Poster # 1258

Consulting Colleagues: Increasing Role of Advanced Practice Providers in Inpatient ID Consultation

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Background

Advanced Practice Providers (APPs) have taken on increasing roles as frontline inpatient providers in both academic and community settings. However, little is known about how frontline provider type may affect Infectious Diseases consultation rates.

With anticipated physician shortages and challenges with Infectious Disease Recruitment, an understanding of local consult trends is essential.

MAIN AIM: To quantify longitudinal trends in infectious diseases consultation by provider type at three hospitals in our healthcare system.

Methods

Study Design: Time Series Analysis
Study Period: July 2015 – June 2022
Setting: Duke University Health System (3 hospitals: 1 university, 2 community)
Primary Outcome: Proportion of Infectious Diseases (ID) consults by provider type

Definitions:
ID consultation rates were based upon new consult orders placed into the electronic health record (EHR).

Provider type was defined by electronic medical record user profile. Users were categorized into three groups: Physician, Trainee or APP.

Approach:
Evaluated trends in ID consult orders over time
Calculated distribution of consults per provider type across hospitals
Multinomial logistic regression models measured change in percent of consults across provider types with physicians as referent

Results

Table 1. Change in ID Consultation, 3 Hospitals, July 2015- June 2022

	Rate of change in ID Consults/1000 days present per Quarter	Rate Ratio comparing Q28 vs. Q1
All Hospitals	1.011 (1.004 - 1.018)	1.353 (1.127 - 1.626)
Hospital 1 (University)	1.019 (1.016 - 1.022)	1.669 (1.559 - 1.787)
Hospital 2 (Community)	1.021 (1.017 – 1.026)	1.771 (1.554 – 2.017)
Hospital 3 (Community)	1.008 (1.003 – 1.012)	1.227 (1.079 – 1.396)

- The rate of infectious diseases consultation increased significantly at all three observed hospitals regardless of setting

Rate of ID Consultation by Hospital
July 2015 through June 2022

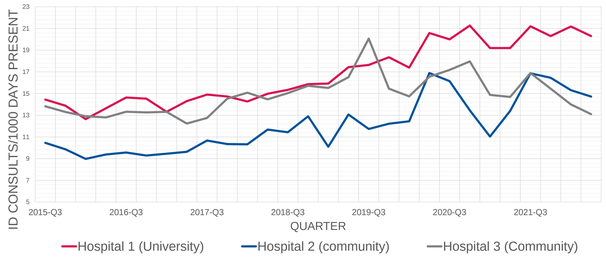
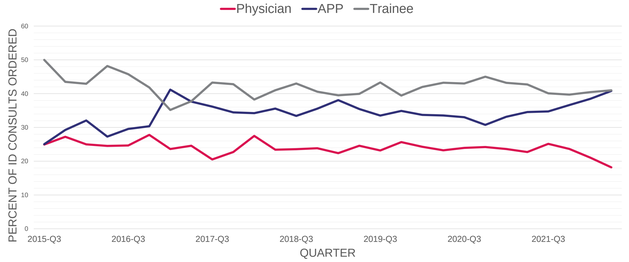


Table 2. ID Consults by Provider Type Across 3 Hospitals and 28 Quarters (July 2015-June 2022)

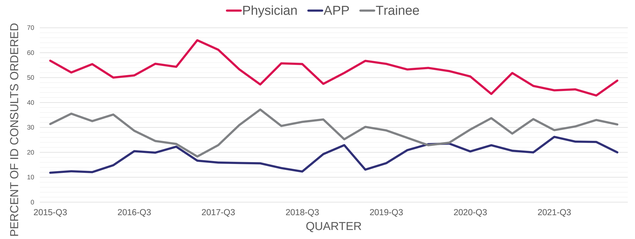
	ID Consults (%), Quarter 1			ID Consults (%), Quarter 28			Change in % for APPs Q1 vs Q28
	Physician	Trainee	APP	Physician	Trainee	APP	
Location							
Hospital 1 (University)	254 (25)	509 (50)	255 (25)	299 (18)	674 (41)	671 (41)	+16%
Hospital 2 (Community)	96 (57)	53 (31)	20 (12)	144 (49)	92 (31)	59 (20)	+8%
Hospital 3 (Community)	140 (74)	9 (5)	40 (21)	172 (67)	17 (7)	66 (26)	+5%

- Each hospital demonstrated distinct practice models with varied distributions of APP and trainee involvement at the start of the study
- The proportion of ID consults ordered by APPs increased over the course of the study for all three sites but the shift was most dramatic at he university hospital
- The absolute proportion of consults ordered by APPs across our sites varied from 20% to 41%

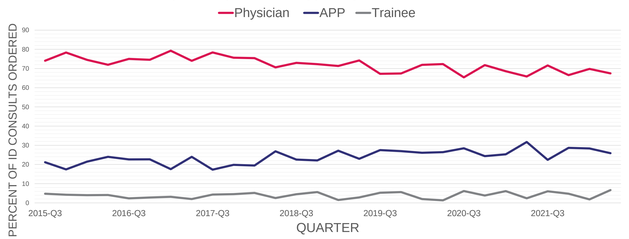
Percent of ID Consults by Provider Type
Hospital 1 (University), July 2015-June 2022



Percent of ID Consults by Provider Type
Hospital 2 (Community), July 2015-June 2022



Percent of ID Consults by Provider Type
Hospital 3 (Community), July 2015-June 2022



Results

Table 3. Change in Percent of ID Consults by Hospital and Provider-Type

	Odds Ratio of Quarterly Change in Percent of IDC (Trainee vs. Physician)	Odds Ratio of Quarterly Change in Percent IDC (APP vs. Physician)
Location		
Hospital 1 (University)	1.003 (1.000-1.006)	1.011 (1.008-1.015)
Hospital 2 (Community)	1.009 (1.002-1.016)	1.028 (1.019-1.037)
Hospital 3 (Community)	1.015 (0.999-1.030)	1.018 (1.011-1.025)

- Models estimated a significant quarterly increase in percent of ID consults ordered by APPs for all hospitals, as compared to physicians
- This increase was not seen consistently among the trainee group

Conclusions

- ID consult rates increased significantly over 7 years
- APPs were responsible for a significantly increasing percent of ID consult orders as compared to physicians for all hospitals, regardless of care model
- Hospital staffing models aiming to increase use of APPs could consider consultation rates as a potential effect and support infectious diseases services accordingly
- ID Consultants and stewardship programs should consider how to adjust to meet the needs of APP colleagues who have different training and communication patterns as compared with physicians
- To further evaluate we have launched a survey of antimicrobial knowledge, attitudes, and practices in APPs

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