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James Keesling* (kees@uf1.edu), Department of Mathematics, University of Florida, P.O. Box 18105, Gainesville, FL 32611-8105, and **Celeste Vallejo**. *A New Way to Analyze a Stochastic Network*. Preliminary report.

Analysis of stochastic networks and queueing theory are fundamental tools in many applications. The applications range from business decision making to epidemiology. An application that we have been involved with is the flow of patients through the various departments in a hospital from admission to discharge. This application has led us to a new way to approach such a system.

Our new approach makes fundamental use of Little's Law. Little's Law is a rule that is used to make difficult calculations in stochastic networks and queueing systems. In our approach we make use of this law as a starting point in analysis of a system rather than as an ancillary tool. Our approach has proved useful in the particular application that we are addressing. It appears to have very wide applicability. (Received January 19, 2016)