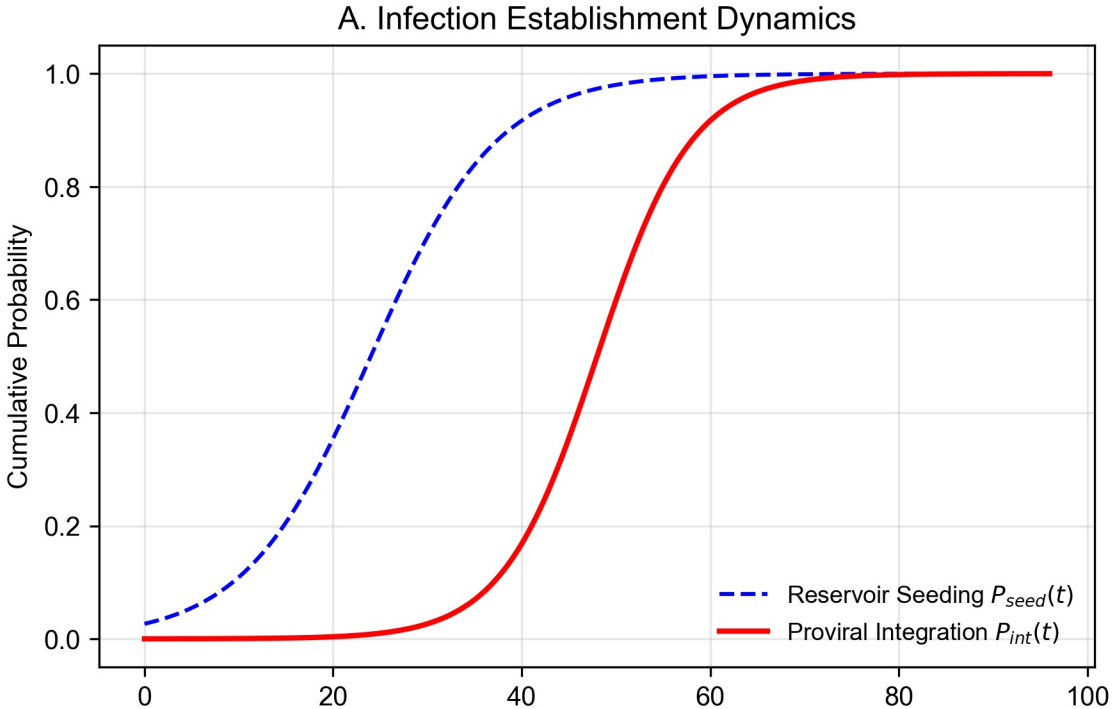

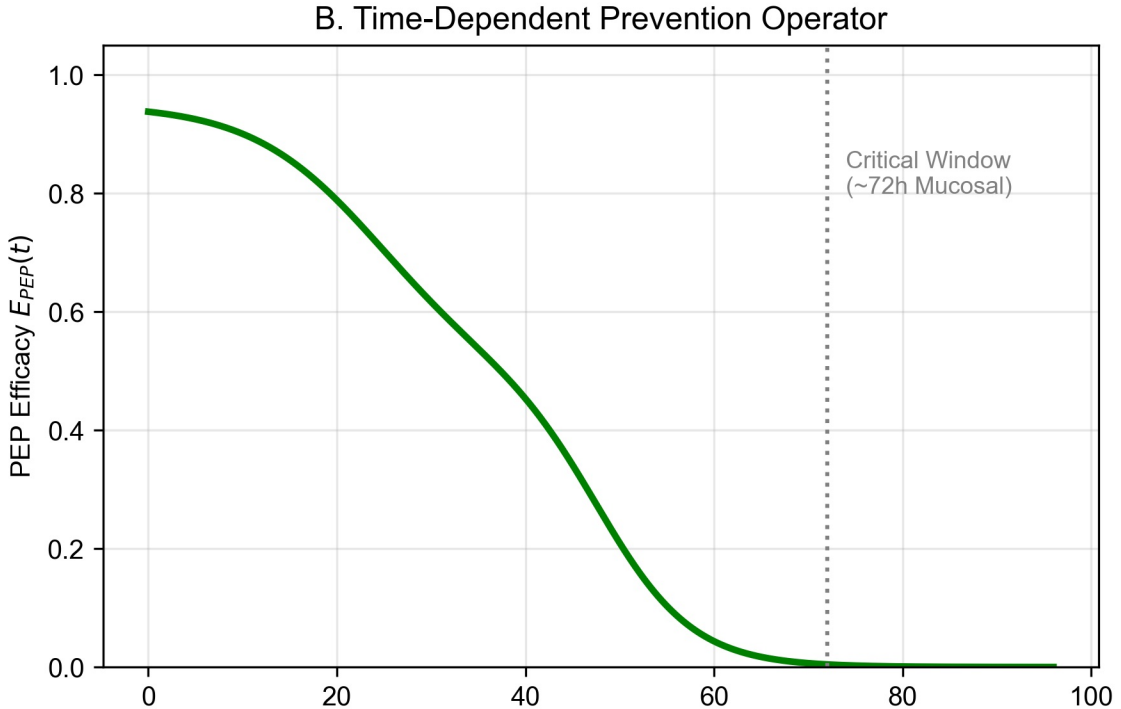

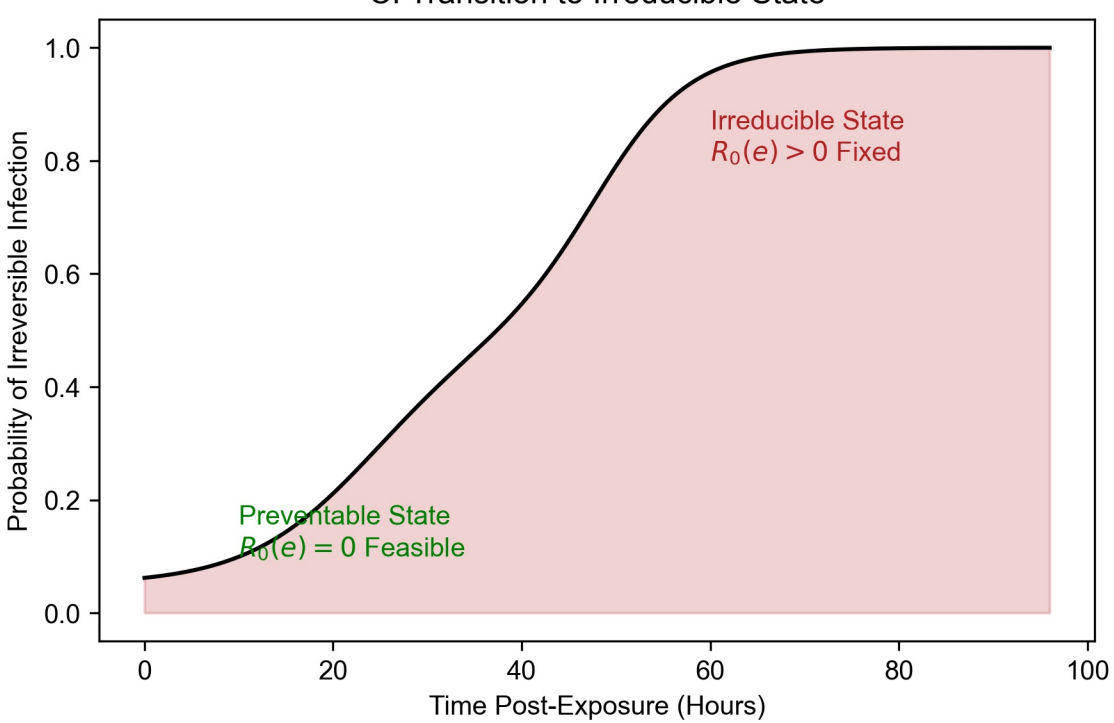

D. Mathematical Formalism

The Prevention Theorem

Prevention requires $R_0(e, t) = 0$.

$$R_0(e, t) = 1 - E_{PEP}(t)$$

As $t \to \infty$, $P_{int}(t) \to 1 \Rightarrow E_{PEP}(t) \to 0$.

$\therefore$ Prevention is only possible while $P_{int}(t) < 1$.

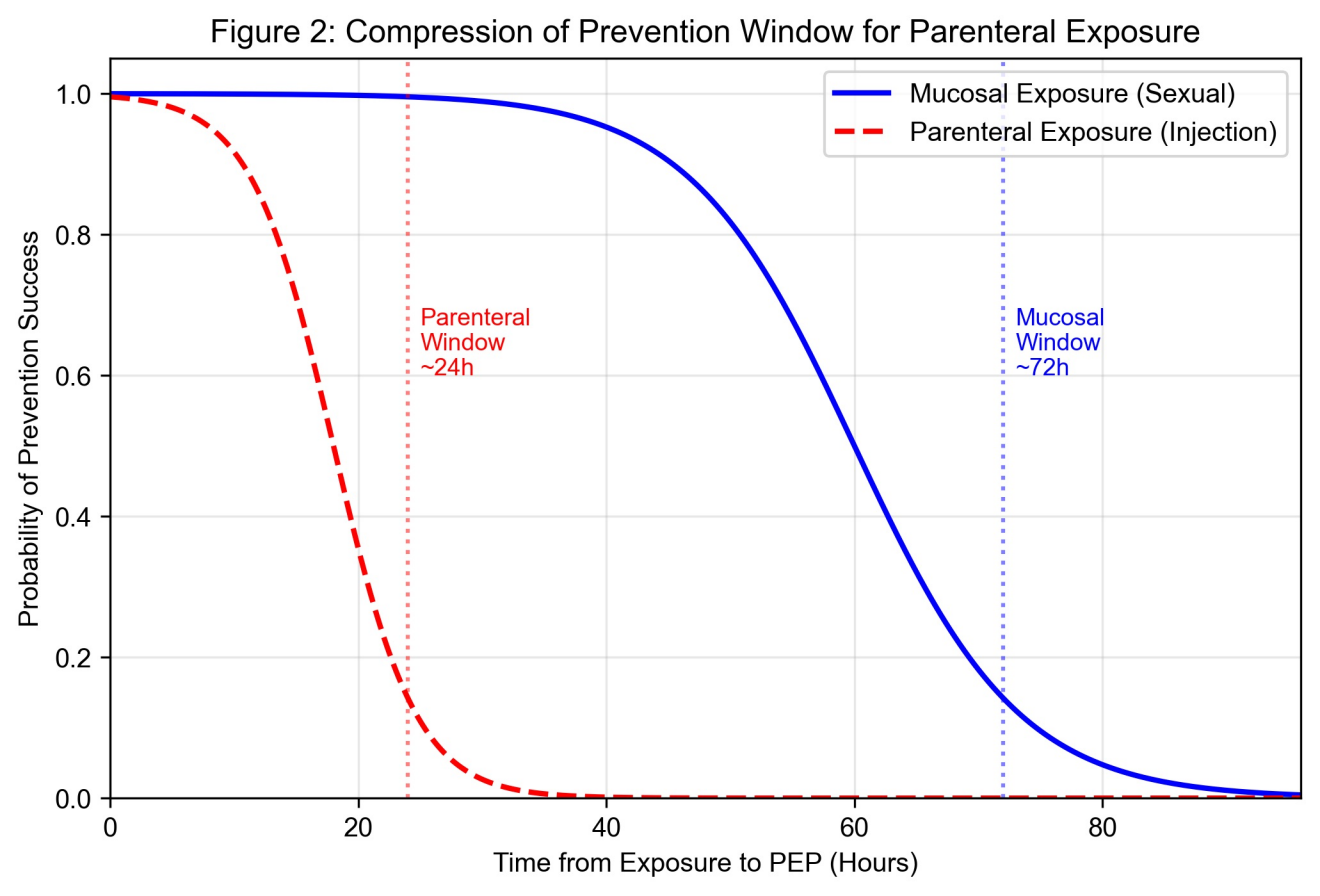
Figure 2: Compression of Prevention Window for Parenteral Exposure
Mucosal Exposure (Sexual)
Parenteral Exposure (Injection)
Parenteral
Window
~24h
Mucosal
Window
~72h
Probability of Prevention Success
1.0
0.8
0.6
0.4
0.2
0.0
0
20
40
60
80
Time from Exposure to PEP (Hours)