1077-92-2818 **Mohammed Yahdi*** (`myahdi@ursinus.edu`), Depart of Math & CS, Ursinus College, Collegeville, PA 19426, and **Michael Dunlea**. *Optimal Control for a VRE Model.* Preliminary report.

Antibiotic resistance Vancomycin Resistant Enterococci (VRE) is one of CDC's top ten health concerns. Optimal Control Theory is used to determine efficient and economically favorable strategies to prevent outbreaks and to control the emergence of VRE in hospital intensive care units. Key controls included combinations of the levels of special preventive care, healthcare workers' compliance rates, and health and economical costs. In particular, it is shown that, rather than constant levels, variable and lower levels of special preventive care are best for controlling VRE and preventing outbreaks. (Received September 22, 2011)