

# AMERICA BACK IN BUSINESS

## 4-week executable plan

Using data to kick-start the economy while saving lives  
and providing adequate healthcare for the sick affected by COVID-19

By Thiag Loganathan



# USA

Intervention strategies  
based on health risk  
and care needs



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As the US is fighting hard to flatten the curve and get ahead of the coronavirus pandemic, healthcare efforts are undoubtedly the need of the hour, but the path to the end-state can be accelerated by executing additional data driven tactics simultaneously. Social distancing is critical to check the spread of COVID-19, but relying on one strategy for the entire population won't work and is not sustainable for the economy in the long run.

A layered approach based on health risk stratification, the Susceptible, Exposed, Infected, or Recovered/Immune (SEIR) classification, and critical care needs can help put in place targeted actionable strategies and policies to save citizens' lives and get America back on its feet.



## An overview of what should be employed to achieve the end-state:

- Ensuring the infected population is within our healthcare capacity
- Sorting majority of the population according to the SEIR model and health-risk level based on age and medical history.
- Enforcing minimal-to-zero interaction between High Risk and Infected/Exposed.
- Opening 'Green Zones' for business, where people can freely move about and work in, and administer strict controls to ensure they stay green.

## The Hypothesis (will change as we learn more):

- 1 in 10 of High Risk will die if infected
- 1 in 1,000 of Low Risk will die if infected
- As of Apr 5, 2020, approximately 1 in 1,000 are reported to be infected (around 300,000 of the approximately 330 million).

Today, we have a lot of data based on broad trends but little capturing insights at the individual level. Time is of the essence here and we need to act before it is too late.

While it's not realistic to get most of the population sorted and understood within a short period of time, we can get a deeper understanding of around 10 percent of the population quickly, confidently provide more options for path to recovery, and, ultimately, get a certain percentage safely back to work.



## An overview:

1. Use digital geofences to create 'Green Zones' & 'Red Zones'. Maintain and administer access to Green Zones using digital passes for people. Define and enforce acceptable social behaviors in the Green Zone.
2. Social policies based on Health-risk & SEIR
3. Intervention strategies based on Health-risk & critical care needs

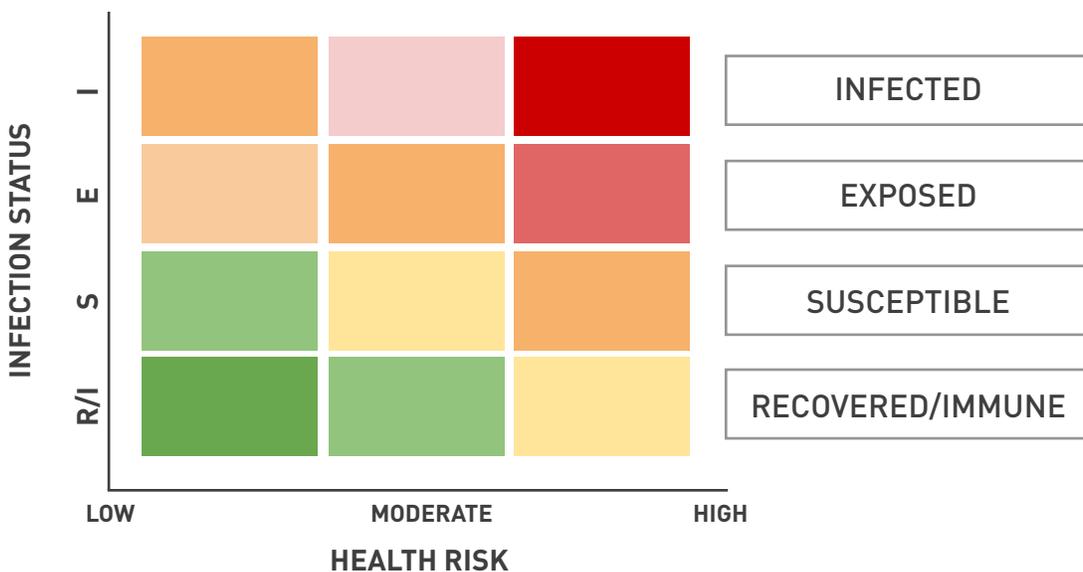
## Social policies based on health risk and SEIR

Overlaying the health-risk level of citizens (if they get infected) on top of their current SEIR status can help put measures in place to direct the 'Healthy/Immune Low Risk' population out to the Green Zones to drive the economy.

Using the heat map matrix as a reference, we can deploy up to 12 different strategies. Some examples:

- Infected High Risk people should get access to medical care
- Infected/Exposed people should self-quarantine and, if outside, follow guidelines to not expose others. This must be made a punishable offense if not followed
- Susceptible High Risk people should be isolated and avoid exposure
- Recovered/Immune High Risk people may leave for work located in Green Zones but still exercise caution, follow social distancing guidelines, and use PPE
- Susceptible Low Risk people should exercise caution while in public, wear masks, personal protective equipment (PPE), etc
- Recovered/Immune Low Risk people start working in Green Zones

With time and more data, we can execute more targeted strategies by layering on demography, travel history, financial ability, eligibility for human services, etc.



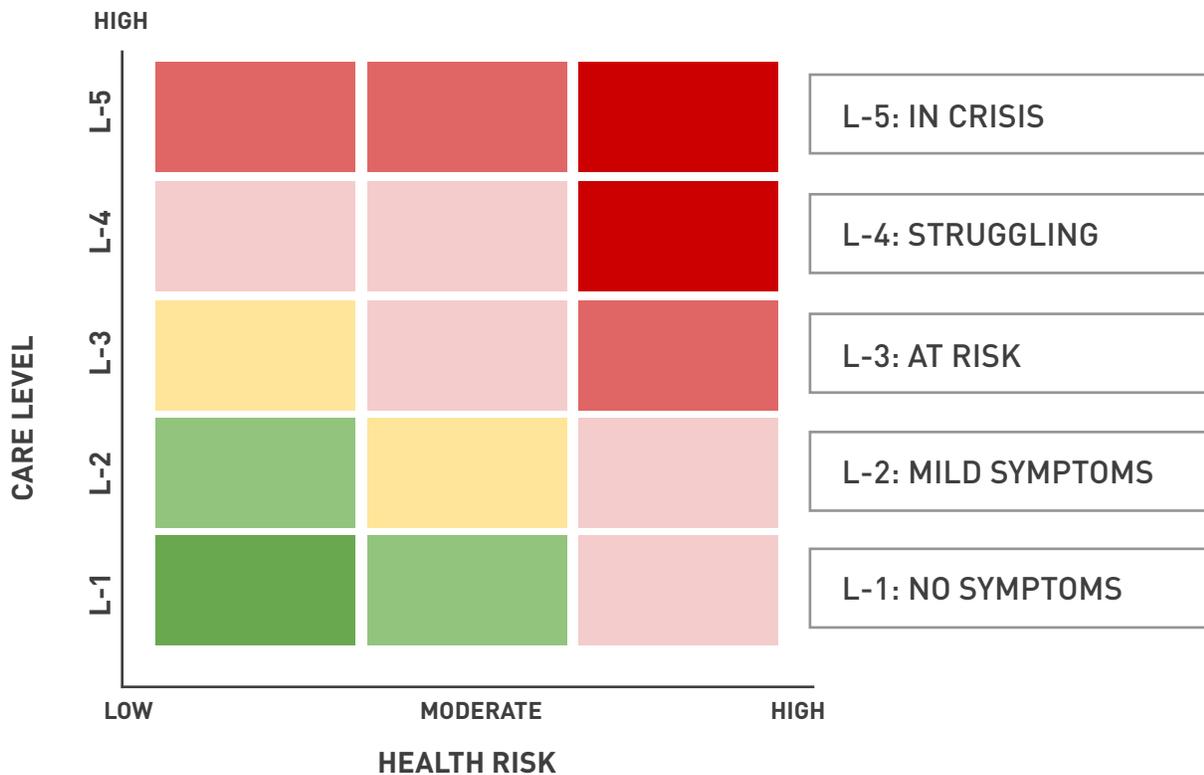
## Intervention strategies based on health risk & care needs

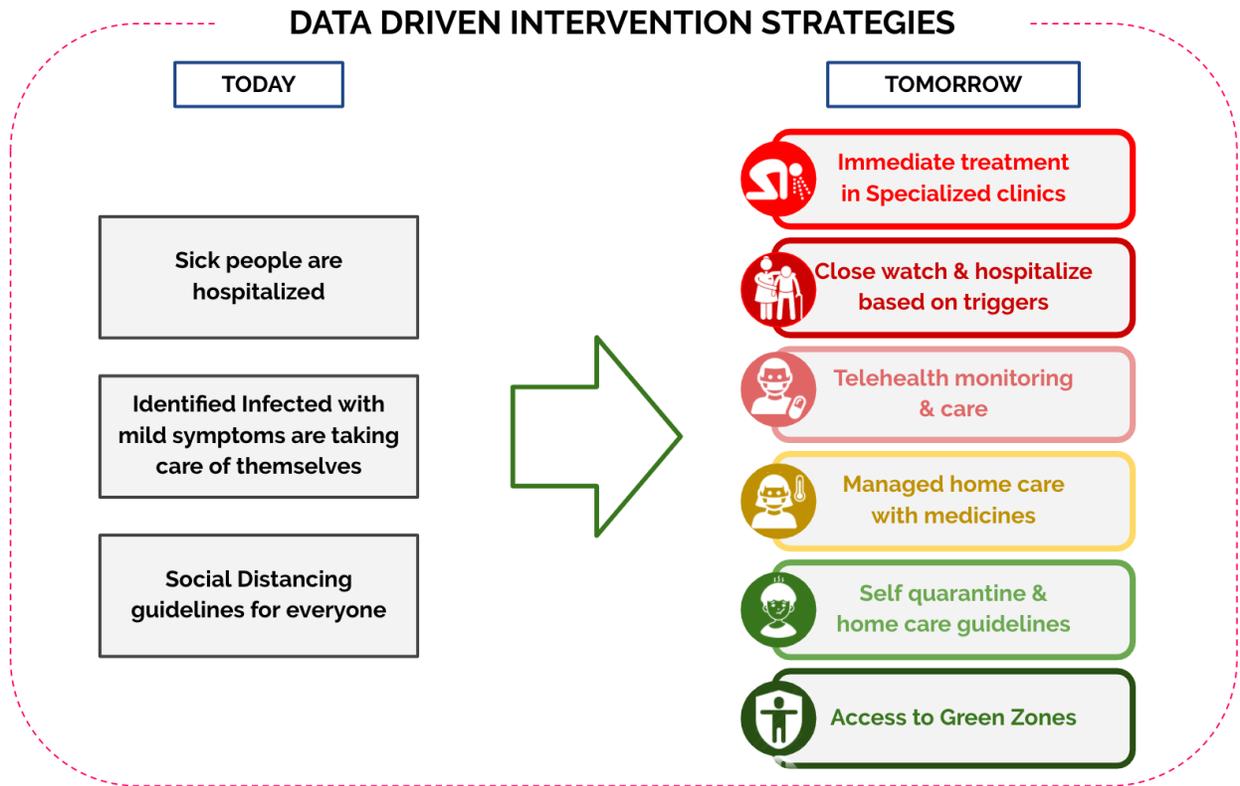
While dealing with the population that is infected, overlaying their health risk and critical care needs will enable optimizing the resources (self-care, PPE, home care kits, healthcare workers, ICUs, ventilators, etc).

We can deploy up to 15 different strategies.

Some examples::

- High Health Risk with symptoms of L-3 or above triggers close watch and early hospitalization to improve chances of survival
- Any patient exhibiting symptoms of L-4 or L-5 should be hospitalized and provided increased care
- Infected people with lower Health Risk and mild-to-no symptoms (L1-L2) should self-quarantine, have access to medicines and guidance to manage care at home
- Infected people with Low Health Risk and no symptoms are enrolled in telehealth, connected thermometers, etc to monitor recovery/progress





The key is to collect individual-level data as fast as possible and begin sorting people into a combination of these layers before it's too late. The goal is to get the data collected for at least 25-30 percent of the population. We need to put a user-friendly solution in the hands of our citizens to collectively enable speedy and effective tech-based implementation. This is critical to enable our leaders to execute strategies that can get the US back on track.

*Disclaimer: My expertise lies not in public policy but in operationalizing data science at scale and thinking big. The goal of this system is to provide leaders and frontline health workers with choices to enable them to make learned decisions. Campaigns based on population segments are proven strategies in industries like retail, finance, and health insurance cost of care. Never before has it been implemented at this scale and speed, but when it is a matter of life and death concerning the citizens of America and turbocharging an economy, it may well be the best option on hand.*



## APPENDIX

**Green Zone** – Spaces where people can freely move about/interact and work. The area is sanitized and monitored to maintain sanitation. Most people are healthy or recovered; infected/exposed people wear PPE, and take preventive measures to not expose others to the infection.

**Red Zone** – Spaces that run a high-level risk of exposure to coronavirus, are highly monitored, and where people are isolated/practice self-isolation. People need permission to go outside, and it is mandatory to use PPE outdoors.

**People Dimensions** that need to be layered to create population segments:

Health risk stratification - High, Medium, and Low based on age and medical history (patients with chronic kidney disease, those who have had organ transplant, patients undergoing chemotherapy, those with history of heart disease, diabetics, etc)

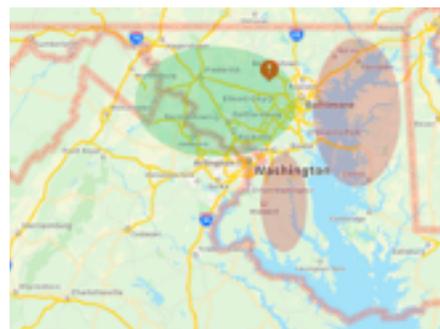
Infection status (SEIR) - Susceptible, Exposed, Infected, Recovered/Immune

Care Level (1-5) - Level 1: No symptoms, Level 2: mild symptoms, Level 3: at risk, Level 4: struggling, Level 5: in crisis

- Health risk High vs Low definitions will change, as we understand the impact of COVID-19 better
- Infection status of people will change, as symptoms get worse over time
- All definitions will change, and need to be continuously monitored, updated, communicated, and managed.
- More granular levels of segments and strategies can be created by layering on demography, travel history, financial ability, eligibility for human services, etc.

**What lies ahead:** The sheer magnitude of work to be done to quell the spread of coronavirus and expedite the return to normalcy for millions of Americans is overwhelming when viewed as a whole, but with timely and incremental steps, both goals are within reach leveraging existing technology platforms & assets. Along the way, some big challenges need to be addressed as well. These include:

- Testing and data collection challenges
- Availability of home care & healthcare
- Civil liberties & enforcement
- People trust & sentiments
- Privacy concerns
- Policy alignment and variations across Federal, State & Local agencies
- Data Security concerns
- Government agencies are slow in implementing & adopting technology



## ABOUT AUTHOR

### THIAG LOGANATHAN



Thiag is an accomplished leader who enables quick business outcomes by specializing in data and analytics lifecycle knowhow. He brings deep expertise in utilizing enterprise data assets for driving measurable value, monetization, and differentiation.

He has demonstrated experience in developing and rolling out end-to-end data-driven platforms and business solutions, including pricing optimization & elasticity, financial modeling, portfolio insights, loyalty programs, marketing mix, customer analytics, and segmentation.

Focusing on data and artificial intelligence for good, Thiag helps government workers and US constituents adopt modern, tech-powered experiences for human services agencies using Cardinality.ai.

He also leads product strategy and execution at Petram Data, a consumer marketing AI SaaS application leveraging pre-trained machine learning algorithms to influence the customer lifecycle journey for deliberate decisions and considered purchases. Prior to his current roles, he led the Big Data Insights division at DMI, helping organizations turn data into profit through mobility, big data, and data science, with a focus on customer experience and IoT.

In 2007, Thiag founded Calvin Consulting Inc, a business intelligence solution provider and SAP Partner, which got acquired by DMI in May 2013. During his time at Calvin, he was named the Executive of the Year for 2011 by the Ohio North East Chamber of Commerce, for his long-standing commitment to bettering the community.

Thiag holds a bachelor's degree in Electrical Engineering. He lives with his wife and three kids in Potomac, MD. Having recently hung up his cricket batting gloves, he is now looking to pick up golf and tennis.

