A PL/I Model of an Emergency Medical System

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A comprehensive PL/I simulation model has been developed for evaluating existing and proposed emergency medical systems. The model is composed of two sub-models and a unique analysis package. The first sub-model generates a "representative" stream of emergency incidents from user specified tables. This incident stream becomes the input to the second sub-model which simulates an emergency medical system responding to the incidents. An event-oriented methodology is used in the simulation. Performance of the model is validated by simulation using actual data from the San Fernando Valley area of Los Angeles.

The model is keynoted by a user orientation, flexibility, and generality which is not found in other EMS models. AI input to the model is checked for consistency to avoid erroneous computer runs. Numerous dispatch and retrieval alternatives for emergency vehicles can be tested by varying only a few parameters of the simulation. Furthermore, both simple and complex emergency medical care systems can be represented easily.

Results of the simulation using the two sub-models is analyzed by a unique PL/I program. Using the preprocessor facility of PL/I, a tailor-made analysis program is constructed. In simulations involving many variables, such as an EMS simulation, it is almost impossible to design an analysis program that satisfies all relevant research. To circumvent this problem, the analysis package allows the user to specify his desired analysis and then constructs a PL/I program to do it. Experience with the package demonstrates its usefulness and efficiency.