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Marissa Renardy* (renardy@umich.edu) and **Denise Kirschner**. *Evaluating vaccination strategies for tuberculosis in endemic and non-endemic settings*. Preliminary report.

According to the World Health Organization, tuberculosis (TB) is the leading cause of death from infectious disease worldwide. While there is no effective vaccine against adult pulmonary TB, more than a dozen vaccine candidates are in the clinical trial pipeline. These include both pre-exposure vaccines to prevent initial infections and post-exposure vaccines to prevent reactivation of latent disease. Many epidemiological models have been used to study TB, but most have not included a continuous age structure and the possibility of both pre- and post-exposure vaccination. Incorporating age-dependent death rates, disease properties, and social contact data allows for more realistic modeling of disease spread. We propose a continuous age-structured model for the epidemiology of tuberculosis with pre- and post-exposure vaccination. We use uncertainty and sensitivity analysis to make predictions about the efficacy of different vaccination strategies in a non-endemic setting (United States) and an endemic setting (Cambodia). In particular, we determine optimal age groups to target for pre-exposure and post-exposure vaccination in both settings. (Received September 14, 2018)