemic: A survey on readiness to test during COVID-19

Emily Uebbing, Matthew Lacroix^{*}, Jeffrey Bratberg, Christopher Federico

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Background: Testing is a principle component to reopening society and bringing the coronavirus 2019 (COVID-19) pandemic to an end. Pharmacists have the ability to perform certain point-of-care tests under federal regulations. On April 8, 2020, the Office of the Assistant Secretary for Health issued new guidance authorizing licensed pharmacists to order and administer COVID-19 tests.

Objective: The primary objective of this study was to investigate the views of pharmacists about pharmacist-ordered and -administered COVID-19 testing.

Methods: A 13-item questionnaire was developed to survey pharmacists who currently hold an active license in Rhode Island.

Results: A total of 122 (13.8%) pharmacists consented and responded to at least 1 question of the survey. The results indicated that the primary concern of the pharmacists in regard to performing COVID-19 testing was spreading the infection to family members (71.3%). Becoming personally infected (59.8%) and not having access to appropriate personal protective equipment (PPE) (62.3%) were the second and third most common concerns of the pharmacists. Almost all of the pharmacists (99.9%) responded that they would be willing to take part in the testing process if they had appropriate PPE. A total of 46% of the pharmacists expressed concern regarding reimbursement for their company, whereas 56% of the pharmacists requested personal compensation for this service.

Conclusion: Expanding the pool of health care providers who can perform testing is critical to achieving and sustaining proposed testing thresholds. Rhode Island pharmacists are willing to take part in performing COVID-19 testing provided appropriate PPE is available and services are reimbursed. Pharmacists are the most accessible and essential health care providers willing to take on critically important roles during the COVID-19 pandemic provided appropriate safety measures can be met.

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The first case of the novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was reported in the United States on January 19, 2020, and by October 3, 2020, there were more than 7.3 million cases in the United States accounting for more than 205,000 deaths.^{1,2} Similar to influenza, SARS-CoV-2 transmits primarily through respiratory droplets.³ Although young healthy people can be infected, develop critical illness, and die, most of the deaths from the

virus occur in older people with underlying conditions such as cardiovascular disease.⁴ What may be the most dangerous aspect of SARS-CoV-2 and subsequent coronavirus disease (COVID-19) infection is the asymptomatic and presymptomatic transmission spread.⁵ Symptoms develop between 2 and 14 days after exposure, which allow for transmission of the disease without the vector's knowledge.⁶ Health care providers and leaders need to take a unique approach in identifying opportunities for early screening and mitigating the risk of widespread infection transmission.^{7,8}

The period of COVID-19 infection without symptoms leaves individuals and the health care community uninformed, posing the greatest risk for transmission of the disease. Allowing anyone to obtain a COVID-19 test by removing barriers to testing leads to quicker isolation, contact tracing, and

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*** Correspondence:** Matthew Lacroix, PharmD, MS, BCPS, Coordinator, Accreditation and Assessment, College of Pharmacy, University of Rhode Island, 7 Greenhouse Rd, Kingston, RI 02881.

E-mail address: mlacroix1@uri.edu (M. Lacroix).

quarantine. The United States does not have a unified national testing infrastructure, leaving the decisions on testing to the states.⁹ This has led to widespread logistical and operational problems with the acquisition of limited supplies of testing equipment and reagents, slowing the delivery of results. At the time of this writing, the United States leads the world in per capita cases, hospitalizations, and deaths.¹ Still, governors across the United States have developed systematic, evidence-based approaches to testing and other harm-reduction approaches such as masking, hand hygiene, and social distancing that have allowed some states to reopen their economies. The success and execution of these plans, including Rhode Island's, are dependent on testing.^{9,10}

Pharmacy practice continues to fill gaps in health care and population health to address unmet patient needs. Most households in the United States are within 5 miles of a pharmacy and more than 1 pharmacist.¹¹ Patients access pharmacists significantly more frequently than their primary care providers.¹² Community pharmacy-based point-of-care testing (POCT) is 1 way pharmacists can improve and expand accessibility to services otherwise not readily available to their patients. The Clinical Laboratory Improvement Amendments of 1988 (CLIA) included pharmacies as laboratories, giving them the authorization to perform POCT, in accordance with state and federal regulations. Requirements for these tests vary from state to state and include 120 low-risk tests, including dyslipidemia, diabetes, influenza, and streptococcus group A.¹³ As of July 20, 2020, more than 14,000 pharmacies have been issued a CLIA waiver to perform POCT.¹⁴

On April 8, 2020, the Office of the Assistant Secretary for Health issued new guidance under the Public Readiness and Emergency Preparedness (PREP) Act authorizing licensed pharmacists to order and administer COVID-19 tests that the U.S. Food and Drug Administration has authorized by means of the Emergency Use Agreement framework.¹⁵ Although guidance was issued under the PREP Act that gave pharmacists immunity from liability from claims of loss caused by the administration of COVID-19 tests, the guidance did not address many concerns of pharmacists including reimbursement or the lack of personal protective equipment (PPE).

Health care workers, especially those who provide treatment and testing to patients with COVID-19, are at a higher risk of contracting COVID-19.¹⁶ The World Health Organization recommend that all health care workers who collect specimens use eye protection, a medical mask, a long-sleeve gown, and gloves.¹⁷ These types of PPE are not normal daily equipment for pharmacists and pharmacy staff. Preparing pharmacists for COVID-19 testing, adequate PPE will need to be available.¹⁸ The lack of adequate PPE is one of many concerns pharmacists have while maintaining normal operations,¹⁹ much less considering specimen collection and testing for COVID-19.

The aim of this study was to collect views of pharmacists about the potential of pharmacist-administered COVID-19 tests. This survey could help legislatures understand these views and consider them when creating legislation. In addition, understanding these views would allow pharmacies to make informed decisions and create company policies regarding pharmacist-administered COVID-19 testing that pharmacists would be more likely to willingly accept.

Objectives

The primary objective of this study was to investigate the views of pharmacists on pharmacist-ordered and -administered COVID-19 testing.

Methods

Study design, population, and setting

This was a descriptive survey study that was approved as exempt by the University of Rhode Island institutional review board. Pharmacists who had e-mail addresses publicly listed with the Rhode Island Department of Health received an e-mail asking them to complete a survey. The professional associations disseminated the study as follows: On April 30, the original message was sent to all pharmacists; May 1, the survey was advertised through an electronic newsletter; and on May 7, a reminder was sent through the association Listserv. The survey was also advertised on the Rhode Island Pharmacist's Association Facebook live COVID-19 town halls held on May 6 and May 13.

Any Rhode Island licensed pharmacist who received an e-mail was eligible to complete the survey. There were no exclusion criteria. There was no incentive for completing the survey, and the survey answers were anonymous and only available to the researchers. The survey remained available for participants to complete between April 30 and May 19, 2020.

Survey development

Informed consent was provided before completing the survey through the first question of the survey instrument. Three questions were asked to gather demographics about participants, 1 question was asked about where participants went to gather information about COVID-19, and 8 questions asked participants about their views of ordering and administering COVID-19 tests. All questions were multiple choice, and the participants could select more than 1 answer for 7 questions.

The 13-question anonymous survey was designed by study personnel to take less than 10 minutes to complete. Questions and elements were created and written by study personnel collectively. The survey was not piloted nor validated. The participants were able to quit the survey at any time without recording any information. All responses were stored within the Qualtrics (Qualtrics, Provo, UT) survey system and were only accessed by the researchers for analyses.

Results

A total of 879 pharmacists received an e-mail asking them to complete the survey, and 142 pharmacists agreed to take part in the study. In total, 122 (13.8%) pharmacists consented and responded to at least 1 question. Of those, 93 (76.2%) pharmacists described Rhode Island as their primary practice location, 33 (22.9%) indicated chain community pharmacy as their primary practice site, and 72 (59%) graduated pharmacy school before 2005. [Table 1](#) shows all the responses to each question on the survey. The primary concern with COVID-19

Table 1
Opinions of pharmacists on pharmacist-ordered and -administered COVID-19 testing

Number for each question	Response	% (n)
1 What are your concerns with testing for COVID-19? (select all that apply)	Bringing home the infection to my family	71.3 (87)
	Not having enough PPE	62.3 (76)
	Getting infected	59.8 (73)
	Not being properly trained	47.5 (58)
	Competing responsibilities	45.9 (56)
	Not getting paid for the service	44.3 (54)
2 Do you feel that you will have access to adequate PPE if asked to perform testing?	It's outside my scope of practice	18.9 (23)
	Yes	45.9 (56)
3 How suitable is your current workplace for COVID-19 testing?	No	41.6 (63)
	Currently suitable	25.4 (31)
	Suitable with minimal change	16.4 (20)
	Suitable with many alterations	19.7 (24)
	My site cannot be made suitable	37.7 (46)
4 How willing are you to perform tests for COVID-19?	I would volunteer to perform tests without pay outside of my workplace	18.9 (23)
		18.9 (23)
	I would volunteer to perform tests within my workplace without added payment	17.2 (21)
		17.2 (21)
	I would only to perform tests with added payment	28.7 (35)
		28.7 (35)
	I would only perform tests if it is required of me by my employer	25.4 (31)
	I would not perform tests even if it is required of me by my employer	9.0 (11)
5 If you were asked to perform COVID-19 tests, where would you feel most comfortable performing them?	State-run testing centers	70.5 (86)
	Emergency department	28.7 (35)
	Community chain	26.2 (32)
	Community independent	23.0 (28)
	Primary care	42.6 (52)
6 If you were asked to administer COVID-19 tests, what role would you feel comfortable having? (select all that apply)	Not feel comfortable in any setting	17.2 (21)
	Receiving patient-collected sample	20.5 (74)
	Collecting samples	19.11 (69)
	Ordering tests	29.64 (107)
	Selling at-home tests	20.5 (74)
	Analysis of specimen brought in by patient	8.31 (30)
7 Given that you are provided proper PPE and trained appropriately, what type of sample would you feel comfortable collecting? (select all that apply)	I would not feel comfortable with any role	1.94 (7)
	Nasopharyngeal swab	47.5 (58)
	Nasal swab	75.4 (92)
	Saliva collection	73.0 (89)
	Fingerstick blood collection	60.7 (74)
	Venipuncture blood collection	11.5 (14)
	Not feel comfortable with any method	14.8 (18)
8 Under what conditions would you consider administering and performing COVID-19 tests? (select all that apply)	Services are reimbursed to my employer	42.6 (52)
	Services are reimbursed to me	56.6 (69)
	Adequate PPE available (per CDC recommendations)	91.0 (111)
	Instructor-led live training available	68.9 (84)
	Self-guided training available	41.0 (50)
	Asymptomatic patient testing	66.4 (81)
	Symptomatic patient testing	47.5 (58)
	Walk-in testing	40.2 (49)
	Drive-thru testing	46.7 (57)
	Appointment testing	76.2 (93)
Adequate support staff (i.e., technicians, interns, etc.)	81.1 (99)	

Abbreviations used: COVID-19, coronavirus disease 2019; PPE, personal protective equipment; CDC, Centers for Disease Control and Prevention.

testing was infecting family members from work exposure expressed by 87 (71.3%) pharmacists. If asked to conduct COVID-19 testing, 63 (51.6%) pharmacists felt they would not have access to appropriate PPE if they were to conduct testing.

A total of 46 (37.7%) pharmacists indicated that their practice site could not be made safe through modifications for testing.

A total of 104 (90.0%) pharmacists were willing to participate in COVID-19 testing through receiving patient-collected

samples, collecting samples, ordering tests, selling at-home tests, or analyzing the specimen brought in by a patient. State-run testing centers were the preferred testing location among pharmacists (70.5%). Twenty-one (17.2%) pharmacists indicated that they would not feel comfortable performing COVID-19 testing in any setting, and 7 (1.94%) pharmacists indicated that they would not feel comfortable with any role involved in COVID-19 testing. Pharmacists felt most comfortable collecting nasal (75.4%), saliva (73.0%), and finger stick (60.7%) samples. Collecting samples from patients that are not routinely used in community practice were less preferred. Ultimately, 85% of the pharmacists were comfortable with collecting a sample from at least one of the available methods.

A total of 121 (99.2%) pharmacists would consider ordering and administering COVID-19 tests if reimbursement were provided, either personally or for their employer. Receiving additional live, instructor-led, training for collection and administration of COVID-19 tests was rated as the second most important item. When training and reimbursement were taken into consideration, 81 (66.4%) pharmacists preferred appointment-based testing to on-demand testing.

Discussion

This study indicated that most of the pharmacists were willing to perform COVID-19 testing. Only a small percentage (9%) of the survey pharmacists indicated that they would not be willing to perform COVID-19 testing even if it was required by their employer. The results from this study portray a willingness of pharmacists to participate in COVID-19 testing efforts if certain measures can be met.

The most common concerns reported among pharmacists were bringing the infection home to family members, not having adequate PPE, and getting personally infected. In addition, almost half of the pharmacists expressed that they felt they would not have access to adequate PPE if they were asked to perform testing. If the proper PPE is not used, the risk of infection is greater, and thus, the risk of infecting family members is greater. Household transmission frequently occurs asymptotically, can occur between adults and children, and is riskiest to people older than 60 years.²⁰⁻²² If adequate PPE were to be guaranteed and supplied to pharmacies throughout the course of testing operations, presumably, all 3 main concerns would be addressed. Although not directly asked, proper PPE access would likely also reduce the mental health concerns of those surveyed, which have been reported to have increased since the pandemic began.²³

Most pharmacists would feel most comfortable performing COVID-19 tests at a state-run testing center rather than a chain or independent community pharmacy, primary care location, or emergency department. This aligns with the finding that most of the pharmacists felt that their current workplace could not be made suitable for COVID-19 testing, even with changes. Most of those surveyed were also willing to collect nasal and saliva samples for testing. Nasal and saliva samples are adequate samples for many point-of-care COVID-19 tests, and they are more comfortable for the patient.²⁴ According to those surveyed, the ideal testing situation is one in which pharmacists are provided adequate PPE in a state-run testing center to collect nasal or saliva samples by appointment only.

Limitations

No validation was conducted to ensure the reliability and clarity of the questions, which may have led to redundancies and/or misguided questions. This study gathered pharmacists' views about performing COVID-19 tests within a single state, Rhode Island. A limitation of this study was that the views of Rhode Island pharmacists may not accurately represent pharmacists' views nationwide. This survey was conducted during the initial peak in COVID-19 cases in the state and the region, which may be part of the cause for limited responses. Several individuals who were invited to partake in the survey did not work in direct patient care and did not complete the survey owing to the feeling that the survey was not aimed at them, even though the investigators were looking to collect information from all licensed individuals.

Conclusion

Expanding the pool of health care providers who can perform testing is critical to achieving and sustaining proposed testing thresholds. Rhode Island pharmacists are willing to take part in performing COVID-19 testing provided the appropriate PPE is available and services are reimbursed.

Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.japh.2020.10.003>.

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Emily Uebbing, PharmD, Clinical Professor, College of Pharmacy, University of Rhode Island, Kingston, RI

Matthew Lacroix, PharmD, MS, BCPS, Coordinator, Accreditation and Assessment, College of Pharmacy, University of Rhode Island; President, Rhode Island Pharmacist Association, Kingston, RI

Jeffrey Bratberg, PharmD, FAPhA, Clinical Professor, College of Pharmacy, University of Rhode Island, Kingston, RI

Christopher Federico, PharmD, BCACP, CDE, President, Elect-Rhode Island Pharmacist Association, Rhode Island Pharmacist Association, Warwick, RI