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## SÉMINAIRE

# Dynamic modelling of HPV transmission and cervical cancer natural history : implications for public health interventions

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In the last three decades, the appreciation of the role of infections in cancer aetiology has greatly expanded. Among the 13 million new cancer cases that occurred worldwide in 2008, around 2 million (16%) were attributable to infections. Cervical cancer is a major example of infection-related cancer. The uncovering of a causal relationship between carcinogenic HPV infections and cervical cancer is shifting public health intervention from cancer control to infection control paradigm. Worldwide, vaccination and detection of infected individuals play an increasingly crucial role in cervical cancer control. In support of this paradigm shift, the use of infection transmission models has entered the field of infection-related cancer epidemiology. These models are useful to understand the infection transmission processes, to estimate the key parameters that govern the spread of infection, and to project the potential impact of different preventive measures. This presentation, focused on HPV transmission and cervical cancer natural history, aims to concisely illustrate the main principles of transmission dynamics, the basic structure of infection transmission models, and their use in combination with empirical data