

# 04 STEPS

# COVID-19 (POCUS)

“EARLY LITERATURE SUGGESTS THAT PATIENTS WITH CONFIRMED COVID-19 PNEUMONIA DEMONSTRATE TYPICAL LUNG IMAGING FEATURES WITH PULMONARY GROUND-GLASS OR GROUND-GLASS/CONSOLIDATION LESIONS THAT ARE PERIPHERALLY-LOCATED, BILATERAL, AND FAVOR THE LOWER LUNGS. THESE PATIENTS DEMONSTRATED:

- FOCAL B-LINES AND FUSED B-LINES
- DISCONTINUOUS, ROUGH APPEARANCE TO THE PLEURAL LINE, WITH SUB-PLEURAL CONSOLIDATION
- FOCI OF DISEASE LOCATED PREDOMINANTLY IN THE POSTERIOR LUNG FIELDS, PARTICULARLY IN THE LOWER LUNG FIELDS”

[HTTPS://WWW.BUTTERFLYNETWORK.COM/COVID-19#LUNGFINDINGS](https://www.butterflynetwork.com/covid-19#lungfindings)

## High Risk

for Coronavirus Covid-19

## SIGNS & SYMPTOMS

Fever (87.9%) \_\_\_\_\_

Dry cough (67.7%) \_\_\_\_\_

Fatigue (38.1%) \_\_\_\_\_

Sputum production (33.4%) \_\_\_\_\_

Dyspnea (18.6%) \_\_\_\_\_

Myalgia or arthralgia (14.8%) \_\_\_\_\_

Sore throat (13.9%) \_\_\_\_\_

Headache (13.6%) \_\_\_\_\_

Chills (11.4%) \_\_\_\_\_

Nausea (5.0%) \_\_\_\_\_

## SYMPTOMS (MORBID)

Pharyngeal pain \_\_\_\_\_

Dyspnea \_\_\_\_\_

Dizziness \_\_\_\_\_

Abdominal pain \_\_\_\_\_

Anorexia \_\_\_\_\_

## MORTALITY FACTORS

Age ≥ 80 (21.9%) \_\_\_\_\_

Male sex (4.7%) \_\_\_\_\_

No comorbid conditions (1.4%) \_\_\_\_\_

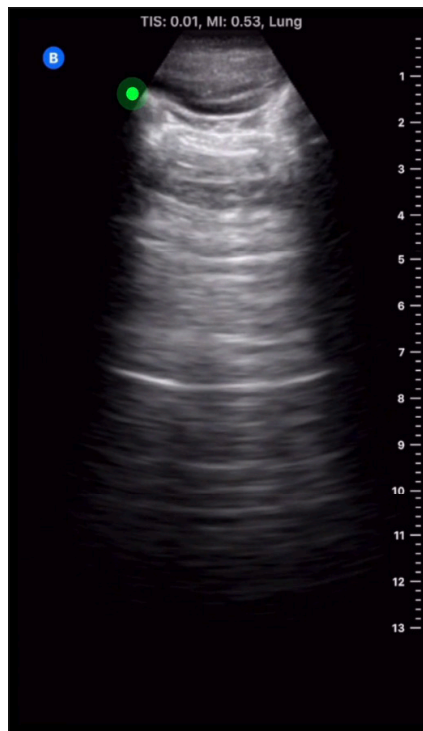
Cardiovascular disease (13.2%) \_\_\_\_\_

Diabetes (9.2%) \_\_\_\_\_

Hypertension (8.4%) \_\_\_\_\_

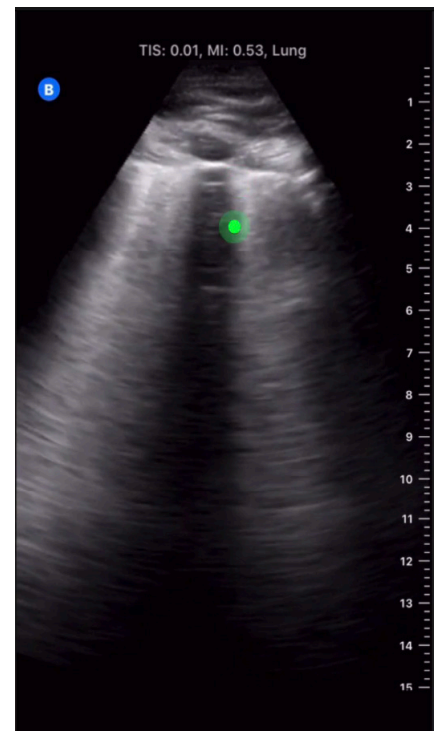
Chronic respiratory disease (8.0%) \_\_\_\_\_

Cancer (7.6%) \_\_\_\_\_



### NORMAL LUNG

- A lines going horizontally
- Pleural lining is inherent and thin
- Left and right “sliding” at pleural lining



### COVID LUNG

- Focal and fused B lines going vertically (“Spotlight” effect)
- Pleural lining is thickened and irregular

*Foci of disease located predominantly in the posterior lung fields, particularly in the lower lung fields*

SIGNS & SYMPTOMS: Who-China-Joint-Mission-on-Covid-19-Final-Report.Pdf. <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>.



If any suspicion of Covid-19 isolate and call 911

# ACTION=911

# DOCUMENTATION: COVID-19 (POCUS findings)

## Use of POCUS for Covid-19

“During a COVID-19 outbreak, it is important to minimise the health care–patient interactions to only the necessary procedures. There are several studies showing the accuracy of lung ultrasound in detecting lung pathologies, from bacterial and viral pneumonia to acute respiratory distress syndrome and its non-inferiority to chest x-ray and clinical examination. Therefore, we believe that such a procedure could reduce health-care workers’ risk of exposure and also patient movement from the consultation room to the radiology room. Considering the contagiousness of the virus and the need to reduce nosocomial outbreaks, we strongly suggest promotion of lung ultrasound in this setting.”

Buonsenso, Danilo, et al. “COVID-19 Outbreak: Less Stethoscope, More Ultrasound.”  
The Lancet Respiratory Medicine, Mar. 2020, p. S221326002030120X. DOI.org (Crossref), doi:10.1016/S2213-2600(20)30120-X.

IMAGE: <https://www.butterflynetwork.com/covid-19>

## COVID-19 Lung Ultrasound Triage

Dr. Mike Stone, MD

upload it to vimeo covid-19 folder

Note: The proposed protocol below is based on expert suggestion but has yet to be validated by prospective trials.

01.

### Patient Presentation

Fever, Cough, Fatigue, Dyspnea  
OR known COVID-19 contact  
OR return from high-risk area.

02.

### Initial Diagnostics

Following is performed on the patient:

- Rapid Flu RSV/PCR (if available)
- COVID-19 PCR
- Pulse oximetry
- POCUS lung ultrasound

Findings:

No supplemental oxygen required  
A-lines present

Recommendation:

- Stay at home and self-quarantine.

Findings:

No supplemental oxygen required  
B-lines present

Recommendation:

- Stay at home and self-quarantine.
- Follow-up monitoring suggested.

Findings:

Supplemental oxygen required  
B-lines present

Recommendation:

**ADMIT**

- Viral testing per institutional guidelines.
- Daily lung ultrasound exams
- Consider dedicated POCUS lung ultrasound during hospital stay.

Findings:

Supplemental oxygen required  
Consolidations present

Recommendation:

**ADMIT**

- Viral testing per institutional guidelines.
- Daily lung ultrasound exams
- Potential ICU admissions
- Recommend dedicated POCUS lung ultrasound during hospital stay.