Consideration for Radiology costs and cost-effectiveness by medical staff

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ABSTRACT

Objective: There is worldwide concern about healthcare cost and cost effectiveness. The number of Radiologic investigations is increasing. Radiologic procedures consume up to 10% of health care expenditure. The aim of this study is to assess medical staff consideration of cost and cost effectiveness during daily patient management.

Methods: Sixty doctors working within the main hospital building were recruited for the study. Doctors in peripheral clinics, were excluded. Sample size was calculated using the "what if" statistics of Epi info 6 World Health Organization, 1993. A questionnaire was distributed to investigate whether medical staff consider cost and cost effectiveness when requesting radiologic procedures.

Results: There were 49 (81.5%) respondents: Only 9 (18%) of the 49 respondents always considered cost when requesting radiologic procedures and only 15 (31%) always considered cost effectiveness. Only 7 (14%) of the respondents have abandoned requesting certain radiologic procedures because they found them not to be cost effective.

Conclusion: The majority of our medical staff do not give consideration to radiology costs or cost effectiveness during daily patient management. Education and guidelines are needed to rectify this non-economical use of radiology services.

Keywords: Radiology cost, radiology cost effectiveness.


Radiologic investigations consume up to 10% of health care expenditure. The number of performed radiologic procedures has increased by 30-60% in the last decade. There is an obvious tendency amongst doctors to overutilize radiology services. Modern sophisticated imaging techniques have been assumed to augment the cost of patient management. On the contrary, as much as a 10-80% saving in the diagnosis and therapy costs of some diseases may be reached by utilizing high technology procedures. There has been recent local concerns about misuse of diagnostic radiology investigations by the referring physicians. There is worldwide concern about the cost and cost effectiveness of radiologic practices. The objective of this study is to investigate whether our hospital staff would give consideration to cost & cost effectiveness when requesting radiologic investigations for daily patient management.

Methods. A non-clustered population survey carried out in a tertiary care hospital. Staff working in the main hospital campus who have direct access to radiologic facilities were targeted. Physicians in peripherals clinics or distant hospital units were excluded because communication difficulties and patient inconvenience on travel to the main hospital campus can be confounding factors. Medical staff who do not request radiologic procedures on a daily basis, like laboratory staff and medical administrators, were not involved. None of our staff were in active private service where cost is common knowledge. Radiologists were excluded from the

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study. There were no known studies estimating the prevalent risk of the percentage of hospital doctors who are not conscious of radiology costs and cost effectiveness. The “what if” statistical calculation of Epi info 6. WHO 1993 was used to estimate sample size from a cohort of 400. Assuming that the minimum acceptable number of doctors who are cost conscious at our hospital should be a bare majority of 51% i.e. the maximum tolerable prevalence of these who were not cost conscious is 49%. A sample size of 60 would give a confidence limit of 99.9%.

Results. There were 49 respondents from the 60 doctors involved in the study with a response rate of 82%. The majority of the 49 respondents 28 (57%) were Saudis. Twenty one (43%) were non-Saudis. Twenty 11901% were either consultants or qualified fellows while the majority, 29 59%, were residents in various levels of training. Only 9 18% of the 49 respondents always considered cost when requesting radiologic procedures and only 15 31% always considered cost effectiveness (Table 1), staff estimation for the various radiologic procedures is summarized in Table 2. Only 7 14% of the respondents have abandoned requesting certain radiologic procedures because they found them not to be cost effective. Forty one 84% made no such revision of their own practices to abandon procedures which were not cost effective. Forty three 86% of the respondents could not identify that the most expensive radiologic examination was angiography as it involves expertise, long procedures time and hospitalization.

Discussion. Implementation of radiologic tests in patient management should be cost-effective, help to improve health or quality of life, available and financially sensible. This involves a trade-off between the potential effectiveness to be gained and the limited resource at hand. Given the current debate about healthcare cost, it would be prudent for clinicians and diagnosticians to be involved in reviewing our current practices and rectify the inherited lack of cost consciousness amongst staff in government hospitals. This study addressed an important issue for health care reform. Our results should be used to pilot other national studies on cost awareness for different subspecialties. We are not aware of previous field studies on cost awareness in our community. Data on hospital costing of procedures is lacking. The estimate we made for hospital cost of individual radiologic procedures may not be very accurate. We allowed a wide range of cost estimate for each procedure. We have not indicated in the questionnaire whether total cost of a radiologic procedure should include the radiologist fee because that would have been a leading question. Concept of cost is known to be deficient amongst public sector physicians. Respondents estimate for cost of radiologic procedures is shown in Table 2. About half or less of respondents 41-52% had a relatively reasonable guess of radiology costs. This, however did not reflect on the doctors attitude to review their practice or abandon costly procedures. Those who had an underestimate of cost varied from 20-45% of respondents. Only 4-8% of respondents indicated that they didn’t know the cost of any test. These findings indicate that those who had a relatively reasonable guess of radiologic costs do not consider it when requesting examinations for the patients. Naturally, physicians are committed to offering the best for their patients.

In conclusion, the majority of our medical staff do not give consideration to radiology costs or cost effectiveness during daily management of patients. The vast majority of our physicians did not voluntarily review their practices, and this non-economic use of radiology services needs to be rectified by education and guidelines.

References