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Jin Wang* (jin-wang02@utc.edu). *Analyzing the impact of awareness programs on cholera dynamics.*

We propose mathematical models to investigate the impact of media and awareness programs on the transmission and spread of cholera, a water-borne intestinal disease, based on a differential equation framework. We study the essential dynamical properties of each model, using both analytical and numerical approaches. We find that these models, though closely related, may exhibit significantly different dynamical behaviors ranging from regular threshold dynamics to backward bifurcations. Our results underscore the importance of validating key modeling assumptions in the development and selection of mathematical epidemic models toward practical applications. (Received September 22, 2017)