

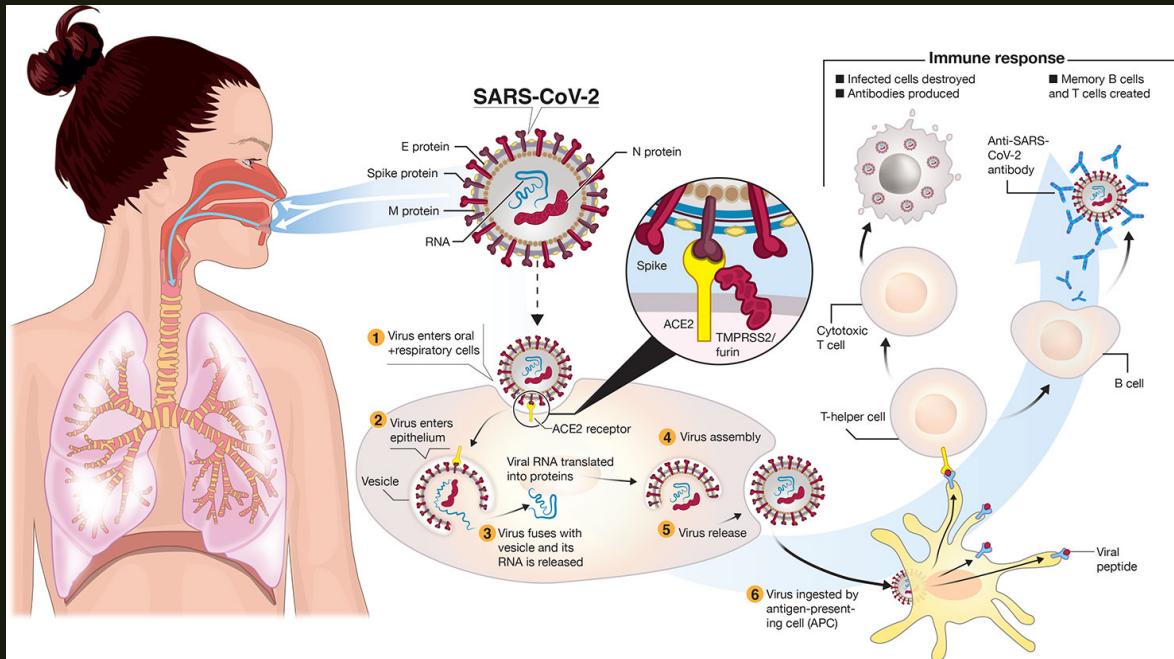
PLANNING MEDICAL OXYGEN SUPPLY DISTRIBUTION TO TREAT HOSPITALIZED COVID-19 PATIENTS

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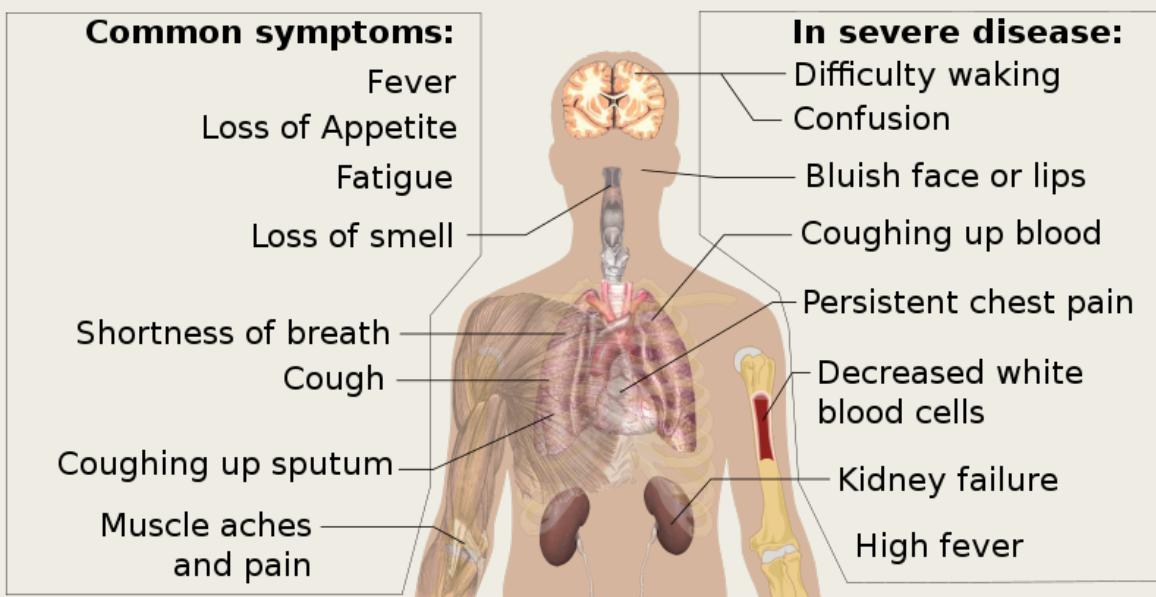
Coronavirus Disease

- The novel coronavirus disease (also known as COVID-19) is a highly infectious disease.
- It is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).
- Transmitted through droplets generated when an infected person coughs, sneezes, or exhales.
- Symptoms usually are fever, cough, headache, fatigue and breathing difficulties.



Coronavirus Disease

- SARS-CoV-2 infection can cause injuries on multiple organs.
- The most common cases are infection on the lungs causing pneumonia.
- The lungs become filled with fluid and inflamed, leading to breathing difficulties.



Coronavirus Disease

- In severe cases, the patients must be put on an oxygen supply or mechanical ventilator.
- However, many hospitals in different nations, particularly in developing countries, faced issues with medical oxygen shortages.

Total depletion of oxygen in hospitals

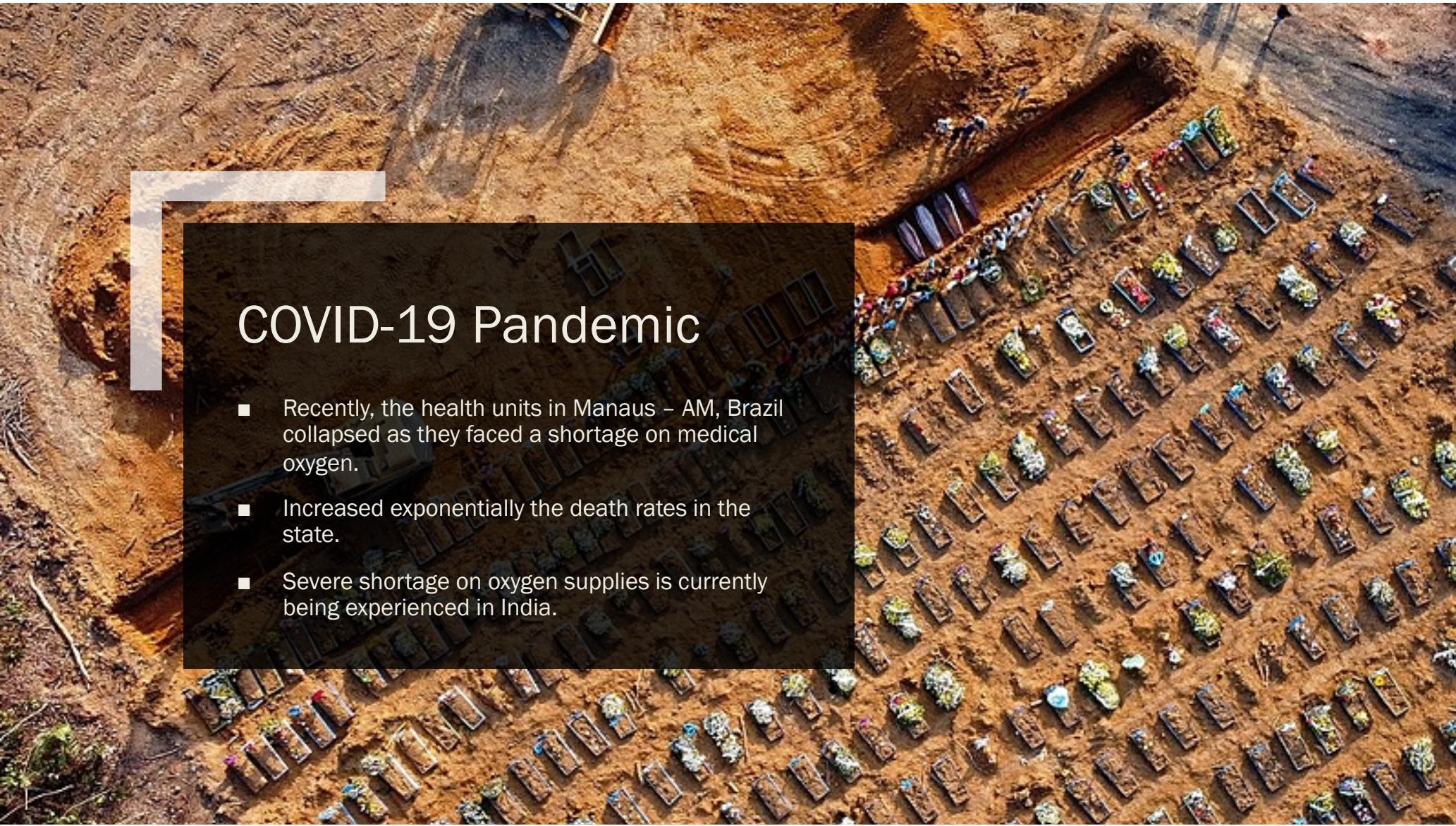
Lack of oxygen tanks

Lack of infrastructure

Poor administration

COVID-19 Pandemic

- Recently, the health units in Manaus – AM, Brazil collapsed as they faced a shortage on medical oxygen.
- Increased exponentially the death rates in the state.
- Severe shortage on oxygen supplies is currently being experienced in India.





Problem

How to reduce or avoid shortage of oxygen supply
in health units to treat COVID-19 infected patients?

Objective

- Develop a model capable of estimating what is the oxygen levels needed in hospitals or healthcare units.
 - PDDL+ modeling;
 - Expressive Numeric Heuristic Search Planner (ENHSP);
 - Help prevent on oxygen supply crisis;
 - Multi-scale model;

Project Management

	Planning techniques (PDDL+)	Develop the planner	Testing	Evaluate results	Write paper
Week 1	X				
Week 2		X			
Week 3		X	X		
Week 4			X	X	
Week 5				X	X

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Thank you!