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Jonathan Forde* (forde@hws.edu), **Stanca Ciupe**, **Ariel Cintron-Arias** and **Suzanne Lenhart**. *Optimal Control for a Delay Model of HBV Treatment*. Preliminary report.

Although Hepatitis B Virus (HBV) is vaccine-preventable, there are 240 million chronically infected people, and 780,000 die each year of HBV-associated symptoms. For this reason, there is interest in drug treatment aimed at reducing symptoms and preventing or clearing chronic infection. Building on an existing delay differential equation model of acute HBV infection, we explore the effects of protease inhibitors and interferon-alpha on viral dynamics. Further, we formulate and numerically solve an optimal control problem, providing a framework for evaluating treatment strategies by including the costs of drug treatment, including economic cost and side effects. (Received January 13, 2015)