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Nikhil Krishna* (nikhil.krishna798@topper.wku.edu) and **Arjun Kanthawar** (arjun.kanthawar248@topper.wku.edu). *Accurately Modeling the Healing Process of Chronic Wounds*. Preliminary report.

In order to formulate a mathematical model that accurately represents the physiology of a wound, the model and its parameters must be identifiable when given actual data. Practical identifiability is a method used to determine whether parameters in a model can be uniquely determined given actual data. This work uses a differential equation model that describes the interactions among matrix metalloproteinases, their inhibitors, the extracellular matrix, and fibroblasts (Krishna et al., 2015). A singular value decomposition technique with a QR factorization combined with a correlation analysis is used to find an identifiable subset of parameters. Subsets are analyzed through model prediction intervals and parameter Markov chains and posterior densities. The goal of this work is to formulate a model that can accurately predict the healing process for individual patients. (Received September 11, 2017)