

Nurse and paramedic rostering with constraint programming: A case study

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The nurse rostering problem consists in generating a configuration of daily schedules for a set of nurses satisfying a set of constraints. The problem is known to be computationally challenging as it must consider different requirements such as minimal area or floor allocations, different skills, working regulations, as well as personnel wishes. The literature presents several successful work devoted to this problem, however there still is limited evidence about real cases of nurse rostering, in particular solved with constraint programming. The aim of this paper is to illustrate a real case study involving the design of a constraint programming solution for nurse rostering. The solution is devoted to a set of mid-size Chilean hospitals where nurse rostering is done manually using a very uncommon shift sequence called the "fourth shift" system. We present a classic model and a global constraint-based model that can be applied generically to any fourth shift health care center.

Constraint Programming

Heuristic Search.

Rostering