

Fig. 6. Reproductive number. y axis: R_0 for epidemic within a naive population, initiated by introduction of bacteria. x axis: bacterial median infectious dose. Solid lines: R_0 for parameters in bloom-induced example ($\phi = 0.67$); dashed lines: R_0 for parameters in instability-induced example ($\phi = 1.5$). In each group, lines from left to right: exponent $a = 15, 7, 2$.

Fig. 7. Extent of bloom-induced epidemics with phage absent, bacterial density under resource control. y axis: number of disease cases in excess of equilibrium prevalence (0.5 per 1,000), over 1 year postoutbreak. x axis: bacterial growth rate per day. Initial bacterial density: open circles, $100 \times K_v$ ($K_v = 2.5 \times 10^6$ cells/liter); filled circles, $10 \times$; open squares, $3 \times$. Other parameters: $k = 4 \times 10^7$, $\mu_- = 0.1$, $\phi = 0.67$, $\pi = 0.1$, $\delta \sim 10^{-4}$, $a = 7$.

Fig. 8. Phage-moderated epidemics, bacterial density under resource control. Epidemics induced by an initial bacterial density of $10 \times K_v$. y axis: number of disease cases prevented, compared to the zero-phage epidemic. x axis: initial phage density. Open circles, phage decay rate $\omega = 0.525$; filled circles, $\omega = 2.100$; open squares, $\omega = 8.400$. Other parameters: $m = 0.3$, $l = 2.1 \times 10^7$, $\alpha = 1$, others as in Fig. 7. (*Inset*) Effect of bacterial growth rate on number of cases prevented, for $\omega = 0.525$ and initial phage density 10^7 virions/liter.

Fig. 9. Phage-moderated epidemics, bacterial density under phage control. Epidemics induced by reducing initial phage density below equilibrium level, phage decay rate $\omega = 0.525$. y axis: number of disease cases in excess of equilibrium prevalence (0.5 per 1,000), under bacteria-phage reservoir equilibrium. x axis: initial phage density, as fraction of equilibrium phage density. $\phi(\omega, a)$: open circles, 1.5 (0.525, 7); open diamonds, 2.0 (0.394, 7);

filled circles, 3.0 (0.263, 5); open squares, 5.0 (0.158, 3). Other parameters as in Fig. 8. (*Inset*) Effect of bacterial growth rate on number of excess cases, for $\omega = 0.525$ and initial phage density 1% of equilibrium.