

DTECT: A Comprehensive Strategy for US to Deal with COVID-19 in absence of a Vaccine and/or Therapeutic

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Abstract:

As the novel coronavirus, SARS-CoV-2, sweeps through the United States (US) it has brought with it unprecedented economic disaster. According to the US Bureau of Labor Statistics, 20.5 million Americans lost their jobs in April bringing the unemployment rate to 14.7%, the highest since the Great Depression; the rate has declined but still very high at over 11%. It is no surprise then that the nation is eager to revert from the stringent social-distancing measures that were put in place to minimize the spread of the disease and its consequent morbidity, but which also had a crippling effect on the economy. However, with over 4 million cases and deaths shortly to exceed 150,000; with no cure and/or prophylaxis, the only safe return to normalcy will rely entirely depend on the widespread availability of a reliable test to detect individuals who are infectious. Such a diagnostic test could form the basis of a targeted containment program DTECT, an acronym reflecting the different components of this program: 1. Detection (D): Identification of an infectious individual (the source of the virus) by testing and through traditional and non-traditional surveillance methodologies; 2. Tracking for Exposure (TE): Once identified, infectious individuals will need to be tracked to see if they have maintained proper quarantine or have exposed themselves to other individuals. 3. Contact Tracing (CT): Identify and test all individuals who have been exposed to the source. This is done by interviewing the source and relies on their recollection. The high rate of asymptomatic carriers of this virus (somewhere between 20 -40%) makes detection based on or directed by clinical presentation highly unreliable and further underscores the importance of having in place an effective testing



regimen before making the transition from mass quarantine to targeted containment. This paper examines how implementing these strategies can contain the virus to a degree that COVID-19 is manageable and the economy can restart, until an effective therapeutic and/or a safe and efficacious vaccine is available.

Publication of speakers:

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