**Population Structure Drives Differential Methicillin-resistant *Staphylococcus aureus* Colonization Dynamics**

**Supplemental Material**

**Table S3** Transitions and Equations for the Metapopulation Model of MRSA Acquisition

|  |  |  |  |
| --- | --- | --- | --- |
| Process | Event | Transition | Equation |
| MRSA Acquisition & Transmission | Nurse Contaminated (Assigned Patient) | NU,i to NC,i |  |
| Nurse Contaminated (Unassigned Patient) |  |  |
| Physician Contaminated | DU to DC |  |
| Patient Colonized (Assigned Nurse Contact) | PU,i to PC,i |  |
| Patient Colonized (Unassigned Nurse Contact) |  |  |
| Patient Colonized (Physician Contact) | PU.i to PC.i |  |
| MRSA Decolonization | Natural De-colonization | PC,i to PU,i | μ |
| Hand Hygiene and Decontamination | Nurse Hand Decontamination (Assigned Patient) | NC,i to NU,i |  |
| Physician Hand Decontamination | DC to DU |  |
| Nurse PPE Change (Assigned Patient) | NC,i to NU,i |  |
| Nurse PPE Change (Unassigned Patient) |  |  |
| Physician PPE Change | DC,i to DU,i |  |
| Patient Admissions and Discharge | PU,i Discharge to PU,i Admission\* |  |   |
| PU,i Discharge to PC,i Admission\* |  |  |
| PC,i Discharge to PU,i Admission\* |  |  |
| PC,i Discharge to PC,i Admission\* |  |  |

\* Note that patient discharge to patient admissions are not true “transitions” of a single individual, but rather the instantaneous replacement of a discharged patient with a newly admitted patient to maintain a steady population state. See 37 for details.