



## Paper 147

### High-Level Language to Specify an Adaptive Heart Failure Follow up Strategy

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**Abstract**— A growing proportion of people live with one or more chronic conditions, such as Heart Failure. In order to optimize quality of life, Heart Failure patients at home must put medical recommendations in practice during the intervals between medical visits. The active follow up of patients and the recording of resulting variables is done by the Health Care Sector, whose scarce resources must ensure follow up in an increasing number of patients. The Heart Failure Management Information System (SIMIC for the Spanish acronym) includes an App which interacts with the patient, putting in practice the data capture and context-adapted feedback messages. During the following visit, SIMIC-web displays the information recorded since the previous visit, to be cleared as Electronic Clinical Record by the physician. The specification of Clinical Guidelines and messaging to the patient need a formal language, which is described in this paper. We use Production Rules to describe unequivocally the actions to be taken autonomously by SIMIC, in a way similar to Expert Systems. The syntax described includes the use of standard logical operators that can be parsed by SIMIC and executed as a real time system. SIMIC operates according to a standard clinical seriousness scale. Four rules are given referring to increased and reduced body weight combined with no shows at medical visits, resulting in either a message to the patient and /or an alarm dispatched to the Health Care System.

**Keywords**— Cardiac Failure, Expert System, Self-care, High Level Language.

