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Ronald E. Mickens* (rohrrs@math.gatech.edu), Physics Department, Box 1744, Atlanta, GA 30314, and **Sandra Rucker** (srucker@cau.edu), Department of Mathematical Sciences, Room 138, Atlanta, GA 30314. *Construction and Analysis of a New SIR Model.*

Standard SIR epidemiological models have the property that the infectious population numbers only go to zero as $t \rightarrow \infty$. We demonstrate, by an explicit construction, that models can be formulated such that $I(t)$ becomes zero at a finite time. Both analytical and numerical results are given to support this conclusion. (Received September 05, 2009)