Abstract - Influenza represents an ongoing risk to public health and negatively impacts quality of life of people. School children are considered to be disseminators of the seasonal flu epidemics. Hand washing is an effective and economical intervention to control and prevent the flu propagation in schools. The purpose of this project was to measure the impact of behaviors and environment on the influenza spread in the educational setting. The agent–based hand washing model was created using AnyLogic® simulation software to quantify the dynamic of flu course and measure the efficacy of hand washing intervention on flu spread among school children. Hand washing variable was manipulated during the simulation experiment to identify the optimal hand washing success rate to decrease the risk of influenza virus transmission in virtual school environment. The illness decrease in 49% was observed when hand washing success rate was gradually increased from 0% to 50%. The results of the simulation experiment indicate that the dynamic of the influenza circulation in schools could be substantially lessened via incorporation of routine handwashing. The simulation experiment with AnyLogic® suggested that maintaining hand hygiene in schools is a critical and an effective method to reduce the risk of the flu transmission among school children and the society overall.

Keywords: influenza; pandemic influenza; school children; hand hygiene; simulation modeling, agent-based; AnyLogic®