Presentation: Decision support system for clinics

I.M. SHOHET. ***Decision support system for clinics performance and maintenance management.*** *Gerontechnology 2012;11(2):334;* doi:10.4017/gt.2012.11.02.351.00 **Purpose** The facilities built for public healthcare services in Israel are composed of 1.3 Million m^2 of acute care facilities, and of wide-ranging facilities designated for community healthcare delivered by the Sick Funds. The floor area of the community clinics, operated by the Sick Funds, is estimated to be 1 Million m^2. Higher life expectancy as well as an increase in in- and out-patient admissions in acute care hospitals was the reason to shorten the duration of medical service in acute care facilities in the developed countries, including Israel. These services are replaced by community healthcare services that operate under intensive service conditions. **Method** The hypotheses of the research were defined as follows: (i) using key performance indicators (KPIs) based on performance and life cycle costs (LCC) principles, the maintenance and performance of clinics can be systematically monitored with a high degree of accuracy and reliability; and (ii) implementation by clinics of the above-mentioned principles can contribute to savings in their maintenance and improve performance. Pursuant to the above hypotheses the following research objectives were formulated: (i) to conduct a state-of-the-art review of methods for healthcare facilities management; (ii) to develop KPIs for the maintenance, performance, and resource allocation of clinics based on a database of LCC; (iii) to implement the KPIs developed for the execution of a preventive and corrective maintenance policy of clinics; (iv) to develop a decision-support system for the implementation of the method in public clinics in Israel; and (v) to monitor the effectiveness of corrective maintenance and performance of clinics following the implementation of the method, in order to validate the research hypotheses. **Results & Discussion** A decision support system (DSS) has been developed so as to allow the implementation of the method in Sick Fund clinics in Israel. The principal KPIs developed in this research include: building performance indicator (BPI), annual maintenance expenditure (AME), normalized annual maintenance expenditure (NAME), density coefficient (DC), age coefficient (AC_y), maintenance efficiency indicator (MEI), and maintenance sources ratio (MSR). The decision process follows these steps: clinics district characterization, construction indices, clinic's data, clinics maintenance costs data, clinics performance data, and clinics key performance indicators analysis. The physical-functional state of clinics facilities in the first phase of the survey ranged from satisfactory to good. The efficiency with which the resources are used was found to be lower than predicted by 30%. We deducted that the actual level of resources represents a redundancy of 30% with respect to the required level; and the latter expresses the level of potential improvement in this field. The second stage of the research encompassed 42 clinics facilities in a country wide distribution, at this stage the MEI was found to be at the predicted level of 0.30, expressing improvement of 30% in the efficiency of maintenance.

References

1. Shohet IM. Building Evaluation Methodology for Setting Maintenance Priorities in Hospital Buildings. Construction Management and Economics 2002;21(7) 681-692; doi:10.1080/0144619032000115562
2. Shohet IM. Strategic healthcare facilities maintenance – key performance indicators. ASCE Journal of Construction Engineering and Management 2006;132(4):345-352; doi:10.1061/(ASCE)0733-9364(2006)132:4(345)
3. Shohet IM, Lavy S. Healthcare facilities management – state of the art review. Facilities 2004;22(7/8):210-220; doi:10.1108/02632770410547570

Keywords: management & social issues, clinics, decision making, key performance indicators, maintenance

Affiliation: Ben-Gurion University of the Negev, Be'er Sheva, Israel; *E:* igals@bgumail.bgu.ac.il

Full paper: No