**Equations for Pseudo-Bergstrom Model (3 Strain)**

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| **Parameter** | **Description** |
| m | Rate of hospital entry |
| μ | Rate of patient turnover in the hospital (1/mu is the rate at which patients leave the hospital) |
| τ | Rate of the treatment effect |
| γ | Rate of natural recovery |
| β | Rate of Transmission |
| σ | Secondary (superinfection) colonisation rate) |
| C1 | Fitness cost of transmission – class 1 |
| C2 | Fitness cost of transmission – class 2 |
| C3 | Fitness cost of transmission – class 3 |
|  | Proportion of population treated with antibiotic class 1 |
|  | Proportion of population treated with antibiotic class 2 |
|  | Proportion of population treated with antibiotic class 3 |
| μ | Rate of patient turnover in the hospital |