# The dissemination of staph infections in hospitals

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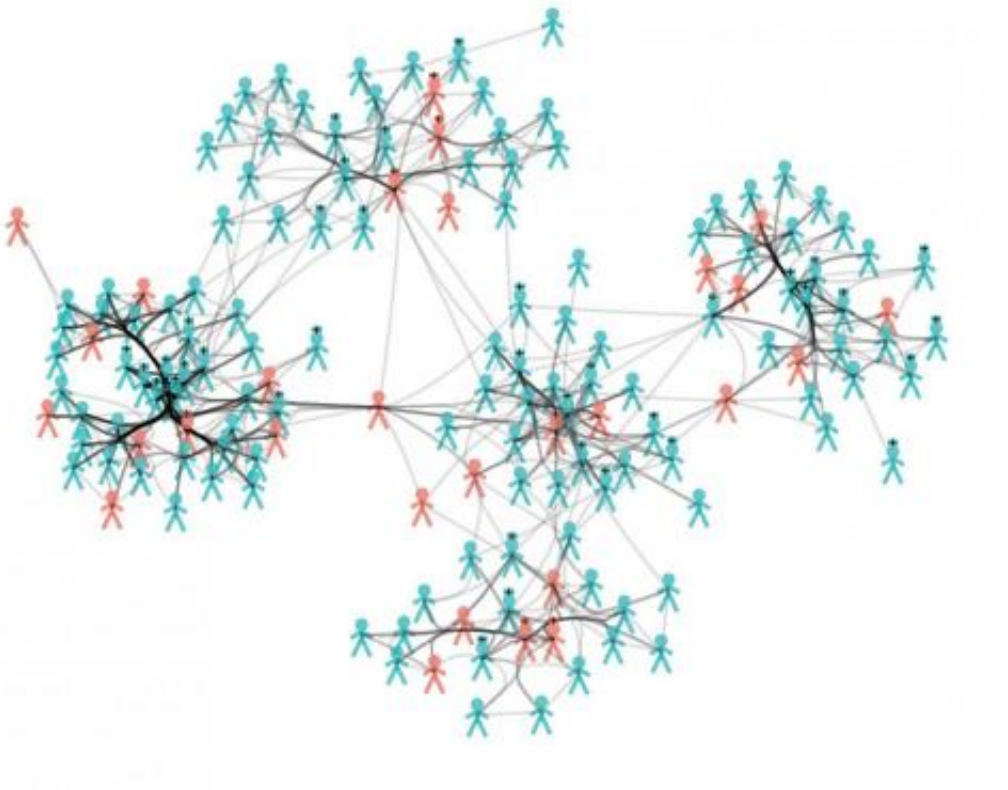

Network of contacts and MRSA carriage. Patients and healthcare workers (with a '+' on their heads) are linked by a grey line if they had contact. Methicillin-resistant *S. aureus* carriers are shown in red. Credit: Obadia et al.

Wireless sensors recording human interactions explain the transmission of germs, such as MRSA, in hospitals, according to research by Thomas

Obadia and colleagues.

The study, published this week in *PLOS Computational Biology*, reveals that close proximity interactions between patients and healthcare workers in Berck-sur-Mer hospital, France, acted as pathways for the transmission of Staphylococcus aureus strains.

The i-Bird (Individual Based Investigation of Resistance Dissemination) study involved analyzing 85,025 daily interactions measured every 30 seconds between 590 participants over a 4 month period. The availability of wireless sensors made capturing interactions between individuals easier than ever and the research supports the use of high-tech approaches for infection control.

Two key features that allowed the analysis were: the simultaneous measurement of contacts and microbiological data - previous studies focused on one or the other component; and the long term follow-up that was instrumental to link incident episodes with contacts.

The results indicate that the study of individuals contact may help identify increased risk of transmission situations and ultimately reduce the burden of nosocomial *S. aureus* transmission.

The researchers say: "Contact networks have been increasingly used in modeling the spread of infectious diseases. Yet, the contacts collected were often incomplete or used proxies that were thought to capture situation at risk. In this unique experiment, the joint analysis of contact and carriage validates the use of close-proximity interactions recorded by electronic devices, and opens a new field for prevention measures in hospitals."

**More information:** Obadia T, Silhol R, Opatowski L, Temime L, Legrand J, Thiébaut ACM, et al. (2015) Detailed Contact Data and the

Dissemination of Staphylococcus aureus in Hospitals. *PLoS Comput Biol* 11(3): e1004170. DOI: 10.1371/journal.pcbi.1004170