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: 11/16/2018

2. Team name:

University of Arizona

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):

UA-EpiCos

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

Forecasts are made using the dynamical system $dX/dt = a\cos(bX) + c$, describing the change in cumulative wILI. Model parameters are fit using data assimilation techniques, and forecasts are made by solving the ODE forward in time with the estimated parameter choices.

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

None

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:

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):
✓ No, but a similar forecasting methodology was used for the 2017-18 influenza season: the same model was used but different methodologies were applied for parameter estimation.