Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

travel and time, making care more convenient and possibly increasing the number of encounters. There are confounding factors such as social distancing, masking, and the approval of elexacaftor/tezacaftor/ivacaftor in late 2019 for 37% of our patients that may have affected results. However, we have shown that video visits during a pandemic are a viable, cost-effective, safe method of delivering CF care. Further analysis in years to come will help determine if video visits are effective outside of pandemic conditions.

346

Tennessee cystic fibrosis clinical care during the COVID-19 pandemic

F. Cacho[1], S. Srinivasan[2], R. Schoumacher[2], R. Hamilton[3], J. Ledbetter[4], M. Moser[4], J. Callison[5], R. Mathes[6], D. Quintero[7], A. Metcalf[8], S. Eastman[9], J. Tolle[9], S. Rushing[10], R. Brown[11]. *[1]Pediatrics, Vanderbilt University Medical Center, Nashville, USA; [2]Pediatrics, College of Medicine, University of Tennessee, Memphis, USA; [3]Pediatric Pulmonology, Le Bonheur Children's, Memphis, USA; [4]Pediatric Pulmonology, T.C. Thompson Children's Hospital, Chattanooga, USA; [5]Medicine, University of Tennessee Medical Center, Knoxville, USA; [6]Adult CF Center, University of Tennessee Medical Center, Knoxville, USA; [7]Pediatric Pulmonology, East Tennessee Children's Hospital, Knoxville, USA; [8]Cystic Fibrosis Center, East Tennessee Children's Hospital, Knoxville, USA; [9]Medicine, Vanderbilt University Medical Center, Nashville, USA; [10]Pediatric Pulmonology, Vanderbilt University Medical Center, Nashville, USA; [11]Pediatric Pulmonology, Monroe Carell Junior Children's Hospital at Vanderbilt, Nashville, USA*

Background: Cystic fibrosis (CF) programs in Tennessee serve a wide geographical area, with patients from urban and rural communities and a wide range of socioeconomic backgrounds. We sought to explore the influence of insurance coverage, driving distance to clinic, and socio-economic status on delivery of clinical care provided via telemedicine and in-person care for the Tennessee CF programs during the COVID pandemic.
Methods: Data regarding clinical care provided from April 1, 2020, through September 30, 2020, were collected from 6 of the 7 Tennessee CF programs (2 adult, 3 pediatric, 1 affiliate), including location of clinical care (telehealth with full audiovisual, telephone only, in person), driving distance to CF clinic, and insurance type.
Results: A total of 1660 encounters were completed from April 1 through September 30, 2020 (790 telehealth, 32 telephone, 838 in person) for 1120 patients (435 adult, 583 pediatric, 102 affiliate; Table 1). There was an equal distribution of telehealth and in-person visits. More pediatric than adult patients had Medicaid coverage (50% vs 22%), and fewer had private insurance (37% vs 59%). The percentage of people with Medicaid or Medicare coverage was similar for telehealth and in-person appointments (40.1% vs 44.7%, respectively); 61.5% of people served through telephone-only encounters had Medicaid or Medicare.

	Telehealth (video/audio)	Telephone	In-person	Total
Individual Patients n(%)	549 (49%)	27 (2.5%)	544 (48.5%)	1120
Distance to clinic (mi)				
Range	1.6 - 794	8 - 481.3	0 - 717.5	0 - 794
Median	46.3	63.2	42.8	44.6
Insurance (n/%)				
Medicaid	203 (37%)	13 (50%)	224 (41%)	440 (39%)
Medicare	17 (3.1%)	3 (11.5%)	20 (3.7%)	40 (3.6%)
Private	271 (49.4%)	7 (26.9%)	237 (43.6%)	515 (45.9%)
Military	17 (3.1%)	0 (0)	25 (4.6%)	42 (3.8%)
Uninsured	0	0	3 (0.6%)	3 (0.3%)
Other	41 (7.5%)	3 (11%)	35 (6.4%)	79 (7%)

Table 1. Characteristics of people receiving clinical care in Tennessee CF programs

Conclusion: In the first 6 months of the pandemic in Tennessee, no differences were noted in insurance coverage or driving distance to clinic for CF patients seen via telehealth or in person. Additional comprehensive data from April 1, 2020, through March 31, 2021, evaluating trends in clinical care in Tennessee throughout the pandemic will be available at the time of NACFC poster presentation. Data will include socioeconomic and program- and patient-level analyses of clinical care, as well as an analysis of barriers to delivering timely clinical care across Tennessee.
Acknowledgements: Tennessee CF Consortium.

AIRWAYS PHYSIOLOGY, PATHOPHYSIOLOGY & AIRWAYS DEFENSE

347

Pseudomonas aeruginosa bacteriophages used therapeutically in cystic fibrosis interact differently with various types of mammalian cells

P. Zamora[1], C. Armbruster[1], B. Chan[2], J. Koff[3], P. Turner[2], J. Bomberger[1]. *[1]Microbiology and Molecular Genetics, University of Pittsburgh, Pittsburgh, USA; [2]Ecology and Evolutionary Biology, Yale University, New Haven, USA; [3]Medicine, Yale University, New Haven, USA*

Background: Bacteriophage (phage) therapy is being experimentally evaluated for the treatment of chronic bacterial infections in cystic fibrosis (CF) and other disorders. Although phages are only able to infect and replicate in their bacterial host, phages are given therapeutically at doses that are in the order of hundreds to thousands of millions of viruses per dose. Often, doses are given multiple times over the course of treatment, and because of their mechanism of action, phages multiply during bacterial killing. As a result, large numbers of phage particles are present at the delivery sites and can interact closely with mammalian mucosal surfaces. Studying phage interactions with human cells is important to better understand the full spectrum of impacts of phage therapy on people.
Methods: Using a panel of phages currently under investigation in clinical trials for the treatment of chronic *Pseudomonas aeruginosa* infections in CF, we analyzed the kinetics of their interaction with human bronchial epithelial cells and macrophages. To examine differences between our panel of phages, we sequenced phage genomes and annotated core and accessory genes to identify candidate factors that may drive differences in phage–mammalian host interactions.
Results: Our results indicate that phages are cleared faster from macrophages than epithelial cells. Additionally, some phages appear less likely to be endocytosed by the epithelium and remain adhered extracellularly to the plasma membrane. The difference in phage endocytosis does not correlate directly with phage size, suggesting that additional phage structural factors modulate interactions with mammalian cells. Current studies are examining how specific phage genes promote interactions with mammalian cells, as well as consequences of these interactions for cellular immune responses.
Conclusion: Our work indicates that phages used therapeutically display unique interactions with mammalian cells. This research is fundamental to improve phage therapy efficacy and safety before it becomes the standard of care in CF.

348

Pseudomonas aeruginosa infection modulates primary granule exocytosis

D. Laucirica[1], C. Schofield[1], S. McLean[2], C. Margaroli[3], P. Agudelo-Romero[2], S. Stick[2], R. Tirouvanziam[4], A. Kicic[1], L. Garratt[1]. *[1]Wal-yan Respiratory Research Centre, Telethon Kids Institute, University of Western Australia, Nedlands, WA, Australia; [2]Wal-yan Respiratory Research Centre, Telethon Kids Institute, Nedlands, WA, Australia; [3]Department of Medicine, University of Alabama at Birmingham, Birmingham, USA; [4]Department of Pediatrics, School of Medicine, Emory University, and Children's Healthcare of Atlanta, Atlanta, USA*

Background: Airway neutrophils in cystic fibrosis (CF) are reprogrammed to a pathological phenotype associated with proteolytic lung damage, featuring a decrease in CD16 (reduced phagocytic receptor) and an increase in CD63 (hyperexocytosis of primary granules). In early CF, this phenotype correlates significantly with lung disease progression, but the factors initiating this phenotype are poorly understood. Here we present a multicomponent system to model epithelial inflammatory responses and airway neutrophil recruitment after infection, with the hypothesis that viral–bacterial co-infections common in early CF are inducers of neutrophil reprogramming.
Methods: CF and non-CF differentiated primary airway cultures were infected individually and in combination with rhinovirus strain RVA1b and a *Pseudomonas aeruginosa* clinical isolate. After 48 hours, cultures were