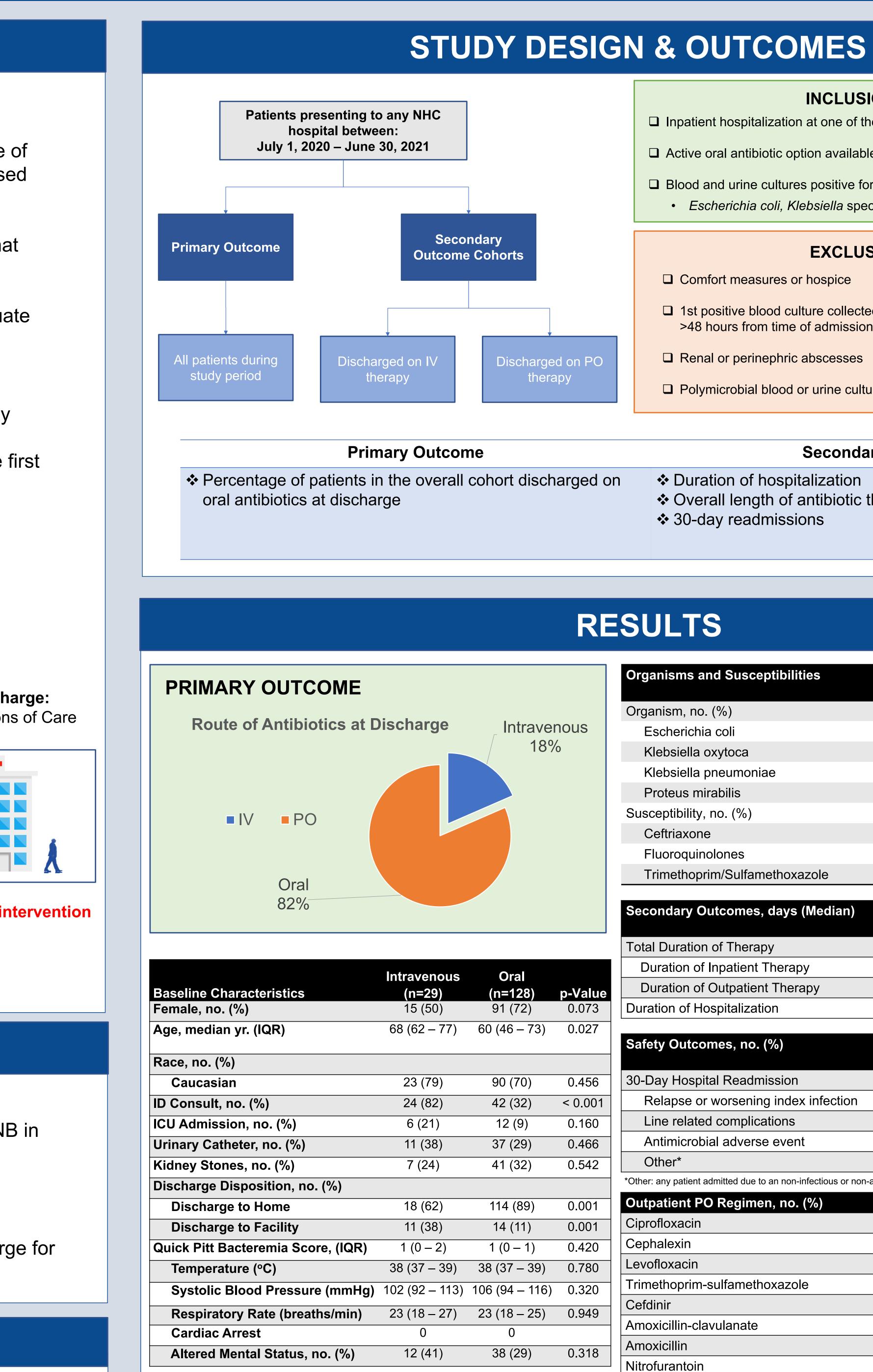
BACKGROUND
Gram-Negative Bacteremia:
Gram-negative bacteremia (GNB) continues to be a major cause morbidity and mortality in the US. Most patients who are diagnose receive Intravenous (IV) antibiotic therapy.
Recent retrospective and prospective studies have suggested that oral (PO) therapy following initial IV therapy results in similar outcomes compared to a full course of IV therapy in GNB bacteremia especially in patients who have demonstrated adequation source control.
Evidence for Oral Stepdown Therapy: Tamma et al.
Retrospective multicenter propensity score-matched cohort study
Evaluated whether oral-stepdown therapy was utilized within the 5 days of treatment of Enterobacterales bacteremia
Study results:
 40% of patients had urinary source bacteremia No differences in 30-day recurrence between groups PO therapy was associated with decreased length of stay
Norton Antimicrobial Stewardship Program
Admission:Hospitalization:DischSelection of AntibioticsSubsequent ManagementTransition
$ \underbrace{ \left(\begin{array}{c} \\ \\ \\ \end{array} \right)}^{*} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $
 Order-sets Antibiotic indications Pharmacy-driven bacteremia management Daily bacteremic patient review Daily bacteremic patient review Prospective audit and feedback
PURPOSE
 Clinical Question: What are the current prescribing patterns for urinary source GN terms of IV to PO step-down antibiotic therapy in a community healthcare system?
 Purpose: Evaluate provider prescribing practices for antibiotics at discharge urinary source gram negative bacteremia

Disclosure

Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation

Evaluation of Intravenous vs. Oral Antibiotics at Discharge for the Treatment of Urinary Source Gram-Negative Bacteremia

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INCLUSION CRITERIA

Inpatient hospitalization at one of the four adult hospitals within Norton Healthcare

□ Active oral antibiotic option available per susceptibility results

Blood and urine cultures positive for one of the following: • Escherichia coli, Klebsiella species, Proteus mirabilis

EXCLUSION CRITERIA

- Comfort measures or hospice
- 1st positive blood culture collected >48 hours from time of admission
- Renal or perinephric abscesses
- Polymicrobial blood or urine cultures
- □ Allergy to all active oral antibiotic options
- NPO at the time of discharge
- Completed antimicrobial course while admitted

Secondary Outcomes

- Duration of hospitalization
- Overall length of antibiotic therapy
- ✤ 30-day readmissions

Other

isms and Susceptibilities	IV (n=29)	PO (n=128)	p-Value
ism, no. (%)			
cherichia coli	22 (73)	107 (83)	0.475
bsiella oxytoca	0	2 (1)	1
bsiella pneumoniae	3 (10)	13 (10)	1
teus mirabilis	4 (13)	6 (4)	0.164
ptibility, no. (%)			
ftriaxone	21 (72)	122 (95)	<0.001
oroquinolones	11 (38)	112 (88)	<0.001
methoprim/Sulfamethoxazole	21 (72)	105 (82)	1.000

ndary Outcomes, days (Median)	IV (n=29)	PO (n=128)	p-Value
Duration of Therapy	17 (15 - 19)	14 (11-15)	<0.001
ation of Inpatient Therapy	5 (4 - 7)	4 (3 - 5)	<0.001
ation of Outpatient Therapy	11 (7 - 14)	10 (7 - 11)	0.005
on of Hospitalization	5 (4 - 7)	4 (3 - 5)	0.002

v Outcomes, no. (%)	IV (n=29)	PO (n=128)	p-Value
y Hospital Readmission	11 (38)	23 (18)	0.035
lapse or worsening index infection	4 (14)	5 (4)	0.104
e related complications	2 (7)	0 (0)	0.038
timicrobial adverse event	2 (7)	5 (4)	0.837
ner*	3 (28)	13 (57)	0.010
ny patient admitted due to an non-infectious or non-antimicrobia	l adverse event		
itient PO Regimen, no. (%)		# of Pat	ients
loxacin		58 (45)	
alexin	19 (15)		
oxacin	13 (10)		
hoprim-sulfamethoxazole		13 (10)	
nir		12 (9)	
cillin-clavulanate		6 (5)	
cillin		5 (4)	
Irantoin		1 (1)	
		1 (1)	

- conditions³

Additional Discussion:

Infectious Disease Consult Selection bias vs. severity of illness

Organisms and PO Regimens

days

Future discharge stewardship efforts:

Prospective audit and feedback of discharge IV antibiotics Selection Duration Route Dose

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DISCUSSION

Primary Outcome: Comparisons to Existing Literature

✤ 82% of patients at Norton Healthcare discharged on oral antibiotics, this appears to be in line with or higher than rates reported in literature

National survey found 87.8% of infectious disease providers self-reported they would transition a patient to oral antibiotics for treatment of GNB under certain

Retrospective review at a tertiary academic center found 56% of patients with GNB were transitioned to oral agents¹⁰

> Duration of therapy Convention vs severity of illness

Fluoroquinolones were most frequently chosen by providers Trimethoprim-sulfamethoxazole utilization fell behind beta-lactams even though > 70% of patients in the IV arm had a susceptible organism

• Opportunity to increase trimethoprim-sulfamethoxazole use

CONCLUSIONS

Most patients with urinary source GNB were discharged on PO antibiotics

Patients discharged on IV antibiotics were more likely to be readmitted within 30

Future opportunities may include promoting PO TMP-SMX use

Outpatient Parenteral Antimicrobial Therapy (OPAT)

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