Table 2. Admission Testing for SARS-Cov-2 Infection in Hospitalized Patients at a Large Health System, by Patient Vaccination Status

		All Transmission Periods (n=19 weeks)*	Moderate Transmission Period (n=4 weeks)	Substantial Transmission Period (n=3 weeks)	High Transmission Period (n= 12 weeks)
Fully Vaccinated	Total # Tests Collected	2,387	958	587	842
	# Positives (%)	17 (0.7%)	5 (0.5%)	4 (0.7%)	8 (1.0%)
	NNT	140	192	147	105
	Total Test Costs	$119,350	$47,900	$29,350	$42,100
	Cost to Detect 1 Positive Patient	$7,000	$9,600	$7,350	$5,250
Not Fully Vaccinated	Total # Tests Collected	16,628	3,220	2,663	10,745
	# Positives (%)	315 (1.9%)	45 (1.4%)	39 (1.5%)	231 (2.1%)
	NNT	53	72	68	47
	Total Test Costs	$831,400	$161,000	$133,150	$537,250
	Cost to Detect 1 Positive Patient	$2,650	$3,600	$3,400	$2,350

*Data from study period following vaccine availability and subsequent time to develop immunity (February 1, 2021 through June 14, 2021); Fully vaccinated = receipt of 2 doses of mRNA COVID-19 vaccine or 1 dose of adenoviral vector vaccine; NNT: number needed to test to identify 1 positive patient

value based on the NNT, even during lower periods of transmission and in different patient populations. Limiting admission testing to non–fully vaccinated patients during periods of lower transmission may be a strategy to address cost and resource concerns around this practice. Further investigations into the impact of booster vaccination and newer SARS-CoV-2 variants on admission testing programs are also necessary. Although the impact of such testing on healthcare-associated COVID-19 among patients and healthcare workers could not be clearly determined, these data provide important information as facilities weigh the costs and benefits of such testing.

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Procalcitonin as marker for bacterial coinfection among adult COVID-19 patients in a tertiary-care hospital in the Philippines

Angelie Lorraine Pesebre; Cybele Lara Abad; Jan Jorge Francisco and Justin Allister Ong

Background: Antimicrobials are often given to patients with COVID-19 despite the absence of a bacterial coinfection. Procalcitonin (PCT), when elevated, often indicates the presence of a bacterial infection and is used to guide empiric antibiotic therapy. We sought to determine the utility of PCT and the optimal cutoff value of PCT among patients with COVID-19. **Methods:** We retrospectively reviewed all COVID-19 confirmed ca-ses hospitalized in our institution from March to December 2020. Of 729 cases, we included 403 (55.3%) who had baseline PCT and blood or respiratory tract specimens (eg, sputum, endotracheal aspirate) within 48 hours of admission. Participants were classified according to PCT levels and COVID-19 severity. A receiver operating characteristic (ROC) curve analysis was performed. The area under the curve (AUC) obtained was used to compute the possible optimal cutoff value using the Youden index. A χ^2 test was used to define association between groups according to the characteristics of variables. **Results:** Of a total cohort of 403, 245 (57%) were male, with an overall median age of 60 years (range, 22–94). Overall, 28 presented with mild COVID-19, 194 presented with moderate COVID-19, and 181 presented with severe or critical COVID-19. Moreover, 363 (90%) were given antibiotics. Of 28 with mild COVID-19, 22 (79%) received empiric antibiotics. The rate of bacterial coinfection was high at 28% (113 of 403). *Klebsiella pneumoniae* was the most commonly identified microorganism: 52 (19.5%) of 266 patients. Based on the ROC curve, the optimal cutoff for PCT was 4.72 ng/mL, with 97% specificity and only 6% sensitivity. Only 17 participants had PCT > 4.72 ng/mL. Of these, 1 was mild, 5 were moderate COVID-19, 8 had severe COVID-19, and 3 had critical COVID-19; all received antibiotic therapy. **Conclusions:** In our cohort, the rate of bacterial coinfection was high. A PCT of >4.72 ng/mL increased the likelihood of a coinfection. However, PCT had poor sensitivity and may not detect the presence of bacterial coinfection, especially when used alone. Serial PCT monitoring, its use in conjunction with other markers, or as a prognostic tool, need to be explored further.

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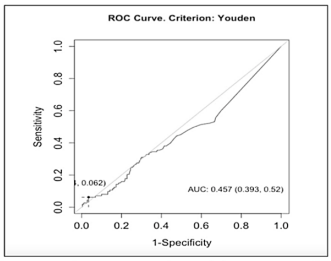

Figure 1. Receiver - Operator Characteristic(ROC) curve of procalcitonin and bacterial co-infection.
**ROC Curve that has an AUC of 0.5 suggests no discrimination. It means that the classifier is unable to distinguish between positive and negative disease (predicting the disease randomly).*
** An AUC between 0 and 0.5 means that the corresponding model has poor separability, and may actually perform worse than a random chance.*
** An AUC between 0.5 and 1 means there is a higher chance that the classifier is able to distinguish positive and negative disease.*
** An AUC=1 able to perfectly distinguish between all the positive and negative disease correctly*
** An AUC=0 means that the classifier predicts all positives as negative, and all negatives as positive.*

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Prioritizing SARS-CoV-2 testing in a highly immunosuppressed patient population

Jenna Shackelford; Michele Woolbert; Ninet Sinaii; Brooke Decker; Tara Palmore and Robin T Odom

Background: The NIH Clinical Center implemented multiple testing protocols to facilitate early detection and isolation of SARS-CoV-2 infected patients and rooming-in family members (RIFMs). Beginning in February 2020, all symptomatic patients were tested; in March 2020, all patients were tested prior to aerosol-generating procedures (AGPs); and in May 2020, all patients and RIFMs were tested on admission. We sought to determine the value of SARS-CoV-2 testing practices in our hospital. **Methods:** Respiratory specimens collected March 2020 through June 2021 tested for SARS-CoV-2 by RT-PCR were reviewed, and corresponding patient clinical and demographic variables were collected. Repeated tests from SARS-CoV-2–positive persons were excluded from the data. Results associated with multiple testing indications were assigned the highest priority reason based on a predetermined hierarchy. Data were analyzed using the χ^2 test and logistic regression. **Results:** Of 12,706 results from 5,704 patients, primary testing reasons were pre-AGP (n = 5,387, 43.0%), admission (n = 2,733; 21.8%), and symptomatic testing (n = 2,701; 21.6%). Overall, 159 tests (1.25%) were positive for SARS-CoV-2. Asymptomatic patients tested on admission were 1.8 times more likely to be positive than outpatients tested for any reason (P = .003) and 4.2 times more likely than asymptomatic inpatients tested prior to AGP (P = .003). Within asymptomatic pre-AGP testing, there was no difference between inpatients (0.46%) and outpatients (0.65%). Hispanic patients were 1.9 times more likely to be positive. (p **Conclusions:** At a hospital with a geographically broad referral base, admissions COVID-19 testing was far more fruitful than pre-AGP testing of inpatients. Pre-AGP used the most testing resources yet had the lowest yield. Admissions testing remains beneficial regardless of community transmission rates, while testing prior to AGP could be pared back when community rates of COVID-19 are low and redeployed when community rates rise. **Conclusions:** Our findings