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**Eric Eager** (eeager@uwlax.edu), La Crosse, WI 54601, **Megan Eberle** (eberle.megan@uwlax.edu), La Crosse, WI 54601, and **James P Peirce\*** (jpeirce@uwlax.edu), La Crosse, WI 54601. *How Infectious Was #Deflategate?*

On Monday January 19, 2015 a story broke that the National Football League (NFL) had started an investigation into whether the New England Patriots deliberately deflated the footballs they used during their championship win over the Indianapolis Colts. Like an infectious disease, discussion regarding Deflategate grew rapidly on social media sites in the hours and days after the release of the story. However, after the Super Bowl was over, the scandal slowly began to dissipate and lost much of the attention it had originally had, as interest in the NFL waned at the completion of its season. We construct a simple epidemic model for the infectiousness of the Deflategate news story. We then use data from the social media site Twitter to estimate the parameters of this model using standard techniques from the study of inverse problems. We find that the infectiousness (as measured by the basic reproduction number  $\mathcal{R}_0$ ) of Deflategate rivals that of any infectious disease that we are aware of, and is actually more infectious than recent news stories of greater importance - both in terms of  $\mathcal{R}_0$  and in terms of the average amount of time the average tweeter continued to tweet about the news story. (Received September 01, 2015)