(a) Functions v and $\hat{v}$

(b) Number of active cases (I)

(c) Phase portrait

FIGURE 5 Comparison of control strategies which create an Allee effect. Chosen functions are piecewise linear maps, decreasing from 0.8 to 0 from $I = 0$ to $I = I_{max}$ and equal to 0 elsewhere, with $I_{max} = 300$ (blue), $I_{max} = 50$ (orange) and $I_{max} = 500$ (purple). Parameters values are $\beta = 1.2$, $k = 0.2$, $\alpha = 0.5$ and $\gamma = 1/200$, for a population of 50,000,000 individuals. The initial conditions is $S_0 = 60{,}000$, $E_0 = 800$, $I_0 = 100$ for 100,000 individuals. (a) comparison of functions v and $\hat{v}$, with a stable (solid circle) DFE and unstable (empty circles) endemic equilibria. (b) evolution of the number of active cases I. The early dynamics is depicted in insert. (c) Phase portrait. Stable equilibria are represented by a solid sphere, and unstable equilibria by a diamond, in colors corresponding to their respective maps v. Surfaces indicate the basin of attractions of the stable endemic equilibrium, the colors corresponding to their respective maps. The grey plane delimits the volume of possible initial conditions ($S + E + I + R \leq N$).