Research program:
"Hospital processes optimization through dynamic analysis"

Annex Code 1

Department of Management, Information and Production Engineering

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Description

The present research aims at exploiting a new approach for increasing efficiency in healthcare services, whether core services, strictly related to medical and hospital activities, as well as non-core services (referring to secondary activities). In particular, using consolidated methodologies of management and industrial engineering, linked also to the logic of Business Process Reengineering (BPR) and of Business Process Improvement (BPI), which allow a representation of the process under a system perspective, opportunities for service cost reduction, starting from medical care provided to patients, will be analysed. The main object of the analysis will be the care pathway. This is defined as the patient care cycle process, and can be further divided into sub-processes, whose analysis can be conducted through Business Process Reengineering (BPR) or Business Process Improvement (BPI) approaches. The adoption of methods and tools for the dynamic optimization, such as discrete events simulation or advanced optimization algorithms, will allow to test the efficacy and the applicability of the new hospital processes approaches, in different scenarios. The project will be developed around three main macro-activities, to help achieve a holistic and systemic view, where the different care pathway can interact or conflict. In particular:

- The identification of the pathway characteristics and of the most suitable mapping methodologies for continuous improvement;
- The identification of different dimensions of patients' needs that can bring to the necessity of a care pathway customization;
- The mapping and the simulation of the care pathway according to different situations and contexts.