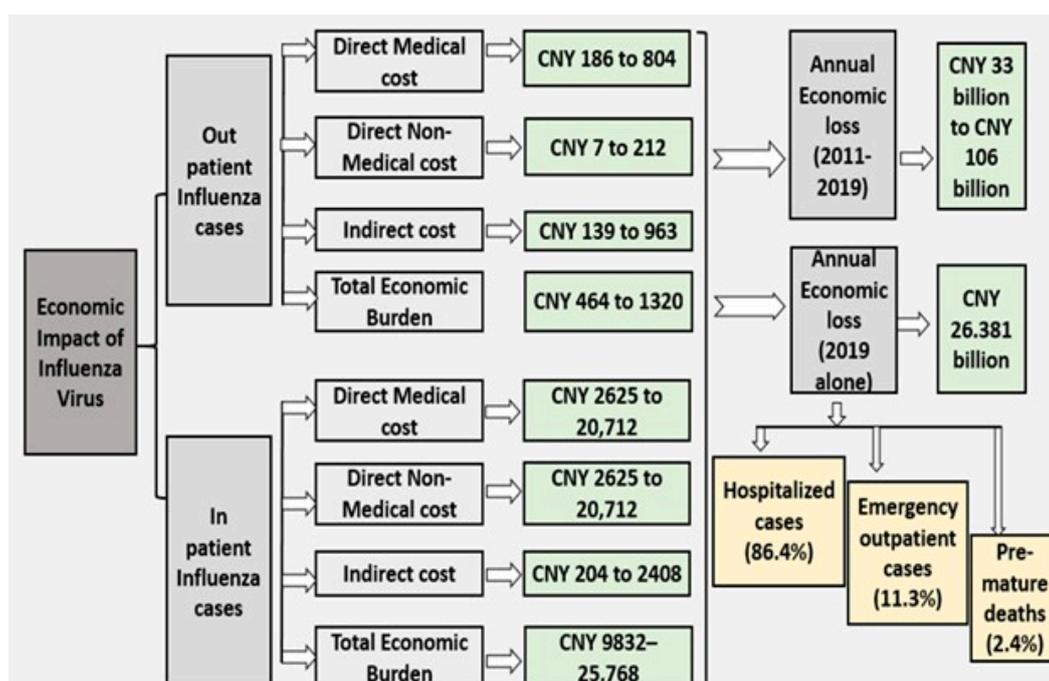


Figure S1: Economic impact of pandemic influenza in China



The total economic burden was 26.3g billion CNY, accounting for GDP in 2019: of which the hospitalization-related economic burden accounted for the highest proportion (86.40%, 22.79 billion •CNY): followed by the outpatient-related economic burden (11.3%: 2.97 billion CNY and the indirect economic burden of productivity Loss of premature deaths was the lowest (2.4 0.62 billion CNY) Largest economic burden observed in East China (10.51 billion CNY) and smallest observed in Northeast China (0.38 billion CNY) [19].

Table S1: Economic impact of pandemic influenza in Chicago, USA

Catastrophic influenza	Base case	Static model	Dynamic model
Pandemic cost per capita	\$678.10	\$581.09	\$370.56
Attack rate	30.15% [0-19 years: 48.35%] [20-64 years: 23.94%] [65+ years: 14.91%]	25.33% [0-19 years: 40.62%] [20-64 years: 20.11%] [65+ years: 12.52%]	16.34% [0-19 years: 27.97%] [20-64 years: 12.25%] [65+ years: 7.34%]
Reproduction number	1.19	1.15	1.09
Strong influenza	Base case	Static model	Dynamic model
Pandemic cost per capita	\$486.67	\$420.28	\$90.81
Attack rate	21.96% [0-19 years: 36.76%] [20-64 years: 16.82%] [65+ years: 10.18%]	18.45% [0-19 years: 30.88%] [20-64 years: 14.13%] [65+ years: 8.55%]	3.90% [0-19 years: 6.47%] [20-64 years: 2.59%] [65+ years: 1.52%]
Reproduction number	1.13	1.11	1.02
Moderate influenza	Base case	Static model	Dynamic model
Pandemic cost per capita	\$255.18	\$225.83	\$14.85
Attack rate	11.73% [0-19 years: 20.64%] [20-64 years: 8.55%] [65+ years: 5.05%]	9.85% [0-19 years: 17.34%] [20-64 years: 7.19%] [65+ years: 4.24%]	0.16% [0-19 years: 0.30%] [20-64 years: 0.11%] [65+ years: 0.06%]

Table S1: cost per capita, attack rate, and reproduction number with and without vaccine intervention are presented for catastrophic, strong, and moderate Influenza pandemic scenarios. The vaccine intervention is implemented at 40% compliance and 40% efficacy which decreases the pandemic cost per capita, attack rate, and reproduction number. Pandemic cost per capita, attack rate and reproduction number are relatively lower in the dynamic model (direct indirect effects) in comparison to the static model (direct effect only) [20].