Identifying Disease Source on a Network with Limited Information

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Abstract

We compare the relative success of multiple approaches to identifying the source of a simulated series of outbreaks on a real-world network when information is severely limited.

The performance of these approaches is limited by several constraints that can appear in real-world situations: the structure of the network is not directly available, the disease parameters are unknown *a priori*, reporting of the disease is limited – *e.g.*, because cases are misidentified, public health reporting is limited, or the disease is typically asymptomatic – and active investigation results are highly time-sensitive.