MANAGING PARKING SNAGS IN THE TEACHING HOSPITALS:A CASE STUDY OF JINNAH HOSPITAL LAHORE

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ABSTRACT: Due to unrelenting increase in motor vehicles, Lahoreis facing an acute parking scarcity. Parking plays a significant role in the service delivery of a hospital. Hospital is sensitive areas of the city and any mismanagement such as in parking may carry serious repercussions. Medical staff, students, patients, and visitors each has unique priority for parking, and having limited space accommodating each group properly is a significant challenge. Parking problem is a common feature in most of the teaching hospitals in Lahore. But, since most of the hospitals are old and lack sufficient space to develop parking space in accordance with the contemporary mandatory provisions for parking. Jinnah hospital, as one of the newly built teaching hospital is experiencing parking snags which needs to be dealt on priority basis to improve service delivery of the hospital. The paper is an attempt to highlight parking related issues and to suggest suitable measures to manage them.

Key words: Parking, Jinnah Hospital, Poor Management System, T2 Flex PARCS.

INTRODUCTION

Population of many countries of the world especially in urban areas is increasing rapidly. According to (Mayo, et. al. 2013) the urbanization is although most widely discussed within development discourse; it is also equally misunderstood in its form and meaning. Nonetheless, urbanization is the most influencing phenomenon we are currently dealing with. Gargantuan expansion mainly due to urbanization of the big cities has increased motor vehicular usage tremendously. Pakistan is facing an inexorable rise in growth of motor vehicles in the last two decades. According to (Pakistan Environmental Protection Agency 2005) in Pakistan number of vehicles have jumped from 0.8 million to 4.0 million within 20 years showing an overall increase of more than 400 percent. Lahore, a primitive green city is gripped with swelling rise in motor vehicles. In wake of an unrelenting rise in motor vehicles, Lahore is experiencing an acute shortage of parking. There is a divergent gap between parking demand and the available spaces. This shortage sometimes leads to illegal parking along the road. This situation is portrayed by (JICA 2010) as the lack of on-street parking facilities results in illegal parking along roads and junctions. According to (Litman 2011) parking conflicts are among the most common problems facing designers, operators, planners and other officials. Such problems can be often defined either in terms of supply (too few spaces are available, somebody must build more) or in terms of management (available facilities are used inefficiently and should be better managed).Mismanagement of the limited parking spaces further ignites the deplorable situation, which causes socio-economic losses to a considerable extent. A study carried out by the (JICA 2010) reveals that 20% of the roads length is occupied by the road side parking; which depletes road capacity and causes traffic congestion.

In Pakistan, some security issues are also associated with parking. Due to non-availability of parking spaces people are forced to park their vehicles in close proximity to shops or offices. It poses a serious threat to human lives and property because it provides an easy access to the terrorists to blast plated device in vehicles. Hospitals are very sensitive areas of the cities. Lack of parking spaces or their mismanagement at these pertinent places enhance the chance of fatality. Medical staff, students, patients, and visitors have unique priorities and parking needs, and with limited space accommodating each group is a significant challenge.

MATERIALS AND METHODS

For this study, first of all parking provision in Jinnah Hospital was discussed. Problems associated with parking were identified. After drawing plausible the study suggestedsome recommendations for an efficent system of parking at Jinnah Hospital, Lahore.

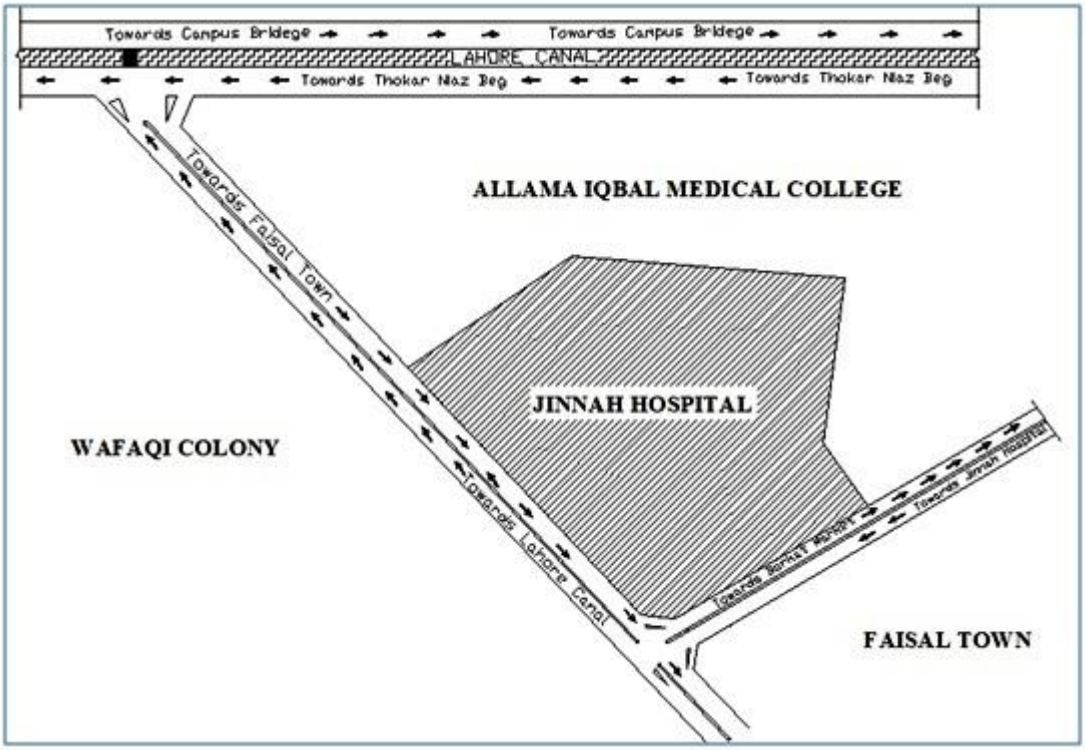


Figure-1: Location of the Jinnah Hospital Lahore

With only an outdoor patients facility, Jinnah hospital was made operational in the year 1994. The Hospital provided quality health care services in almost all the specialties of medicine, surgery and allied health sciences. It was 1500 beds andtertiary care teaching hospital,which wasassociated with Allama Iqbal Medical College. On an average of 0.5million patients visit the Outpatient and Emergency Departments of the hospital every year. Every year, more than 0.15 million tests were carried out in the Pathology laboratory. General actualities of the Jinnah Hospital are summarized in table-1:

Table-1. Featured Actualities of Jinnah Hospital, Lahore

Sr. No.	Category	Number
1.	Total Doctors	300
2.	Nurses and Paramedical Staff	1800
3.	Departments	35
4.	Beds	1500
5.	Indoor Patients	900-1200/day
6.	Outdoor Patients	1900-2500/day
7.	Emergency Cases	1500/day
8.	Area of Hospital	35 Acres

Source: Jinnah Hospital, 2011

Parking problem is a common feature in most of the teaching hospitals in Lahore. Furthermore, it was the first autonomous hospital that was strictly built according to a stipulated design with provision of the three main areas. Firstly, an area designated for the hospital. Secondly, a chunk of land, reserved for doctors, nurses, students and paramedical staff residences and hostels. Supplement with it, a land was also reserved for "Sarai", an area, where relatives of the patients could be lodged temporarily. Thirdly, an area reserved for Allama Iqbal Medical College and parking. The Jinnah hospital has prominence over the other teaching hospitals because of its convenient location and an easy access from motorway and southern suburbs of Lahore. Land use survey was carried out to determine the existing parking situation with respect to other land uses. Likewise, parking survey was carried out to calculate the parking demand and provision in the hospital.

RESULTS AND DISCUSSION

Parking Snags: Parking contributed significantly to increase the overall effectiveness of the services provided by the hospital. Jinnah hospital parking could not contribute to the services of the hospital due to the following:

Parking Shortage; Despite a modest allocation for the Parking, Jinnah Hospital was still short of the Parking as

per standards, set forth by (PEPAC 1988) for the hospital buildings. According to the parking standards for hospitals, on an average 1000 sq. ft. of floor area is required for each car. The total covered area under departments (main block and burn unit) is 237925 sq. ft. The hospital comprises of 5 floors with a total floor area of 1189625 sq. ft. Stipulated with this parking criteria, the parking area required for both of these departments is, for of 2380 cars, i.e. about 445500 sq. ft. Currently, the Burn unit is not operational and is under construction, so the current parking requirement is for 1026 cars only. The area provided for parking is about 125377 sq. ft. which is for 726 cars. Thus there existed a shortage of about 66600sq. ft., a deficiency for 300 car parking.

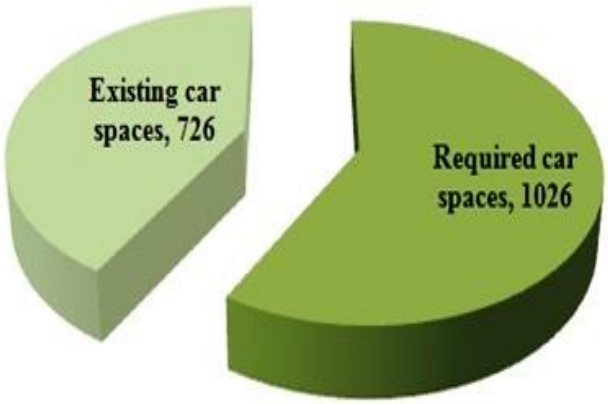


Figure-2: Deficient Parking as per Floor/Covered Area

Table-2 below show that parking spaces were utilized maximum from 9:00 a.m. to 1:00 p.m. Thereafter utilization started declining and from 2:00p.m. to onwards the utilization dropped to less than one third of the peak hours. The maximum parking was being utilized by the motorcyclists with 74% of the overall modes followed by cars with 23% and the ambulances with 3%.

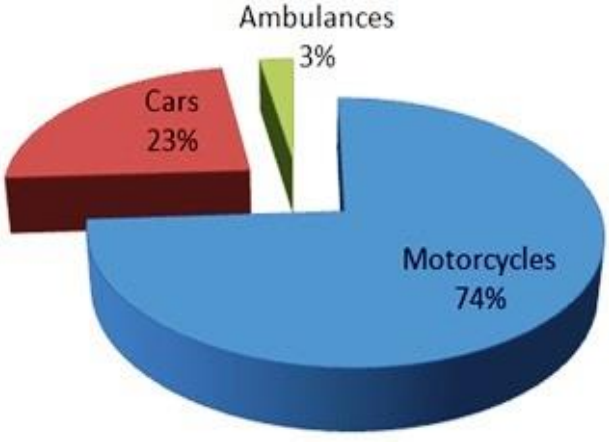


Figure-3: Modal Distribution at Parking Facility

Table-2. Parking Situation during Hospital Timings

Sr. No.	Time	Motorcycles	Cars	Ambulances
1.	9-10 a.m.	1010	350	40
2.	10-11 a.m.	1200	400	36
3.	11-12 a.m.	1200	400	36
4.	12-01 p.m.	1200	400	36
5.	01-02 p.m.	1150	360	35
6.	02-03 p.m.	450	50	36
	Total	**6210**	**1960**	**219**

Source: Field survey, 2011

Parking Control: parking management can play an important role to diffuse the effect of parking shortage to a significant level. But no proper parking management was evident at Jinnah Hospital parking lot. There was no marking of parking spaces or installation of the parking sign panels, necessary for the control of the flow of parking. Due to lack of turning guidance there was always a chance of collision between the vehicles. There was no separate exit and entrance to the parking lot. An insufficient space was reserved for the parking of ambulances. Parking for motor cyclist was unpaved, which caused air pollution and blow of suspended particles. It was being observed that due to nominal charges, irrelevant people from outside also try to park their vehicles there.

Figure-4: A view of the Existing Parking Facility at Jinnah Hospital Lahore

Furthermore parking charges were being collected manually with token system.

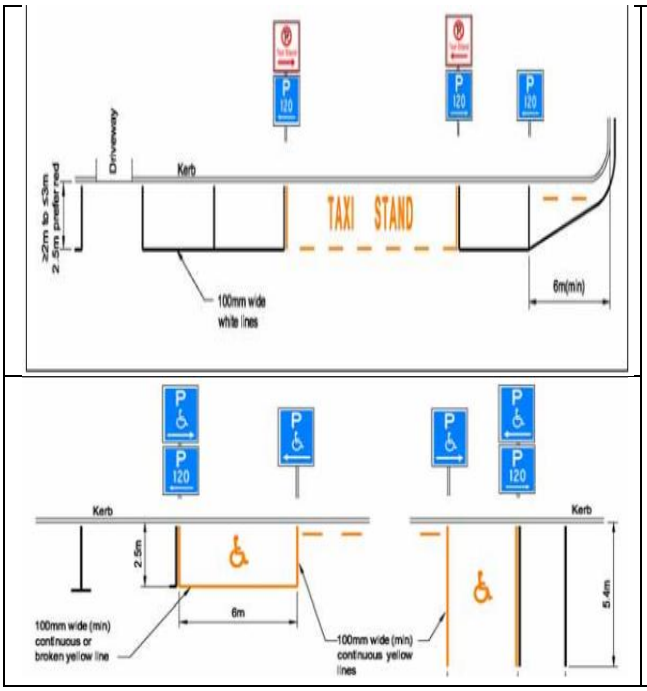
Requirements of an organized Hospital Parking: According to (Anne 2010) a hospital parking lot was geometrically efficient, if provided with the following facilities:

- Horizontal and vertical alignment
- Tracking paths for vehicles entering into and leaving from angled parking spaces
- Surface condition and slope of parking spaces
- Locate conveniently away from all key Departments of the Hospital, in particular Emergency and OPD. For the convenience, a direct access from the main road of hospital be provided.
- Location of disabled parking and ramps in relation to buildings and access to destinations be provided.
- Pedestrian and mobility device access within the parking area be made available
- Adequate and consistent lighting
- Provision of security surveillance systems
- Minimum conflicting points

In addition to the geometrically efficient design, a parking lot must also be subjected to a capable operational management, which requires the following:

- Installation of the Parking signs; e.g. no parking within drive lane, reserved parking, parking zone etc. and markings of drive lane and parking spaces
- To have firm control, a Parking lot needs to be provided with separate entrance and exit places.
- The parking lots be equipped with automatic token and collection system. In most of the countries, especially in USA and Canada,T2 Flex PARCS, an automatic system of parking, served all groups of hospitals, i.e. medical students, teachers, staff, patients and employees.T2 System is a technology-focused parking system provider with deep roots in the evolving parking industry. T2 delivers sophisticated data and tools to parking operations, enabling them to achieve greater efficiencies and increased revenues (T2 System 2011).
- Zone parking, primarily denotes parking restrictions that are common or uniform throughout an entire area be encouraged.
- Parking spaces, driveways, and maneuvering areas are paved and permanently maintained

Figure-5:An unpaved Parking Lot at Jinnah Hospital Lahore



Type of restriction	Sign no. (*TCD Specifications*)	Use	Sign examples
Zone parking	P4-7.1 P4-7.3	To indicate the extent of the parking zone. Sign to define the type of parking zone	P Coupon Parking Zone BEGINS P Coupon Parking Zone ENDS
Zone parking repeater	P4-7.2	To act as a reminder of the existence of the parking zone	P Coupon Parking Zone
Zone parking for specified users	P4-8.1	To be used as a supplementary plate to indicate the vehicle class exempted from an identified parking restriction	Except vehicles displaying parking permit

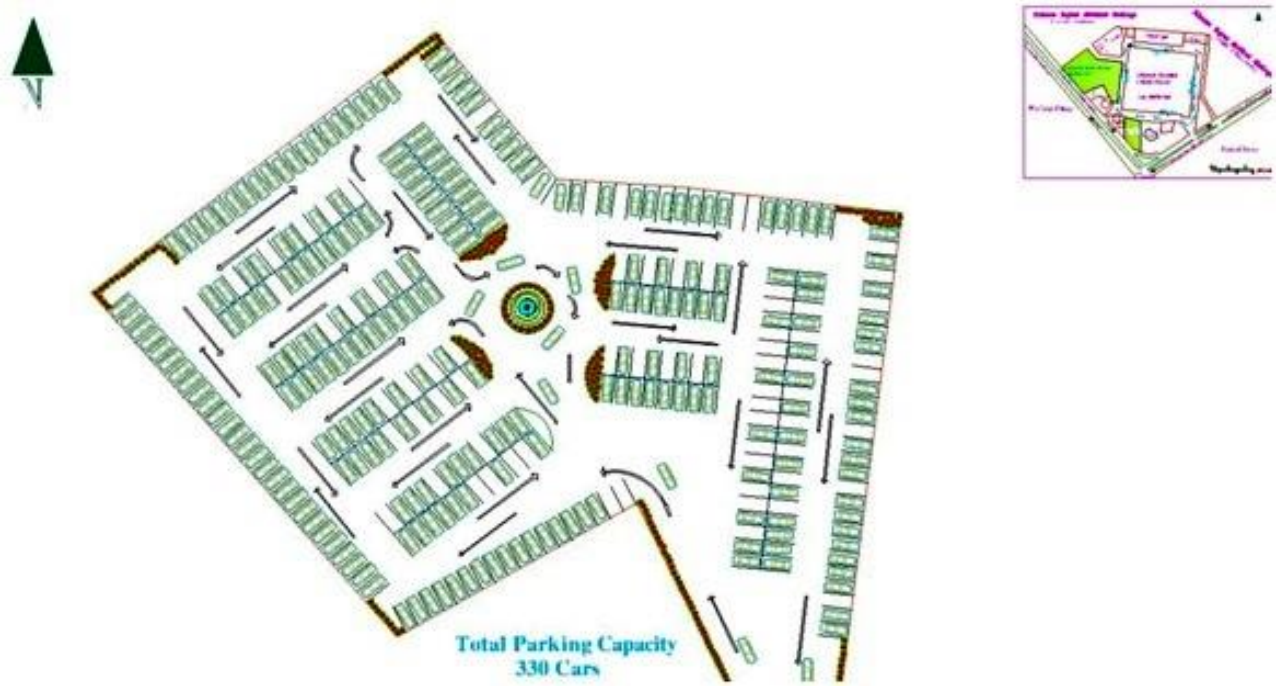
Figure-6: Basic Signs for Reserved and Zone Parking
Source: Department of Transport, New Zealand

Time Limit and Cost Oriented Parking in Hospitals: Time limits parking helps to create a turnover of parking spaces, thus maximizes opportunities to park vehicles in locations of high demand. Normally it is divided into two categories with user defined need. Short-stay parking facilities are needed for visitors and OPD patients. Long-stay parking facilities are appropriate for those drivers, who generally park whole the day long and normally stay in hospital as an attendant of the patient. Their demands must be taken into consideration when developing a strategy but ensure they may not occupy valuable parking areas. Parking demand can be controlled through time cost.

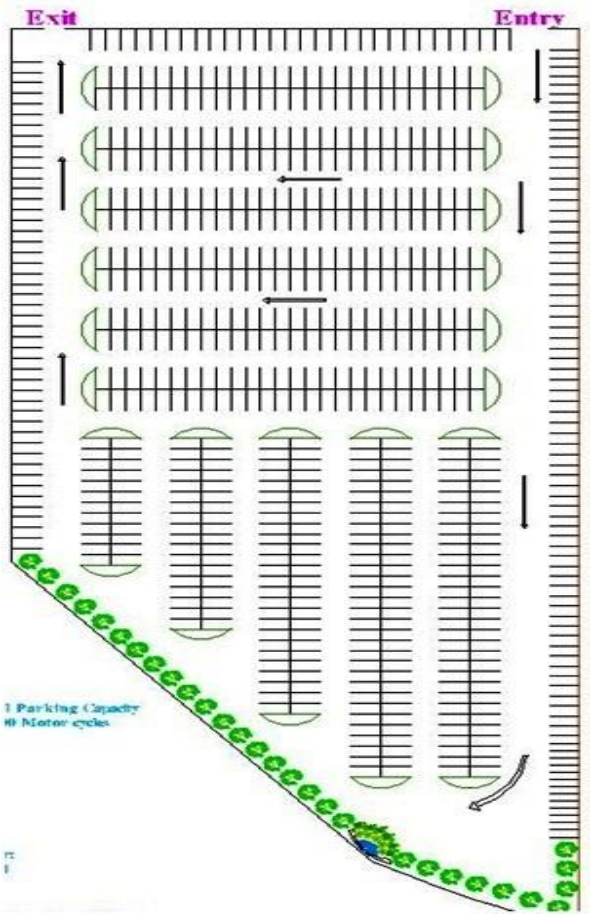
The detailed research on parking of Jinnah Hospital revealed that:

- There was lack of 300 parking spaces for staff and general public.
- Parking management system was not convergent with a concept of real hospital parking management.
- Parking lot for motor bikes was more deficient of facilities.
- Parking standards were not taken into consideration for the provision of length, width of the parking spaces and aisle passage.
- Motor Cycle parking was disrupted due to soak ground in the wake of rain at-least for one day.
- There were issues of accessibility in the parking lot.
- Combined entrance and exit of the parking lot resulted in congestion at adjacent road, which disrupt flow of the vehicles for long.
- Due to nominal Parking charges, there were abuses of the parking spaces by surrounding shops owners and irrelevant visitors.

There was a need to increase the area for parking in Jinnah hospital Lahore. However, shortage of 300 parking spaces can be managed by the effective parking management measures and by the introduction of automatic parking system like T2 flex. It will not only help in parking management but also assists in maintaining the data for monitoring and synchronizing actions. To finish the abuses of the parking spaces, the parking charges may be levied in connection with the nearby parking stands. Parking lot may be divided into two categories according to short and long term usage to accommodate employees, students, patients and general visitors accordingly. Keeping in view the revealed basic discrepancies the following designs (for parking spaces only) are proposed for the betterment in the existing car and motor cycle lots respectively.



Proposed Blueprint of the Parking Spaces in the Existing Car Parking At Jinnah Hospital, Lahore, Pakistan



Proposed Blueprint of the Parking Spaces in the Existing Motor Cycle Parking at Jinnah Hospital, Lahore, Pakistan

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