



BRIEF REPORT

REVISED COVID-19 testing capabilities at urgent care centers in states with greatest disease burden [version 2; peer review: 2 approved]

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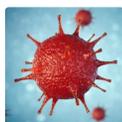
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Abstract

While rapid and accessible diagnosis is paramount to monitoring and reducing the spread of disease, COVID-19 testing capabilities across the U.S. remain constrained. For many individuals, urgent care centers (UCCs) may offer the most accessible avenue to be tested. Through a phone survey, we describe the COVID-19 testing capabilities at UCCs and provide a snapshot highlighting the limited COVID-19 testing capabilities at UCCs in states with the greatest disease burden.

Keywords

COVID-19, urgent care center, testing, health services



This article is included in the **Disease Outbreaks** gateway.



This article is included in the **Coronavirus** collection.

Open Peer Review

Reviewer Status ✓ ✓

	Invited Reviewers	
	1	2
version 2		
(revision)		✓
16 Nov 2020		report
		↑
version 1	✓	?
04 May 2020	report	report

1. **Siddharth Sridhar** , University of Hong Kong, Pokfulam, Hong Kong
2. **Buqing Liang** , Baylor Scott & White Health, Temple, UK

Any reports and responses or comments on the article can be found at the end of the article.

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Competing interests: No competing interests were disclosed.

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REVISED Amendments from Version 1

In order to answer reviewer comments on the relationship between urban versus rural designation on COVID-19 testing availability, we added a variable that characterized each UCC as urban or rural based on UCC zip codes that were cross-referenced with data from the U.S. Department of Agriculture's Economic Research Service. We have updated the results to include the urban/rural designation. All UCCs were located in urban-designated areas. However, 4 UCCs were located in a smaller subset of the urban designation called "small towns with an urban cluster."

We have updated the discussion section to identify the obstacles that UCCs face in their ability to offer COVID-19 testing. Additionally, we have identified several areas of improvement for UCCs that offer COVID-19 testing.

Any further responses from the reviewers can be found at the end of the article

Introduction

While rapid and accessible COVID-19 diagnosis is paramount to monitoring and reducing the spread of disease, COVID-19 testing capabilities across the U.S. remain constrained. For many individuals, urgent care centers (UCCs) may offer the most accessible avenue to be tested. Using a phone survey, we describe the COVID-19 testing capabilities of UCCs in states with the greatest disease burden.

Methods

Our study received non-human research IRB exemption from the Yale School of Medicine and participant consent was not required. We identified ten states with the highest COVID-19 caseload as of March 19, 2020 according to the Centers for Disease Control (CDC)¹. Using the Urgent Care Association "Find an Urgent Care" directory, we identified all UCCs within the state of interest and assigned each UCC a numeric identifier. A random number generator was used to select for a convenience sample of 25 UCCs per state. If the UCC was not able to be contacted, a new UCC was randomly selected and called. UCCs were classified into independent, hospital/health network, and academic categories.

Using a standardized survey script (Figure 1), trained investigators asked UCC receptionists about COVID-19 testing ability, testing criteria, time to test results, costs of tests and visits for insured/uninsured patients, and test referrals. All 250 calls were made on March 20, 2020 and were limited to 1 minute to minimize occupying clinic resources. Using publicly available data from the United States Department of Agriculture's Economic Research Service (based off the 2010 U.S. Census), we determined urban/rural designation based on UCC zip codes.

Results

Of 250 UCCs contacted, 57 (22.8%) offered COVID-19 testing. Hospital/health network-affiliated UCCs were more

likely to offer COVID-19 tests compared to independent UCCs (odds ratio 3.69, 95% confidence interval 1.94–7.01, $p < 0.0001$).

Of UCCs that offered testing, 56 (98.2%) required the patient to be symptomatic (typically fever and respiratory symptoms) and 2 (0.4%) required a primary care physician referral. In total, 45 (86.5%) UCCs charged a fee to test uninsured patients, but no UCC could provide a definitive answer regarding test fees for insured patients given the shifting federal legislation. A total of 53 (94.6%) UCCs charged a visit fee in addition to the COVID-19 lab test fee. For the 49 centers that provided the wait time for test results, the median time was 120 hours (interquartile range 96 hours to 144 hours).

Of UCCs that did not offer testing, 97 (51.3%) referred individuals to other clinics that could possibly test for COVID-19, and 37 (24.8%) directly referred individuals to a specific emergency department. Individual-level results for each UCC are available as *Underlying data*².

All UCCs were located in urban-designated zip codes. 246 (98.4%) UCCs were located in metropolitan areas, while 4 (1.6%) UCCs were located in small towns with an urban cluster.

Discussion

In the 10 states with the greatest COVID-19 caseload, only 23% of UCCs offered COVID-19 testing. Additionally, results would take approximately five days to be processed. Although time to test results at public/state labs are typically 24–48 hours (Table 1), time to test results at UCCs were longer as most samples are sent to external labs. However, it remains unclear whether UCC ability to obtain test samples may be unmatched by the ability to process tests. This finding underscores the importance of point-of-care testing that can rapidly detect COVID-19, particularly because severe disease peaks at approximately ten days from onset of initial symptoms³.

Fees and cost-sharing for COVID-19 tests remain unclear. The Families First Coronavirus Response Act, which passed on March 18, mandated all group and individual health plans cover COVID-19 testing and gave states the option to use Medicaid coverage for testing uninsured patients⁴. Although this study could not definitively define test fees, most UCCs stated they would charge test fees, contrary to recent federal regulations, in addition to fees for the urgent care visit itself as of March 20. Test and visit fees at UCCs may discourage patients from seeking COVID-19 testing.

UCCs continue to face several obstacles in their ability to offer COVID-19 testing. Point-of-care rapid testing remains limited, and the necessity to externally process tests delays the receipt of test results. Overburdened healthcare providers and lack of personal protective equipment could also affect availability and costs of testing at UCCs. Our results identify several primary areas of improvement for UCCs offering COVID-19 testing: 1) the adoption of rapid point-of-care

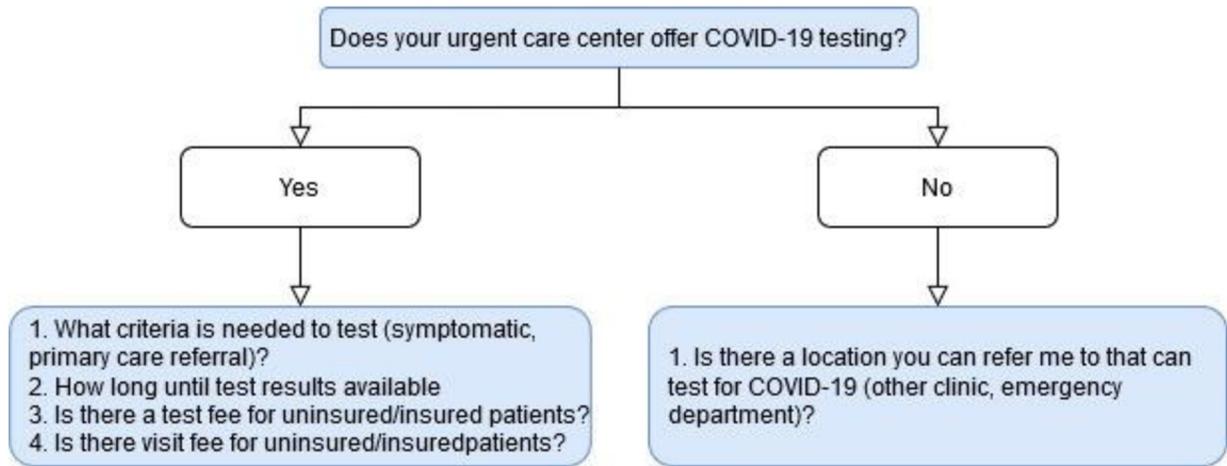


Figure 1. Urgent care center survey script.

Table 1. COVID-19 testing capabilities by state.

	UCCs offering tests, n (%)	Average time to test results at UCC, hours	Average time to test results at state or public health lab, hours*
California	1 (4%)	N/A	48–72
Colorado	2 (8%)	108	72
Florida	7 (28%)	96	24–48
Georgia	2 (8%)	120	N/A
Illinois	6 (24%)	118	24
Louisiana	4 (16%)	138	N/A
Massachusetts	9 (36%)	139.2	24
New Jersey	7 (28%)	124.5	24–48
New York	10 (40%)	115.2	3–5
Washington	9 (36%)	91	24–48

*Time to results at state/public health labs obtained from the respective state's Department of Public Health website as of March 20.

testing should be implemented and 2) UCCs should follow legislation that patients should not be charged for COVID-testing.

This report has limitations. The small number of UCCs contacted per state may not accurately represent the state's urgent care climate. Additionally, the rapidly changing nature of the COVID-19 pandemic may affect these findings. However, this study serves as an important snapshot that highlights the limited COVID-19 testing capabilities at UCCs in the most heavily burdened states.

Data availability

Underlying data

Harvard Dataverse: COVID-19 Testing Capabilities at Urgent Care Centers in States with Greatest Disease Burden. <https://doi.org/10.7910/DVN/SJSNZ6>².

This project contains the individual-level responses of each urgent care center to each question from the call script (JMP and XLSX file formats.)

Data are available under the terms of the [Creative Commons Zero “No rights reserved” data waiver](#) (CC0 1.0 Public domain dedication).

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[Reference Source](#)
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[PubMed Abstract](#) | [Publisher Full Text](#)
4. **H.R.6201 - Families First Coronavirus Response Act.** In: Congress US, ed 2020.
[Reference Source](#)

Open Peer Review

Current Peer Review Status:  

Version 2

Reviewer Report 25 November 2020

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Buqing Liang 

Department of Neurosurgery, Baylor Scott & White Health, Temple, TX, UK

No further comments.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Neurosurgery

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 30 July 2020

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Buqing Liang 

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In this study, the authors conducted a phone interview to investigate the COVID-19 testing capabilities at urgent care centers in states with the greatest disease burden. This is an interesting and meaningful topic, especially during this pandemic crisis. However, there are some issues that need to be addressed.

- How did the authors validate the data from the UCCs to ensure no wrong information was conveyed? Even at the same center, two receptionists may give different answers to the same question. Is it possible to double confirm with two different receptionists?
- As the authors state that UCCs were randomly selected. How to differentiate big city centers vs rural area centers? High burden states still have rural areas that may have a very low incidence of COVID infection that does not supplement with UCCs with test capability. What is the percentage of these UCCs?
- Based on the above-mentioned reason, wouldn't investigating UCCs in cities with high COVID-19 incidence be a more reasonable design?
- Lastly, in the discussion part, the authors merely analyzed the results but did not put forward how it can be utilized for improvement. Namely, what's the meaning of this study?

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Neurosurgery

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 05 Nov 2020

Walter Hsiang, Yale School of Medicine, New Haven, USA

How did the authors validate the data from the UCCs to ensure no wrong information was conveyed? Even at the same center, two receptionists may give different answers to the

same question. Is it possible to double confirm with two different receptionists?

We cannot guarantee that receptionists may or may not convey the correct information, but contacting offices in a randomized approach with a large sample has been a validated way to collect survey information. We cannot double confirm with receptionists given the changing landscape since March. However, this caller approach has been used and validated in many of our similar survey methodologies: doi.org/10.1097/SLA.0000000000004373; doi.org/10.1177/0046958019838118; doi.org/10.1016/j.surg.2018.03.013; doi.org/10.1016/j.arth.2015.03.015

As the authors state that UCCs were randomly selected. How to differentiate big city centers vs rural area centers? High burden states still have rural areas that may have a very low incidence of COVID infection that does not supplement with UCCs with test capability. What is the percentage of these UCCs?

We have added an urban vs rural variable in our analysis based off the UCC's zip code in the 2010 U.S. Census. UCCs were all located in urban-designated areas. The urban-designation can be broken down into subcategories, and 4 centers were located in smaller towns with an urban cluster. However, these UCCs are still considered urban. It is well known that UCCs tend to locate in wealthier, urban areas.

The results section and data sharing section have been updated accordingly.

Based on the above-mentioned reason, wouldn't investigating UCCs in cities with high COVID-19 incidence be a more reasonable design?

Given that the primary locations of UCCs at the time of the study were in urban metropolitan areas, we feel confident that our sample essentially represented cities with high COVID-19 incidence.

Lastly, in the discussion part, the authors merely analyzed the results but did not put forward how it can be utilized for improvement. Namely, what's the meaning of this study?

Thank you for this feedback. We have added two areas of improvement in the 3rd paragraph of the discussion.

Competing Interests: None

Reviewer Report 21 July 2020

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Siddharth Sridhar 

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This study provides a snapshot of the COVID-19 testing landscape in ambulatory clinics in the United States in March 2020. Overall, only 22.8% of UCCs offered COVID-19 testing. Turn around time was up to several days in several centres.

Testing and tracing are vital means to control community COVID-19 epidemics. Testing is the first step in the test-isolate-quarantine paradigm that has successfully contained COVID-19 in many parts of the world. Deployment of testing to a wide section of symptomatic individuals in the communities is a challenge. UCCs are a potentially convenient location where such testing can be performed; widespread testing at these centres would also generate vital surveillance data. The fact that less than a quarter of all UCCs in affected states offered COVID-19 testing represents a lost opportunity and a lesson for future pandemic preparedness.

Some suggestions for improvement are as follows:

1. This data is now 4 months old. While it would be too much to ask to repeat the survey, it would be good if the authors can provide any available updates on the number of UCCs offering COVID-19 testing or turn around time of state laboratories. Is the low availability of testing at UCCs improving in these states, especially in heavily affected areas like Florida?
2. Briefly discuss the obstacles to UCCs offering COVID-19 tests.
3. How does this snapshot in March reflect the situation today in July? Do the authors observe an association between a higher proportion of testing UCCs in March with better COVID-19 control today?

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Emerging infectious diseases; clinical virology; hepatitis E

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 05 Nov 2020

Walter Hsiang, Yale School of Medicine, New Haven, USA

This data is now 4 months old. While it would be too much to ask to repeat the survey, it would be good if the authors can provide any available updates on the number of UCCs offering COVID-19 testing or turn around time of state laboratories. Is the low availability of testing at UCCs improving in these states, especially in heavily affected areas like Florida?

While it is difficult to repeat this study under the previous condition, we attempted to provide additional clarity regarding this question by repeating the phone calls to the same 25 UCC locations in Florida in October. In Florida, the availability of testing improved from 28% to 64%, however, the mean wait time increased from 4 days to 7 days.

Briefly discuss the obstacles to UCCs offering COVID-19 tests.

We have added several statements on the obstacles to UCC testing in 3rd paragraph of the discussion section.

How does this snapshot in March reflect the situation today in July? Do the authors observe an association between a higher proportion of testing UCCs in March with better COVID-19 control today?

It is difficult to say whether higher availability of testing is associated with better COVID-19 control, since numerous factors affect the ability to control the spread of infection. However, as we continue into an additional wave of COVID-19 infections, sufficient availability of and accessibility to testing remains paramount.

Competing Interests: None

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