Conclusion: While most NHs had a plan to respond to COVID-19 pandemic in March 2020, many facilities experienced a lack of available resources, less than ideal communication lines with local hospitals, lack of testing capacity and insufficient staff. These shortcomings indicate potential high-yield areas of improvement in pandemic preparedness in the NH setting.

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67. SARS-CoV-2 Transmission: Preliminary Findings from a Household-based Study

Carlos G. Grijalva, MD, MPH[1]; Yuwei Zhu, MS, MD[2]; Natasha B. Halasa, MD, MPH[1]; Ahra Kim, MS[3]; Melissa A. Rolfes, PhD, MPH[4]; Andrea Steffens, MPH[5]; Carrie Reed, DSc, MPH[5]; Helen Talbot, MD, MPH[6]; [1]Vanderbilt University Medical Center, Nashville, Tennessee; [2]Vanderbilt University, Nashville, Tennessee; [3]VUMC, Nashville, Tennessee; [4]Centers for Disease Control and Prevention, Atlanta, Georgia; [5]CDC, Atlanta, Georgia; [6]Vanderbuilt University, Nashville, Tennessee

Session: O-13. COVID-19 Epidemiology + Prevention

Background: Social distancing measures, such as shelter-in-place or stay-at-home orders, are recommended for control of community transmission of SARS-CoV-2. Few studies, however, have characterized the transmission of SARS-CoV-2 infections in households.

Methods: We conducted a case-ascertained study of household transmission in Nashville, TN starting in April 2020, after recommendations to stay at home were enacted. Index cases were ambulatory patients identified through clinical RT-PCR testing at Vanderbilt walk-in-clinics dispersed across the Nashville metropolitan area. For this study, the index case was the first person presenting with respiratory or compatible symptoms in a household and who lived with at least one other household member. After informed consent was obtained, household members were remotely trained in the self-collection of nasal swabs and use of REDCap electronic questionnaires. Household members completed daily symptom diaries and collected daily nasal swabs for 14 days. Contact patterns within households before and after disease onset were ascertained. Nasal swab samples were tested using RT-PCR at an academic research laboratory.

Results: At the time of writing, 18 families were enrolled (including 18 index cases and 34 household members) with at least 1 follow-up nasal swab tested. The median age of index cases and household members was 37 years (IQR: 26–46) and 27 years (15–39), respectively. The median number of days from index patient onset of symptoms to first sample collected in the household was 4 (2–5). Before onset of symptoms, 83% of index cases spent >4 hours in the same room with at least one other household member, whereas after disease onset and diagnosis, 44% did. Among 34 non-index household members, 18 (53%) had a positive test during follow-up; the median number of days from index case's symptoms onset to first positive detection in a household member was 4.5 (3–5) days. Interestingly, 13 (72%) of 18 secondary infections were detected within the first 3 days of follow-up, whereas 5 (28%) were detected during subsequent days.

Conclusion: These observations suggest that transmission of SARS-CoV-2 within households is high, with many infections detected during the initial days of study follow-up.

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68. Active Monitoring of a Healthcare Worker Cohort During the COVID-19 Epidemic

Rupak Datta, MD[1]; Melissa Campbell, MD[2]; Anne Wyllie, PhD[2]; Arnau Casanovas-Massana, MSc, PhD[2]; Ryan Handoko, MD[2]; Lorenzo Sewanan, BS[2]; Nida Naushad, BS[2]; Michael Simonov, MD[2]; Elizabeth White, BS[2]; Jordan Valdez, BS[2]; Feimei Liu, BS[2]; Saad Omer, MBBS, MPH, PHD[3]; Charles Dela Cruz, MD, PhD[2]; Shelli F. Farhadian, MD, PhD[2]; Aaron Ring, MD, PhD[2]; Akiko Iwasaki, PhD[2]; Nathan Grubaugh, PhD[2]; Richard A. Martinello, MD[2]; Albert I. Ko, MD[4]; [1]Yale School of Medicine - Yale New Haven Hospital, 20 York Street, Connecticut; [2]Yale School of Medicine, New Haven, Connecticut; [3]Yale Institute for Global Health [4]Yale School of Public Health, New Haven, Connecticut

Yale IMPACT Research Team

Session: O-13. COVID-19 Epidemiology + Prevention

Background: Initial CDC recommendations for passive monitoring of COVID-19 related symptoms among staff may not be sufficient in preventing the introduction and transmission of SARS-CoV-2 in healthcare settings. We therefore implemented active monitoring for SARS-CoV-2 infection in healthcare workers (HCWs) at an academic medical center during the COVID-19 epidemic in northeast US.

Methods: We recruited a cohort of HCWs at Yale New Haven Hospital who worked in COVID-19 units and did not have COVID-19 related symptoms between March 28 and June 1, 2020. During follow-up, participants provided daily information on symptoms by responding to a web-based questionnaire, self-administered nasopharyngeal (NP) and saliva specimens every 3 days, and blood specimens every 14 days. We performed SARS-CoV-2 RT-PCR and an anti-spike protein IgM and IgG ELISA to identify virological and serological-confirmed infection, respectively.

Results: We enrolled 525 (13%) amongst 4,136 HCW of whom daily information on symptoms and NP, saliva, and blood specimens were obtained for 66% (of 13208), 42% (or 1977), 44% (of 2071) and 65% (of 1099), respectively, of the follow-up measurement points. We identified 16 (3.0% of 525) HCWs with PCR-confirmed SARS-CoV-2 infection and an additional 12 (2.3% of 525) who were not tested by PCR or had negative PCR results but had serological evidence of infection. The overall cumulative incidence of SARS-CoV-2 infection was 5.3% (28 of 525) amongst HCWs. Cases were not identified by hospital protocols for passive staff self-monitoring for symptoms. Amongst 16 PCR-confirmed cases, 9 (56%) of the 16 PCR-confirmed HCW had symptoms during or after the date of initial detection. We did not identify an epidemiological link between the 28 confirmed cases.

Conclusion: We found that a significant proportion (5.3%) of HCWs were infected with SARS-CoV-2 during the COVID-19 epidemic. In the setting of universal PPE use, infections were possibly acquired in the community rather than stemming from patient-HCW or HCW-HCW transmission. Passive monitoring of symptoms is inadequate in preventing introductions of SARS-CoV-2 into the healthcare setting due to asymptomatic and oligosymptomatic presentations.

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69. Effective Contact Tracing Strategies for COVID-19: A Municipal Health Department's Model

Paul Persaud, MD MPH[1]; Jin S. Suh, MD[2]; Kate Bond, RN[3]; Alicia Espinal-Mesa, n/a[1]; Bennett Suh, n/a[4]; [1]Paterson Department of Health, Paterson, New Jersey [2]St. Joseph's University Medical Center, Ridgewood, New Jersey [3]PAterson, Paterson, New Jersey [4]Ridgewood High School, Ridgewood, New Jersey

Session: O-13. COVID-19 Epidemiology + Prevention

Background: During the COVID-19 pandemic, contact tracing program as part of a larger epidemiological case investigation was effectively implemented by the local department of health in Paterson, NJ. The Paterson Communicable Disease Strike Team (PCDST) was established by leveraging skills and using existing public health staff of the health department team which led to a timely and robust public health intervention.

Methods: PCDST comprised of 25 communicable disease investigators/contact tracers established in preparation for public health response in the event of large-scale communicable disease outbreaks pre-COVID. In March 2020 with initial COVID-19 cases in Paterson, PCDST was activated utilizing NJ DOH's Communicable Disease Reporting and Surveillance System (CDRSS). Additional staff members were cross-trained to augment team as new cases surged. A triage coordinator would identify and assign new cases to disease investigators at a 24/7 schedule. Disease Investigators would provide test results, perform epidemiological case interviews, elicit close contacts, and provide isolation/quarantine recommendations. Case-contact monitors followed up daily basis until completion of isolation/quarantine period.

Results: As of June 15, 2020, 6537 cases tested COVID-19 (+) in Paterson, NJ. 91% of cases and their contacts were interviewed. Peak occurred in mid-April with 263 cases on a single day. By mid-June, daily number of cases declined to 7/day. Reported COVID-19 mortality rate in Paterson (4.65%), compared to surrounding towns in the same county of Passaic (6%), other large cities in New Jersey (Newark 8%, Jersey City 7.4%) and New Jersey state (7.59%).

Conclusion: Despite limited resources, we were able to cross train and engage our frontline public health team (PCDST) to investigate and effectively contact trace new COVID-19 cases to help contain spread of infection. Although its unclear if our intervention impacted mortality rates, it is certain that contact tracing using a trained public health workforce is a model that has proven successful in Paterson. A local public health workforce vested in their communities can develop rapport needed to build trust and confidence in an intervention that elicits confidential medical information to limit viral transmission.

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

70. Lack of SARS-CoV-2 Antibody Seroconversion After Prompt Identification and Cohorting of Sentinel sars-cov-2-positive Residents in a Skilled Nursing Facility

Debika Bhattacharya, MD MSc[1]; Alexander Winnett, BS[2]; Jennifer A. Fulcher, MD, PhD[1]; Linda Sohn, MD, MPH[3]; Feliza Calub, NP[4]; Ian Lee-Chang, BS[5]; William A. Schwartzman, MD[1]; David O. Beenhouwer, MD[1]; John Vallone, MD[6]; Christopher J. Graber, MD, MPH[7]; Matthew B. Goetz, MD[8]; [1]David Geffen School of Medicine, University of California, Los Angeles; Division of Infectious Diseases, Veterans Affairs Greater Los Angeles Healthcare System, Los Angeles, California, Los Angeles, California; [2]University of California Los Angeles - California Institute of Technology, Los Angeles, California; [3]David Geffen School of Medicine, University of California, Los Angeles; Division of Geriatrics and Extended Care, Veterans Affairs Greater Los Angeles Healthcare System, Los Angeles, California, Los Angeles, California; [4]VA Greater Los Angeles Healthcare System, Los Angeles, California; [5]Division of Infectious Diseases, Veterans Affairs Greater Los Angeles Healthcare System, Los Angeles, California, Los Angeles, California; [6]Veterans Affairs Greater Los Angeles Healthcare System, Los Angeles, California, Los Angeles, California; [7]VA Greater Los Angeles Healthcare System/UCLA, Los Angeles, California; [8]VA Greater Los Angeles Healthcare System and David Geffen School of Medicine at UCLA, VA-CDC Practice-Based Research Network, Los Angeles, California

Session: O-13. COVID-19 Epidemiology + Prevention

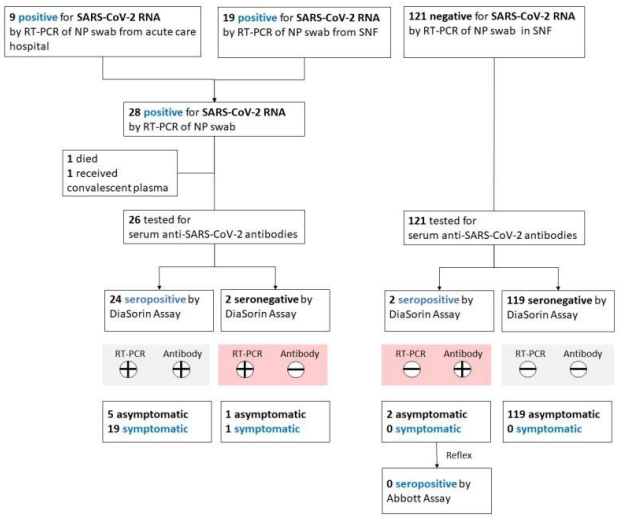
Background: Despite numerous outbreaks, antibody responses to SARS-CoV-2 in residents of skilled nursing facilities (SNF) are not well described. We reviewed

serological test results in a cohort of SNF residents who had been repetitively screened for SARS-CoV-2 infection by nasopharyngeal swab PCR.

Methods: In late March 2019, we identified symptomatic SARS-CoV-2 PCR positive residents at a SNF. In response, all remaining SNF patients were serially screened, and all SARS-CoV-2 PCR positive patients were transferred to the acute care hospital or cohorted in a separate COVID Recovery Unit (CRU) in the SNF. In early June, all SNF residents (SARS-CoV-2 PCR positive and negative) underwent serologic testing for SARS-CoV-2 Spike (S1/S2) IgG (DiaSorin). DiaSorin IgG-positive results for patients that were SARS-CoV-2 PCR-negative were reflexed to nucleocapsid IgG (Abbott). Antibody testing occurred a median of 69 days (63–70 IQR) after PCR positivity.

Results: Nineteen SARS-CoV-2 PCR positive residents were identified from the outbreak and an additional 9 were transferred from the acute care hospital to the CRU; 1 died and 1 received convalescent plasma leaving 26 SARS-CoV-2 PCR positive residents, including 6 who were asymptomatic, that were eligible for serologic testing. Twenty-four of the 26 were positive for IgG by the DiaSorin assay; one seronegative resident was one of the asymptomatic residents. There were an additional 121 residents in the SNF whose SARS-CoV-2 PCR was negative at least once. Among these 121 SNF residents with negative SARS-CoV-2 RT-PCR, all but two were seronegative by the Diasorin assay. The two seropositive residents had no nucleocapsid antibodies when reflex tested by the Abbott assay.

Figure 1. Cohort Diagram



Conclusion: In a limited sample of SNF residents with SARS-CoV-2 PCR positivity, the sensitivity of the Diasorin assay was 92% (24/26) and the specificity was 98% (119/121). None of the residents with negative SARS-CoV-2 PCR had *confirmed* positive antibody results using reflex testing (DiaSorin/Abbott). Despite high risk exposure in congregate living facilities, we found no evidence of additional SARS-CoV-2 exposure, reinforcing the importance of serial surveillance SARS-CoV-2 testing and early cohorting in SNF settings.

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71. Use of Intravenous Immunoglobulin Therapy Reduces Progression to Mechanical Ventilation in COVID-19 Patients with Moderate to Severe Hypoxia

George Sakoulas, MD[1]; Matthew Geriak, PharmD[2]; Ravina Kullar, PharmD[3]; Kris Greenwood, PhD[3]; Mackenzie Habib, n/a[3]; Anuja Vyas, MD[3]; Mitra Ghafourian, MD[3]; Venkata Naga Kiran Dintyala, MD[3]; Fadi Haddad, MD[2]; [1]University of California San Diego, San Diego, California; [2]Sharp Hospital, San Diego, California; [3]Sharp Healthcare, San Diego, California

Session: O-14. COVID-19 Therapies

Background: The majority of COVID-19 morbidity and mortality occurs in patients who progress to mechanical ventilation. Therefore, therapeutic interventions targeting the mitigation of this complication would markedly improve outcomes and reduce healthcare utilization.

Methods: Patients with COVID-19 from two hospitals in San Diego, California were randomized at a 1:1 ratio to receive standard of care (SOC) plus intravenous immunoglobulin (IVIG) at 0.5 g/kg/day x 3 days with solumedrol 40 mg 30 minutes before infusion (IVIG group) versus SOC alone. The primary composite endpoint was receipt of mechanical ventilation or death before receiving ventilation. Patients were followed until discharge to home or up to 30 days from time of enrollment.

Results: Sixteen patients received IVIG plus SOC and 17 SOC alone. The median age was 54 years for SOC and 57 years for IVIG. Median time from hospital admission to study enrollment was 1 day (range 0–4) for SOC and 2 days (range 0–8) for IVIG. APACHE II scores and Charlson comorbidity indices were similar for IVIG and SOC (median 8 vs 7 and 2 for both, respectively). Seven SOC patients achieved the composite endpoint (6 ventilated, 1 death) versus 2 IVIG patients (2 ventilated), p=0.12, Fisher exact test. Among the subgroup with an estimated A-a gradient of >200 mm Hg at time of enrollment, the IVIG group showed a lower rate of progression to the composite endpoint (2/14 vs 7/12, p=0.04 Fisher exact test), shorter median hospital length (11 vs 24 days, p=0.001 Mann Whitney U), and shorter median intensive care unit (ICU) stay (3 vs 13 days, p=0.005 Mann Whitey U).

Conclusion: This small, prospective, randomized, open-label study showed that when administered to hypoxic non-ventilated COVID-19 patients with an A-a gradient of >200 mm Hg (corresponding to a requirement of 6 liters O_2 via nasal cannula to achieve an SpO_2 of 92%), IVIG significantly decreased the rates of progression to mechanical ventilation, ICU length of stay, and total hospital length of stay. A Phase 3 prospective, randomized, placebo-controlled, multicenter trial is underway to further validate these findings.

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72. Remdesivir vs Standard Care in Patients with Moderate covid-19

Francisco M. Marty, MD[1]; Prashant Malhotra, MD[2]; Robert L. Gottlieb, MD[3]; Karen T. Tashima, MD[4]; Massimo Galli, MD[5]; Louis Yi Ann Chai, MD[6]; Devi SenGupta, MD[7]; Robert H. Hyland, MD[7]; Hongyuan Wang, PhD[7]; Lijie Zhong, PhD[8]; Huyen Cao, MD[7]; Anand Chokkalingam, PhD[9]; Anu Osinusi, MD[9]; Diana M. Brainard, MD[7]; Michael Brown, MD[10]; Ane Josune Goikoetxea, MD[11]; Mamta Jain, MD[12]; David Shu Cheong Hui, MD[13]; Enos Bernasconi, MD[14]; Christoph Spinner, MD[15]; [1]Brigham and Women's Hospital, Boston, Massachusetts; [2]Multicare Tacoma General Hospital, Tacoma, Washington; [3]Baylor University Medical Center, Dallas, Texas; [4]The Miriam Hospital, Providence, Rhode Island [5]Dipartimento di Malattie Infettive, Malattie Infettive I- Malattie Infettive III, ASST Fatebenfratelli Sacco Ospedale Luigi Sacco, Milano, Lombardia, Italy; [6]National University Hospital, National University Health System, Singapore, Not Applicable, Singapore; [7]Gilead Sciences Inc., Foster City, California; [8]Gilead Sciences, Foster City, California; [9]Gilead, foster City, California; [10]University College Hospital, London, England, United Kingdom [11]Hospital Universitario de Cruces, Bizkaia, Pais Vasco, Spain; [12]UT Southwestern, Dallas, Texas; [13]Chinese University of Hong Kong, Hong Kong, Not Applicable, Hong Kong; [14]Servizio Malattie infettive, Ente Ospedaliero Cantonale, Ospedale, Ticino, Luzern, Switzerland; [15]Department of Medicine II, University Hospital rechts der Isar, Technical University of Munich, Munich, Germany, Munich, Bayern, Germany

Session: O-14. COVID-19 Therapies

Background: Remdesivir (RDV) shortens time to recovery time in patients with severe COVID-19. Its effect in patients with moderate COVID-19 remains unclear.

Methods: We conducted an open-label, phase 3 trial (NCT04252664) involving hospitalized patients with confirmed SARS-CoV-2 infection, evidence of pulmonary infiltrates, and oxygen saturation >94% on room air. Patients were randomly assigned 1:1:1 to receive up to 5d or 10d of RDV with standard of care (SoC), or SoC alone; patients could be discharged prior to completing per-protocol assigned treatment duration. RDV was dosed intravenously at 200 mg on d1, 100 mg daily thereafter. Patients were evaluated daily while hospitalized, and via telephone if discharged. The primary endpoint was clinical status on d11 assessed on a 7-point ordinal scale. Results regarding the primary endpoint are expected to be published before IDWeek 2020; we plan to present d28 results at the meeting.

Results: In total, 584 patients underwent randomization and started their assigned treatment (191, 5d RDV; 193, 10d RDV; 200, SoC). By d11, ^{3} 2 point improvement on the ordinal scale occurred in 70% of patients in the 5d arm, 65% in the 10d arm, and 61% in the SoC arm. Patients in the 5d RDV arm were significantly more likely to have an improvement in clinical status than those receiving SoC (odds ratio [OR], 1.65; 95% confidence interval [CI], 1.09–2.48; P=0.017); OR of improvement for the 10d RDV arm compared to SoC was 1.31 (95% CI, 0.88–1.95]; p=0.183). This improvement in the 5-day arm over the SOC arm was noted from d6 through d11. We observed a peak of discharges corresponding with the assigned treatment duration of RDV, with increased discharges at d6 in the 5-day arm and at d11 in the 10-day arm. A worsening of clinical status of $\geq$ 1 point in the ordinal scale was observed more commonly in the SoC am (n=19, 10%) versus the 5d RDV (n=7, 4%) and 10d RDV (n=9, 5%).

Conclusion: RDV for up to 5 days was superior to SoC in improving the clinical status of patients with moderate COVID-19 by d11. We will report d28 outcomes at the meeting.

Disclosures: **Francisco M. Marty, MD**, **Allovir** (Consultant)**Amplyx** (Consultant)**Ansun** (Scientific Research Study Investigator)**Avir** (Consultant)**Cidara** (Scientific Research Study Investigator)**F2G** (Consultant, Scientific Research Study Investigator)**Kyorin** (Consultant)**Merck** (Consultant, Grant/Research Support, Scientific Research Study Investigator)**New England Journal of Medicine** (Other Financial or Material Support, Honorarium for Video)**Regeneron** (Consultant, Scientific Research Study Investigator)**ReViral** (Consultant)**Scynexis** (Scientific Research Study Investigator)**Symbio** (Consultant)**Takeda** (Scientific Research Study Investigator)**United Medical** (Consultant)**WHISCON** (Scientific Research Study Investigator) **Prashant Malhotra, MD**, **Gilead Sciences Inc.** (Scientific Research Study Investigator) **Robert L. Gottlieb, MD**, **Gilead Sciences Inc.** (Scientific Research Study Investigator) **Karen T. Tashima, MD**, **Bristol-Myers Squibb** (Research Grant or Support)**Gilead Sciences Inc.** (Grant/Research Support, Scientific Research Study Investigator)**GlaxoSmithKline** (Research Grant or Support)**Merck** (Research Grant or Support)**Tibotec** (Research Grant or Support)**Viiv Healthcare** (Research Grant or Support) **Massimo Galli, MD**, **Gilead Sciences Inc.** (Grant/Research Support, Scientific Research Study Investigator, Advisor or Review Panel member, Other Financial or Material Support, Personal fees) **Louis Yi Ann Chai, MD**, **Gilead Sciences Inc.** (Scientific Research Study Investigator) **Devi SenGupta, MD**, **Gilead Sciences Inc.** (Employee, Shareholder) **Robert H. Hyland, MD**, **Gilead Sciences Inc.** (Employee, Shareholder) **Hongyuan Wang, PhD**, **Gilead Sciences Inc.** (Employee, Shareholder) **Lijie Zhong, PhD**, **Gilead Sciences Inc.** (Employee, Shareholder) **Huyen Cao, MD**, **Gilead Sciences Inc.** (Employee, Shareholder) **Anand**