عنوان مقاله:

Home Care Services Planning With Time Windows and Periodic Demands Under Continuity of Care

محل انتشار:

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خلاصه مقاله:

Because of improving in healthcare systems, we have witnessed an increasing trend in the life expectancy leading to a larger proportion of the people who need more care. On the other hand, due to the life styles, taking care of elderly people byrelatives has been reduced. As a result, demand for home care services is growing fast and providers of such services have confronted with over demand and need to employ planningmethods in order to reduce the operational costs. In this paper, we introduce a problem arising when providing supportive care for people in the home. Essentially, we are given a set of customerswhose demand have to be provided over a given time horizon. Our proposed model accounts for general skill levels of the nurses and care continuity. Also patient time windows and scenarios shouldbe respected. We develop a mixed integer linear programming model to solve the problem. Since the developed model includes scheduling, routing and assignment problems, exact methods arenot suitable solution approaches for such problem. Thus, we havedeveloped a Simulated Annealing metaheuristic algorithm that incorporates heuristic and math-based local searches. Computational tests on a set of randomly generated instances indicate the effectiveness of the developed algorithm

کلمات کلیدی:

Home care services; care continuity; time window; scheduling; vehicle routing problem

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