**CDC is requesting information about your forecast methodology be provided in a standard format to better capture the types of data and methodologies being used to forecast influenza. Please complete the form for your team’s forecast by November 16, 2018 (or, if this form is being used for the hospitalization challenge, within two weeks of the start of the challenge). If your team submits more than one forecast each week, please complete a separate form for each one. If at any point during the challenge a significant change to the forecast data sources or methodology is made, please complete a new form.**

**1. Date:**

October 29th, 2018

**2. Team name:**

Columbia University

**3. Challenge:**

FluSight

Hospitalization (FluSurv)

State ILI

**4. Model name (if different from team name or if more than one forecast; no more than 25 characters):**

CU\_Vixen

**5. Brief narrative describing methodology (no more than 50 words):**

SEIRS compartmental model with Ensemble Adjustment Kalman filter. Also uses nowcasts.

**6. Please provide any references (published article, website, etc.):**

* Shaman, J, A. Karspeck, W. Yang, J. Tamerius, and M. Lipsitch, 2013: [Real-Time Influenza Forecasts during the 2012-2013 Season.](http://www.nature.com/ncomms/2013/131203/ncomms3837/full/ncomms3837.html) *Nature Communications*, 4: Article Number 2837, doi:10.1038/ncomms3837.
* Pei, S. and **J. Shaman**, 2017: [Counteracting structural errors in ensemble forecast of influenza outbreaks](https://www.nature.com/articles/s41467-017-01033-1).  Nature Communications, **8**, Article Number 925, doi:10.1038/s41467-017-01033-1.
* Kandula, S, D. Hsu, and J. Shaman. 2017. [Subregional nowcasts of seasonal influenza using search trends](https://doi.org/10.2196/jmir.7486). Journal of Medical Internet Research, 19(11):e370, 2017.
* Forecast website: http://cpid.iri.columbia.edu/

**7. Model components:**

Please indicate which of the following data source(s) your team used in developing your forecast. Check all that apply.

CDC FluSurv-NET

CDC ILINet at the national or regional level

CDC ILINet at the state level

CDC webpage visits

Commute and transportation (e.g., flight) data

Electronic/Cloud-based health records

Google/Internet-search query information

HealthTweets/Twitter

NCHS Pneumonia and Influenza Mortality Surveillance

Online news/outbreak reporting (e.g. ProMed, HealthMap)

School vacation calendars

Weather/climate data

☐ Wikipedia

☐ WHO/NREVSS virologic data

Other. Please specify:

Delphi Epicast API

Please indicate the methodological approaches used to create this forecast. Check all that apply.

Crowdsourcing

Machine-learning approaches

Mechanistic model at the individual level (e.g. agent-based model)

Mechanistic model at the population level (e.g. compartmental model)

Metapopulation/Network-based approaches

Statistical/descriptive/phenomenological models (i.e. models that do not directly account for disease transmission dynamics)

Other. Please specify:

Is this forecast the product of an ensemble?

Yes

No

Has this forecast been submitted in previous forecasting challenges?

Yes. Please indicate which influenza season(s): 2016/17, 2017/18 with small updates

No