**S4 text: Pseudo-code for the calculation of the network-associated distance between an incident-colonization episode and potential infector**

**For each incident-colonization episode *i* = 1 to Ncases do**

1. *Identify the episode*

Let the concerned patient as *pi*, the date as *wi* and the microbiological result as *mi*

1. *Find all swabs from individuals other than* pi *taken during the time window [*wi*–*W*,* wi*–*1*]*

Tab = table of patient IDs/swab dates/microbiological results

**# To compute the observed distance**

1. *Find all transmission candidates in Tab*

For each swab in Tab

If microbiological result (swab) = *mi*Add swab to CandidateTab

1. *Compute the distance* dt *from the episode to each transmission candidate* t

For each transmission candidate *t* in Candidate Tab

*dt* = 1

While [(found = FALSE) and (full = FALSE)] repeat

 IDlist = list of all patient IDs with network links of length *dt* to patient *pi* in the time window [*wi*–*W*, *wi*–1]

 If length of the IDlist = total number of individual in the network do full = TRUE

 If *t* is in IDlist do Set found = TRUE

 Else do *dt* = *dt* + 1

1. *Determine the distance to the closest potential infector*

Compute *d* as the minimum of all *dt*

**# To compute the expected distance under H0**

**Do *n* times**

1. *Shuffle the microbial data*

Randomly shuffle the last column of Tab

1. *Perform steps 2 to 4 to compute the episode’s distance to its closest potential infector*
* **Compute *dexp* as mean of the *n* distances**