Though commonly known for its respiratory complications, COVID-19 is a multi-faceted disease capable of affecting the entire body. Patients who have COVID-19 can quickly deteriorate as their immune systems work in overdrive to combat the disease. If health care teams can intervene early, they may be able to prevent critical deterioration for these patients. However, COVID-19 is also highly transmissible, and treating it puts care givers at a great risk of contracting the disease themselves. As a result, there is an urgent need for deployable solutions capable of

1.) augmenting current testing capabilities;
2.) identifying the COVID-19 patients who are at the greatest risk for deterioration and notifying health care teams; and
3.) conserving PPE and other critical hospital resources.

**UNMET NEED**

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**SOLUTION**

**PICTURE (Predicting Intensive Care Transfers and other Unforeseen Events)** is a machine learning algorithm that uses electronic health record (EHR) data to passively and accurately predict intensive care unit transfer or death as a proxy for patient deterioration.

**PICTURE-COVID-19** is an enhanced version of the PICTURE platform that combines three analytical approaches to create a powerful diagnostic and surveillance system tuned specifically for COVID-19 patients.

**COMPETITIVE ADVANTAGE**

PICTURE-COVID-19 is designed to seamlessly integrate into any hospital. It is widely applicable to varying groups of patients, including those monitored using common labs and vital signs, ECG, and CXR imaging. The ability to explain its predictions using SHAP (Shapley Additive exPlanations) provides a layer of invaluable transparency for health care teams.

**PROJECT TEAM**

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