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Health newscasts for increasing influenza vaccination coverage: How much is too much?

Both pandemic and seasonal influenza are receiving more attention from mass-media than ever before. Frequent topics are epidemic severity, vaccination, etc., changing the way in which we perceive the utility of disease prevention. Voluntary influenza vaccination has been recently modeled using inductive reasoning games. Thus, it has been found that severe epidemics cannot be prevented by voluntary vaccination unless vaccination incentives are offered. However, a key assumption has been that individuals make vaccination decisions based on whether there was an epidemic each influenza season; no other epidemiological information is available to them. In this work, we relax this assumption and investigate the consequences of making more informed vaccination decisions while no incentives are offered. We obtain two major results. First, providing additional epidemiological information to the public may stabilize the vaccination coverage and suppress severe influenza epidemics. Second, when severe epidemics are prevented, if even more epidemiological information is released to the public, then the vaccination coverage decreases. We discuss three scenarios where individuals know (i) the prevalence, (ii) the vaccination coverage and (iii) both the prevalence and the vaccination coverage every influenza season, in addition to whether there was an epidemic.

References

[1] R. Vardavas, R. Breban, S. Blower, *Can influenza epidemics be prevented by voluntary vaccination?* PLoS Comput Biol **3** e85, 2007.

[2] R. Breban, R. Vardavas, S. Blower, *Mean-field analysis of an inductive reasoning game: application to influenza vaccination* Phys Rev E **76** 031127, 2007.