We are offering a 18 months post-doc position to work on modeling nosocomial bacterial transmission in the hospital.

Several studies have shown that organizational factors may play a major part in nosocomial risks. In this respect, widespread community epidemics could impact hospital hygiene by increasing patients admission while decreasing health-care worker attendance, leading to understaffing and increased circulation of bacterial pathogens within hospitals.

In collaboration with the French coordinating centre for the fight against nosocomial infections (C-CLIN), we plan to study the impact of a community influenza epidemic on the circulation of bacterial pathogens within hospitals. This study will combine the collection and analysis of epidemiological data over two influenza seasons with a mathematical modeling approach.

The objectives of this post-doc position are to develop the necessary mathematical models, to validate their predictions using the epidemiological data, and to use them to evaluate optimal control strategies for bacterial nosocomial infections during an influenza epidemic. The developed models will be based on an existing agent-based model, NosoSim (Temime et al, PNAS, 2009, 106(43)).

Ideally, the applicant should have a PhD in biomathematics / bioinformatics, as well as a previous experience in epidemic mathematical modeling or complex systems.


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