A STUDY OF RIYADH HOSPITALS NON-URGENT SURGERY WAITING LISTS: FROM THE PHYSICIANS’ PERSPECTIVE

Badran A. Al-Omar, PhD, Public Administration Department, Administrative Sciences College, King Saud University, Riyadh, Saudi Arabia

Objective: To examine and compare the factors causing long waiting lists for non-urgent surgery in public (Ministry of Health, military, and teaching) and private hospitals in the city of Riyadh, Saudi Arabia, and to examine the relationship between the personal characteristics of the respondents (surgeons) and the surgery-delay experience.

Material and Methods: The instrument used in this study was a self-administered questionnaire. Out of 500 distributed questionnaires 320 valid responses were returned. Data were collected from 14 public and private hospitals in Riyadh City. Frequencies and percentages; Mann-Whitney; Kruskall-Wallis one way ANOVA; Chi-square; Phi; and Cramers’ V tests were used in the statistical analysis.

Results: Results show that seven factors were significantly important in causing long waiting lists. A significant difference with regard to the seriousness of this problem was found between the two types of hospitals.

Conclusion: This study shows that there is a significant difference in the seriousness of the problem between private and various types of public hospitals. Similar studies in different parts of the country are therefore recommended.

Key Words: Non-urgent surgery, waiting lists, and private, MOH, military, and teaching hospitals.

Correspondence to:
Dr. Badran A. Al-Omar, Public Administration Department, Administrative Sciences College, King Saud University, P.O. Box 2459, Riyadh 11451, Saudi Arabia
INTRODUCTION
One of the most important issues facing hospital management today is the need to bring efficient and sufficient services to patients at the right time. One of the most disturbing problems affecting patient satisfaction is the long waiting list for non-urgent surgery. Since Saudi Arabian (SA) policy is to provide free, comprehensive and universal health care services to all citizens, there is great demand on the health services resulting in long waiting lists for non-urgent surgical cases in hospitals. The adverse effects of these long waiting lists include: major adverse medical consequences, even in non-urgent cases; dissatisfaction among both patients and hospital staff; improper utilization of health resources, a decline in the quality of patients’ care and loss of the reputation of the hospital. In their evaluation of the coronary bypass waiting lists, Mulgan and Logan, confirmed that usually some of the less severe cases on the waiting lists deteriorate into more serious conditions that could have been prevented. Also, the average waiting period is unacceptably long for surgical services.

Another study shows that long waiting lists inevitably result in long waiting times for access to medical services. Finally, long lists adversely affect a hospital’s reputation. In spite of these problems, long waiting lists do have some advantages in that they can be seen as a means of controlling the use of health care, especially if this service is free. Second, some cases may improve without any surgical intervention. Third, both the patient and his/her surgeon have the opportunity of reevaluating their decision about the surgery when there is a delay. Finally, waiting lists allow non-urgent cases to compete with immediate and urgent cases for the same surgical beds.

Investigating the factors that affect the waiting list could help hospital management ascertain the causes of the problem. In controlling such factors the efficiency of hospital services will improve. Therefore, the author strongly believes that it is necessary to conduct studies to reveal those factors that affect the provision of these services. This study aims at meeting the following objectives: to investigate the differences of long non-urgent waiting lists in the Ministry of Health (MOH), military, teaching and private hospitals; to determine the factors that create long waiting lists in Riyadh hospitals in general and in the different types of hospitals; to examine the differences in the delay of scheduled surgeries among the various public hospitals; to determine the part played by the personal characteristics of surgeons in surgical delays; and to make appropriate recommendations to shorten the long waiting lists.

MATERIAL AND METHODS
The study sample was drawn from 14 hospitals representing various sectors (military, MOH, teaching, and private hospitals). The 14 hospitals, which were chosen randomly, included the following: Riyadh Al-Kharj Hospital, Security Forces Hospital, King Fahad National Guard Hospital, Riyadh Medical Complex, Prince Salman Hospital, King Khalid University Hospital, King Abdulaziz University Hospital, Dallah Hospital, Mashari Hospital, Hammadi Hospital, Obied Hospital, Al-Mubarak Hospital, Al-Watani Hospital, and the Green Crescent Hospital. The target population was surgeons working in these hospitals.

A self-administered questionnaire in English consisting of two parts was designed. One part concerned the personal data of the respondents, while the other dealt with the seriousness of long non-urgent surgery waiting lists and the factors causing such problems.
To ensure the content validity of the questionnaire, the author reviewed previous studies, performed a pilot study, and obtained expert assistance. Reliability of the questionnaire was crucial for assessing the extent to which the study instrument would produce the same result in repeated studies. Coefficient alpha was used to find out how reliable the questionnaire was. This was found to be over 0.79 which was considered a very good level of reliability. Of the five hundred questionnaires sent out, each with an accompanying explanatory letter, 339 (67.8%) were returned. Of these, 320 were valid.

In order to achieve the objectives of this study, the Mann-Whitney test was used to compare private hospitals to all public hospitals, private hospitals to each of the public hospitals and the public hospitals to each other to test for significant differences between any two public hospitals (Table 3). The Kruskall-Wallis test, which allows comparisons among more than two samples, was utilized to compare the seriousness of the problem between more than two public hospitals (Table 1). Chi-square analysis ($X^2 = 76.66$) showed that there was a significant difference between private and public hospitals with regard to the seriousness of the problem of the non-urgent surgery waiting list ($p<0.001$ in both tests). The value of Cramers’ V was 0.62, indicating that the problem was more serious in public hospitals than in private hospitals. Over 67% of the surgeons in public hospitals had experienced some delay in their scheduled operations, while over 86% of the private hospital surgeons had had no delays in their scheduled operations.

As Table 1 shows, the results of Kruskall-Wallis suggest that there was a significant difference among the individual public hospitals in regard to the seriousness of the problem ($p<0.01$). The table also shows that a significant difference existed between the MOH and teaching hospitals ($p<0.05$), as well as between the military and teaching hospitals ($p<0.01$). No significant difference was found to exist between the MOH and military hospitals ($p>0.05$). Phi test shows that the waiting list problem was more serious in the MOH hospitals than in the teaching hospitals ($phi=0.21$ and $p<0.05$) even more serious in military hospitals than it was in the teaching hospitals ($phi=0.30$ and $p<0.05$). Yet there was no significant difference in the degree of seriousness between MOH hospitals and military hospitals ($phi=0.09$ and $p>0.05$). This may indicate that the teaching hospitals were better able to manage their lists. However,
Table 1: Differences between the various hospitals in regard to the seriousness of the non-urgent surgery waiting list

| Difference between | Mann-Whitney | Kruskall-Wallis |
|--------------------|--------------|----------------|
|                    | Freq. | Z value | p-value | Freq. | Chi-sq. | p-value |
| Private and all public hospitals | 320   | -6.55   | 0.0000* | 162   | 9.24   | 0.0098† |
| Public hospitals    | 190   | -0.96   | 0.3358  |       |        |        |
| MOH and military hospitals | 157   | -2.21   | 0.0271‡ |       |        |        |
| MOH and private hospitals | 149   | -5.80   | 0.0000* |       |        |        |
| Military and teaching hospitals | 171   | -2.93   | 0.0034† |       |        |        |
| Military and private hospitals | 163   | -5.89   | 0.0000* |       |        |        |
| Teaching and private hospitals | 129   | -1.95   | 0.0518  |       |        |        |

*statistically significant at p<0.05 †statistically significant at p<0.01 ‡statistically significant at p<0.001

Table 2: The relative importance of each factor in causing long non-urgent surgery waiting list

| Factors                              | Total % (Rank) | MOH % (Rank) | Military % (Rank) | Teaching % (Rank) | Private % (Rank) |
|--------------------------------------|----------------|--------------|-------------------|-------------------|------------------|
| Insufficient number of surgical beds | 80 (1)         | 83 (3)       | 82 (1)            | 79 (1)            | 73 (1)           |
| Patient-related reasons              | 68 (2)         | 69 (5)       | 73 (3)            | 64.5 (5)          | 61.5 (3)         |
| Absence of waiting list review system| 65 (3)         | 86 (2)       | 67 (5)            | 65 (4)            | N/I              |
| Lack of one-day program              | 64.5 (4)       | 87 (1)       | 69 (4)            | 70 (2)            | N/I              |
| Rescheduling of missed appointments  | 59.5 (5)       | N/I          | 63 (6)            | 67 (3)            | N/I              |
| Useless utilization review system    | 56.7 (6)       | 76 (4)       | 60 (7)            | N/I               | N/I              |
| Blocking surgical beds for long-term cases | 56.5 (7)     | 56 (6)       | 75 (2)            | N/I               | N/I              |
| Shortage of surgical nurses          | N/I            | N/I          | N/I               | 65 (4)            | 67 (2)           |

*Others did not show a significant weight among surgeons and the criterion is 55% †Not Important

Table 3: The relationship between personal characteristics of surgeons and experiencing a delay in non-urgent operations

| Variable                      | Have you experienced any non-urgent surgery delays | Statistical inference |
|-------------------------------|---------------------------------------------------|-----------------------|
|                               | Yes | No | Chi-square | Phi | Cramers | p-value |
| Type of hospital:             |     |    |            |     |         |         |
| Public                        | 109 (67%) | 54 (33%) | 33.61 | -0.42 | 0.0000* |
| Private                       | 8 (14%) | 49 (86%) |       |       |         |         |
| Gender:                       |     |    |            |     |         |         |
| Male                          | 155 (57%) | 118 (43%) | 0.03 | 0.01 | 0.8677 |
| Female                        | 16 (59%) | 11 (41%) |       |       |         |         |
| Nationality:                  |     |    |            |     |         |         |
| Saudi                         | 104 (71%) | 42 (29%) | 15.15 | -0.28 | 0.0001* |
| Non-Saudi                     | 67 (43%) | 88 (57%) |       |       |         |         |
| Profession Status:            |     |    |            |     |         |         |
| Resident                      | 18 (69.2%) | 8 (30.8%) | 1.81 | 0.10 | 0.4044 |
| Registrar                     | 32 (62.5%) | 19 (37.5%) |       |       |         |         |
| Consultant                    | 120 (54%) | 102 (46%) |       |       |         |         |
| Age:                          |     |    |            |     |         |         |
| ≤ 40 years                    | 94 (66%) | 48 (34%) | 6.70 | -0.19 | 0.0097† |
| > 40 years                    | 72 (47%) | 80 (53%) |       |       |         |         |
| General Experience:           |     |    |            |     |         |         |
| ≤ 15 years                    | 78 (57%) | 59 (43%) | 0.01 | -0.01 | 0.9407 |
| > 15 years                    | 91 (56.5%) | 70 (43.5%) |       |       |         |         |
| Experience at this hospital:  |     |    |            |     |         |         |
| ≤ 5 years                     | 61 (47%) | 69 (53%) | 5.69 | 0.18 | 0.0171‡ |
| > 5 years                     | 107 (64.5%) | 59 (33.5%) |       |       |         |         |

*statistically significant at p<0.001 †statistically significant at p<0.01 ‡statistically significant at p<0.05

(Note the difference between the total answered and 320 (sample size) is due to missing values.)
there is a slight significant difference ($p=0.0518$) between the seriousness of the problem in teaching hospitals and private hospitals (phi was 0.22). Results show that over 84% of the surgeons in private hospitals did not view the problem as serious, while less than 65% of those working at the teaching hospitals held that view.

Table 2 shows the important factors causing long waiting lists for non-urgent surgery. Overall, seven factors were classified as important causes for the long waiting lists for non-urgent surgery. However, each type of hospital had a different ranking of factors. Because this was not a serious problem in private hospitals, the surgeons there thought of only three important factors concerning this issue.

Table 3 reveals a significant relationship between the type of hospital and the experience of delayed operations ($p<0.001$). It shows that surgeons in public hospitals were more likely to face a delay in non-urgent surgeries. The table also shows the following: Saudi surgeons were more subject to delays than the non-Saudi surgeons ($p<0.001$); surgeons over 40 years old were less likely to delay operations ($p<0.01$); surgeons with five or more years of experience at the same hospital were less likely to delay non-urgent operations than those with less experience ($p=0.05$); the results do not indicate any significant difference in regard to the professional status and the years of general practice ($p>0.05$).

In comparing private and public hospitals, the results show that the demand for surgeries in public hospitals was greater than it was in the private ones. The average number of patients admitted weekly to private hospitals was 7.24, while the average number was 11.82 in public hospitals. This can be attributed to the free health services provided at the public hospitals. It was also found that approximately 67% of the patients admitted to private hospitals were for non-urgent surgeries, compared to less than 55% admitted to public hospitals, yet, only about 33% of the cases in private hospitals were either immediate or urgent, compared to over 45% in public hospitals. Finally, results show that the number of operating days per week for physicians in private hospitals was significantly more than that at the public hospitals (Mann-Whitney z score= -3.93 and $p<0.001$).

DISCUSSION

The results of this study, confirmed the expectation, that the problem of long waiting lists for non-urgent surgery was significantly more serious in the public hospitals included in this study than it was in the target private hospitals in Riyadh, Saudi Arabia. This can be partially explained by the fact that the demand for surgical services at public hospitals is high because they are free. It was found that one of the commonest factors causing long non-urgent waiting lists was that the supply of such services cannot meet the demand. This reason may explain to some extent why the problem was more acute in the MOH and the military hospitals than private hospitals. The high demand for surgical beds and services could be reduced if some charges were levied.

All surgeons in public hospitals’ who participated in this study saw the absence of a review system for the waiting lists as an important factor causing long delays. This is consistent with a study conducted in 1994, which stated that waiting lists should continually be reviewed to reduce its length. This review would reveal a number of patients who for personal reasons (i.e., the patient changed his/her mind or had the surgery done elsewhere) no longer needed the service. This would shorten long waiting lists significantly. In a study of factors causing long waiting lists at King Fahad National Guard Hospital in Riyadh, it was found that the shortage of
surgical beds and rooms and the scarcity of surgical facilities at the outpatient clinics (one-day surgery) were significant contributors towards creating long waiting lists. These two factors appear to be important in this study as well. Rescheduling patients who did not report for surgeries as well as improving the ineffective utilization-review committees (URCs) which contributed towards the creation of long waiting lists would help. It is expected that with the improvement of URCs, in-patient days in hospitals would be reduced and the number of patients reporting for surgeries would rise. Bed-blocking by delaying the discharge of patients who have recovered was found to be an important factor in creating long waiting lists. The Canadian Quebec Government has authorized an action plan allowing more "one-day surgeries" as a means towards the reduction of long waiting lists.

Recommendations to reduce the problem of long waiting lists include:

1. The introduction of minimal charges at public hospitals to reduce the high demand for surgical services and consequently the problem of insufficient number of surgical beds.
2. Continuous updating of the waiting lists.
3. The introduction of outpatient services (same-day operation program), for certain types of operations, and the increase in the number of experienced surgeons to help in reducing their load.
4. Review of the utilization review committee (or system) and its functions to improve its effectiveness. Together with the introduction of the same-day operation program the volume of rescheduled patients may decrease.
5. Avoidance of blocking surgical beds for long-term or non-surgical patients.
6. Finally, additional studies should be conducted with different samples all across the country.

ACKNOWLEDGMENT

I would like to thank Mr. Al-Fawzan A., for his help in collecting part of the data.

REFERENCES

1. Milton IR. National Health Systems of the World: Volume 1 The Countries. New York and Oxford: Oxford University Press; 1991.
2. Adel YF. An analysis of the elective surgery waiting list in Riyadh hospitals. [Dissertation]. Riyadh (Saudi Arabia): King Saud Univ., 1996.
3. Mulgan R, Logan RL. The coronary bypass waiting list: a social evaluation. N Z Med J 1990;103:371-2.
4. Ho E, Coyte PC, Bombardier C, Hawker G, Wright JG. Ontario patients' acceptance of waiting times for knee replacement. J Rheumatol 1994;21(11): 2101-5.
5. West RR, Frankel SJ, Roberts RE. Waiting for General Surgery: a question of priorities. J Manage Med 1991;5(3):19-26.
6. Mullen PM. Waiting lists in the post-review NHS. Health Serv Mange Res 1994;7(2):131-45.
7. John WC. Research Design: qualitative and quantitative approaches. London; SAGE; 1994.
8. Cleary PD, Leroy L, Karapanos G, McMillan W. Patient assessments of hospital care. QRB 1989;15:172-9.
9. Modi AA, Hashem ZM. The higher councils in Kuwait: an evaluative study. Arab J Admin Sci 1995;3(1):11-45.
10. Harley M. Waiting times in trauma and orthopaedic surgery. Community Medicine 1988;10(1):57-65.
11. Ibraheem HA. The role of admission procedures: a descriptive study. [Dissertation]. Riyadh (Saudi Arabia): King Saud Univ., 1993.
12. Karim S, Mats T. 'Bed-blockers': delayed discharge of hospital patients in a nationwide perspective in Sweden. Health Policy 1993;26:155-70.
13. Michel M. Quebec hopes to overcome province's surgical-delay problem. Can Med Assoc J 1995;153(7):1001-2