Just how much will that flu vaccine help?

Every year between 5 and 20 percent of the US population contracts influenza, and in a typical year, complications from the flu lead to 200,000 hospitalizations and 30,000 deaths. The influenza vaccine has the potential to greatly reduce this public health burden. Randomized controlled trials demonstrate that vaccination substantially reduces the probability that a person develops influenza, but they lack sufficient power to estimate the vaccine’s efficacy in reducing rare events such as hospitalizations and deaths.

Huntsman assistant professor Devon Gorry, alongside colleagues Carlos Dobkin at the University of California, Santa Cruz, and Michael Anderson at the University of California, Berkeley, recently received a $650,000 grant from the National Institutes of Health to study the impact of flu vaccination on serious health challenges. Typically, only 15% of reviewed proposals receive funding.

Their research has three specific aims:

1. Estimate the influenza vaccine’s effectiveness in protecting individuals near age 65 from influenza severe enough to result in a visit to the doctor, hospitalization, or death.
2. Document the influenza vaccine’s effect on reducing influenza-related morbidity and mortality among individuals at broader age ranges.
3. Determine if current influenza vaccination rates significantly reduce morbidity and mortality among the unvaccinated through herd effects.
Comparisons between the vaccinated and unvaccinated using observational data suggest that the vaccine reduces hospitalizations and deaths. However, these estimates often suffer from selection bias. The research by Dr. Gorry and her colleagues will try experimental approaches, including exploiting age-based guidelines and leveraging year-to-year variations in how well the vaccine matches circulating influenza strains.