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**Title:** “Predicting seasonal influenza hospitalizations using an ensemble super learner: a simulation study”

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**Data Availability Statement:** The code necessary to reproduce these results and the output from the super learner procedures are provided in a repository at Open Science Framework **(doi: XXXXXXXXX)**. These materials are also housed permanently at the Brown Digital Repository **(doi/url: XXXXXXXXXXX)**, and the package can be installed directly via the Github repository (<https://www.github.com/jrgant/FluHospPrediction>).

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**Running Head:** Predicting Flu Hospitalizations with Super Learner

**Keywords:** influenza, hospitalization, machine learning, forecasting, public health surveillance, epidemiologic methods

**Abbrevations:** ILI, influenza-like illness; EIP, Emerging Infections Program

**Contributions:** J.R.G. helped to refine the study aims, formulated the analysis plan, implemented all coding and analyses, and drafted the initial version of the manuscript. K.W.M. and C.J.H. assisted in formulating the study goals and analysis plan and interpreting the results, in addition to critically revising the manuscript. J.S. reviewed and contributed to refining the statistical analysis, helped to interpret the results, and critically revised the manuscript. R.v.A. and A.C. conceived of the project aims, assisted in interpreting the results, and critically revised the manuscript. A.R.Z. helped to conceive of the project aims, formulate the study plan, and interpret the results, in addition to critically revising the manuscript. A.R.Z. and K.W.M. both supervised the project. All authors agreed to the submission of the final version.