

Title of the study:
Determinants of the MRI equipment utilization in the Kingdom of Saudi Arabia

Description of problem/issue	<p>Analysis conducted in 2018, as part of the consultancy services for the <i>Optimization of Utilization of High-Value Medical Equipment Plan in Public Health Organizations</i>, highlighted the problem of underutilization of MRI equipment in public hospitals. Average MRI utilization rate was assessed to be less than 40%. There were large variations in the calculated utilization rates between hospitals (ranging from 10% to 60%). Variations could be partially explained by clinical decision-making, patient type, hospital specialization, level of demand and the availability of equipment. However, these factors alone did not sufficiently explain the variability in utilization across the sectors. This variability suggested a substantial scope to improve how MRI services are delivered and at what cost.</p> <p>Most hospitals couldn't accurately determine utilization, as they did not routinely collect key information on the utilization of imaging equipment and data were only available as number of cases or number of procedures by department, but not by device. The lack of reliable data denied decision makers in health sectors the basic information needed for planning and funding decisions. The decisions have been made without understanding the potential competing needs for equipment in other locations, or of nearby oversupply, which has led to long waiting times in some locations.</p> <p>Proposed <i>Implementation Plan for the Program of Utilization of High-Value Medical Equipment</i> allocates to the Saudi Health Council responsibility for implementation of the strategic objective 3 (Rationalize utilization of health technology across the health sub-sectors). One of the initiatives under the objective is design of a workable system for referral of patients between hospitals, in order to provide patients with the needed care at the appropriate level and optimize the use of hospital facilities in a cost-effective manner. The initiative responds to the need of balancing patient loads between hospitals, in order to reduce congestion in hospitals with long queues of patients and increase the load on those having underutilized capacity.</p> <p>The (re)design of the referral system needs to start from review of the current practices. In the MRI case, current variability in utilization might be determined by health systems factors (capabilities of lower levels, availability of specialized personnel, training capacity, organizational arrangements, cultural issues, political issues, and traditions) and general determinants (population size and density, terrain and distances between urban centers, pattern and burden of disease, demand for and ability to pay for referral care).</p> <p>There have been no studies on different factors influencing variations in utilization of MRI equipment in the KSA. Conducting such a study will be useful for understanding of underlying causes of variations in hospitals and devising the system for referral of patients between hospitals in the Kingdom that would improve MRI equipment utilization.</p>
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