Table 2. Definitions applied during study

Term	Definition
Appropriate antibiotic use	**Based on the IDSA clinical guidelines, taking into consideration:** • **Drug class -** Antibiotic prescriptions were considered as the appropriate drug class if the claim was for a first-line therapy (fosfomycin, nitrofurantoin, and trimethoprim-sulfamethoxazole) alone. Patients who had two first-line treatments at the same time (i.e. contemporaneous use of first-line treatments) were not considered as appropriate (i.e. inappropriate). • **Drug duration -** Appropriate prescription durations defined as 1 day for fosfomycin, 3 days for Fluoroquinolones and trimethoprim-sulfamethoxazole, and 5 days for nitrofurantoin
Treatment failure	**Evidence of treatment failure defined as:** • receiving intravenous antibiotics or switch to a different first line or to a second-line treatment (occurrence of a different antibiotic other than the initial treatment within 28 days of the index date) *or* • having a primary diagnosis of UTI in an acute care setting (emergency room or inpatient stay within 28 days after the date of the initial UTI diagnosis)
Inappropriate antibiotic use	**Patients without appropriate use of antibiotic (as defined above)**
Suboptimal antibiotic use	**Identified if there is evidence of treatment failure (as defined above)**

IDSA, Infectious Diseases Society of America; UTI, urinary tract infection.

Results: In total, 557,669 patients with uUTI were included in the study; see Table 3 for baseline characteristics. Overall, 88.7% had inappropriate or suboptimal antibiotic use (Table 4). Of these, 86.1% had inappropriate use only, 2.1% had suboptimal use only, and 11.9% had both. Inappropriate drug class assignment was observed in 53.4% of patients with inappropriate use, 83.7% of whom were administered fluoroquinolones (a second-line agent) as first-line therapy. Among patients with inappropriate therapy duration: most given trimethoprim/sulfamethoxazole received 5- (27.2%), 7- (42.1%) or 10- (27.8%) days' supply rather than the recommended 3 days; the majority given nitrofurantoin were provided a 7- (80.5%) or 10- (13.4%) day supply rather than the recommended 5 days; and 46.2% given fosfomycin received 3-days' supply instead of the recommended 1 day.

Table 3. Baseline characteristics

	Females with uUTI (N=557,669)	
	Appropriate and optimal antibiotic use (n=63,019)	**Inappropriate or suboptimal antibiotic use (n=494,650)**
Age, mean (SD), years	38.8 (15.6)	42.9 (17.2)
Age group, n (%)		
12–34 years	26,823 (42.6)	164,986 (33.4)
35–54 years	24,753 (39.3)	196,332 (39.7)
55–64 years	9,257 (14.7)	94,948 (19.2)
≥65 years	2,186 (3.5)	38,384 (7.8)
US geographic region, n (%)		
North East	12,802 (20.3)	78,648 (15.9)
North Central	15,166 (24.1)	106,946 (21.6)
South	21,930 (34.8)	223,342 (45.2)
West	12,822 (20.4)	82,740 (16.7)
Other	299 (0.5)	2,974 (0.6)
Charlson Comorbidity Index, mean (SD)	0.05 (0.2)	0.07 (0.3)
Charlson Comorbidity Index group, n (%)		
0–1	62,846 (99.7)	491,567 (99.4)
2–3	164 (0.3)	2,968 (0.6)
4+	9 (<0.1)	115 (<0.1)

SD, standardized difference; US, United States; uUTI, uncomplicated urinary tract infection.

Table 4. Patient disposition

	Females with uUTI (N=557,669)
Appropriate and optimal antibiotic use, n	63,019
Inappropriate or suboptimal antibiotic use, n	494,650 (88.7)
Inappropriate only	425,669 (86.1)
Suboptimal only	10,162 (2.1)
Inappropriate and suboptimal	58,819 (11.9)
Inappropriate use, n	484,488
Inappropriate due to drug class	258,514 (53.4)
Inappropriate due to therapy duration	225,974 (46.6)
Inappropriate drug class, n	258,514
Fluoroquinolones as first-line therapy	216,453 (83.7)
β-lactam agents as first-line therapy	8,127 (3.1)
Two treatments on one day	463 (0.2)
Other inappropriate first-line therapy	33,935 (13.1)

uUTI, uncomplicated urinary tract infection. Data n (%) unless otherwise stated.

Conclusion: In the treatment of uUTI, the prevalence of inappropriate and/or suboptimal antibiotic use is very high which may have subsequent implications for patient health outcomes.

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124. Six-year Longitudinal Analysis of an Inpatient Infectious Diseases Telemedicine Service at a Community Hospital

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Session: O-24. Hot Issues in Clinical Practice

Background: Telemedicine (TM) has emerged as a viable solution to extend infectious disease (ID) expertise to communities without access to this specialty.[1] TM allows clinicians in rural settings to connect with specialists at distant sites and provide the best care for their patients, often eliminating the need for hospital transfers. Here, we describe the experience from one of the longest standing inpatient Tele-ID consult services using live audio-video (AV) visits with the assistance of a telepresenter.

References:
1. Monkowski D, Rhodes LV, Templer S, et al. A Retrospective Cohort Study to Assess the Impact of an Inpatient Infectious Disease Telemedicine Consultation Service on Hospital and Patient Outcomes. *Clin Infect Dis*. 2020;70(5):763-770. doi:10.1093/cid/ciz293

Methods: Longitudinal data were collected from a 126-bed rural hospital in Pennsylvania that had no access to ID consultation before 2014. Live AV consults during business hours began in 2014 and telephonic physician to physician consults were made available 24/7. All ID consult data were extracted from the hospital electronic health record between 2014 to 2019. Key outcomes assessed included the number of consult encounters, total hospital length of stay (LOS), discharges to home, transfer to tertiary care centers, and readmission rates at 30 days.

Results: Most consulted patients were Caucasians, and females with an average age of 64.7 years (Table 1). The number of unique consult encounters increased annually from 111 in 2014 to 469 in 2019 (Table 1). The Charlson Comorbidity Score and Elixhauser Comorbidity Index also increased each year beginning in 2016 (Table 1). By contrast, LOS decreased each year as did the 30-day readmission rate (Table 2). Most patients were not transferred (average 89.4% over 6 years) to tertiary care centers and more than half were discharged to home each year (Table 2).

Table 1: Characteristics of Patients Consulted for ID Care (2014-2019)

	2014	2015	2016	2017	2018	2019	Total	Average
Total Encounters	111	177	258	263	399	469	1677	280
Caucasian (%)	NA	NA	220 (85.2)	225 (85.5)	355 (88.9)	398 (84.9)	1198	85.6%
Female (%)	55 (49.5)	87 (49.2)	141 (54.7)	144 (54.8)	212 (53.1)	250 (53.3)	889	53.0%
Age (Years)	64.2	65.8	62.9	64	64.8	66.2	*	64.7
BMI	NA	NA	34.3	32.1	32.7	32.8	*	33.0
Charlson Comorbidity Score	NA	NA	4.9	5.8	6.5	7.0	*	6.1
Elixhauser Comorbidity Index	NA	NA	2.9	4.6	5.8	6.6	*	5.0

NA = Not Available
* = Not Applicable

Table 2: Primary Outcomes of Consulted Patients (2014-2019)

	2014	2015	2016	2017	2018	2019
Total Encounters	111	177	258	263	399	469
Transferred (%)	7 (6.3)	18 (10.2)	34 (13.1)	29 (11.0)	37 (9.2)	63 (13.4)
Discharged to Home (%)	60 (57.7)	88 (55.3)	150 (67.0)	148 (63.2)	214 (59.1)	265 (65.3)
30 Day Readmission (%)	23 (22.1)	21 (13.2)	34 (15.2)	33 (14.1)	66 (18.2)	61 (15.0)
LOS, Days	10.2	9.9	8.5	8.3	8.3	8.2

Conclusion: This longitudinal 6-year observation study of an inpatient TM ID service at a rural hospital showed remarkable annual growth in consult encounters (total growth >400%). Despite increasing patient acuity, overall hospital LOS decreased over time (10.2 to 8.2 days). Patient transfers to tertiary care centers remained low (average 10.5% over 6 years) as did 30-day readmissions (average 16.3% over 6 years).

The majority of patients were discharged to home (average 61.3% over 6 years). These findings show that a rural inpatient TM ID consult service can expand over time and is an effective alternative for hospitals without access to ID expertise.

Disclosures: John Mellors, MD, Abound Bio (Shareholder)Accelevir Diagnostics (Consultant)Co-Crystal Pharmaceuticals (Shareholder)Gilead (Consultant, Grant/Research Support)Merck (Consultant) Rima Abdel-Massih, MD, Infectious Disease Connect (Shareholder, Other Financial or Material Support, Chief Medical Officer)

125. Effect of Body Temperature Before Hospital Discharge on the Readmission Rate

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Session: O-24. Hot Issues in Clinical Practice

Background: One of the goals of the Affordable Care Act is to decrease readmission rates, which lead to wasting of resources and are associated with worse patient outcomes. While widely adhered to, there is no published research to support the practice of delaying discharge if the patient exhibits fever or hypothermia in the previous 24 hours. Our study quantifies the effect of abnormal body temperature before discharge on the readmission rate.

Methods: Retrospective analysis of the minimal (Tmin) and maximal (Tmax) body temperatures during the last 24 hrs before discharge of all patients over 1 year period from our tertiary medical center were analyzed with T-test, ANOVA, uni-and multivariate logistic regression. Fever was defined as Tmax > 100.2F(2SDs from mean Tmax), hypothermia as Tmin < 96.7F(2SDs from mean Tmin).

Results: Descriptive analysis of the data from 19,038 inpatients are featured in Table 1 and Figure 1. The overall readmission rate was 10.2% (highest for General Medicine and Pediatrics); 4.7% of patients had an abnormal temperature 24 hrs before discharge; body temperature declined with age. ANOVA showed that 1st, the average number of days to readmission was not different between those with fever, hypothermia, and normothermia (mean+/-SD: 10.6+/-8.6; 12.1+/-8.6; 12.5+/-8.1, respectively); 2nd that the rate of readmission was not different between these groups, although there was trend for higher readmission among normothermic patients (2.9%; 0.3%; 7%, respectively). Table 2 features regression analyses that model readmission. Univariate analysis revealed that higher Tmax and age are associated with lower readmission probability. Both uni- and multivariate analysis showed that the presence of fever is associated with lower readmission probability and that compared with General Medicine, the other major primary services have lower readmission probability, when correcting for all the other listed variables.

Table 1. Descriptive statistics	
Total # of patients studied	19038
% female	48.30%
Ages (mean +/- SD)	46.3+/-27.2
# readmitted (and % of total) within 30 days	1936 (10.2%)
# days between discharge and readmission (mean +/- SD)	12.5+/-8.2
Tmax (mean+/SD)	98.7+/-0.74
Tmax indicating fever at 2 SD from mean Tmax	100.2
Total # with fever using 2 SD (and % of total) from the mean Tmax	651 (3.4%)
Tmin (mean+/-SD)	97.6+/-0.49
Tmin indicating hypothermia at 2 SD from mean Tmin	96.7
Total # with hypothermia using 2 SD (and % of total) from the mean Tmin	244(1.3%)
Abbreviations: *SD: standard deviation*	

Figure 1

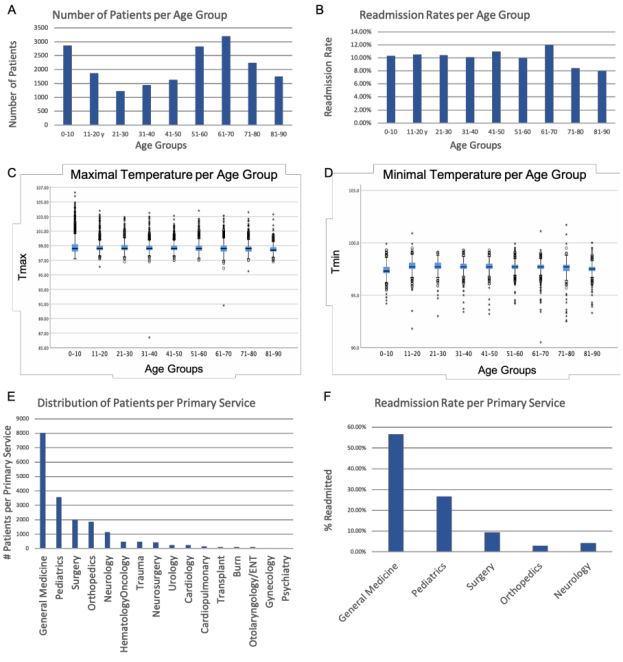

Table 2. Univariate and mutivariate regression analysis of readmission within 30 days after hospital discharge						
	OR	**p value**	**95% C.I.**	**adjusted OR**	**adjusted p value**	**95% C.I.**
T max	0.936	0.049	[0.877-1.000]	1.044	0.409	[0.943-1.155]
T min	1.052	0.321	[0.952-1.163]	1.141	0.052	[0.999-1.304]
Presence of fever at 2SDs	0.683	0.006	[0.520-0.898]	0.625	0.018	[0.424-0.923]
Presence of hypothermia at 2SDs	1.134	0.56	[0.743-1.730]	0.985	0.952	[0.603-1.609]
Sex (male as reference)	1.068	0.172	[0.972-1.173]	1.075	0.172	[0.969-1.193]
Age	0.998	0.046	[0.997-1.000]	0.999	0.384	[0.996-1.002]
Primary service, compared against General Medicine						
Neurology	0.492	<0.001	[0.381-0.634]	0.486	<0.001	[0.377-0.628]
Orthopedics	0.211	<0.001	[0.158-0.283]	0.206	<0.001	[0.154-0.277]
Surgery	0.637	<0.001	[0.532-0.762]	0.623	<0.001	[0.518-0.750]
Pediatrics	1.069	0.284	[0.946-1.208]	1.029	0.772	[0.846-1.252]

Abbreviations: *OR: odds ratio, C.I: confidence interval, SD: standard deviation;* ***Highlighted cells:*** *statistically significant data*

Conclusion: Our data clearly showed that abnormal body temperature measured within 24 hrs before discharge is not useful for predicting the chance for readmission. Therefore, delaying patients' discharge based on Tmax or Tmin alone, taken outside the specific clinical context, may lead to wasting of hospital resources.

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126. evaluation of Addition of Outpatient Parenteral Antimicrobial Therapy and Orthopedic ID Resources to Transitions-of-care Outcomes

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Session: O-24. Hot Issues in Clinical Practice

Background: Our large academic medical center initiated both an Outpatient Parenteral Antimicrobial Therapy (OPAT) program supported by an infectious disease trained pharmacist, along with an Orthopedic Infectious Disease (OID) consult service to assist in caring for these specialized populations. We measured the impact of these services.

Methods: Patients discharged on parenteral antimicrobial therapy were divided into two groups. The pre-OPAT cohort included all patient receiving OPAT from 4/1/18 - 10/31/18; the post-OPAT cohort included all patients who received OPAT from 4/1/19 - 10/31/19 with OPAT consult (Fig 1). The OID consult service began in September 2018 prior to initiation of the OPAT program. The primary outcome was 30-day hospital readmission. Secondary outcomes included: length of stay (LOS), 90-day readmission, clinical outcomes, and identification of predictors of hospital readmission. Clinical outcomes included: time from final OR visit to discharge for OID patients and optimal treatment (cefazolin, oxacillin, or nafcillin) for MSSA.

Figure 1: Enrollment for the pre-OPAT and post-OPAT cohort

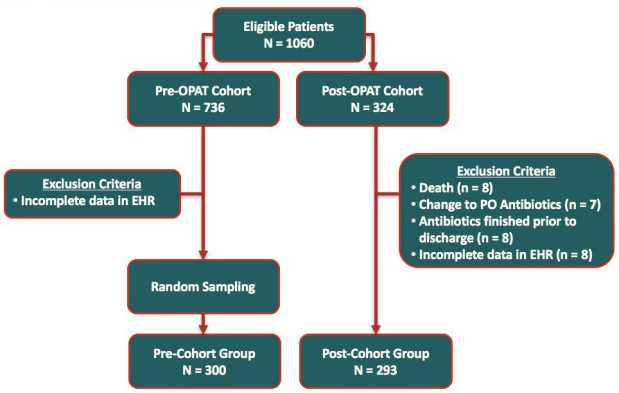
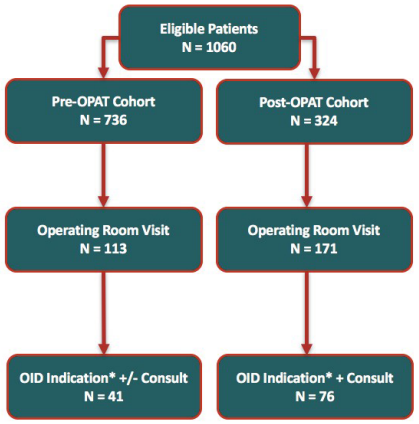


Figure 2: Enrollment for the Orthopedic Indication Subgroup



*OID Indication: Osteomyelitis, Prosthetic Joint Infection, or Septic Arthritis