The Covid-19 educational simulation aims to simulate the progression and transmission of Covid-19 infection. It aims to do this in a manner descriptive, comprehensive, and, through interactive visual presentation, easily accessible. The primary purpose of this simulation is public information and education. In particular, the program aims to convey, in a manner both clear and compelling, the effects of uncontrolled exponential spread of an airborne disease such as Covid-19.

The program simulates a population containing individuals with varying degrees of infectiousness, mingling in environments ranging from home to work to religious services. It deals with a closed community. Within that context, it assumes a strategy of “herd immunity” in which the community takes no specific preventative measures, and the environments in which people interact define the major determinants of the risk of infection. These determinants include the type of the environment, the number of people present, the mobility expected of persons within the environment, the ventilation provided and the sound level.

The activities the program simulates, both as infection risks and as a visual presentation, include home life, work, outdoor recreation, social gatherings, social spaces such as clubs and restaurants, religious services, and movement between these venues. The program simulates and visually presents the effects of these regular interactions, the resulting need for medical services, and the expected death tolls.

The current version of the program represents one thousand individuals; each individual is represented by an icon. The program simulates and displays the movement of individuals over time. The infected and infectious status of individuals is represented by both the configuration and the colour of the icon. Icons represent faces, and as the status of the person represented changes, to infected, infectious, symptomatic, severely ill and recovered. The program represents cases ending in death by grave markers in an area on the display marked off as a cemetery.

Each individual simulated has a specific risk of infection, a risk determined by their exposure. Exposure is determined by by the infection status of the people living with them, the status of the people they interact with through their movements, and the environments in which they interact.

The program is written in JavaScript and hypertext markup language, and is designed to run is any html 5 standard browser. It can thus form part of an educational presentation on the history, development, and risks of Covid-19, or, potentially, of any other airborne or even infectious virus with a defined morbidity.