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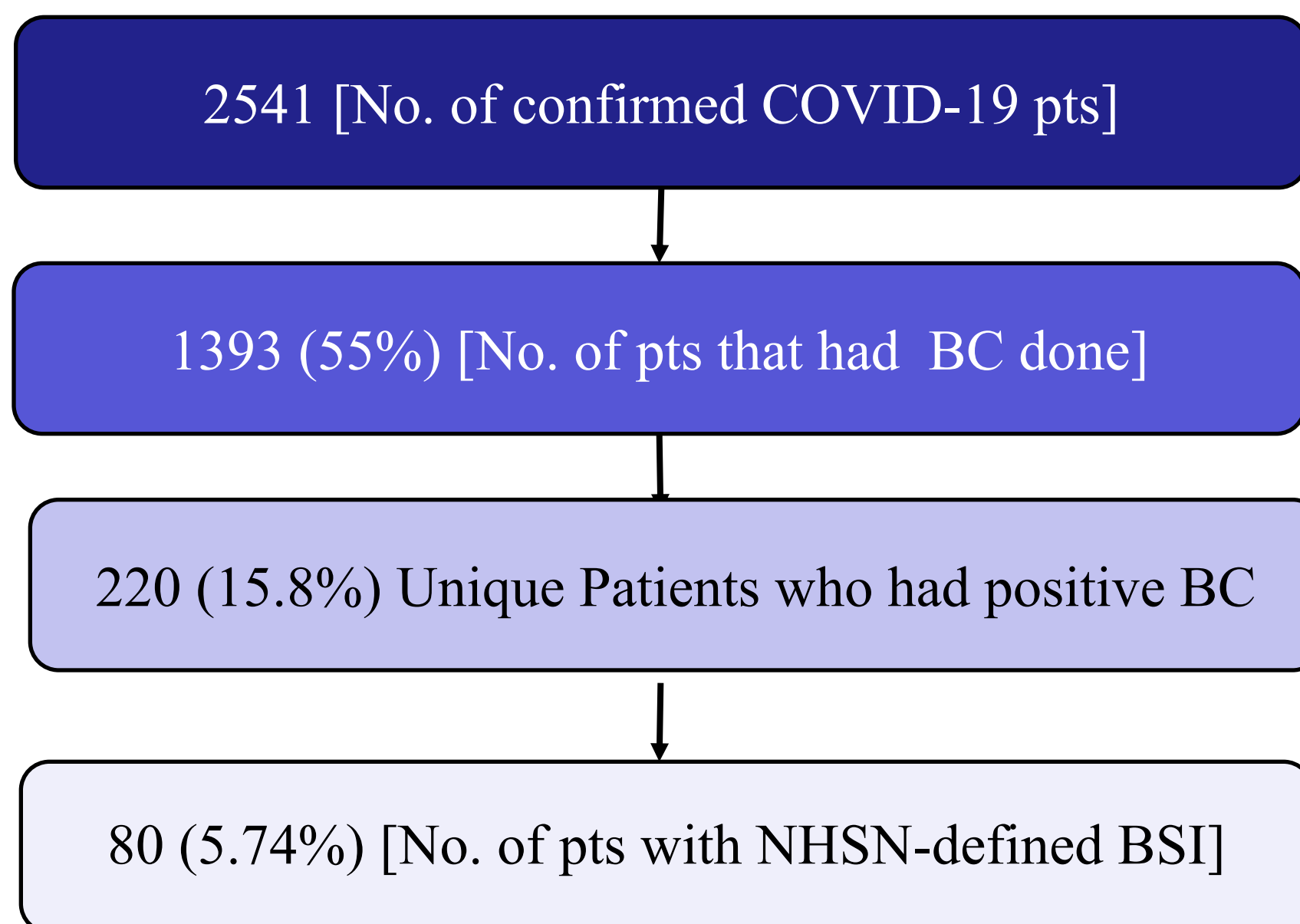
## Introduction

- During the coronavirus disease 2019 (COVID-19) surge, there was a sharp increase of blood cultures (BC) performed at Henry Ford Health System (HFHS).
- However, the epidemiology and outcomes of bloodstream infections (BSI) in COVID-19 patients (pts) remains undefined.
- We report the utilization of blood cultures, risk factors and mortality associated with BSI in a large cohort of COVID-19 pts.

## Methods

- A retrospective analysis was performed of all COVID-19 pts that had BC performed during hospitalization at HFHS, a 5-hospital system in southeast Michigan.
- Study period 3-10-20 to 4-28-20.
- BSI was defined using NHSN criteria.
- Demographics, comorbidities, severity of illness and outcome of pts with and without BSI were compared.
- Comparisons were performed using Chi square testing for categorical variables and Student's T test for continuous variables.

## Results



## Results

**Table 1. Characteristics of COVID-19 Patients with BSI Compared to COVID-19 Patients without BSI**

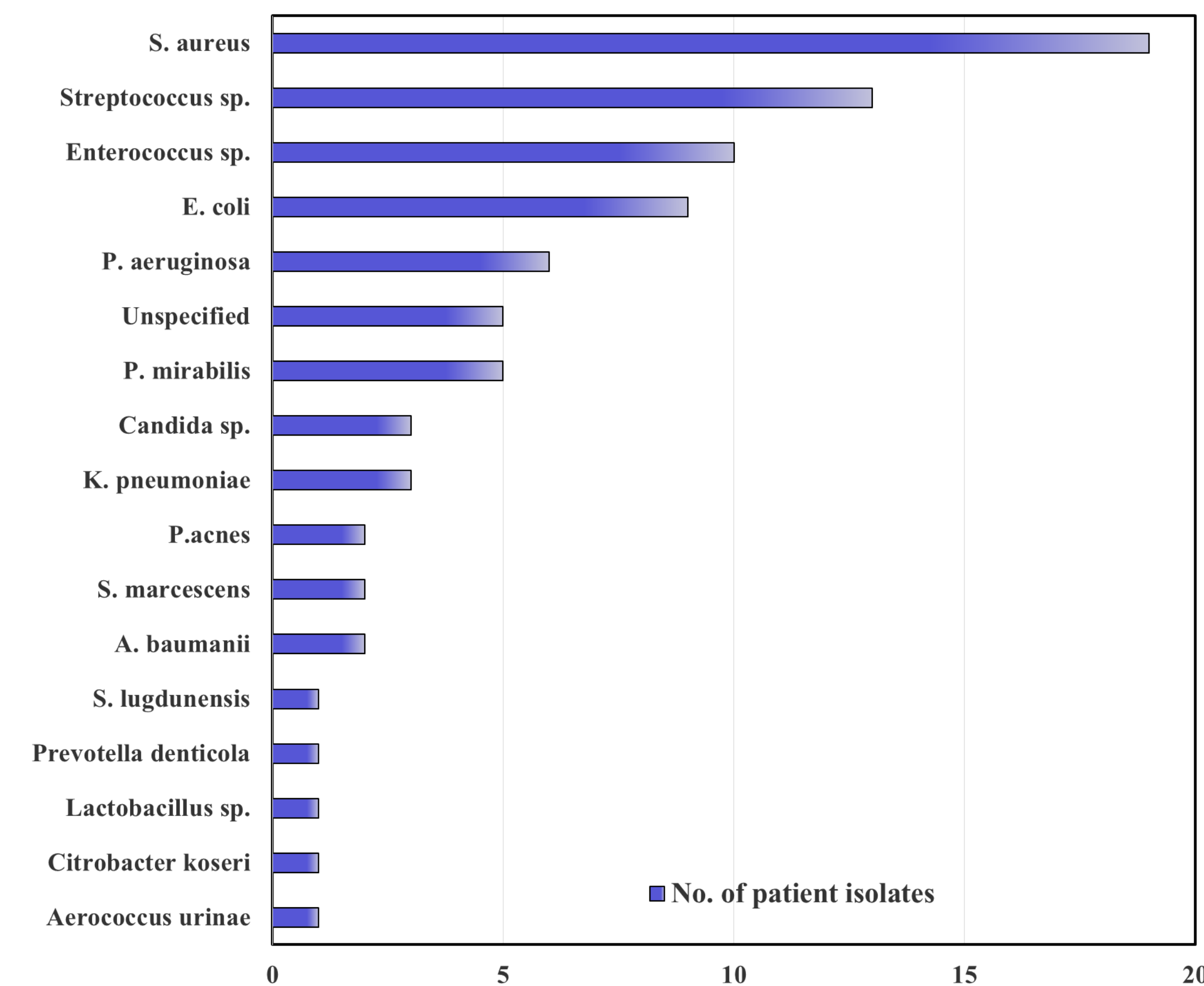
Variable	COVID-19 pts with BSI (N=80)	COVID-19 pts without BSI (N=1313)	P value
<b>Age – Mean (SD)</b>	<b>70.1 (13.8)</b>	<b>64.5 (15.9)</b>	<b>0.0024</b>
Male gender - N (%)	36 (45.0)	717 (54.6)	0.0941
Race/ethnicity - N (%)			0.3556
Black	51 (63.8)	726 (55.3)	
White	25 (31.3)	457 (34.8)	
Body mass index (N=271)	(N=78)	(N=1258)	0.0935
Continuous – Mean (SD)	31 (9.8)	31.8 (8.4)	
<b>Max mSOFA score (N=232)</b>	<b>(N=64)</b>	<b>(N=954)</b>	<b>&lt;0.0001</b>
<b>Med.(IQR)</b>	<b>6.5 (3-8.5)</b>	<b>4 (2-6)</b>	
<b>Length of stay – Med. (IQR)</b>	<b>12 (5.5-20)</b>	<b>8 (5-13)</b>	<b>0.0013</b>
<b>ICU admission – Med. (IQR)</b>	<b>47 (58.8)</b>	<b>453 (34.5)</b>	<b>&lt;0.0001</b>
<b>Mechanical ventilation – Med.(IQR)</b>	<b>43 (53.75)</b>	<b>351 (26.73)</b>	<b>&lt;0.0001</b>
Receipt of steroids N (%)	50 (62.5)	932 (71)	0.1063
O2 saturation at presentation			0.2523
≥95	18 (22.5)	210 (16)	
90-94	32 (40)	664 (50.6)	
86-89	14 (17.5)	216 (16.5)	
≤ 85	16 (20)	223 (17)	
<b>Co-morbidities – Mean (SD)</b>			
Immunodeficiency	1 (1.25)	24 (1.8)	1.0000
Pulmonary disease	56 (70)	875 (66.7)	0.5356
Cardiac disease	8 (10)	130 (9.9)	0.9770
<b>Chronic kidney disease</b>	<b>56 (70)</b>	<b>619 (47.1)</b>	<b>&lt;0.0001</b>
Chronic obstructive lung disease	15 (18.8)	198 (15.1)	0.3759
Hypertension	60 (75)	888 (67.6)	0.1700
Asthma	9 (11.3)	120 (9.4)	0.5272
Cancer	20 (25)	222 (16.9)	0.0636
Diabetes mellitus	44 (55)	513 (39.1)	0.0047
<b>Central line (N=52)</b>	<b>18 (22.5)</b>	<b>147 (11.2)</b>	<b>0.0024</b>
<b>Mortality</b>	<b>39 (48.8)</b>	<b>325 (24.8)</b>	<b>&lt;0.0001</b>

## Results

**Risk Factors Associated with Mortality - Multivariate Analysis**

Variable	Odds Ratio (95% CI)	P value
<b>Age</b>	<b>1.07 (1.06-1.08)</b>	<b>&lt;0.0001</b>
<b>ICU stay</b>	<b>7.91 (5.75-10.87)</b>	<b>&lt;0.0001</b>
<b>mSOFA score</b>	<b>1.29 (1.13-1.47)</b>	<b>&lt;0.0001</b>
BSI	1.69 [CI: 0.99-2.89],	<0.056

**Figure 1. Cumulative Number of Bloodstream Pathogens**



## Conclusion

- Although more than half of hospitalized COVID-19 pts had BC done, the number of BSI were low suggesting overutilization of BC.
- BSI was associated with older age and disease severity.
- Mortality was not affected by BSI but was primarily driven by age and severity of illness.