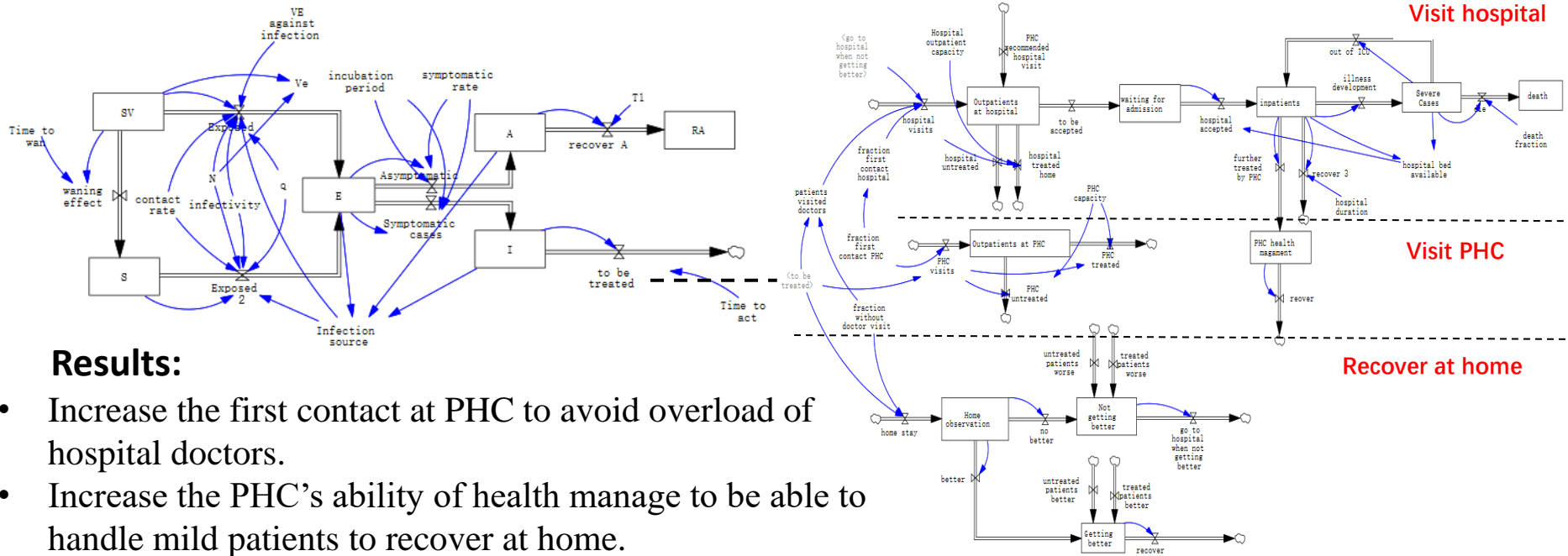


Medical Resources Overload during the Pandemic: A System Dynamics Modelling Research

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Background: Most countries adopted reopen strategy after a period of restrictions against Covid-19, and healthcare systems were being hit by a flood of infected patients. Healthcare systems in almost all countries are overload or even collapsed.

Model: System dynamics model is built with two parts: one is an extension of the SIR model for the spread of the virus and the other is the medical system.



Results:

- Increase the first contact at PHC to avoid overload of hospital doctors.
- Increase the PHC's ability of health manage to be able to handle mild patients to recover at home.
- Improve the ability to correctly identify high risk patients could also be helpful.
- The combined policies produce much better results than individual policy alone, which could greatly improve the doctor availability and hospital bed availability.
- An PHC-based integrated system is a better alternative for responding to the large-scale infection.