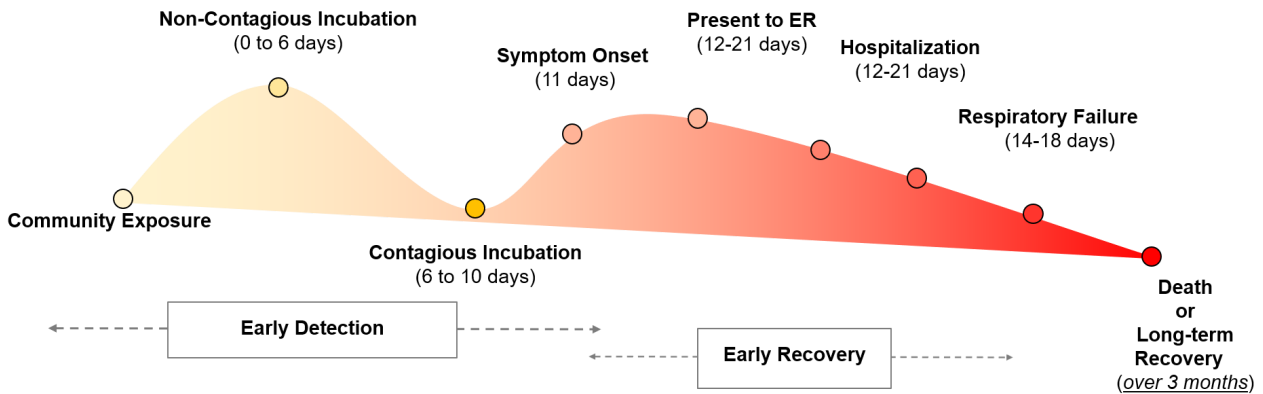# LIFE SINGULARITY'S EARLY IDENTIFICATION OF VULNERABLE PATIENT POPULATIONS HELPS WITH PROACTIVE RESPONSE TO THE COVID-19 PANDEMIC

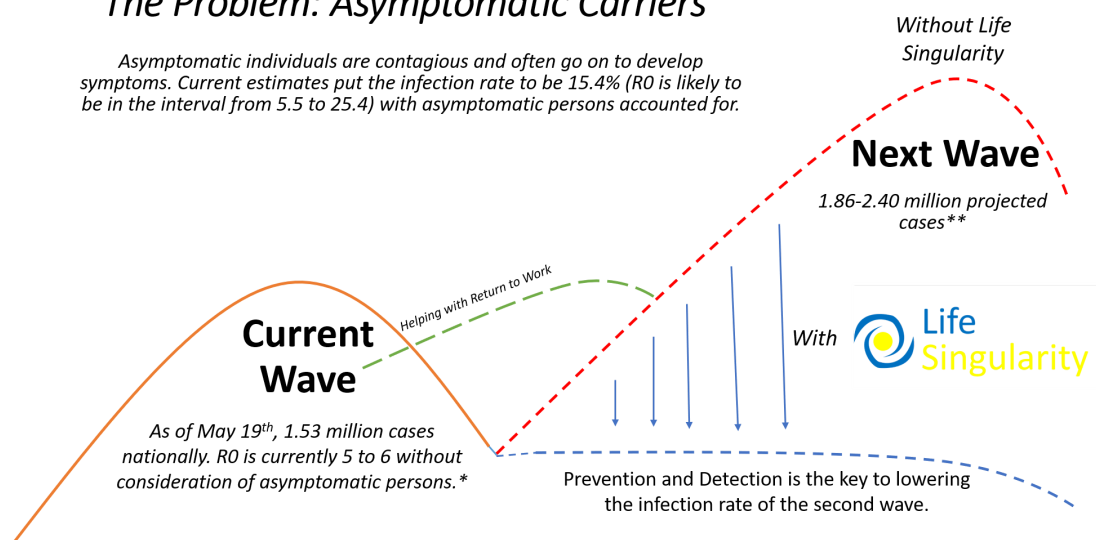COVID-19 Case Progression – A Vicious Journey from Mild Symptoms to Death or Long Painful Recovery

Life Singularity's focus on AI-driven prevention will facilitate early COVID-19 detection in vulnerable populations, allowing for reduced healthcare costs and lower risk of new outbreaks. Employers, Payers and Providers in particular will benefit from this innovation as vulnerable populations can be identified early on and safeguarded with ease through proactive treatment.

Life Singularity has four goals for proactively addressing the COVID-19 pandemic. Accurate predictive AI analysis will ensure early detection to facilitate lowered health care costs, while employer management of real time data uploads will ensure the avoidance of productivity losses. Community surveillance through consent-driven, real-time sensor-enabled geo-spatial mapping of asymptomatic and pre-symptomatic communities, testing of viral loads in community wastewater, and analyses of social determinants of health will reduce risks of disease transmission and likelihood of further exposures while also ensuring early detection of additional risks.

The Problem: Asymptomatic Carriers

Asymptomatic individuals are contagious and often go on to develop symptoms. Current estimates put the infection rate to be 15.4% (R0 is likely to be in the interval from 5.5 to 25.4) with asymptomatic persons accounted for.

Without Life Singularity

Next Wave

1.86-2.40 million projected cases**

Helping with Return to Work

Current Wave

As of May 19th, 1.53 million cases nationally. R0 is currently 5 to 6 without consideration of asymptomatic persons.*

With **Life Singularity**

Prevention and Detection is the key to lowering the infection rate of the second wave.

Life Singularity has already created a COVID-19 Predictive Index which uses AI analysis to identify vulnerable populations at risk of COVID-19 complications. Applications of this platform will enable employers to reduce healthcare costs for employee treatments by ensuring early detection and early recovery. It will ensure employers are able to match work responsibilities with appropriately risky employees, reduce worker turnover, and conserve working hours, ultimately mitigating issues related to productivity and efficiency.

This platform will also be essential in reducing the infection rate of the impending second wave of COVID-19 infections. Current estimates predict a rise in COVID-19 cases from 1.53 million to 1.86-2.40 million cases while current estimates state an infection rate of 15.4% including asymptomatic individuals. Early detection and prevention, while accounting for pre-symptomatic populations, will be key in flattening the next curve. Predictive analysis will facilitate predictions for early treatment and ultimately, the reduction of health complications, transmission rates, and healthcare costs.

Leveraging the underlying foundation of 150 million patient records, social determinants of health, and over one billion data points, Life Singularity has identified significant factors that may affect the control and spread of COVID-19. These include asymptomatic carriers, patient comorbidities, past medical histories, and contact tracing, which are collectively used and analyzed to create predictions for different patient populations. Vulnerable populations, in particular, are specifically safeguarded with the development of the COVID-19 Predictive Index.

The COVID-19 Predictive Index is a prescriptive model that identifies populations with vulnerabilities to severe COVID-19 complications. It is designed to help healthcare professionals identify patients most at risk for complications if or when they contract COVID-19 to ensure optimal treatment. The index will also be instrumental in reducing the burden on healthcare workers during the next predicted spike in COVID-19 patient cases. With predictive analysis allowing for specific COVID-19 instances to be predicted and tracked, effective treatment options can be planned and tailored to patients ahead of time.This prevents healthcare workers from being overwhelmed at a given time, improving quality and access to care for all.

Key features of the new index include its ability to allow healthcare providers to monitor key symptoms in symptomatic, pre-symptomatic and asymptomatic populations. This allows predictive models to include the role asymptomatic carriers play in disease transmission while also identifying significant key symptoms within the carriers. These symptoms along with when they occur can provide key insights to healthcare workers when tracing disease transmission or considering disease progression timelines. They offer the ability to raise alerts for specific symptoms and create routines and daily structure in relation to return to work guidelines. The AI model will also use underlying multi-comorbidity disease models to predict escalation of COVID-19 symptoms and identify populations with higher risk trajectories. As a whole, Life Singularity's platform will allow for accurate predictions amongst diverse populations, ultimately saving countless lives and costs.