Christian L. Coles, PhD[30,31]; Timothy Burgess, MD, MPH[32]; [1]Madigan Army Medical Center, Tacoma, Washington, [2]Infectious Disease Clinical Research Program, Bethesda, Maryland, [3]Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., Bethesda, Maryland, [4]Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., Tacoma, Washington; [5]Infectious Disease Clinical Research Program, Department of Preventive Medicine and Biostatistics, Uniformed Services University of the Health Sciences, Bethesda, Maryland, [6]Henry M. Jackson Foundation, Bethesda, Maryland; [7]Madigan Army Medical Center, Tacoma, Washington; [8]Immunization Health Branch, Defense Health Agency, Bethesda, Maryland; [9]Immunization Health Branch, Defense Health Agency, Falls Church, Virginia; [10]Immunization Health Branch, Defense Health Agency, San Diego, California, ; [11]Infectious Disease Clinical Research Program and the Henry M. Jackson Foundation for the Advancement of Military Medicine, Bethesda, Maryland, [12]Walter Reed National Military Medical Center, Bethesda, Maryland; [13]Walter Reed National Military Medical Center, Bethesda, Maryland; [14]Infectious Disease Clinical Research Program, Bethesda, Maryland, [15]The Henry M. Jackson Foundation, Bethesda, Maryland, [16]Naval Medical Center, Portsmouth, Virginia; [17]Brooke Army Medical Center, Fort Sam Houston, Texas; [18]Naval Medical Center - San Diego, San Diego, California, [19]Infectious Disease Clinical Research Program, Bethesda, Maryland, [20]Infectious Disease Clinical Research Program, San Diego, California, [21]Infectious Disease Clinical Research Program, Bethesda, Maryland, [22]The Henry M. Jackson Foundation, Bethesda, Maryland, [23]Brooke Army Medical Center, Fort Sam Houston, Texas, [24]Brooke Army Medical Center, San Antonio, Texas, [25]Immunization Health Branch, Defense Health Agency, Falls Church, Virginia, [26]Naval Medical Center San Diego, Infectious Disease Clinical Research Program, Bethesda, Maryland, [27]Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., Bethesda, Maryland, [28]Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., San Diego, California, [29]Naval Medical Center Portsmouth, Portsmouth, Virginia, [30]Infectious Disease Clinical Research Program, Bethesda, Maryland, [31]The Henry M. Jackson Foundation, Bethesda, Maryland, [32]Infectious Disease Clinical Research Program, Bethesda, Maryland

Session: 278. Vaccines: Influenza
Saturday, October 5, 2019: 12:15 PM

Background: Despite greater than 90% of US active duty (AD) military personnel receiving influenza vaccination annually, vaccine effectiveness (VE) among AD members has been substantially lower than in groups with less vaccine uptake. The substrate used in vaccine production may impact immunogenicity and thus VE. The PAIVED study is investigating VE of 3 different influenza vaccine formulations; a sub-study assesses immunogenicity. This analysis compares demographic characteristics and influenza-like illness (ILI) experience among main and sub-study participants for the first year of PAIVED.

Methods: During the 2018–2019 influenza season, PAIVED enrolled participants at 5 military medical centers, recruiting sub-study subjects from the main cohort excluding marine recruits. All participants were randomized (1:1:1) to receive either egg-based, cell-culture based or recombinant influenza vaccine. At enrollment, participants provided key demographic and behavioral data. Weekly surveillance for ILI symptoms was performed electronically. Sub-study volunteers underwent an additional blood draw prior to and at 21–35 days post vaccination ± an optional buccal swab.

Results: 200 (23.5%) of 852 non-recruit PAIVED participants enrolled in the immunogenicity sub-study. Similar to the main cohort, 46% of sub-study volunteers were female, 85% were physically active, and 6% smoked tobacco. Sub-study participants were younger (47 ± 16 years vs. 51 ± 17 years, $P = 0.004$) and more likely to be AD (34% vs. 22%, $P = 0.001$). Although 70% of both groups identified as White, the percent African American (20% sub-study; 13% main), Asian (3%; 7%), multi-racial (2%; 5%), and unknown (6%; 4%) differed ($P = 0.02$). More sub-study participants developed an ILI (19% vs. 12%, $P = 0.02$).

Conclusion: The convenience sampling method used for recruitment into the sub-study was effective. The younger age and higher AD status in the sub-study group may be informative for evaluation of military readiness issues. The greater incidence of ILI in the sub-study increases the chance differences in immune response by vaccine type may be interpretable in the context of circulating influenza strains. Targeted efforts to enhance recruitment of a racially diverse sub-study cohort may be warranted.

Disclaimer
This study IDCRP-120 was conducted by the Infectious Disease Clinical Research Program (IDCRP), a Department of Defense (DoD) program executed by the Uniformed Services University of the Health Sciences (USUHS) through a cooperative agreement with The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. (HJF). This project has been funded in whole, or in part, with federal funds from the National Institute of Allergy and Infectious Diseases, National Institutes of Health (NIH), under Inter-Agency Agreement (12012-001-07000) and the Defense Health Program.

The contents of this publication are the sole responsibility of the authors and do not necessarily reflect the views, opinions or policies of Uniformed Services University of the Health Sciences (USUHS), The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc., the Department of Defense (DoD), or the Departments of the Army, Navy, or Air Force or Brooke Army Medical Center. Mention of trade names, commercial products, or organizations does not imply endorsement by the U.S. Government.

The authors have no conflict of interest to disclose.

The investigators have adhered to the policies for protection of human subjects as prescribed in 45CRF46.

Disclosures. **All authors:** No reported disclosures.

2758. Identifying Populations at High-Risk for Influenza-Related Hospitalization: A Real-World Analysis of Commercially Insured Population in the United States

Chakkarin Burudpakdee, PharmD[1]; Aimee Near, MPH[1]; Jenny Tse, MS[1]; Yinong Young-Xu, ScD, MA, MS[2]; Lynn Connolly, MD, PhD[3]; Carolina M. Reyes, PhD[3]; [1]IQVIA, Fairfax, Virginia; [2]Veteran's Affairs Medical Center, White River Junction, Vermont; [3]Vir Biotechnology, San Francisco, California

Session: 278. Vaccines: Influenza
Saturday, October 5, 2019: 12:15 PM

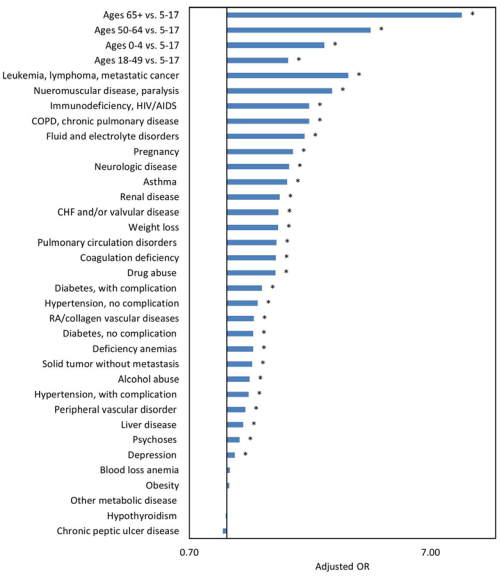
Background: The disease burden of seasonal influenza (flu) is high and contributes to morbidity, mortality and healthcare utilization. While only 1–2% of flu cases are hospitalized, these events are costly. The objective of this study was to describe and quantify risk factors for flu hospitalization.

Methods: Patients with 1 flu diagnosis (Dx) over 4 seasons (October 1, 2014–May 31, 2018) in IQVIA's Real-World Data Adjudicated Claims – US database were selected into the study; the earliest flu Dx was the index date. Patients were required to have ≥12 months continuous enrollment in their health plan before index (baseline), ≥30 days after index, and either a record of a flu test ± 14 days of index or a flu Dx in the primary position. Comorbidities during a fixed 12-month baseline period were categorized by AHRQ and CDC definitions. The study outcome of interest, flu-related hospitalization during the 30-day follow-up period, was defined as hospitalization with Dx of flu or a pre-defined flu-related complication in any position. A logistic regression model assessed the odds of flu-related hospitalization, adjusting for age, sex, region, payer, season of index Dx, evidence of flu vaccination, and comorbidities.

Results: More than 1.6 million medically-attended flu cases were identified, of which 18,509 (1%) had a hospitalization. 40% of patients were < 18 years of age, 47% were male, and 28%, 15%, 24%, and 33% were identified in the 2014–2017 flu seasons, respectively. More hospitalized patients were ages 50+ compared with non-hospitalized patients (57% vs. 20%) and 44% of hospitalized patients had 4 or more AHRQ/CDC comorbidities vs. 8% of non-hospitalized patients. In adjusted analyses, older age (65+ vs. 5–17; OR = 9.4, 95% CI 8.8–10.1) and leukemia/lymphoma/metastatic cancer (OR = 3.2, 95% CI = 2.9–3.5) were key drivers of hospitalization (Figure 1).

Conclusion: The risk of flu-related hospitalization is high for elderly populations and those with certain underlying co-morbidities among all age groups. While these findings reflect the burden of medically-attended flu in a younger, commercially insured population, additional research is needed to address the flu burden in high-risk populations.

Figure 1. Odds ratios for flu-related hospitalization from logistic regression model, adjusting for baseline characteristics and comorbid conditions



*p<.05

Disclosures. **All authors:** No reported disclosures.

2759. Immunogenicity of Inactivated Influenza Vaccines Given Early vs. Late After Pediatric Allogeneic Hematopoietic Cell Transplantation

Jennifer E. Schuster, MD[1]; Jennifer E. Schuster, MD[1]; Andrew Speaker, PhD[2]; Lubna Hamdan, MD[2]; Einas Batarseh, MD[2]; Laura S. Stewart, PhD[2]; Daniel Dulek, MD[2]; Carrie L. Kitko, MD[2]; Flor M. Munoz, MD[3]; Flor M. Munoz, MD[3]; Claire Bocchini, MD[3]; Lara Danziger-Isakov, MD, MPH[4]; Michael Grimley, MD [4]; Rakesh Goyal, MD, MRCP[5]; Susan E. Coffin, MD, MPH[6]; Jason L. Freedman, MD, MSCE[7]; Janet A. Englund, MD[8]; Paul A. Carpenter, MB BS, BSc (Med)[9]; Monica I. Ardura, DO, MSCS[10]; Jeffrey Auletta, MD[11]; Rachel Wattier, MD, MHS[12]; Kenny Truong, BSN[13];