Nåsell, Ingemar (S-RIT)
The quasi-stationary distribution of the closed endemic SIS model. (English summary)

Summary: “The quasi-stationary distribution of the closed stochastic SIS model changes drastically as the basic reproduction ratio $R_0$ passes the deterministic threshold value 1. Approximations are derived that describe these changes. The quasi-stationary distribution is approximated by a geometric distribution (discrete!) for $R_0$ distinctly below 1 and by a normal distribution (continuous!) for $R_0$ distinctly above 1. Uniformity of the approximation with respect to $R_0$ allows one to study the transition between these two extreme distributions. We also study the time to extinction and the invasion and persistence thresholds of the model.”