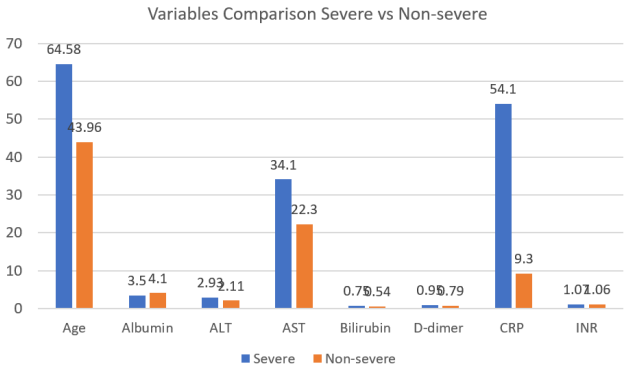
Table 3: Age And Location With Disease Severity

Variables	Severe	Non-severe	OR (95% CI)	P-Value
Gender				
Male	63(18%)	286(82%)	1.95(1.26,3.0)	0.0022
Female	38(10%)	336(90%)		
Region				
Wuhan	70(18%)	312(82%)	2.17(1.4,3.34)	0.0004
Non-Wuhan	35(9%)	338(91%)		

Note: Liu C, et al (n=32) was not included in the male vs. female analysis

Figure 1: Variables Comparison Severe vs. Non- Severe



Conclusion: This study demonstrated that male gender and of Wuhan origin were significantly higher in proportion in the severe group. Of Wuhan origin as a risk factor of severe *COVID-19* could be explained by limited medical resources for overwhelming *COVID-19* patients in Wuhan during the period of January and February 2020. It is unclear why male was the risk factor of severe *COVID-19* based on our data. Also, there were significant lower Albumin, higher AST and CRP in severe *COVID-19*, but their values were not too impressive. However due to limited data and studies, future studies are needed to elucidate risks factors associated with severe *COVID-19*.

Figure 2: Locations of Patients by Cities

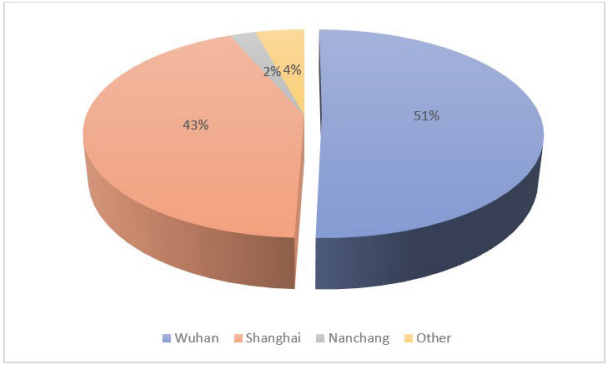


Figure 2 Location of Patients by Cities

Locations of Severe COVID-19 by Cities

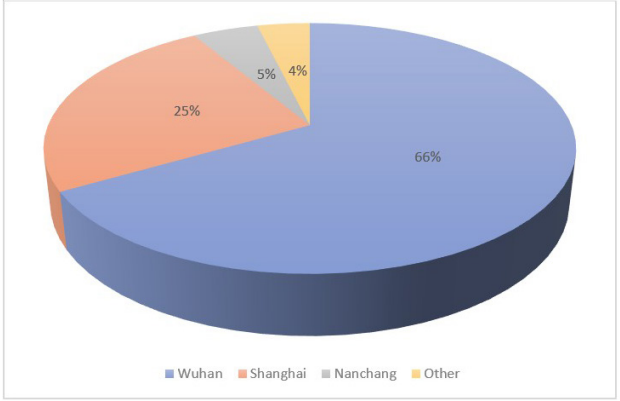


Figure 3 Location of Severe COVID-19 by Cities

Disclosures: **All Authors**: No reported disclosures

456. Implementing an At-Home Smell Test for Early Assessment of COVID-19 in High-Risk Healthcare Workers

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Yale IMPACT Research Team

Session: P-14. COVID-19 Epidemiology and Screening

Background: Smell loss has been recognized as an important, and potentially early, sign of COVID-19. However, to date smell loss has only been assessed in retrospective, COVID+ cohorts, and largely through self-report. The objective of this study was to implement a daily standardized behavioral test of smell sensitivity in healthcare workers (HCW) to capture changes in smell sensitivity over time and to assess whether these changes occur prior to positive COVID test.

Methods: The study enrolled 500 high-risk COVID-negative HCW during the COVID-19 epidemic in Connecticut, beginning March 28, 2020 (80% F, mean age 38, 58% nurses). Initially, HCW received a daily symptom questionnaire with parosmia screening questions. On April 23 we introduced the "Jiffy", a daily at-home psychophysical test of smell sensitivity, where olfactory stimuli are sampled and rated for perceived intensity. SARS-CoV-2 infection was tested every three days by PCR of nasopharyngeal swabs or saliva.

Screening Questionnaire for Parosmia

How often are you bothered by any of the following?	Always	Often	Rarely	Never
1. Food tastes different than it should because of a problem with odors.	1	2	3	4
2. I always have a bad smell in my nose, even if no odor source is present.	1	2	3	4
3. Odors that are pleasant to others are unpleasant to me.	1	2	3	4
4. The biggest problem is not that I do not or only weakly perceive odors, but that they smell different than they should.	1	2	3	4

Adapted from Landis BN, Frasnelli J, Croy I, Hummel T. Evaluating the clinical usefulness of structured questions in parosmia assessment. *Laryngoscope*. 2010;120(8):1708.

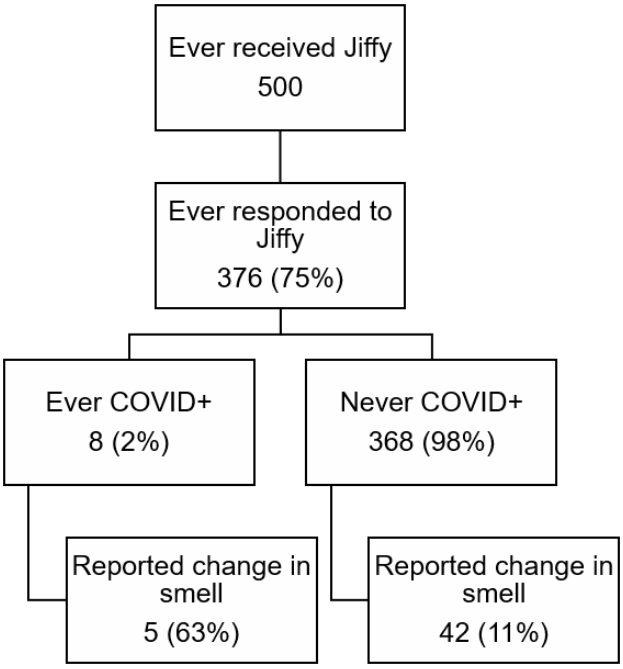
The "Jiffy" Survey and Test

Initial questions	Answer options	
How would you rate your ability to smell	Poor, average, good, very good	
Have you noticed a reduction in your sense of smell in the past week?	None, slight, moderate, severe	
Please indicate how much reduction (if any) you believe you have experienced in the past week	Sliding 0-10 scale from "no reduction at all" to "extreme reduction"	
Smell test instructions	**Smell test questions**	**Smell test answer options**
Please find a jar of peanut butter (or other nut butter). If you have any nut allergies, please use jam or jelly.	What do you have?	Peanut butter, other nut butter, jelly, jam, other
Open it and bring it to about 1 inch from your nose. Please sniff.	Do you smell it?	Yes/No
	How strong does it smell?	0-10 scale from "no sensation" to "strongest sensation imaginable"
	Does it smell different from normal?	Yes/No
	Please indicate how different it is	0-10 scale from "no different" to "completely different"
Please find a jar of vinegar (white vinegar is best) or a muscle balm (e.g., Tiger balm or Bengay).	What do you have?	Vinegar, Tiger balm, Bengay, nail polish remover, rubbing alcohol, other
Open it and bring it to about 1 inch from your nose. Please sniff.	Do you feel a sensation of irritation (e.g., burning, stinging, harshness) in your nose or throat?	Yes/No
	How strong was the sensation?	0-10 scale from "no irritation" to "strongest irritation imaginable"
	Does it smell different from normal?	Yes/No
	Please indicate how different it is	0-10 scale from "no different" to "completely different"

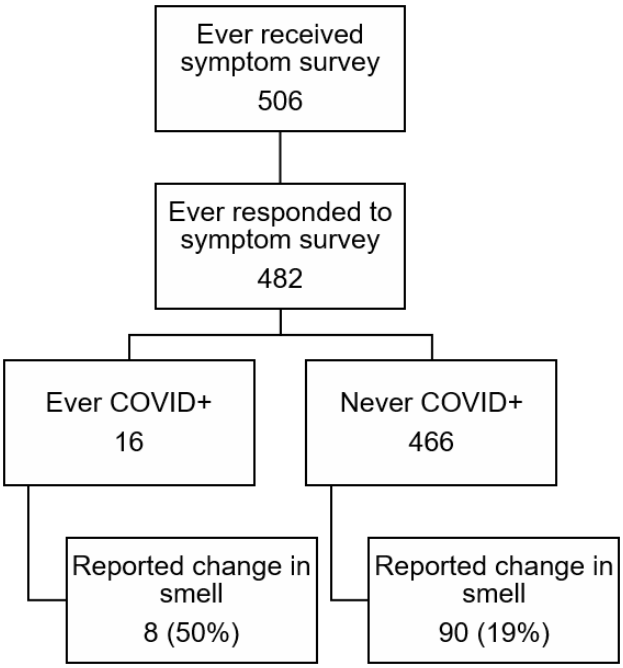
Results: Of the first 500 enrolled HCW, 376 HCW (75%) completed the Jiffy 4528 times (mean 12 times/HCW). 17/500 HCW (3.4%) had a COVID+ test, of which 9/17 (53%) reported smell loss through the Jiffy or the daily symptom survey. 6/9 (67%) reported smell loss that preceded or was concurrent with a COVID+ test. 8/17 COVID+ HCW completed the Jiffy, with 5/8 (63%) reporting reductions in smell versus 42/368 (11%) COVID- HCW (OR=13, 95% CI: 2.4–85, p=.001). COVID+ HCW rated their greatest reduction in smell sensitivity as slight (40%) and severe

(60%), versus slight (88%) and moderate (12%) in COVID- HCW. 16/17 COVID+ HCW completed a daily symptom survey (mean 14 times/HCW), with 8/16 (50%) ever reporting parosmia versus 90/466 (19%) of COVID- HCW (OR=4.2, 95% CI: 1.3–13, *p*=.007). Overall, parosmia was the first reported symptom in 3/13 (23%) COVID+ HCW who reported symptoms.

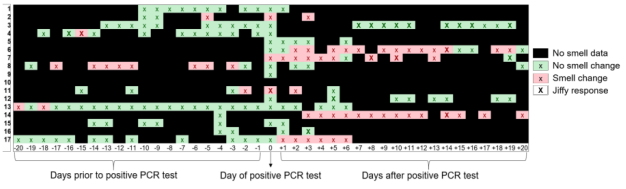
Smell Changes in COVID+ and COVID- HCW Reported in the "Jiffy" Test



Smell Changes in COVID+ and COVID- HCW Reported in Daily Symptom Questionnaire



Smell Changes among COVID+ HCW by Day, Relative to Day of Positive PCR Test



Conclusion: We conducted a prospective study of smell testing in a population at high risk for COVID-19 using two parallel approaches. Our results demonstrate the feasibility of at-home smell testing for assessing parosmia during COVID-19, in some cases even prior to a positive PCR result. Given the urgent need for widespread, low-cost, non-invasive testing for COVID-19, we are now developing an easy-to-use app to distribute this survey more widely to high-risk populations.

Disclosures: **Julian J. Weiss, BA**, Nothing to disclose

457. Low Rates of COVID-19 in a Vulnerable Population: Learning from Early and Decisive Public Health Policies

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St. Paul's Hospital COVID-19 Research Group

Session: P-14. COVID-19 Epidemiology and Screening

Background: Disasters, including pandemics, disproportionately affect vulnerable populations. The Downtown Eastside (DTES) neighborhood of Vancouver has high prevalence of mental illness, substance use, infectious disease and homelessness. While studies have described clinical characteristics of COVID-19 patients in other centres worldwide, data is lacking on marginalized groups. We describe the clinical characteristics and outcomes of COVID-19 patients seen at two urban hospitals who care for the vulnerable population in the DTES of Vancouver, British Columbia (BC), Canada.

Methods: A retrospective chart review was conducted on all COVID-19 patients ≥19 years seen at either centre from January 1 to June 10, 2020. Descriptive statistics assessed demographics, comorbidities, presenting symptoms, laboratory values and outcomes, and were compared between subjects managed as inpatients (died vs. discharged) and outpatients.

Results: Of 71 COVID-19 subjects, mean age was 57y (SD 20); 36 (51%) were male. Time to presentation, symptoms and laboratory values were similar to other reports. 58 (82%) presented from the community, 3 (4%) from long-term care/rehabilitation centres, and 8 (11%) had no fixed address (NFA) or lived in the DTES. 45 (64%) had a known exposure, 20 (28%) were healthcare workers, 85% involved in direct patient care; 0/20 were admitted to hospital. Of the 8 NFA/DTES subjects, mean age was 46y (SD 13), 50% were male, 5 (63%) were admitted to hospital and all survived.

Admitted subjects (n=34) were older (mean age 69 vs 46y, p< 0.001), 62% were male, and had more comorbidities (mean [SD] 3 [3] vs. 1 [2], p< 0.001). Eight (24%) died, 26 (76%) were discharged, 29% developed acute respiratory distress syndrome, 21% secondary infection, 18% renal failure, and 15% cardiac dysfunction. Of patients admitted to intensive care, 5/10 died.

Conclusion: Our results concur with other studies showing older age and comorbidities contribute to more severe COVID-19 disease. 64% of subjects had a known exposure, and only 11% had NFA/DTES residence. Given that there is no financial barrier to access healthcare in Canada and these hospitals serve our most vulnerable populations, our results may indicate that BC Public Health has done an effective job of tracking and limiting community spread of COVID-19.

Disclosures: **All Authors**: No reported disclosures

458. Molecular SARS-CoV-2 Testing During the COVID-19 Outbreak: Experiences of a Hospital in Southeast Michigan, USA

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Session: P-14. COVID-19 Epidemiology and Screening

Background: The novel Coronavirus SARS CoV-2 (COVID-19) outbreak was complicated by the lack of diagnostic testing kits. In early March 2020, leadership at Beaumont Hospital, Royal Oak Michigan (Beaumont) identified the need to develop high capacity testing modalities with appropriate sensitivity and specificity and rapid turnaround time. We describe the molecular diagnostic testing experience since initial rollout on March 16, 2020 at Beaumont, and results of repeat testing during the peak of the COVID-19 pandemic in MI.

Methods: Beaumont is an 1100 bed hospital in Southeast MI. In March, testing was initially performed with the EUA Luminex NxTAG CoV Extended Panel until March 28, 2020 when testing was converted to the EUA Cepheid Xpert Xpress SARS-CoV-2 for quicker turnaround times. Each assay was validated with a combination of patient samples and contrived specimens.

Results: During the initial week of testing there was > 20 % specimen positivity. As the prevalence grew the positivity rate reached 68% by the end of March (Figure 1). Many state and hospital initiatives were implemented during the outbreak, including social distancing and screening of asymptomatic patients to increase case-finding and prevent transmission. We also adopted a process for clinical review of symptomatic patients who initially tested negative for SARS-CoV-2 by a group of infectious disease physicians (Figure 2). This process was expanded to include other trained clinicians