XI HUO, Ryerson University and York University
The evolutionary ecology of antimicrobial de-escalation

We model the transmission of P. aeruginosa in intensive care units (ICUs) with de-escalation as the major antibiotic treatment strategy. That is, empirical therapy is initiated when a patient is infected with P. aeruginosa, right after the laboratory test results become available, the definitive therapy will be de-escalated - the broad-spectrum antibiotic for empirical therapy is switched to a narrow-spectrum antibiotic if possible. De-escalation is a treatment strategy that have been applied widely in ICUs, with the aim of reducing the risk of super-infection and preserve the efficacy of broad spectrum drugs. It has been considered as a potential way of reducing antibiotic use and antimicrobial resistance in ICUs.

This is a project from the Development of an Antimicrobial Resistance Diversity Index (ARDI) led by Prof. Jianhong Wu.