

Figure 1. Clinic Follow Up Rates

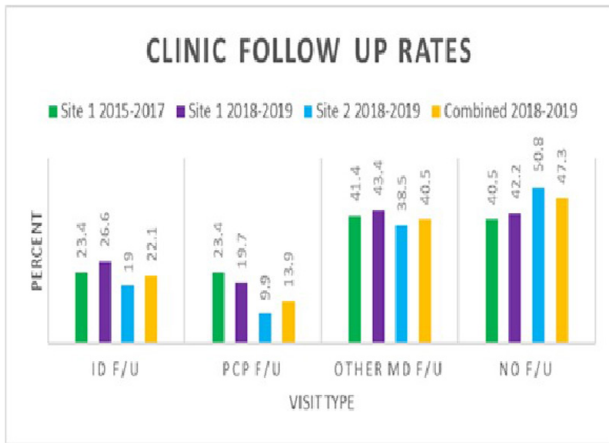
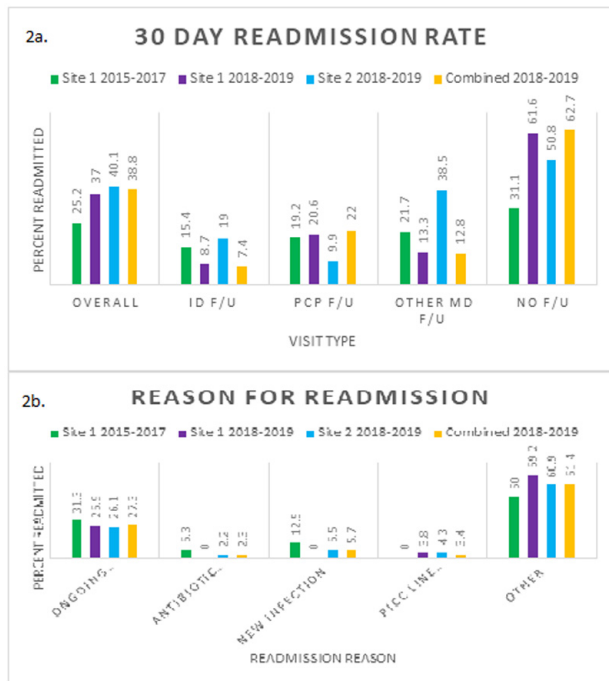


Figure 2. Readmission Rates & Reasons for Readmission



Conclusion: Patients discharged on IV antibiotics who were managed via a Tele-OPAT service in an outpatient clinic had lower readmission rates than those who were seen by non-ID physicians or who had no outpatient follow-up. Tele-OPAT is an important option for patients residing in rural areas who are discharged on parenteral antibiotics.

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628. The Role of the Advanced Practice Provider in Infectious Disease: Opportunities for Growth

Leah H. Yoke, PA-C, MCHS¹; Leah H. Yoke, PA-C, MCHS¹; Alison M. Beiler, PA-C, MPAS²; Alison M. Beiler, PA-C, MPAS²; Catherine Liu, MD³; Steven A. Pergam, MD, MPH³; Anna Wald, MD, MPH³; Anna Wald, MD, MPH³; Shireesha Dhanireddy, MD⁴; Shireesha Dhanireddy, MD⁴; ¹University of Washington; ²Fred Hutch Cancer Research Center, Seattle, Washington; ³Harborview Medical Center, Seattle, Washington; ⁴Fred Hutchinson Cancer Research Center; ⁵University of Washington, Seattle, Washington; ⁶University of Washington, Seattle, Washington

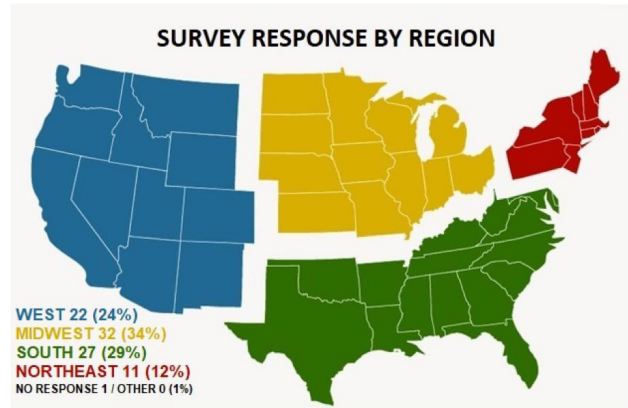
Session: P-23. Clinical Practice Issues

Background: Advanced Practice Providers (APPs), including nurse practitioners and physician assistants, provide high quality medical care in multiple specialties by extending the physician workforce. However, within the Infectious Disease (ID) specialty, their demographics, areas of practice, and experience are not well described. To better understand this key group, we examined APP years of experience in ID, primary practice settings, and perceived practice barriers from the APP perspective.

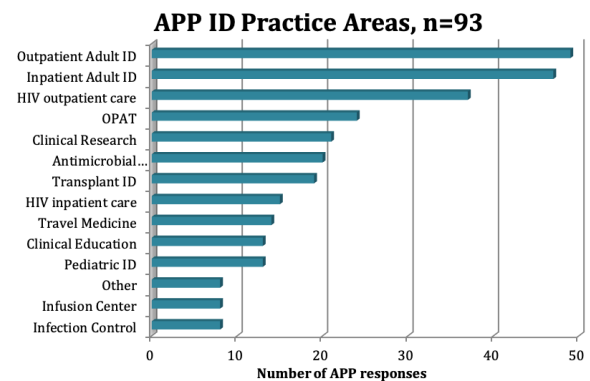
Methods: We created a survey using REDCap which was distributed between 12/1/2019-1/31/2020 to APPs practicing in ID by social media, direct emails to key stakeholders, and online Infectious Disease Society of America (IDSA) community forums.

Results: Ninety-three APPs responded to the posted survey from across the US (figure 1). Most respondents (45 [49%]) had between 2-9 years of overall experience as an APP, while 14 (15%) between 10-15 years, and 24 (26%) had >16 years of experience. Experience specifically as an ID APP varied, with the majority (56%) having 2-9 years of experience and 25% reporting >16 years of experience as an APP. Although over half of the respondents worked in an outpatient adult ID clinic, they also practiced in diverse settings and within multiple ID sub-specialties (figure 2). The other most common areas of practice included inpatient adult ID, HIV care, and outpatient parental antimicrobial therapy programs. Limited formalized ID education and misconceptions about APP scope of practice were perceived barriers to practicing in ID (figure 3). Lack of recognition as a peer amongst physician colleagues was also identified as a practice barrier.

Advanced Practice Provider Survey Response by Region

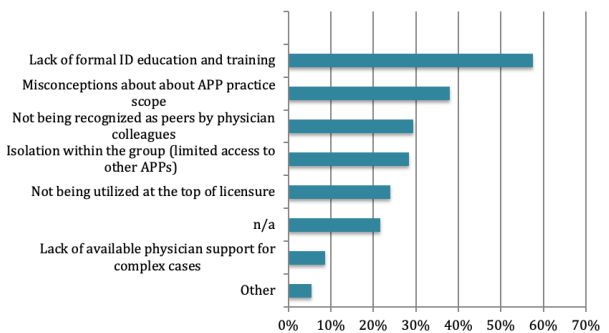


Advanced Practice Provider ID Practice Areas



Perceived Advanced Practice Provider Barriers

Perceived Practice Barriers for APPs in ID n=92



Conclusion: Our survey results demonstrate that the APP ID workforce is an experienced provider group, both in terms of total years as an APP and years exclusively in ID, working in a large variety of ID settings in a number of geographic locations. Creation of specific and directed ID educational opportunities, along with

collaborating physician support and inclusion, are identified as significant areas of improvement. The establishment of APP-specific training programs and educational courses will create more opportunities for APPs and further expand the ID workforce.

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629. Understanding the Effects of Social Determinants of Health on Outcome When Discharging Veterans on Parenteral Antibiotic Therapy

Erin Guenther, DO¹; Katherine Sherman, MS²; Haroon Shah, DO¹; Claire Dysart, PharmD, BCIDP²; Nathan Gundacker, MD³; ¹Medical College of Wisconsin, Milwaukee, Wisconsin; ²Clement J Zablocki VAMC, Milwaukee, Wisconsin; ³The Medical College of Wisconsin, Milwaukee, WI

Session: P-23. Clinical Practice Issues

Background: Social determinants of health are conditions in which people live, including aspects of both social environments and physical environments, and how these conditions affect their health. Examples of social determinants include access to health care, social support, culture, etc. These factors are often considered when discharging a patient on IV antibiotics. The purpose of this study was to determine if social determinants of health are related to outcomes for veterans discharged from the Zablocki VA on outpatient parenteral antibiotic therapy (OPAT).

Methods: This retrospective chart review evaluated veterans discharged home from the Zablocki VA on OPAT between the years of 2013 and 2017. Variables of social determinants of health included: race/ethnicity, co-habitants, mental health diagnosis, employment, use of illicit drugs, use of tobacco, and use of alcohol. The primary outcome analyzed was completion of therapy with or without complication. Complication is defined as antibiotic change/dose adjustment, PICC line complication, or additional clinic/hospital visit.

Results: Overall, 294 veterans' charts were reviewed. Of these patients, 188 (63.95%) had no complication and 106 (36.05%) had a complication. Univariate analyses of social determinants are summarized in Table 1. Tobacco use was the only factor significantly associated with OPAT complication (p=0.008).

Table 1.

Table 1. Social determinants of patients receiving OPAT at Zablocki VA 2013-2017.

Determinant	No Complication N= 188; N (%)	Complication N= 106; N (%)	p-value
Sex			
Male	181 (96.28)	105 (99.06)	0.124
Female	7 (3.72)	1 (0.94)	
Race/ethnicity			
White	167 (88.83)	88 (83.02)	0.3671
Black	16 (8.51)	14 (13.21)	
Other	5 (2.66)	4 (3.77)	
Co-inhabitants			
Alone	50 (26.60)	23 (21.70)	0.6338
Not Alone ^a	127 (67.55)	77 (72.64)	
Unavailable	11 (5.85)	6 (5.66)	
Mental Health Diagnosis			
No	99 (52.66)	56 (52.83)	0.2333
Yes ^b	89 (47.34)	50 (47.17)	
Employment			
Employed	37 (19.68)	18 (16.98)	0.8947
Retired	80 (42.55)	46 (43.40)	
Unemployed	22 (11.70)	15 (14.15)	
Unavailable	49 (26.06)	27 (25.47)	
Illicit Drug Use			
Current IV	0	0	0.698
Former IV	1 (0.53)	2 (1.89)	
Current Non-IV	5 (2.66)	4 (3.77)	
Former non-IV	13 (6.91)	5 (4.72)	
Denied	162 (86.17)	90 (84.91)	
Unavailable	7 (3.72)	5 (4.72)	
Tobacco Use			
Yes	38 (20.21)	39 (36.79)	0.0088
No	58 (30.85)	21 (19.81)	
Former	90 (47.87)	46 (43.40)	
Unavailable	2 (1.06)	0	
Alcohol Use			
Yes	73 (38.83)	39 (36.79)	0.585
No	80 (42.55)	48 (45.28)	
Former	26 (13.83)	17 (16.04)	
Unavailable	9 (4.79)	2 (1.89)	

Abbreviations: OPAT, Outpatient Parenteral Antimicrobial Therapy; VA, Veterans Affairs

^a Spouse, family, or roommate

^b Depression, anxiety, bipolar, schizophrenia, and/or PTSD

Conclusion: This analysis suggests that many social determinants thought to potentially impact OPAT outcomes, such as race/ethnicity, co-inhabitants, mental health diagnosis, employment status, and use of illicit drugs or alcohol were not significant contributors to OPAT complications in the Milwaukee VA population; although, veterans who were current smokers were more likely to have an OPAT complication. These results may speak to the VA's integral social support provided to veterans upon discharge, and perhaps, the above social determinants should not be as heavily considered when deciding if a veteran can perform OPAT. However, it is important to consider that these results may reflect the careful selection of Milwaukee veterans discharged on OPAT, as questionable cases can be treated as an inpatient.

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630. A 5-mRNA host response whole-blood classifier trained using patients with non-COVID-19 viral infections accurately predicts severity of COVID-19

Ijubomir Buturovic, PhD¹; Purvesh Khatri, PhD²; Benjamin Tang, MD, PhD³; Kevin Lai, MD⁴; Win Sen Kuan, MD⁵; Mark Gillett, MD⁶; Rahul Santram, MD⁷; Maryam Shojaei, PhD⁸; Raquel Almansa, Dr⁹; Jose Nieto, MD¹⁰; Sonsoles Muñoz, MD¹⁰; Carmen Herrero, MD¹⁰; Nikolaos Antonakos, Medical Degree, PhD¹¹; Panayiotis Koufargyris, MSc¹²; Marina Kontogiorgi, MD¹³; Georgia Damaraki, MSc¹⁴; Oliver Liesenfeld, MD¹⁵; James Wacker, n/a¹; Uros Midic, PhD¹⁵; Roland Luethy, PhD¹⁶; David C. Rawling, PhD¹; Melissa Remmel, BSc¹; Sabrina Coyle, BS¹⁷; Evangelos J. Giamarellos, MD, PhD¹⁸; Timothy Sweeney, MD¹; ¹Inflammatix, Burlingame, California; ²Stanford, Stanford, California; ³Nepean Hospital, Sydney, New South Wales, Australia; ⁴Westmead Hospital, Sydney, New South Wales, Australia; ⁵National University Hospital Singapore, Singapore, Not Applicable, Singapore; ⁶Royal North Shore Hospital, Sydney, New South Wales, Australia; ⁷St Vincent Hospital, Sydney, New South Wales, Australia; ⁸WESTMEAD INSTITUTE FOR MEDICAL RESEARCH, Sydney, New South Wales, Australia; ⁹HURH-IBSAL, Valladolid, Castilla y Leon, Spain; ¹⁰Servicio de Urgencias de Atención Primaria, Salamanca, Castilla y Leon, Spain; ¹¹Academic Scholar, Athens, Attiki, Greece; ¹²National and Kapodistrian University of Athens, Medical School, Greece, Athens, Attiki, Greece; ¹³14. 4th Department of Internal Medicine, National and Kapodistrian University of Athens, Medical School, 124 62 Athens, Greece, Athens, Attiki, Greece; ¹⁴UNIVERSITY OF ATHENS, Athens, Attiki, Greece; ¹⁵Inflammatix Inc, Burlingame, California; ¹⁶Burlingame, Burlingame, California; ¹⁷Inflammatix, Inc., Burlingame, California; ¹⁸National and Kapodistrian University of Athens, Athens, Attiki, Greece

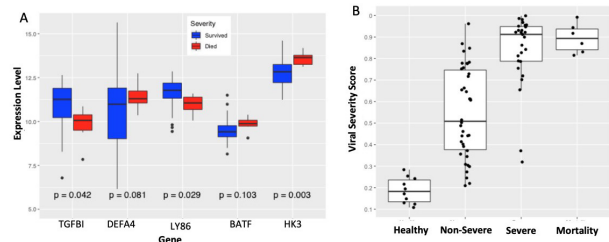
Session: P-24. Clinical Trials

Background: While major progress has been made to establish diagnostic tools for the diagnosis of SARS-CoV-2 infection, determining the severity of COVID-19 remains an unmet medical need. With limited hospital resources, gauging severity would allow for some patients to safely recover in home quarantine while ensuring sicker patients get needed care. We discovered a 5 host mRNA-based classifier for the severity of influenza and other acute viral infections and validated the classifier in COVID-19 patients from Greece.

Methods: We used training data (N=705) from 21 retrospective clinical studies of influenza and other viral illnesses. Five host mRNAs from a preselected panel were applied to train a logistic regression classifier for predicting 30-day mortality in influenza and other viral illnesses. We then applied this classifier, with fixed weights, to an independent cohort of subjects with confirmed COVID-19 from Athens, Greece (N=71) using NanoString nCounter. Finally, we developed a proof-of-concept rapid, isothermal qRT-LAMP assay for the 5-mRNA host signature using the QuantStudio 6 qPCR platform.

Results: In 71 patients with COVID-19, the 5 mRNA classifier had an AUROC of 0.88 (95% CI 0.80-0.97) for identifying patients with severe respiratory failure and/or 30-day mortality (Figure 1). Applying a preset cutoff based on training data, the 5-mRNA classifier had 100% sensitivity and 46% specificity for identifying mortality, and 88% sensitivity and 68% specificity for identifying severe respiratory failure. Finally, our proof-of-concept qRT-LAMP assay showed high correlation with the reference NanoString 5-mRNA classifier (r=0.95).

Figure 1. Validation of the 5-mRNA classifier in the COVID-19 cohort. (A) Expression of the 5 genes used in the logistic regression model in patients with (red) and without (blue) mortality. (B) The 5-mRNA classifier accurately distinguishes non-severe and severe patients with COVID-19 as well as those at risk of death.



Conclusion: Our 5-mRNA classifier demonstrated very high accuracy for the prediction of COVID-19 severity and could assist in the rapid, point-of-impact assessment of patients with confirmed COVID-19 to determine level of care thereby improving patient management and healthcare burden.

Disclosures: Ijubomir Buturovic, PhD, Inflammatix Inc. (Employee, Shareholder) Purvesh Khatri, PhD, Inflammatix Inc. (Shareholder) Oliver Liesenfeld, MD, Inflammatix Inc. (Employee, Shareholder) James Wacker, n/a, Inflammatix Inc.