Anurekha Gollapudi, MD[1], Adam J. Lamble, MD[1], Mark C. Walters[2], Lena E. Winestone[3], Paibel Aguayo-Hiraldo[4], Lourdes Baez Conde[5], Tumaini Coker[6], Hema Dave[7], Dana Dornsife[8], Amy K. Keating[9], Diana M. Merino[10], Bonnie Ramsey[11], Julie R. Park[1], Anurag K. Agrawal, MD[2]

[1]Division of Hematology and Oncology, Seattle Children's Hospital, Seattle, WA, [2]Division of Hematology and Oncology, UCSF Benioff Children's Hospital Oakland, Oakland, CA, [3]Division of Pediatric Allergy, Immunology, and Blood & Marrow Transplantation, UCSF Benioff Children's Hospital, San Francisco, CA, [4]Cancer and Blood Disease Institute, Children's Hospital Los Angeles, Los Angeles, CA, [5]University of Southern California, Keck School of Medicine, Los Angeles, CA, [6]Department of Pediatrics, Seattle Children's Research Institute, University of Washington School of Medicine, Seattle, WA, [7]Program for Cell Enhancement and Technologies for Immunotherapy, Children's National Health System, Washington DC, [8]Lazarex Foundation, Danville, CA, [9]Pediatric Blood and Marrow Transplantation, University of Colorado School of Medicine, Aurora, CO, [10]Friends of Cancer Research, Washington DC, [11]Department of Pediatrics, Seattle Children's Hospital, University of Washington School of Medicine, Seattle, WA

Title: Equitable access to CAR-T cell therapy: an analysis of patient demographic and socioeconomic factors from cellular therapy trials at a single institution

Background: Demographic factors, such as race, ethnicity, and socioeconomic status (SES), have been shown to be associated with inferior outcomes in pediatric acute lymphoblastic leukemia (ALL) patients. Low SES is an independent predictor of relapse and previous studies have shown that patients with low SES are also less likely to enroll on clinical trials. However, these studies have primarily focused on conventional chemotherapy trials, and data regarding trial participation for novel cellular therapies is lacking. Given the limited number of pediatric cellular therapy centers and associated travel-related costs, these therapies may not be equally accessible to all patients.

Objective: To describe the demographic and socioeconomic characteristics of patients accessing chimeric antigen receptor-T cell (CAR-T) trials for pediatric ALL.

Design/Method: Retrospective chart review was performed on all patients with ALL that enrolled on a CAR-T cell trial at Seattle Children's Hospital from 2012 to 2018. Demographic data (including self-reported race/ethnicity and distance traveled to receive treatment) were collected for each patient and analyzed using descriptive statistics. For patients residing within the United States, ArcGIS NSES Index software was used to assign SES score by census tract (0-100, with 50 as the national average).

Results: Our cohort included 117 patients with 77 males (65.8%). The majority (56.4%) of patients identified as non-Hispanic Whites, while a minority identified as Hispanic (18.8%), Black (4.3%), Asian (6.8%), Hawaiian/Pacific Islander (1.7%), American Indian/Alaskan Native (1.7%), and other (15.4%). Almost one-fourth (24.8%) of patients traveled from outside the United States to receive treatment. The median distance traveled to CAR-T therapy was 1118 miles (IQR: 191, 2802) and 731 miles (IQR: 81.5, 1636) for the entire cohort and domestic patients, respectively. Median SES score was 53.3 (IQR: 46.45, 65.75), with only 2.5% of patients falling in the lowest quartile (SES $\leq$25).

Conclusion: Only 2.5% of domestic patients treated at our center were in the lowest SES quartile, suggesting economic barriers to participation in CAR-T cell trials. Patients traveled long distances to

participate, likely representing a financial burden which could deter patients with lower SES from enrolling in CAR-T cell trials. We plan to collect similar data from additional institutions to assess whether these findings are consistent across regions.