

# Preliminary report of COVID-19 testing: experience of the clinical microbiology laboratory Universitas Indonesia, Jakarta, Indonesia

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## Abstract

Indonesia first reported SARS-CoV-2 in March 2020. From March to April, clinical microbiology laboratory Universitas Indonesia in Jakarta received 4617 specimens with 12.6% positivity rate and 22% asymptomatic case. The result of this study could give an early picture of Indonesia's COVID 19 outbreak situation.

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Indonesia announced the first confirmed coronavirus disease 2019 (COVID-19) case on 2 March 2020 [1]. Since then the government has activated the state and university laboratories as reference laboratories for COVID-19 testing. The clinical microbiology laboratory of the Universitas Indonesia in Jakarta began providing diagnostic testing services using real-time reverse-transcription PCR according to World Health Organization and US Centers for Disease Control and Prevention guidelines. We accepted specimens from suspected cases occurring in hospitalized patients and from healthy person with high-risk jobs or close contact with COVID-19 patients.

Until 14 April 2020, a total of 4617 specimens had been processed, with 582 positive results. The positivity rate was

12.6%. The average patient age was 44.5 years, with a range of 2 to 85 years; 59% were male.

From complete preanalytical forms ( $n = 246$ ), we collected data about patients' characteristics (Table 1). The COVID-19-positive patients were divided into three major clinical categories according to the criteria of the National Health Commission of People's Republic of China [2]: asymptomatic (22%), mild cases (34%) and moderate or severe hospitalized cases (44%). Only 3% patients had a history of travel outside Indonesia. We found that 19 patients (8%) were healthcare workers. Only 17% of patients had comorbidities. The most common comorbidities were cardiovascular disease (58%) and diabetes (37%); the others were chronic lung disease, kidney disease and immunocompromised condition.

Respiratory symptoms were the most common (73%). Four percent of symptomatic patients had no respiratory problems and fever. This particular group had only gastrointestinal problems, lethargy or headache. Radiologic findings for pneumonia were present in 24% patients.

We also received specimens from other regions, such as Banten and West Java. The distribution of positive result from Jakarta was 75%, 13% from West Java and 12% from Banten.

We found the average age to be similar to a report from Singapore (42.5 years) [3] but younger than the age reported from Wuhan (55.5 years) [4]. Male gender and cardiovascular disease predominance as comorbidities were in concordance with reports from other countries [5]. Respiratory symptoms and fever prevalence were also similar [6]. However, the

**TABLE 1. Characteristics of 582 COVID-19 patients**

Characteristic	Value
Age (years)	
Average	44.5
Range	2–85
Sex	
Female	238 (41%)
Male	344 (59%)
Complete preanalytical form	246 (42%)
Asymptomatic	55 (22%)
Mild cases (self isolation)	84 (34%)
Moderate to severe cases (hospitalized)	107 (44%)
History of travel	8 (3%)
History of contact with COVID-19 patients	
Yes	88 (36%)
No	158 (64%)
Patient with comorbidities	43 (17%)
Cardiovascular disease	24 (58%)
Diabetes mellitus	16 (37%)
Other	11 (25%)
Multiple	9 (2%)
Symptoms	191 (78%)
Respiratory problem (with or without other symptoms)	140 (73%)
Respiratory problem with fever	62 (32%)
Respiratory problem and other symptoms without fever	44 (23%)
Headache, malaise or gastrointestinal problem only	10 (4%)
Radiologic findings of pneumonia	64 (24%)
Distribution of cases per province	
DKI Jakarta	184 (75%)
West Java	33 (13%)
Banten	29 (12%)

COVID-19, coronavirus disease 2019.

prevalence of asymptomatic cases and the presence of atypical symptoms must be noted for transmission risk.

The number of positive cases among HCWs is a major concern because of the potential burden to the healthcare system [7]. Preventive measures during the early pandemic in Indonesia were not taken, and standardized personal protective equipment was scarce, which likely contributed to the early cases among HCWs.

The number of positive results from samples collected outside Jakarta was noticeable. Most of them came from densely populated satellite cities of Jakarta, such as Bogor, Depok and Tangerang, that are part of West Java and Banten provinces. Lack of a referral laboratory in either province means that specimens were sent to several different laboratories in Jakarta. We assume that the positive results were included among Jakarta's reported cases and contributed to low positivity rate in the West Java and Banten provinces [8].

The COVID-19 pandemic situation continues to evolve. The number of positive test results is increasing, especially the asymptomatic cases. Disease-control strategies to contain rapid transmission are urgently needed.

### Conflict of interest

None declared.

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