

# **REPORT OF ROAD INJURY SURVEILLANCE PROJECT OF THE ROAD INJURY RESEARCH AND PREVENTION CENTRE OF JPMC, KARACHI**

## **INTRODUCTION**

Liberalisation of credit facilities for purchase of vehicles in Pakistan in 2002 has led to an exponential increase in registered vehicles on the road in the urban centres. Sadly, a proportionate increase in road crashes has occurred and in 2006 The Federal Ministry of Health, Govt. of Pakistan established a Road Traffic Injury Research & Prevention Centre within the Jinnah Postgraduate Medical Center. A road injury surveillance project was devised and initiated in collaboration with N.E.D University of Engineering & Technology and supported by Indus Motors.

## **PROJECT OBJECTIVES**

- To quantify and assess severity of Road Traffic Accidents

Data to be collected regarding all the road traffic injuries (RTI) happening in the city and then classified according to their severity and thus give an idea about the magnitude and the gravity of the problem at hand.

- Assess pattern & behavior of accidents on Major Arterials

To identify where and why the crashes are happening, especially on the major arterials and evaluate the different road user groups involved between them.

- Identification of Major causes of motor crashes

The data collected reviewed and the major causes of crashes and the issues behind them to be identified

- Detailed analysis of Black Spots

Black spots i.e. locations where the frequency or severity of the crashes is high be identified. Then these black spots will be reviewed for possible improvements so that accidents at these locations can be minimized

The Road Traffic Injury Research & Prevention Centre has been involved in road traffic accident data collection and analysis since September 2007. During this period over 17,000 road crash victims have been reported from the 5 major trauma centers (CHK, JPMC, AKUH, LNH & ASH) in the city. Black spots are being identified and relevant prevention strategies are being developed, and the same being communicated to the relevant Government authorities for rectification. The philosophy behind the Center's work is 'Prevention is better then cure'.

## **RESEARCH ASSISTANTS:**

Data is being collected at the five selected trauma centers, by Research assistants 24 hours a day 7 days a week.

They are collecting and documenting information from the incoming victims as well as facilitating them, guiding them where to go in the hospital and how to get in touch with their relatives. They establish the exact location of the road crashes as well as study the dynamics of the incident.

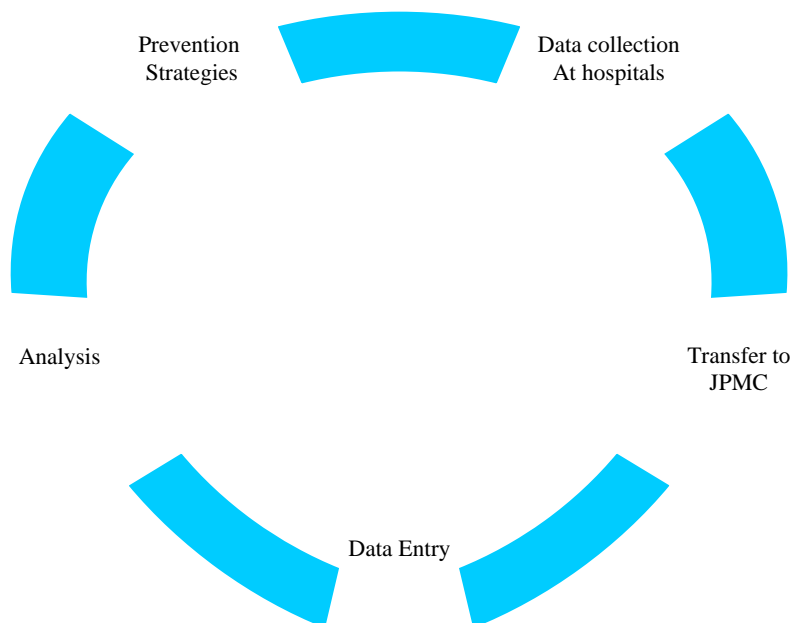
## **HOSPITALS INVOLVED**

Data is collected from Karachi's five major trauma receiving hospitals namely,

1. JPMC
2. Civil Hospital
3. Abbasi Shaheed Hospital
4. Liaquat National Hospital
5. Aga Khan Hospital

Initially these five hospitals were selected because most of the RTI cases are reported to these hospitals and a small number of RTI cases are reported to other local area hospitals. Now we are also trying to expand our team to those local area hospitals to cover the maximum number of RTI cases.

## **PROCESS CYCLE**



The above diagram shows how the process works. Data is collected from different hospitals and transferred to the main centre at JPMC where it is fed into the computers. Then data analysis is done by using SPSS, a tool of statistical analysis. After that prevention strategies are developed to rectify the situation.

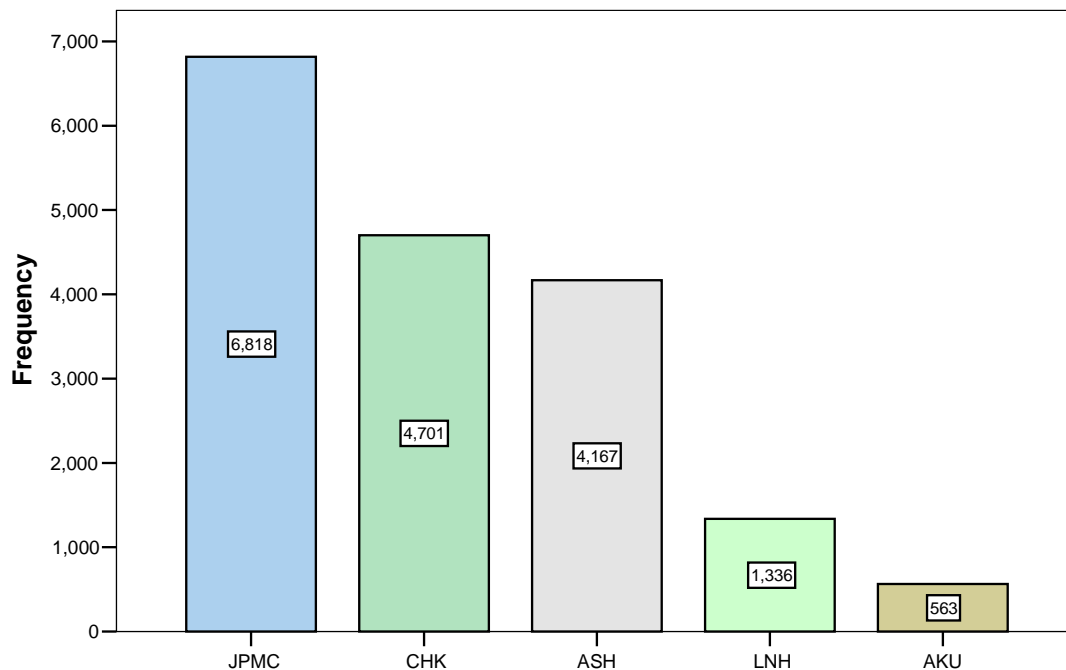
## **DATA ANALYSIS (SEPTEMBER 06 TO MARCH 07)**

### **1. Frequency Analysis**

#### **a) Center**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	JPMC	6818	38.8	38.8	38.8
	LNH	1336	7.6	7.6	46.4
	AKU	563	3.2	3.2	49.6
	ASH	4167	23.7	23.7	73.3
	CHK	4701	26.7	26.7	100.0
	Total	17585	100.0	100.0	

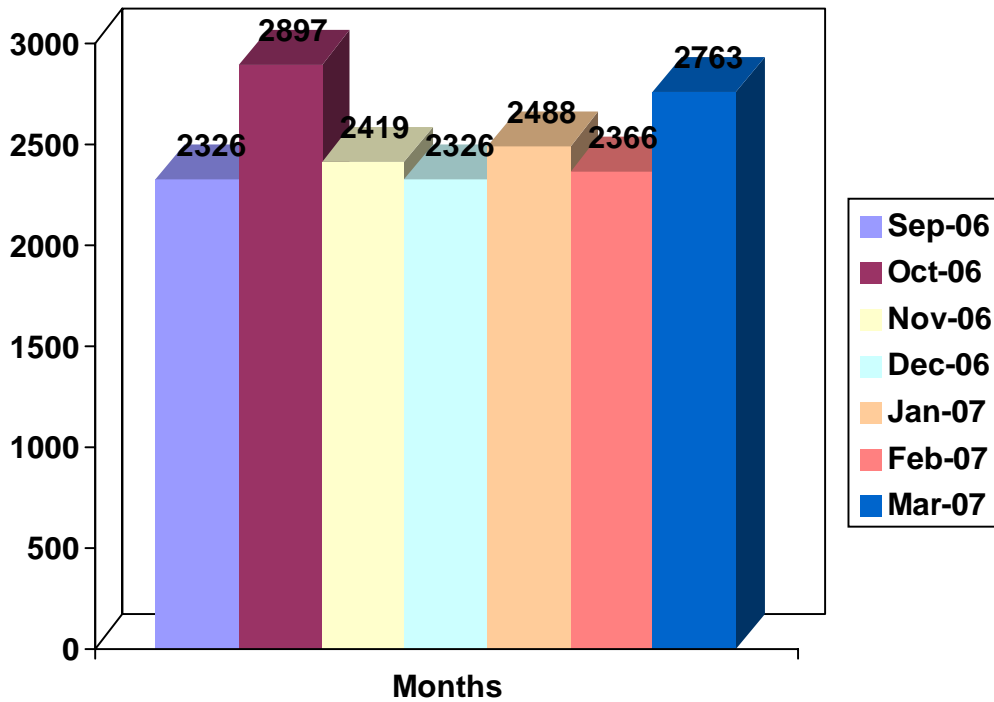
**Center**



The data shows that the maximum cases come to the JPMC with the AKU having the least number. JPMC and Civil Hospital being the largest government hospitals in Karachi attract the largest number of RTI victims. Another reason for largest number of

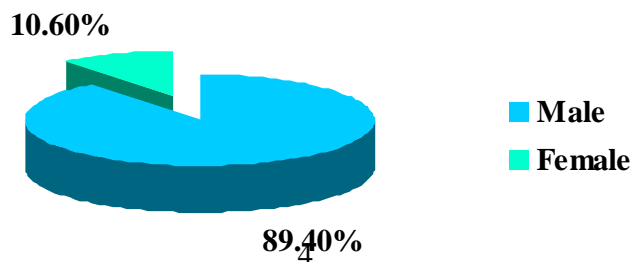
RTI cases in Jinnah and Civil is that these are located in city centre and have maximum facilities for RTI victims.

**b) Monthly Variation**



**c) Gender**

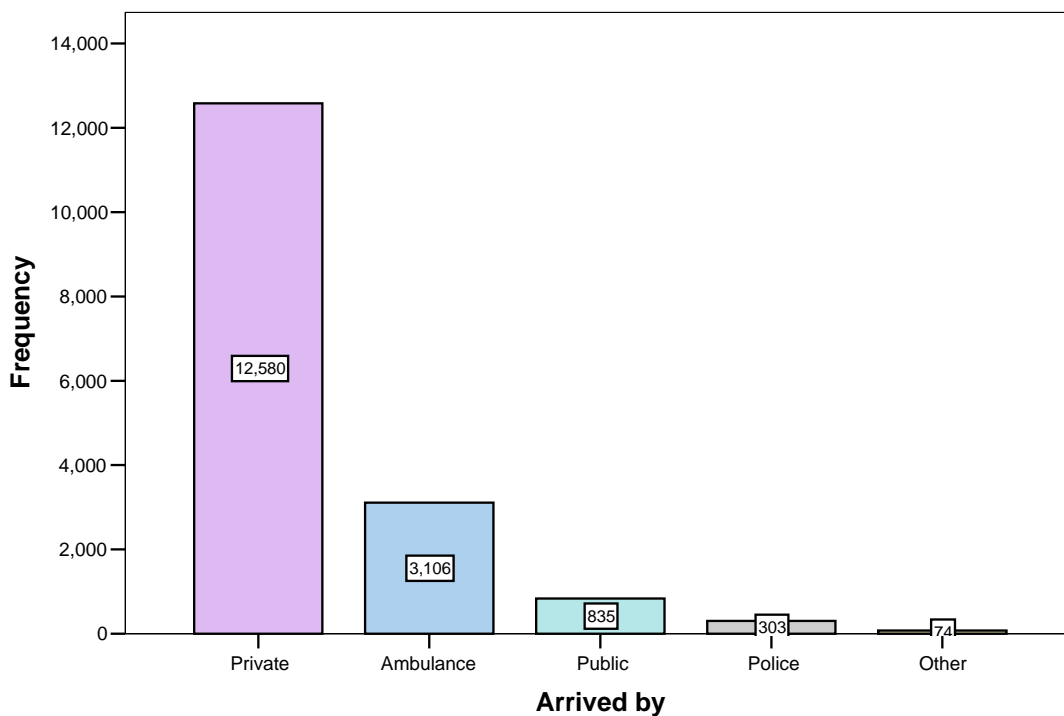
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	15701	89.3	89.3	89.3
	Woman	1874	10.7	10.7	100.0
	Total	17575	99.9	100.0	
Missing	System	10	.1		
Total		17585	100.0		



The data shows that males comprise a majority 90% of the RTIs while the females comprise only 10%. The involvement of male gender in accidents is more because of the fact that they are more socio economically active in our Society.

**d) Arrived by**

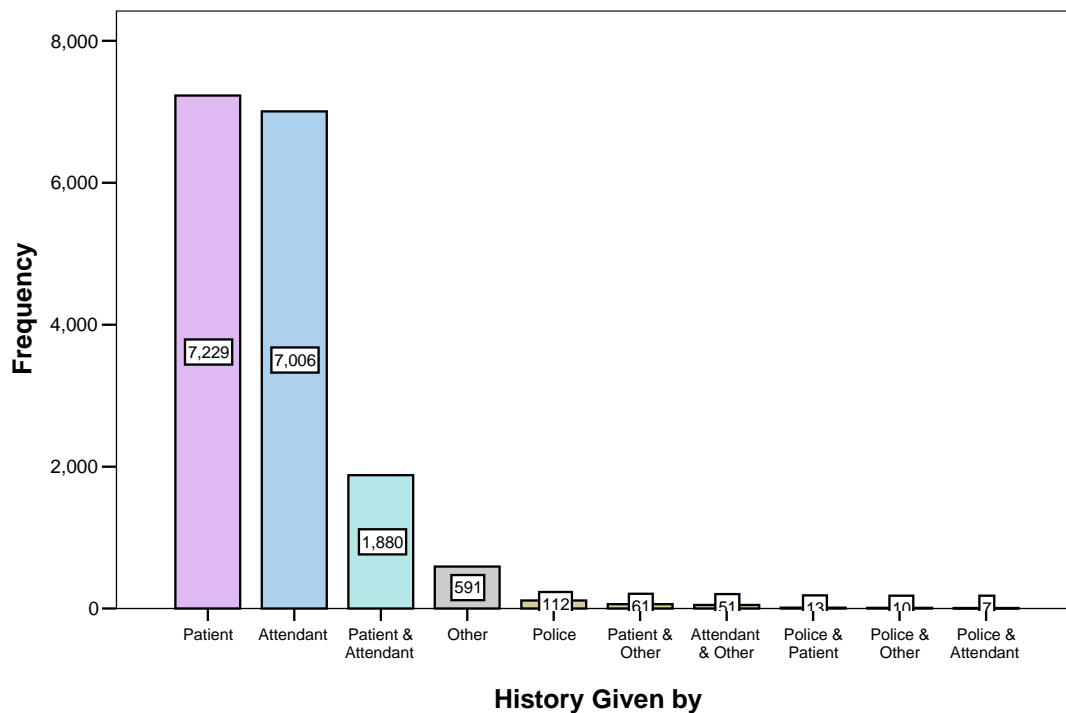
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ambulance	3106	17.7	18.4	18.4
	Police	303	1.7	1.8	20.2
	Private	12580	71.5	74.4	94.6
	Public	835	4.7	4.9	99.6
	Other	74	.4	.4	100.0
	Total	16904	96.1	100.0	
Missing	System	686	3.9		
Total		17585	100.0		



Most of the RTI victims come to the hospitals through private means of transportation having a share of 74%. Ambulance comes next with 18% while police and public transport make up the rest. There is a strong need for the Ambulance services to expand their network.

**e) History Given by**

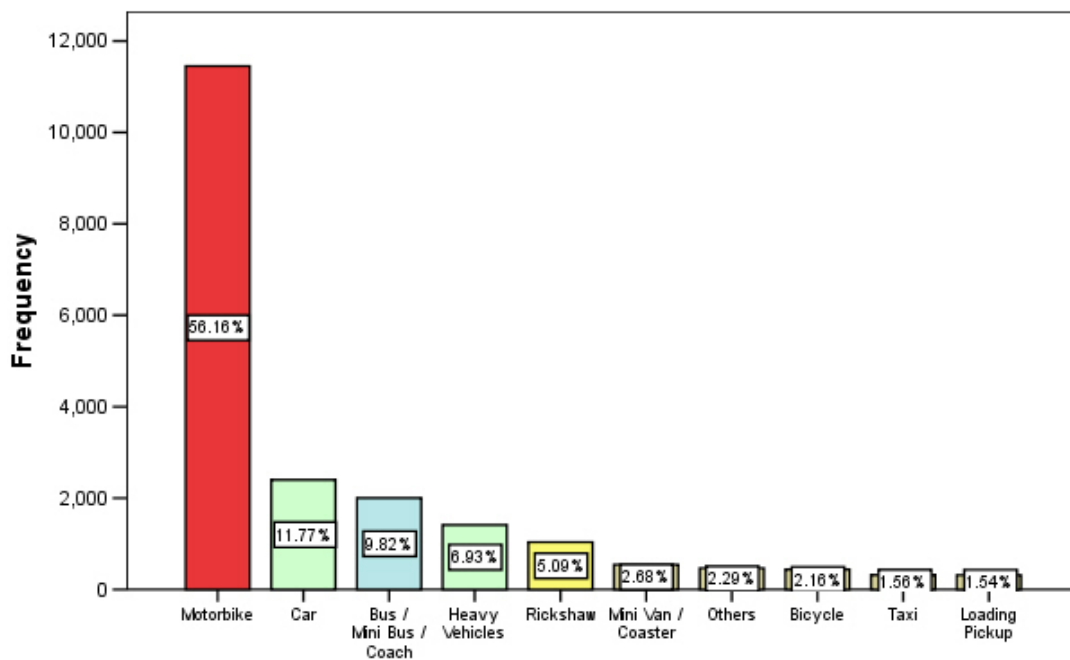
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Police	112	.6	.7	.7
	Police & Patient	13	.1	.1	.7
	Police & Attendant	7	.0	.0	.8
	Police & Other	10	.1	.1	.8
	Patient	7229	41.1	42.6	43.4
	Patient & Attendant	1880	10.7	11.1	54.5
	Patient & Other	61	.3	.4	54.9
	Attendant	7006	39.8	41.3	96.2
	Attendant & Other	51	.3	.3	96.5
	Other	591	3.4	3.5	100.0
	Total	16967	96.5	100.0	
Missing	System	625	3.5		
Total		17585	100.0		



Most of the accident data was collected either by the patient or his attendant, both accounting for 84% of the data collected.

**f) Vehicles Involved in Injury**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Motorbike	11453	56.2	56.2	56.2
	Mini Van / Coaster	546	2.7	2.7	58.8
	Bus / Mini Bus / Coach	2003	9.8	9.8	68.7
	Heavy Vehicles	1414	6.9	6.9	75.6
	Taxi	318	1.6	1.6	77.1
	Bicycle	440	2.2	2.2	79.3
	Car	2401	11.8	11.8	91.1
	Rickshaw	1037	5.1	5.1	96.2
	Loading Pickup	314	1.5	1.5	97.7
	Others	470	2.3	2.3	100.0
	Total	20396	100.0	100.0	

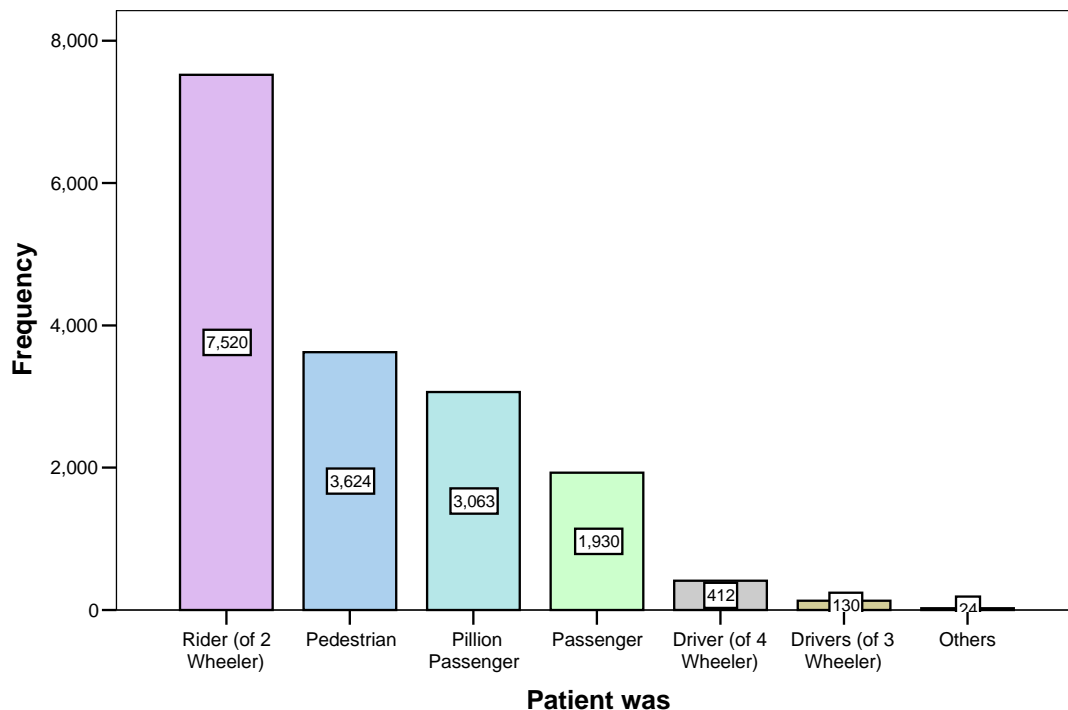


Motorbikes are the vehicle type that is most involved in accidents having a share of 56%. Cars and public transport are the next highest vehicle type while dumpers, bicycle, trucks, taxi, rickshaw, trailers and loading pickups make up the rest. Though dumpers and trucks constitute a small percentage but their severity is high.

A mass transit system is recommended so that the amount of people using motorbikes, cars and public transport decreases. A separate lane for bikes is also proposed.

**g) Patient was**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rider (of 2 Wheeler)	7520	42.8	45.0	45.0
	Pillion Passenger	3063	17.4	18.3	63.3
	Driver (of 4 Wheeler)	412	2.3	2.5	65.8
	Passenger	1930	11.0	11.5	77.4
	Pedestrian	3624	20.6	21.7	99.0
	Drivers (of 3 Wheeler)	130	.7	.8	99.8
	Others	24	.1	.1	100.0
	Total	16712	95.0	100.0	
Missing	System	883	5.0		
Total		17585	100.0		

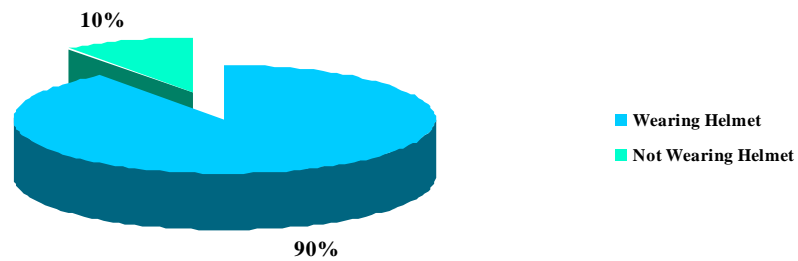


As in the previous graph it was stated that motorbikes are the vehicles type that are most involved in accidents so it is natural that most of the patients are riders and pillion riders accounting for about 64% of the data. Pedestrians come next with 21%

while all other road user groups make up 15%. So steps must be taken to make the motorcyclists and pedestrians safer against accidents.

### h) If Patient is Motorbike Rider

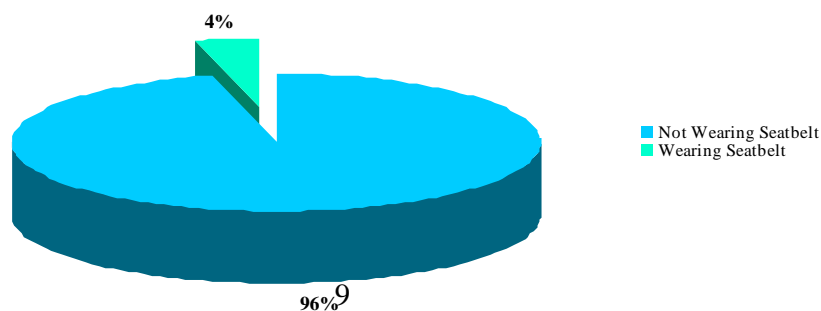
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wearing Helmet	778	4.4	10.0	10.0
	Not Wearing Helmet	6992	39.8	89.9	99.9
	Total	7774	44.2	100.0	
Missing	System	9815	55.8		
Total		17585	100.0		



Only around 10% of the motorbike riders are wearing helmets while 90% are not wearing helmets. This is a pitiful number and the helmet law should be strictly enforced to improve this ratio.

### i) If Patient is Driver/Passenger of Car

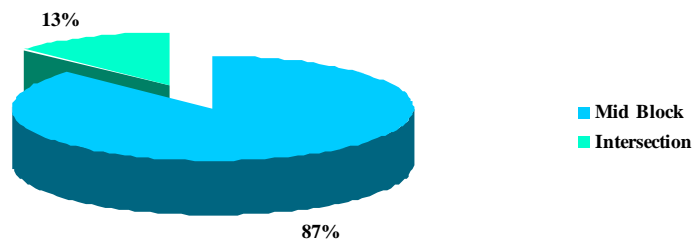
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wearing Seatbelt	25	.1	3.8	3.8
	Not Wearing Seatbelt	629	3.6	95.9	100
	Total	656	3.7	100.0	
Missing	System	16931	96.3		
Total		17585	100.0		



According to the data collected only 3.25% of the car drivers and passengers wear seatbelts while a huge 96.75% do not wear seatbelts.

### j) Location Details

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Intersection	2264	12.9	13.4	13.4
	Mid Block	14665	83.4	86.6	100.0
	Total	16929	96.3	100.0	
Missing	System	656	3.7		
Total		17585	100.0		

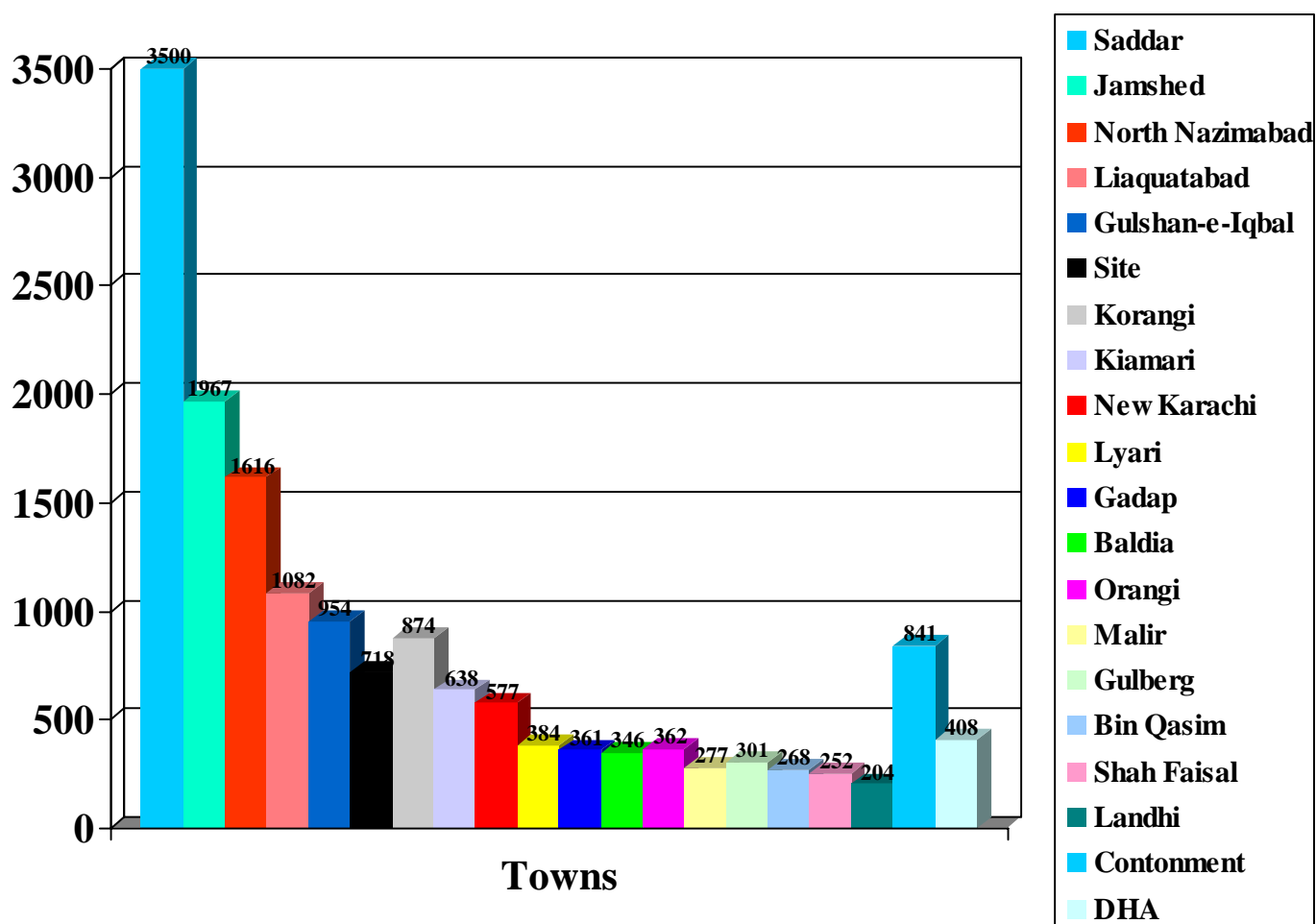


The chart shows that 87% of the accidents take place at the mid blocks while only 13% of the accidents take place at intersections.

### j) Towns

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Baldia Town	1660	9.4	9.4	9.4
	Bin Qasim Town	347	2.0	2.0	11.4
	Cantonment	268	1.5	1.5	12.9
	DHA	840	4.8	4.8	17.7
	Gadap Town	407	2.3	2.3	20.0
	Gulberg Town	361	2.1	2.1	22.1
	Gulshan-e-Iqbal Town	301	1.7	1.7	23.8
	Jamshed Town	945	5.4	5.4	29.2
	Total	1967	11.2	11.2	40.4

Kiamari Town	638	3.6	3.6	44.0
Korangi Town	874	5.0	5.0	49.0
Landhi Town	204	1.2	1.2	50.1
Liaquatabad Town	1082	6.2	6.2	56.3
Lyari Town	389	2.2	2.2	58.5
Malir Town	277	1.6	1.6	60.1
New Karachi Town	577	3.3	3.3	63.3
North Nazimabad Town	1616	9.2	9.2	72.5
Orangi Town	362	2.1	2.1	74.6
Saddar Town	3500	19.9	19.9	94.5
Shah Faisal Town	252	1.4	1.4	95.9
Site Town	718	4.1	4.1	100.0
Total	17585	100.0	100.0	



Saddar Town has the highest number of accidents. This is because Saddar Town is the commercial hub of the city and one of the most congested areas having a very high population. Jamshed and North Nazimabad Towns also have very high number of

accidents, with Landhi Town having the least number of accidents. High number of accidents in Saddar Town is due to the fact that exposure of vehicles in Saddar Town is more to the accidents because all vehicles merge in the central business district of Karachi which is Saddar Town. Another reason for maximum number of accidents reported from Saddar Town may be that Civil Hospital and Jinnah Hospital are covering Saddar Town very well.

**k) Roads**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3507	19.9	19.9	19.9
Abubaker Siddique Road	2	.0	.0	19.9
Abdullah Bahadur Road	1	.0	.0	19.9
Abdullah Haroon Road	83	.6	.6	20.5
Abdullah Naeem Road	1	.0	.0	20.5
Abdullah Shah Ghazi Road	13	.1	.1	20.6
Abdullahabad Road	1	.0	.0	20.6
Abu Bakar Siddique Road	3	.0	.0	20.6
Abul Hasan Isphani Road	7	.0	.0	20.6
Adamji Road	14	.1	.1	20.7
Admin Block Road	42	.2	.2	20.9
Ahbab Sweet Road	27	.2	.2	21.1
Ahmed Shah Bukhari Road	2	.0	.0	21.1
Ajmeer Nagri Road	1	.0	.0	21.1
Akbar Road	2	.0	.0	21.1
Allama Rasheed Turabi Road	79	.4	.4	21.6
Allama Shabeer Ahmed Usmani Ro	2	.0	.0	21.6
Altaf Hussain Brelvi Road	46	.3	.3	21.8
Ameer Khsroo Road	3	.0	.0	21.9
Aslam Road	5	.0	.0	21.9
Awan-e-Saddar Road	14	.1	.1	22.0
Azeem Pura Road	1	.0	.0	22.0
Bab-e-Urdu Road	48	.3	.3	22.3
Bahadur Yar Jang Road	45	.3	.3	22.5
Begum Khursheed Road	22	.1	.1	22.6
Business Recorder Road	62	.4	.4	23.0
Cantt Station Road	81	.5	.5	23.4
Ch Fazal Ellahi Road	438	2.5	2.5	25.9
Ch Khaliq-uz-Zaman	91	.5	.5	26.5
Chakiwara Road	32	.2	.2	26.6
Chand Bibi Road	47	.3	.3	26.9
DHA Road	152	.9	.9	27.8
Dr. Daud Pota Road	13	.1	.1	27.8

Dr. Ziauddin Ahmed Road	85	.5	.5	28.3
Drigh Road	27	.2	.2	28.5
Faqir Muhammad Dur Khan Road	7	.0	.0	28.5
GA Allana Road	32	.2	.2	28.7
Garden Road	3	.0	.0	28.7
Ghanzanfar Ali Road	2	.0	.0	28.7
Ghizri Road	99	.6	.6	29.3
Gol Market	30	.2	.2	29.5
Gulistan-e-Johor Road	13	.1	.1	29.6
Gulshan-e-Ghazi Road	2	.0	.0	29.6
Habib Bank Chowrangi	11	.1	.1	29.8
Habib Ibrahim Rehmatullah Road	7	.0	.0	29.8
Hakim Ibn-e-Sina Road	292	1.7	1.7	31.5
Hawks bay Road	7	.0	.0	31.5
Hawks Bay Road	20	.1	.1	31.5
Hub River Road	351	2	2	33.5
Ibrahim Hydri Road	5	.0	.0	33.5
Il Chundrighar Road	137	.8	.8	34.3
Jail Road	7	.0	.0	34.3
Jamshed Road	52	.3	.3	34.6
Jehangir Road	49	.3	.3	34.9
Jinnah Avenue	1	.0	.0	34.9
Kashmir Road	20	.1	.1	35.0
Khalid Bin Waleed Road	15	.1	.1	35.1
Khokarapar Road	1	.0	.0	35.1
Khuwaja Ajmair Nagri Road	10	.1	.1	35.1
Khy-e-Badar Road	1	.0	.0	35.2
Khy-e-Bukhari	1	.0	.0	35.2
Khy-e-Hafiz	10	.1	.1	35.2
Khy-e-Iqbal	147	.8	.8	36.1
Khy-e-Itehad	18	.1	.1	36.2
Khy-e-Jami	2	.0	.0	36.2
Khy-e-Maryum	2	.0	.0	36.2
Khy-e-Muhafiz	2	.0	.0	36.2
Khy-e-Muslim	2	.0	.0	36.2
Khy-e-Mustafa	2	.0	.0	36.2
Khy-e-Roomi	1	.0	.0	36.2
Khy-e-Sadi	61	.3	.3	36.6
Khy-e-Shamsheer	19	.1	.1	36.7
Khy-e-Shujaat	2	.0	.0	36.7
Korangi Industrial Area Road	163	.9	.9	37.6
Korangi Road	678	3.9	3.9	41.5
Kumar Wara Road	2	.0	.0	41.5
Liaquat Ali Khan Road	4	.0	.0	41.5

Low Road	644	3.7	3.7	45.2
Lyari Road	10	.1	.1	45.2
MA Jinnah Road	1165	6.6	6.6	51.8
Mai Kolachi Road	51	.3	.3	52.1
Main Korangi Road	382	2.2	2.2	54.3
Manghupir Road	75	.4	.4	54.7
Martin Road	14	.1	.1	54.8
Masan Road	8	.0	.0	54.9
Matric Board Office	70	.4	.4	55.3
Mauripur Road	428	2.4	2.4	57.7
Mehmoodabad Road	26	.1	.1	57.8
Meran Shah Road	2	.0	.0	57.9
Mir Muhammad Baloch Road	5	.0	.0	57.9
Mirza Adam Khan Road	137	.8	.8	58.7
Molana Shaukat Ali Khan Road	93	.5	.5	59.2
Mominabad Road	1	.0	.0	59.2
MT Khan Road	165	.9	.9	60.1
Mubarak Shaheed Road	11	.1	.1	60.2
Napier Road	5	.0	.0	60.2
National Highway	495	2.8	2.8	63.0
Native Jative Bridge	34	.2	.2	63.2
Nawab Sadiq Ali Khan Road	236	1.3	1.3	64.6
New Kumarwara Road	5	.0	.0	64.6
Nishtar Road	414	2.4	2.4	67.0
Noorani Road	1	.0	.0	67.0
Northern Bypass	20	.1	.1	67.1
Rafiqi Shaheed Road	147	.8	.8	67.9
Raja Ghazanfar Ali Road	22	.1	.1	68.0
Rashid Minhas Road	200	1.1	1.1	69.2
Res Road	502	2.9	2.9	72.0
Ring Road	2	.0	.0	72.0
Sadique Wahab Road	7	.0	.0	72.1
Sahba Akhtar Road	1	.0	.0	72.1
Sajawal Road	3	.0	.0	72.1
Sarwer Shaheed Road	150	.9	.9	73.0
Sea View Road	121	.7	.7	73.6
Shah Abdul Latif Bhatai Road	15	.1	.1	73.7
Shah Faisal Road	30	.2	.2	73.9
Shah Nawaz Shaheed Road	14	.1	.1	74.0
Shaheed-e-Millat Extention	29	.2	.2	74.1
Shaheed-e-Millat Road	62	.4	.4	74.5

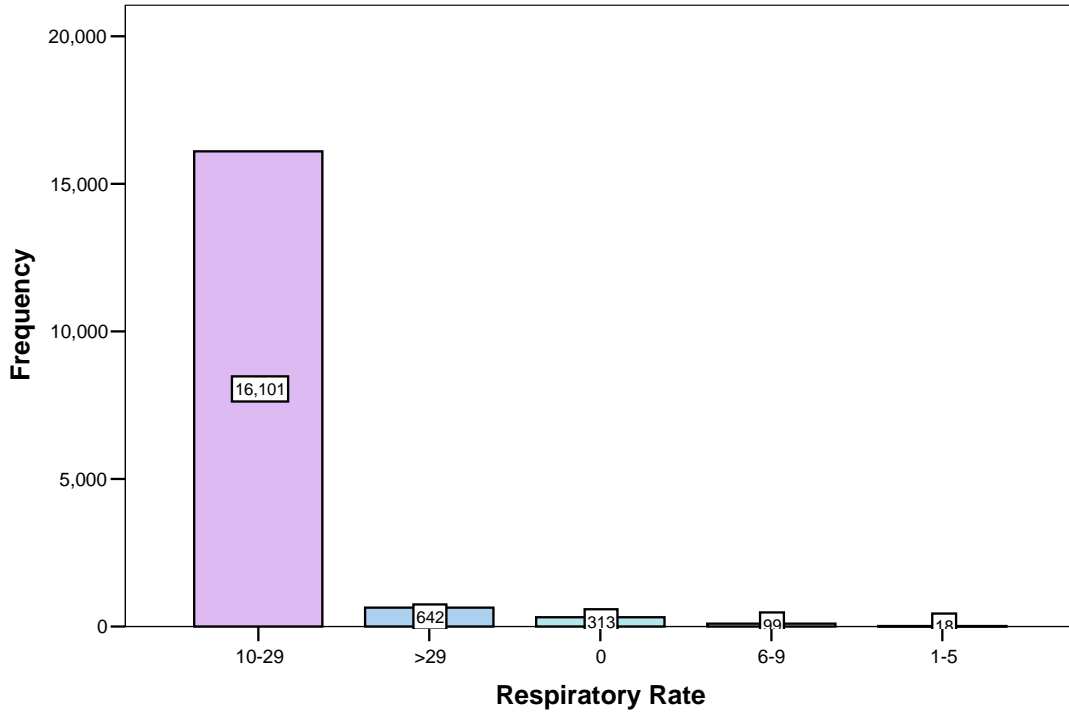
Shaheed Sibgatullah Shah Pir Pagara Roads	174	1.0	1.0	75.5
Shahrah-e-Faisal	1127	6.4	6.4	81.9
Shahrah-e-Ghalib	1	.0	.0	81.9
Shahrah-e-Liaquat	145	.8	.8	82.7
Shahrah-e-Noor Jehan	78	.4	.4	83.2
Shahrah-e-Orangi	286	1.6	1.6	84.8
Shahrah-e-Pakistan	202	1.1	1.1	85.9
Shahrah-e-Qaddafi	3	.0	.0	86.0
Shahrah-e-Quaideen	60	.3	.3	86.3
Shahrah-e-Shah Wali Ullah	18	.1	.1	86.4
Shahrah-e-Sher Shah Suri	559	3.2	3.2	89.6
Shahrah-e-Waqas	9	.1	.1	89.6
Sher Paw Road	1	.0	.0	89.6
Sher Shah Road	2	.0	.0	89.7
Siddiq Wahab Road	27	.2	.2	89.8
Sir Shah Mohammad Suleman Road	66	.4	.4	90.2
Site Avenue	470	2.7	2.7	92.9
SM Toufiq Road	321	1.8	1.8	94.7
Super Highway	443	2.5	2.5	97.2
Tannery Road	4	.0	.0	97.2
Tariq Road	89	.5	.5	97.7
Tipu Sultan Road	4	.0	.0	97.8
Umar Farooq Road	1	.0	.0	97.8
University Road	377	2.1	2.1	99.9
Yaseenabad Road	1	.0	.0	99.9
Zaib-un-Nisa Street	16	.1	.1	100.0
Total	17585	100.0	100.0	

Shahrah-e-Faisal and M.A. Jinnah Road have the highest number of accidents. National highway, Super Highway, Site Avenue, Mauripur Road and Ch. Fazal Ilahi Road have the second highest number of accidents. Hakim Ibn-e-Sina Road, Nawab Sadiq Ai Khan Road, Nishtar Road, ECO Highway, Shahrah-e-Orangi, SM Toufiq Road and University Road have the third highest number of roads.

#### 1) Respiratory Rate

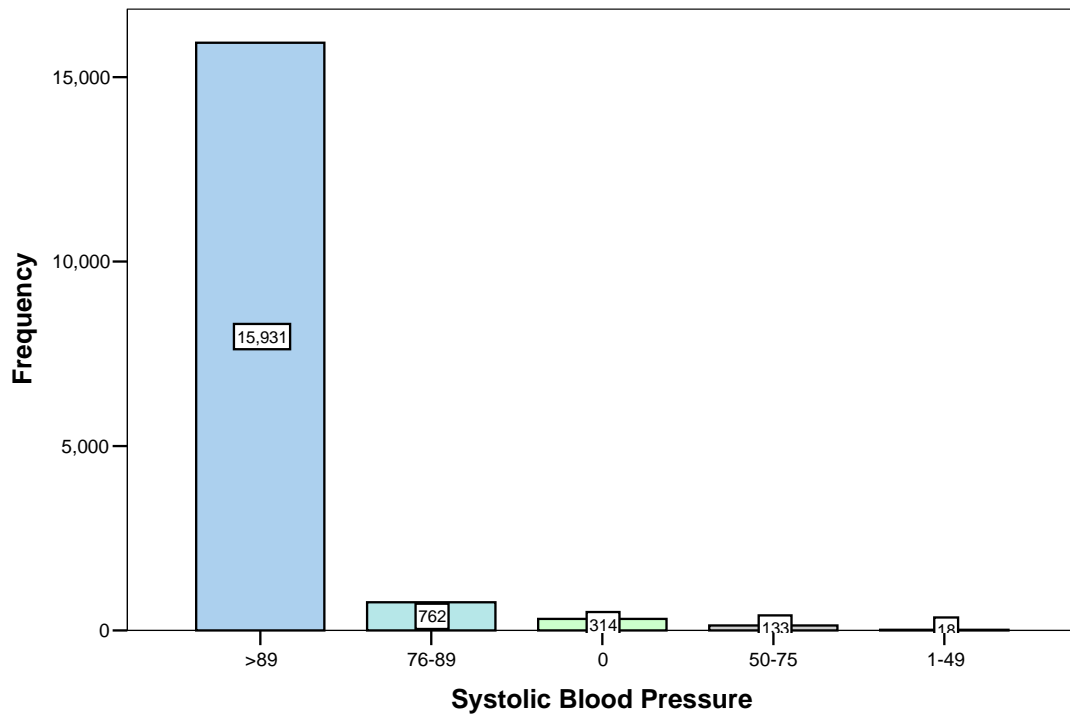
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-29	16101	91.6	93.8	93.8
	>29	642	3.7	3.7	97.5
	6-9	99	.6	.6	98.1
	1-5	18	.1	.1	98.2
	0	313	1.8	1.8	100.0

	Total	17173	97.7	100.0
Missing	System	412	2.3	
Total		17585	100.0	



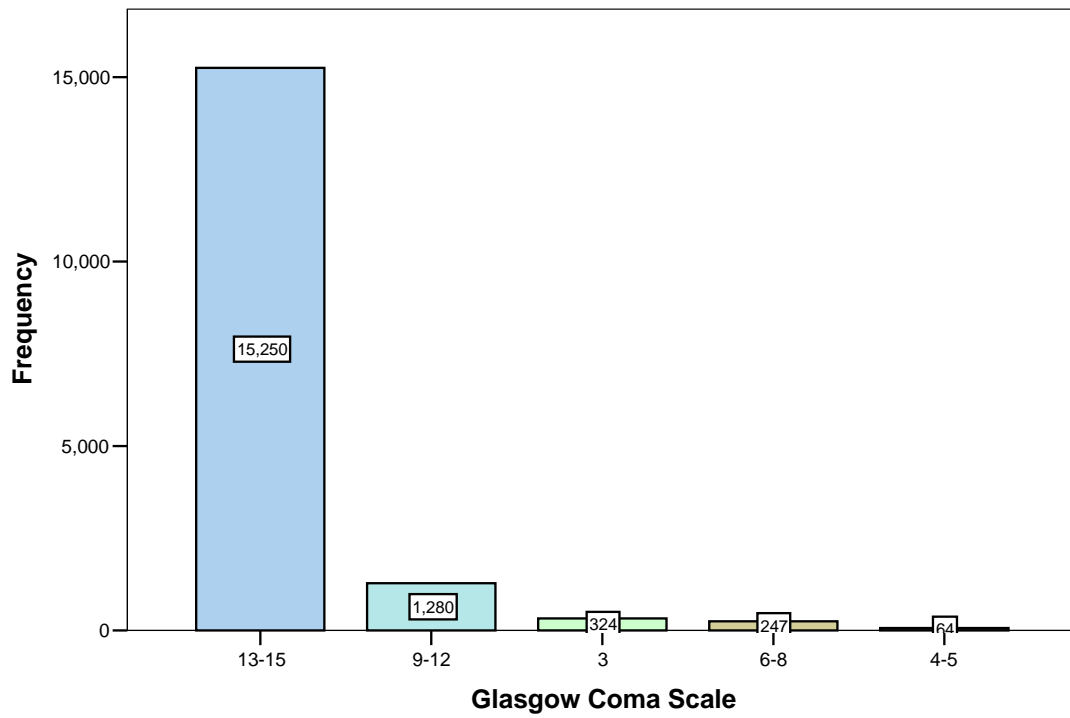
**m) Systolic Blood Pressure**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	>89	15931	90.6	92.8	92.8
	76-89	762	4.3	4.4	97.3
	50-75	133	.8	.8	98.1
	1-49	18	.1	.1	98.2
	0	314	1.8	1.8	100.0
	Total	17158	97.6	100.0	
Missing	System	427	2.4		
Total		17585	100.0		



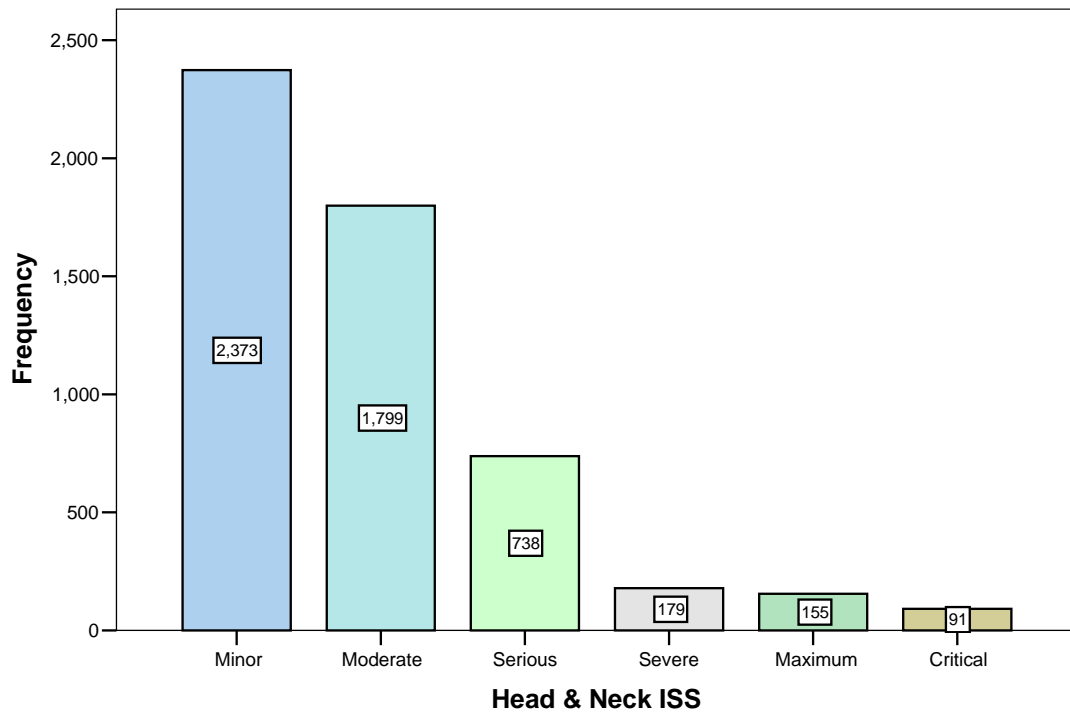
**n) Glasgow Coma Scale**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	13-15	15250	86.7	88.8	88.8
	9-12	1280	7.3	7.5	96.3
	6-8	247	1.4	1.4	97.7
	4-5	64	.4	.4	98.1
	3	324	1.8	1.9	100.0
	Total	17165	97.6	100.0	
Missing	System	420	2.4		
Total		17585	100.0		



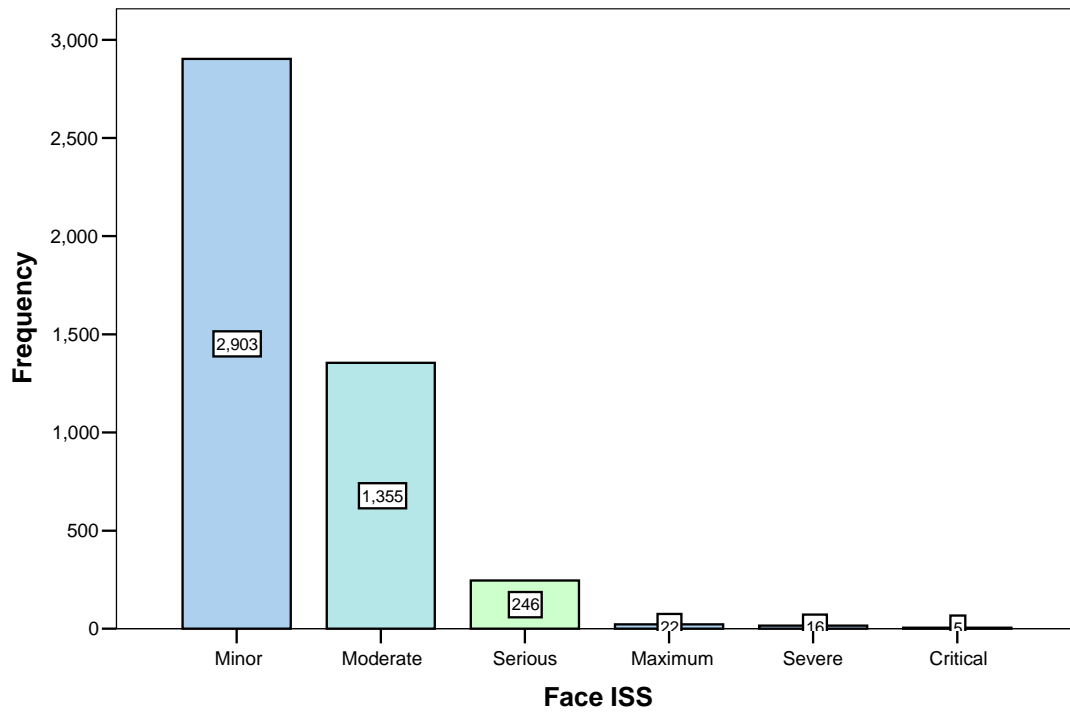
**o) Head & Neck ISS**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Minor	2373	13.5	44.5	44.5
	Moderate	1799	10.2	33.7	78.2
	Serious	738	4.2	13.8	92.0
	Severe	179	1.0	3.4	95.4
	Critical	91	.5	1.7	97.1
	Maximum	155	.9	2.9	100.0
	Total	5336	30.3	100.0	
Missing	System	12250	69.7		
Total		17585	100.0		



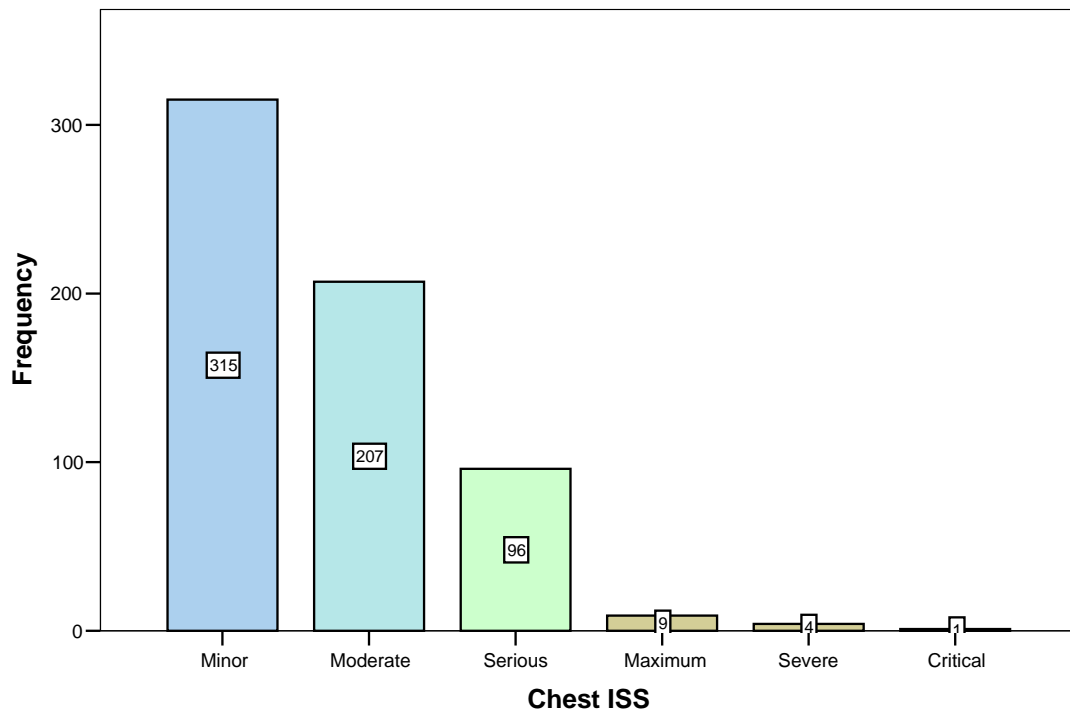
**p) Face ISS**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Minor	2903	16.5	63.8	63.8
	Moderate	1355	7.7	29.8	93.6
	Serious	246	1.4	5.4	99.1
	Severe	16	.1	.4	99.4
	Critical	5	.0	.1	99.5
	Maximum	22	.1	.5	100.0
	Total	4547	25.9	100.0	
Missing	System	13038	74.1		
Total		17585	100.0		



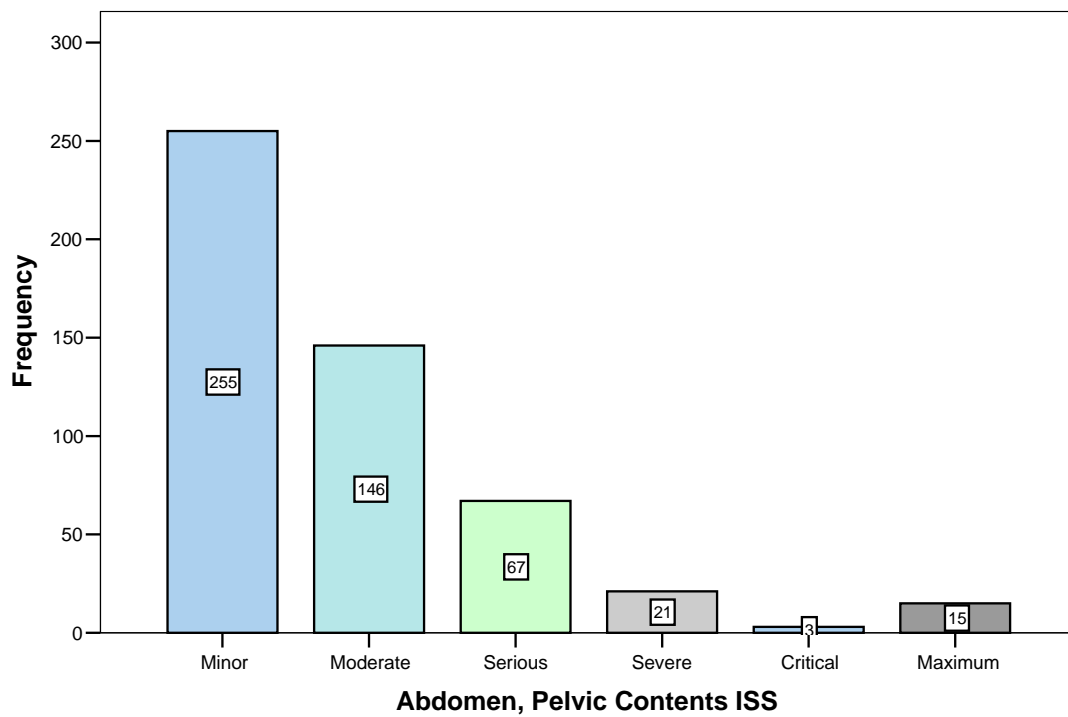
**q) Chest ISS**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Minor	315	1.8	49.8	49.8
	Moderate	207	1.2	32.8	82.6
	Serious	96	.5	15.2	97.8
	Severe	4	.0	.6	98.4
	Critical	1	.0	.2	98.6
	Maximum	9	.1	1.4	100.0
	Total	632	3.6	100.0	
Missing	System	16953	96.4		
Total		17585	100.0		



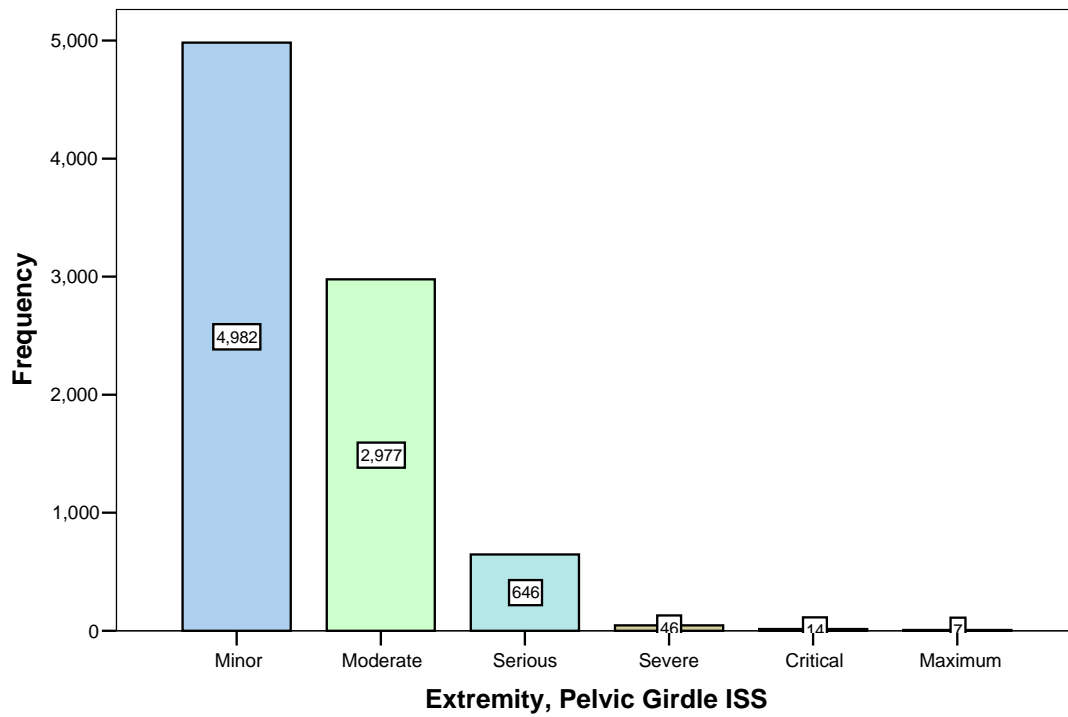
**r) Abdomen, Pelvic Contents ISS**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Minor	255	1.5	50.3	50.3
	Moderate	146	.8	28.8	79.1
	Serious	67	.4	13.2	92.3
	Severe	21	.1	4.1	96.4
	Critical	3	.0	.6	97.0
	Maximum	15	.1	3.0	100.0
	Total	507	2.9	100.0	
Missing	System	17078	97.1		
Total		17585	100.0		



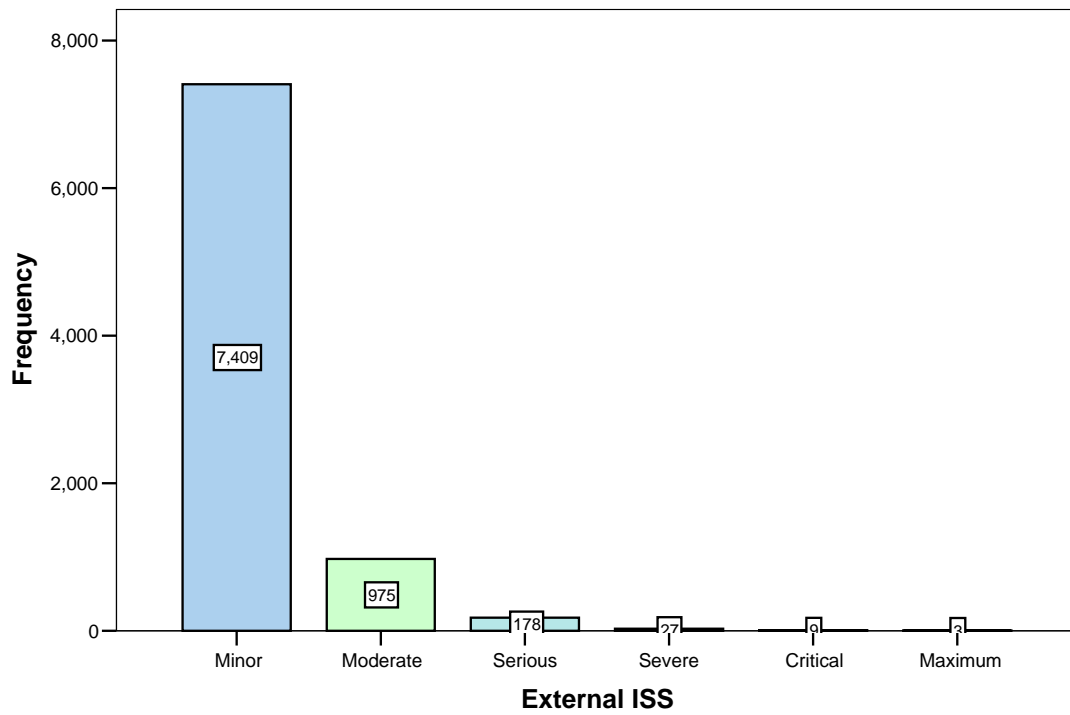
s) Extremity, Pelvic Girdle ISS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Minor	4982	28.3	57.4	57.4
	Moderate	2977	16.9	34.3	91.8
	Serious	646	3.7	7.4	99.2
	Severe	46	.3	.5	99.8
	Critical	14	.1	.2	99.9
	Maximum	7	.0	.1	100.0
	Total	8672	49.3	100.0	
Missing	System	8913	50.7		
Total		17585	100.0		



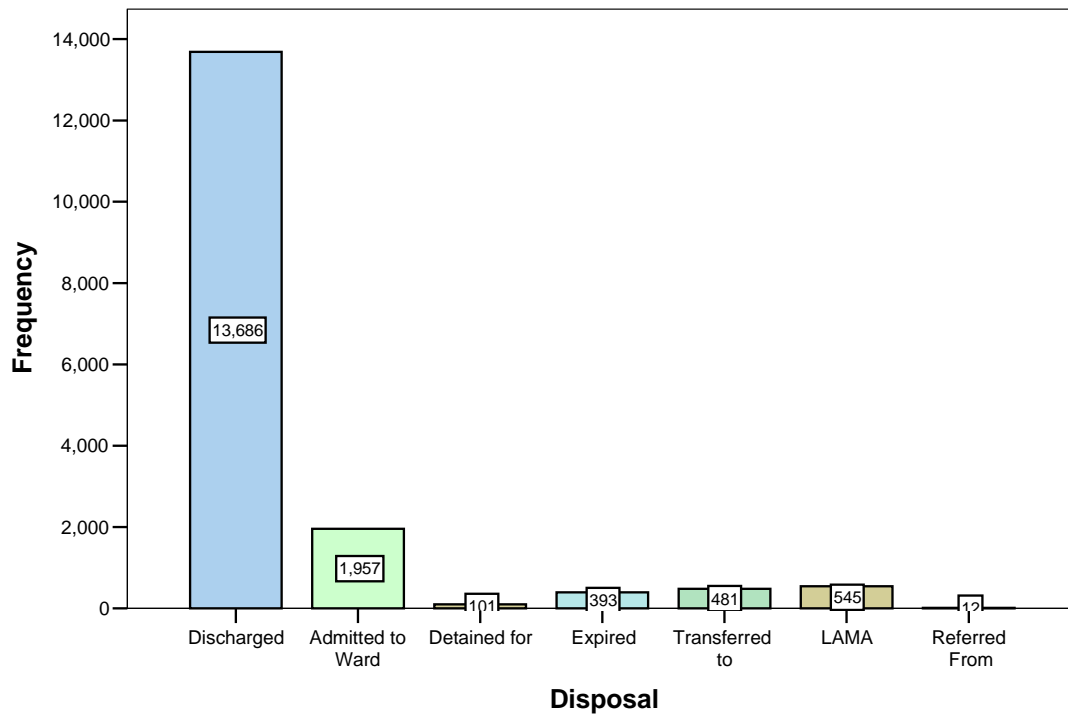
**t) External ISS**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Minor	7409	42.1	86.1	86.1
	Moderate	975	5.5	11.3	97.5
	Serious	178	1.0	2.1	99.5
	Severe	27	.2	.3	99.9
	Critical	9	.1	.1	100.0
	Maximum	3	.0	.0	100.0
	Total	8601	48.9	100.0	
Missing	System	8984	51.1		
Total		17585	100.0		



**u) Disposal**

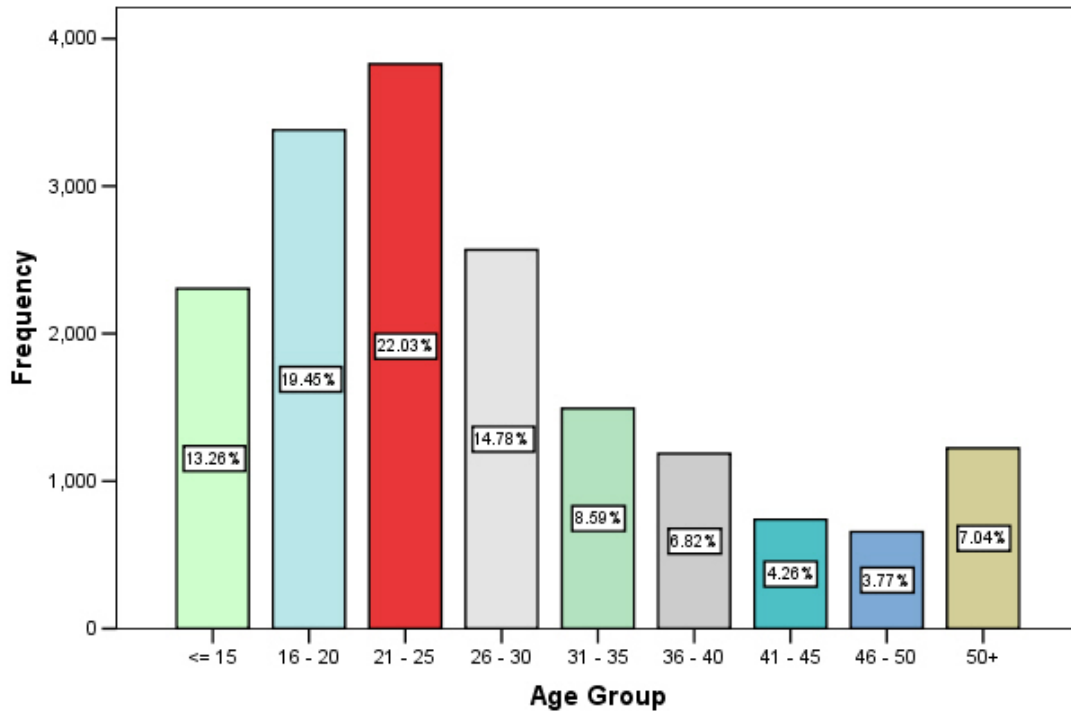
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Discharged	13686	77.8	79.7	79.7
	Admitted to Ward	1957	11.1	11.4	91.1
	Detained for	101	.6	.6	91.7
	Expired	393	2.2	2.3	94.0
	Transferred to	481	2.7	2.8	96.8
	LAMA	545	3.1	3.2	99.9
	Referred From	12	.1	.1	100.0
	Total	17175	97.7	100.0	
Missing	System	410	2.3		
Total		17585	100.0		



Majority of the patients, about 79.7% get discharged and 11.4% are admitted to ward. 2.3% of the patients get expired.

**v) Age Group**

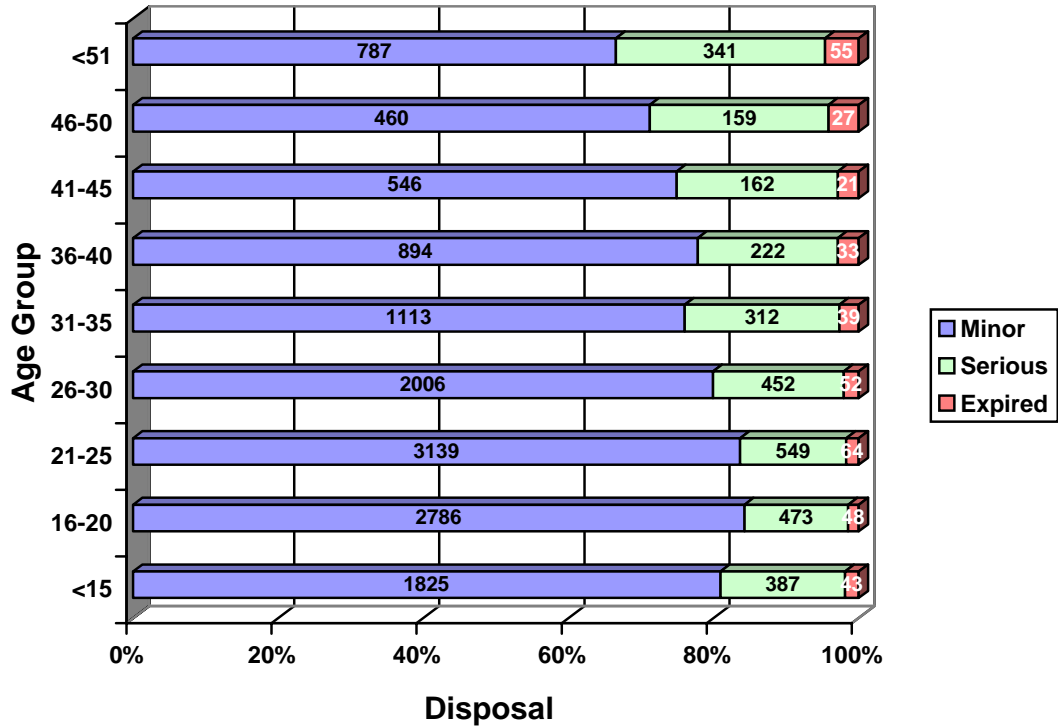
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<= 15	2305	13.1	13.3	13.3
	16 - 20	3380	19.2	19.4	32.7
	21 - 25	3828	21.8	22	54.7
	26 - 30	2568	14.6	14.8	69.5
	31 - 35	1492	8.5	8.6	78.1
	36 - 40	1186	6.7	6.8	84.9
	41 - 45	740	4.2	4.3	89.2
	46 - 50	656	3.7	3.8	93
	50+	1223	6.9	7	100
	Total	17378	98.8	100	
Missing	System	207	1.2		
Total		17585	100		



The chart shows the age groups involved. The age group 21 to 25 is the most involved in accidents. About 70% of all age groups involved in RTIs are either 30 or below it.

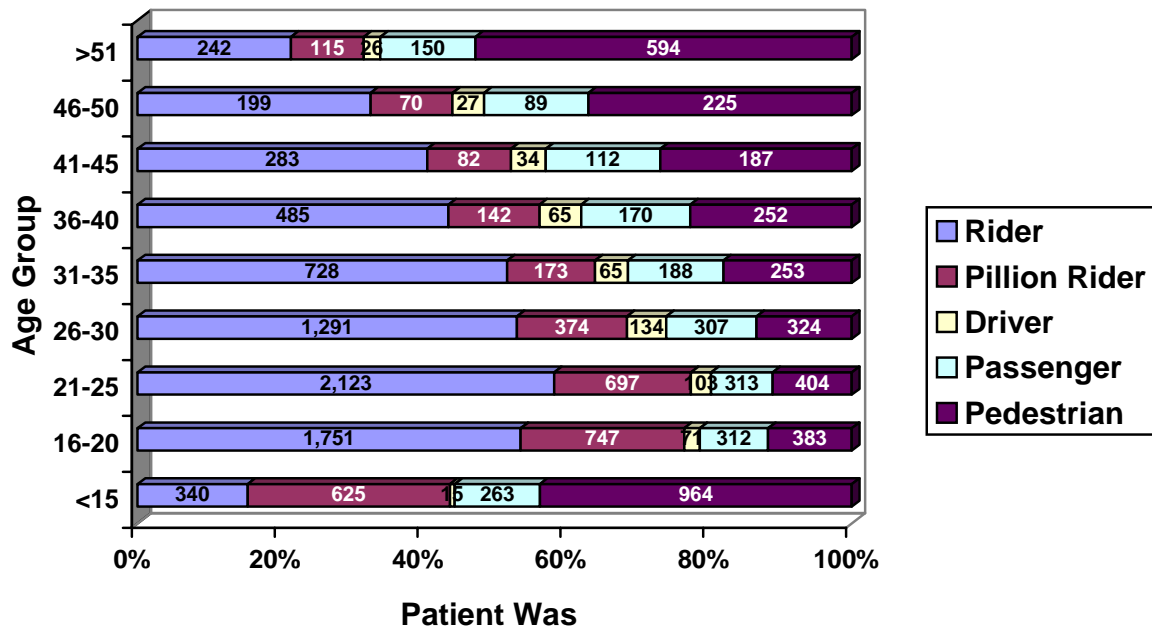
## 2. Cross Tabulation

### a) Age Group VS Disposal



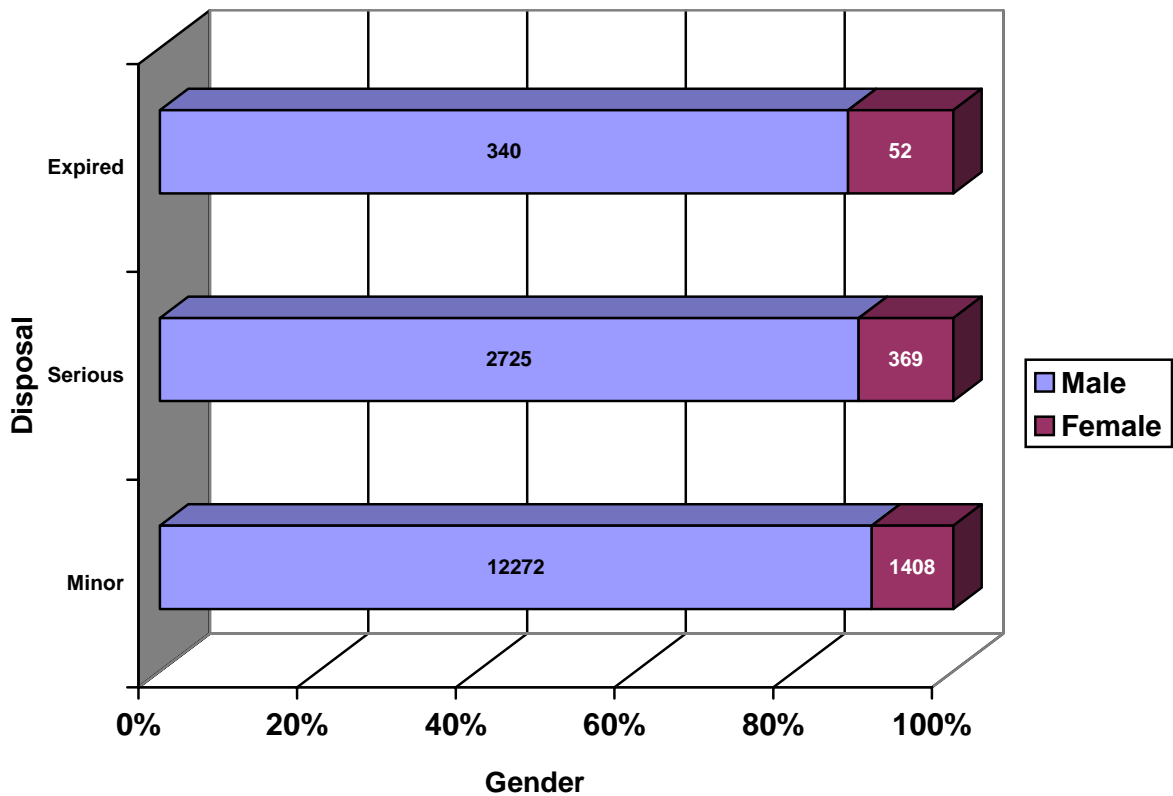
The total number of disposal cases is 17175. The total number of expired patients is 393. The age group between 21-25 and 26-30 has the highest number of fatalities while the age group between 61-65 has the lowest number.

**b) Age Group VS Patient was**



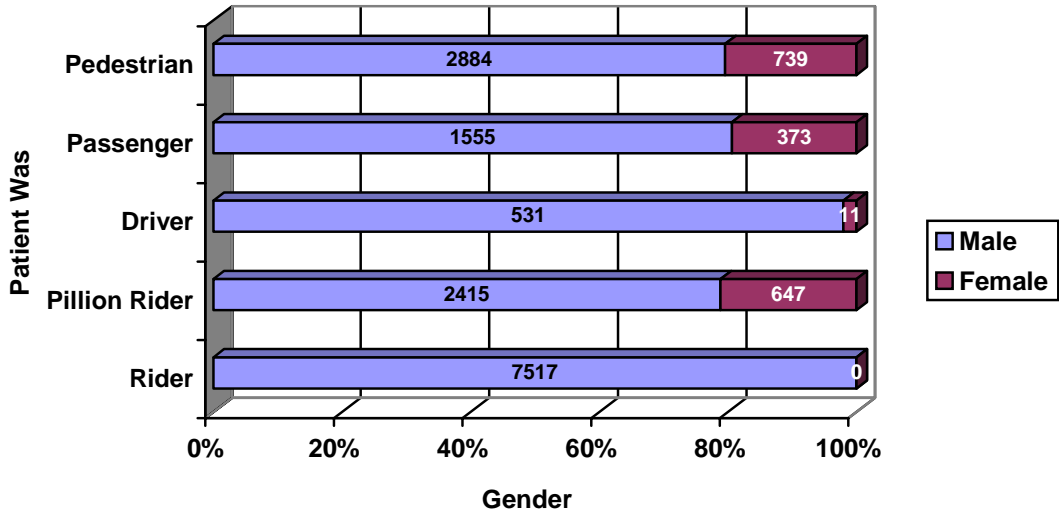
340 Motorcyclists, 12 Drivers and 3 three wheeler drivers belong to the age group of less than 15. The number of motorcyclists is very high and represents a serious problem of underage driving.

**c) Gender VS Disposal**

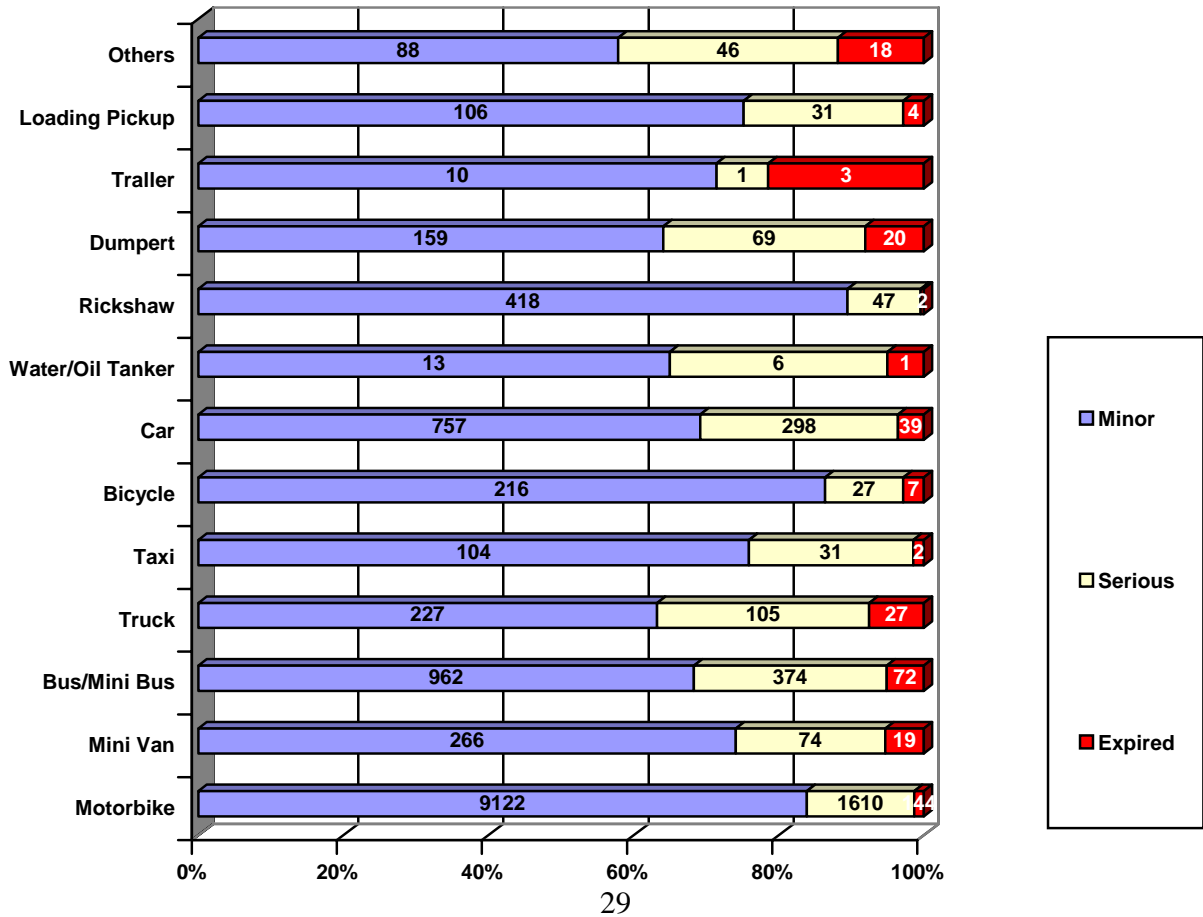


A total of 343 men and 52 women have expired. Overall males comprise an overwhelming majority of the cases.

**d) Gender VS Road User Group**

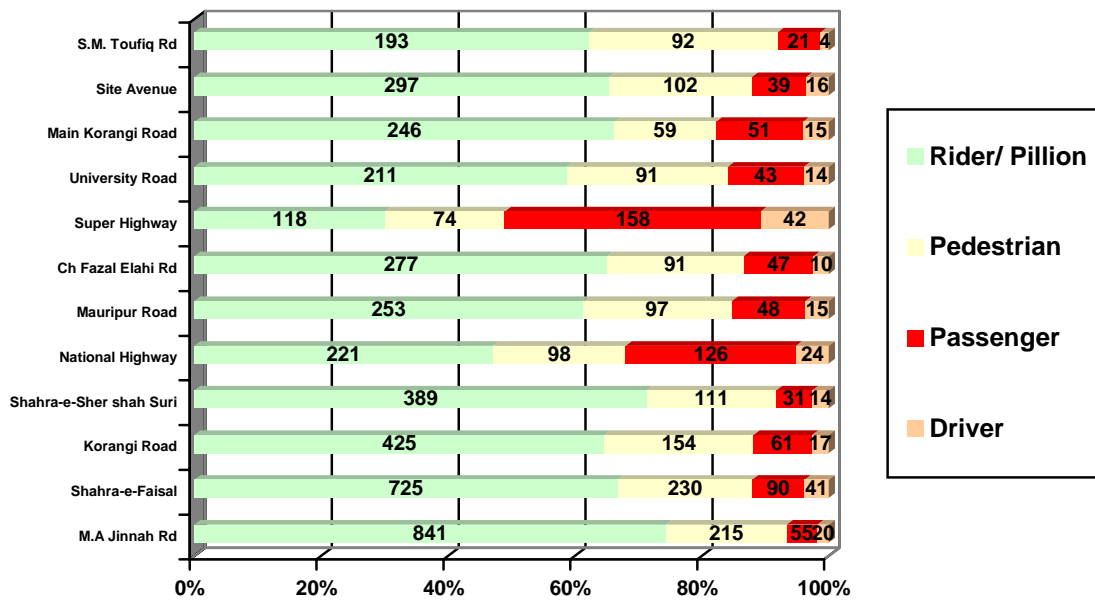


**e) Vehicle Involved in Injury VS Disposal**



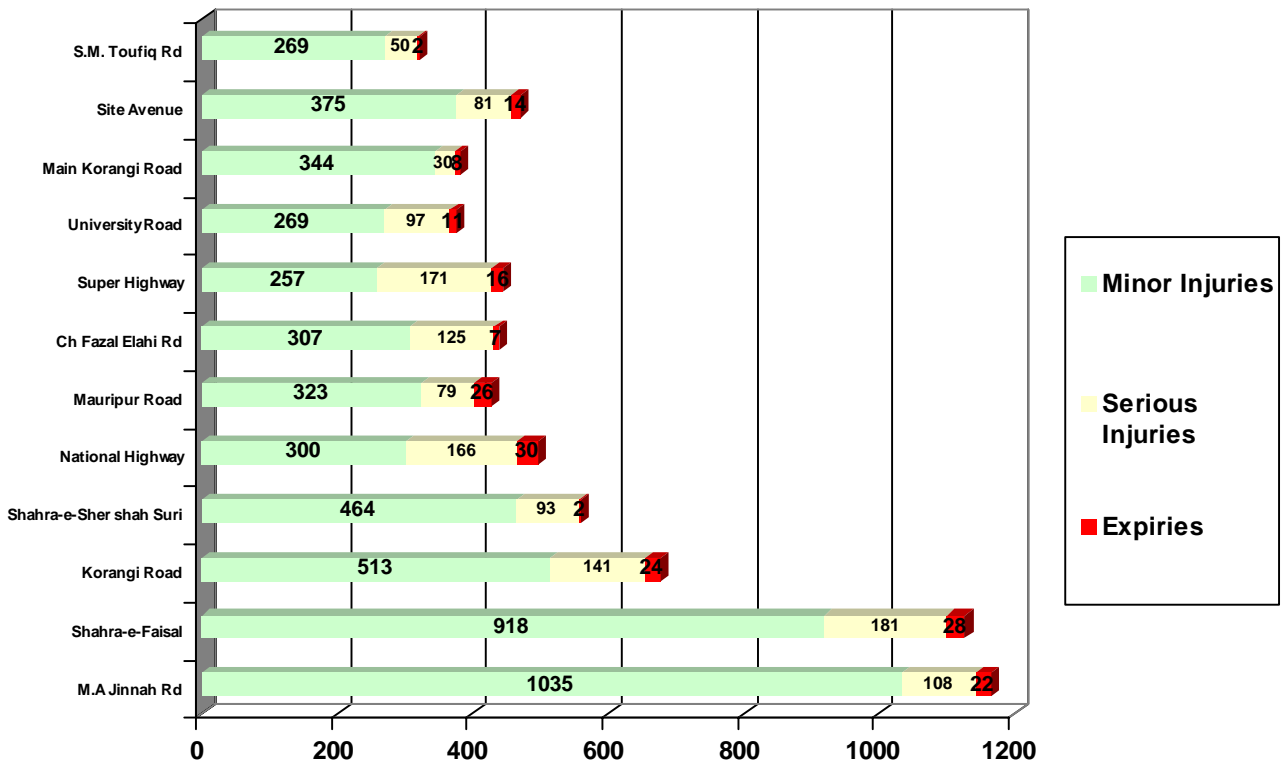
Motorbikes have the highest number of expiries, the number being 129. Public transport has the second highest number of expiries at 73 and cars are third at 42. The total number of expiries is 352.

**f) Road User Group on Major Arterials**



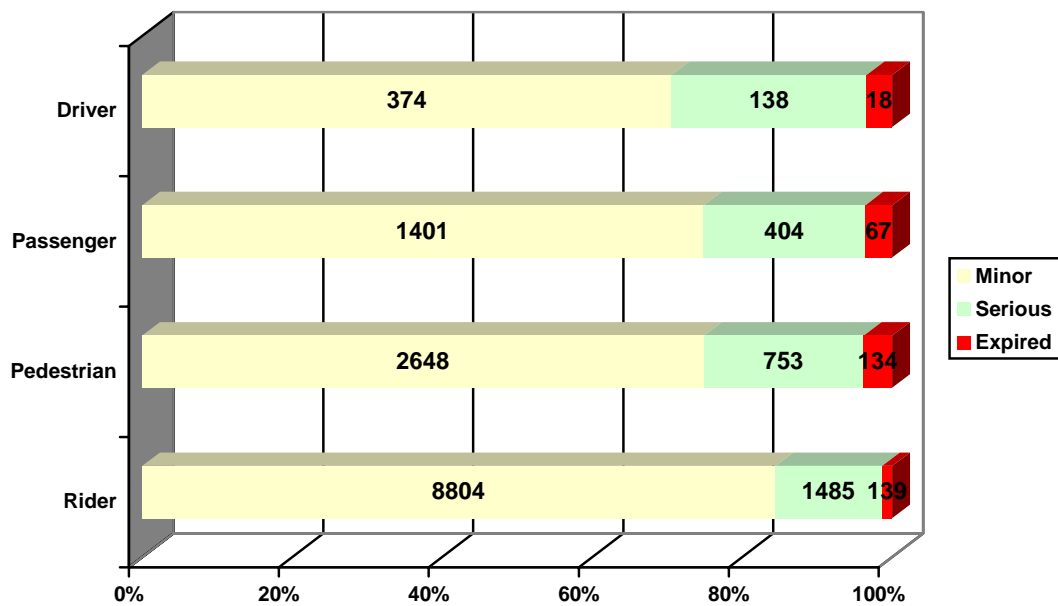
The above graph shows Road User Group on major arterials of Karachi. M.A. Jinnah road and Shahra-e-Faisal have the highest frequency of accidents. On M.A. Jinnah Road and Shahra-e-Faisal, bike riders are vulnerable to accidents. Shahra-e-Faisal, M.A. Jinnah Road, Mauripur Road, Site Avenue and Shahra-e-Sher Shah Suri are high risk zones for pedestrian and pedestrian facilities need to be improved on these major arterials. For this purpose pedestrian bridges may be constructed on those locations where the flow of pedestrian is high. Bike riders are at high risk on all the roads. To make riders safe an exclusive lane may be allocated to bike riders. On Super Highway and National Highway passengers are more involved in accidents due to the fact that intercity passenger buses are operating on these roads. The drivers of intercity buses are usually involved in over speeding and rash driving due to which they cause accidents. Speed of intercity buses should be monitored on highway and speed limit should be strictly enforced.

### g) Disposal of Patient on Major Arterials



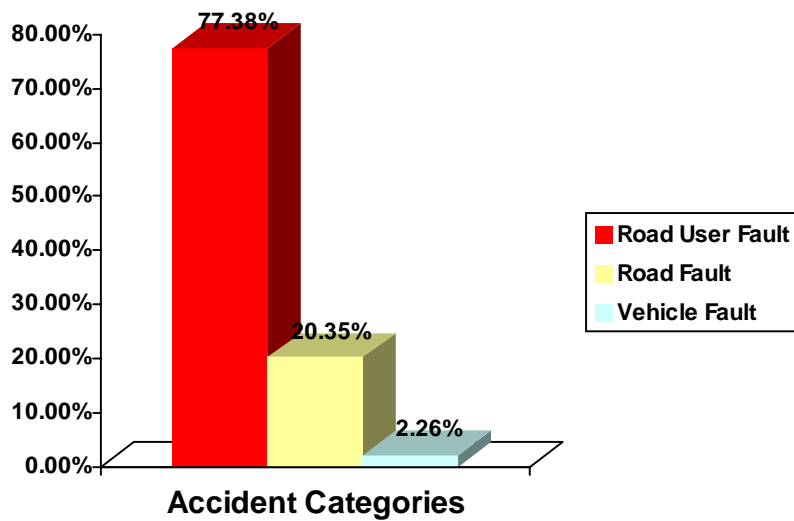
The above graph shows severity of accidents on major arterials. National Highway, Mauripur Road, Shahra-e-Faisal and Korangi Road have the highest expiries.

### h) Road User Vs Severity

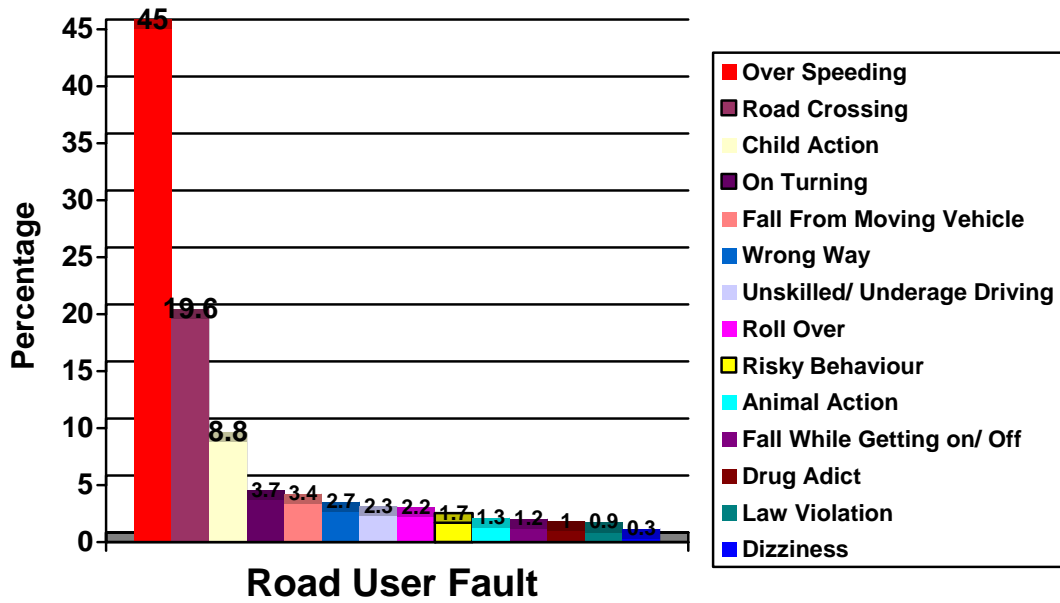


Above graph shows severity of accidents of different road user groups. It is obvious that motorbike riders and pedestrians are most vulnerable groups. Although cases of pedestrian are less than cases of riders but severity of pedestrian vehicle accident is high. Expiry rate of riders is 1.3%, expiry rate of pedestrian is 4.25%, expiry rate of passengers is 3.67% and expiry rate of drivers is 3.5%. So, pedestrian is the most vulnerable group having second highest frequency and highest expiry rate.

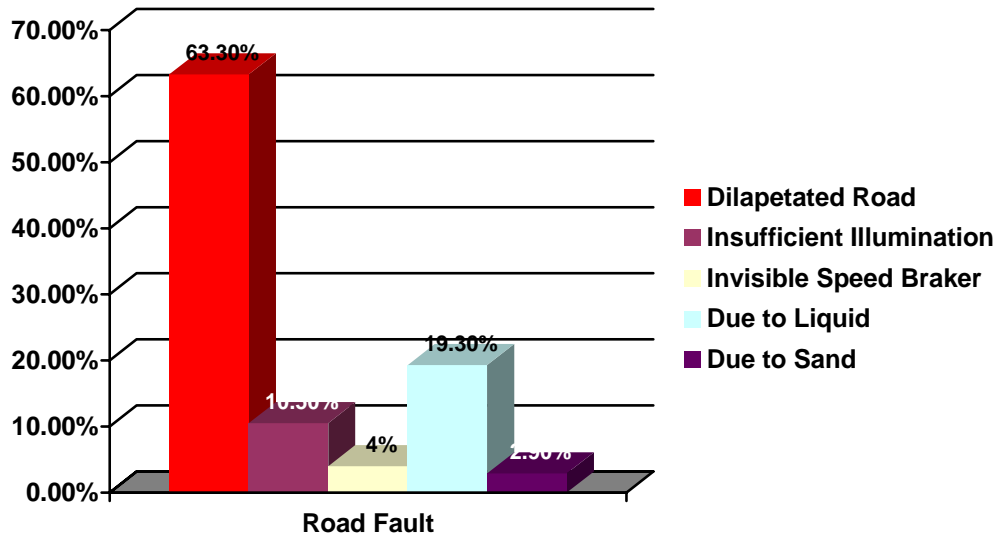
### Categories of Accidents



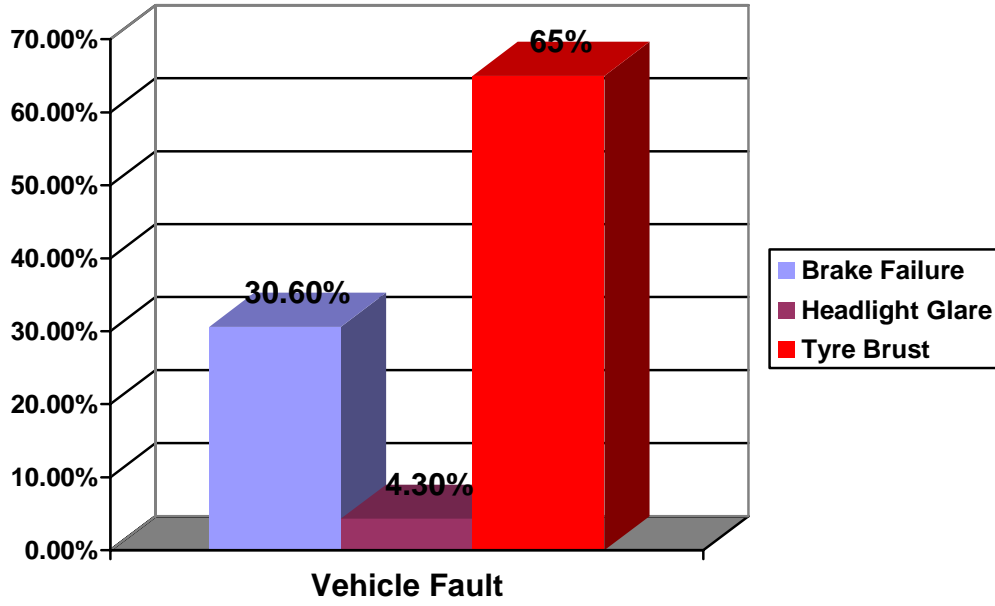
a) Road User Fault



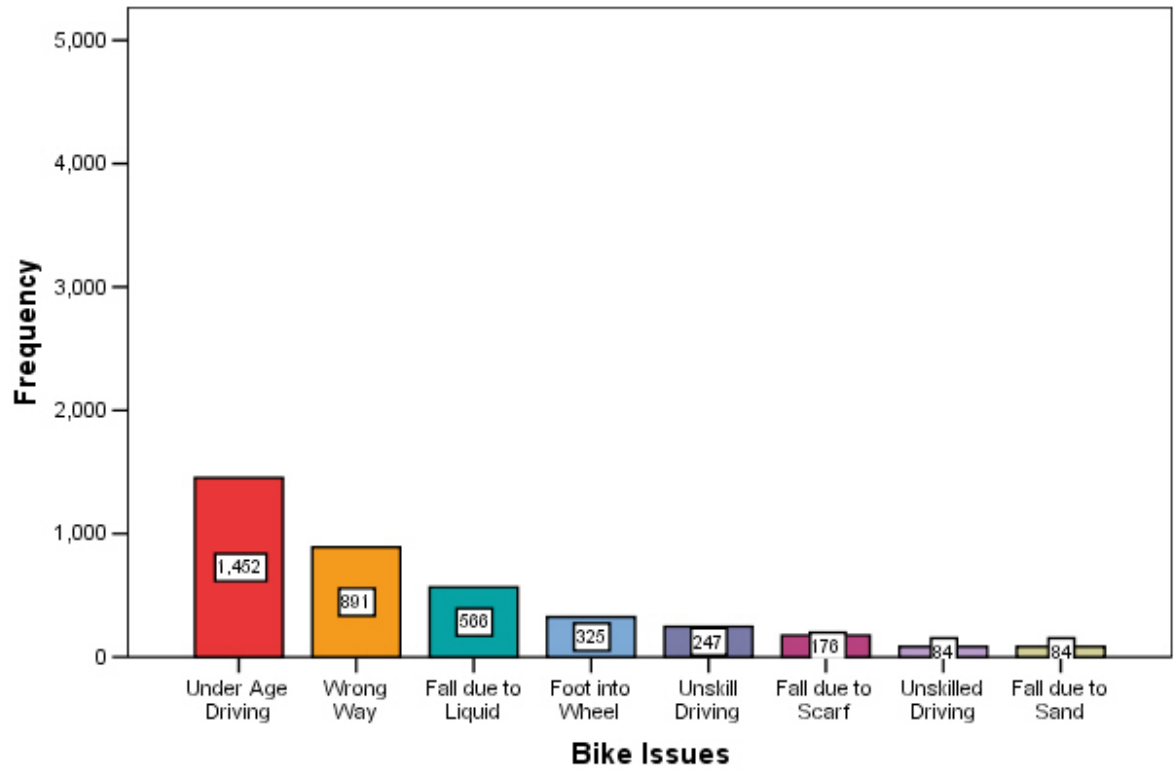
b) Road Fault



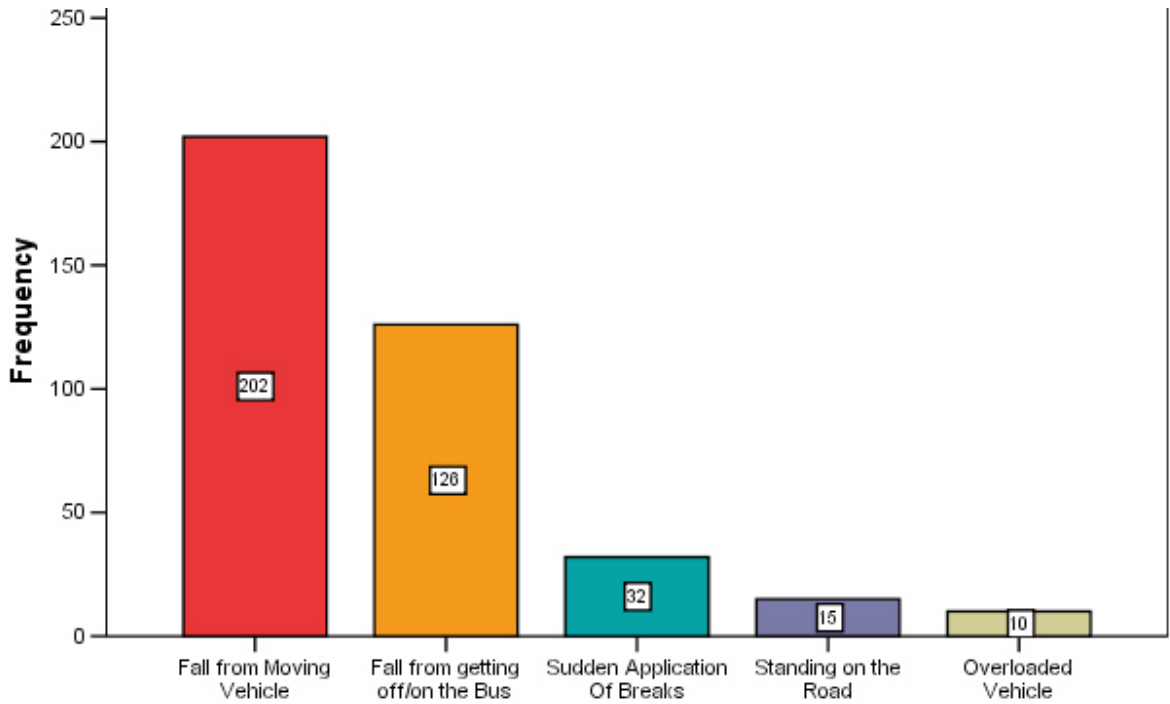
c) Vehicle Fault



## BIKE ISSUES

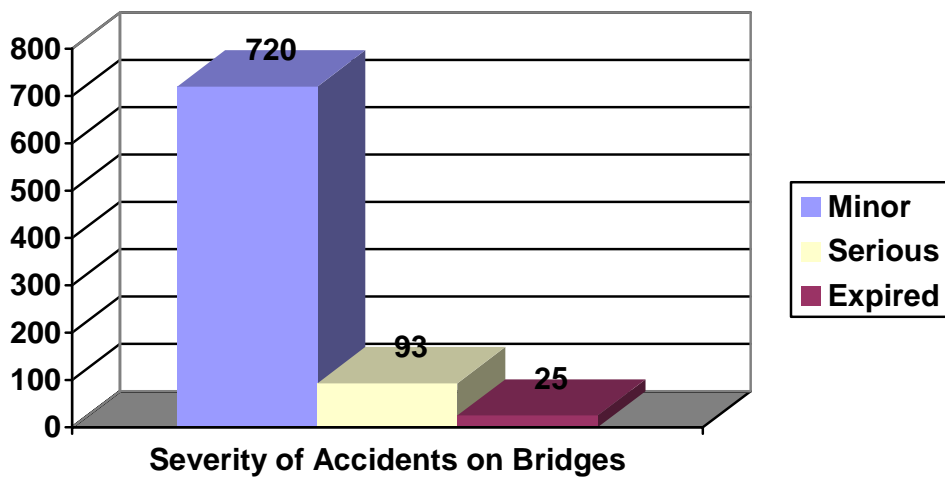


## BUS ISSUES



## BRIDGES

About 865 cases from different bridges are reported in six months from September 06 to February 07.



# **ANALYSIS OF BLACK SPOTS**

## **DANGEROUS ACCIDENT LOCATION: BLACK SPOTS**

In literature there is no universally accepted definition of a black spot. According to Hauer (1996) some researchers rank locations by accident rate (accidents per vehicle-kilometers or per entering vehicles), some use accident frequency (accidents per km-year or accidents per year) and some use a combination of the two. More recently, the proportion of accident types considered susceptible to treatment is also used for ranking.

Locations are in general classified as black spots after an assessment of the level of risk and the likelihood of a crash occurring at each location. At certain sites, the level of risk will be higher than the general level of risk in surrounding areas. Crashes will tend to be concentrated at these relatively high-risk locations. Locations that have an abnormally high number of crashes are described as crash concentrated, high hazard, hazardous, hot spot or black spot sites.

Black spots generally explain crashes as being a consequence of driver behavior that is not correctly matched with the demands of the road environment or to vehicle characteristics, or to both. The demands of the road environment vary due to factors such as traffic flow rates, geometric features of the road and type of road.

The severity of accidents may take into account, as accidents with fatal and serious injuries are more costly in both social and economic terms. If sufficient research has been carried out to identify the costs of accidents of different types and with different severity, then they can be weighted relative to their cost. Other than this certain statistical methods are also used for ranking of black spots applying correlation regression.

## **IDENTIFYING BLACK SPOTS**

It may be possible to make a start on remedial works at 'known' black spots, based on local knowledge of sites where accidents occur most frequently. It is preferable, however, to identify black spots in an objective way using accident records. Identifying black spots has an objective to reduce the social and economic costs of road trauma by improving the physical condition and management of black spots. It aims to achieve this by implementing traffic management techniques and other road safety measures that have proven road safety value

In Belgium, in 2001, 47444 injury accidents occurred in traffic, with 66780 victims, of which 1486 deaths (Belgian Institute for Traffic Safety, 2001) therefore in Flanders (the Flemish speaking community of Belgium), approximately 1014 accident locations are currently considered as 'dangerous'. These 'dangerous' accident sites or so

called black spots are selected by the Flemish government by means of their historic accident data for the period 1997-1999. Based on these data, each site where in the last 3 years 3 or more accidents have occurred is selected. Then, a location is considered to be dangerous when its priority value (P), calculated using the following formula, equals 15 or more (Ministry of Flemish Community, 2001):

$$\mathbf{P=X +3*Y +5*Z,}$$

Where

X = total number of light injuries (LI)

Y = total number of serious injuries (SI)

(Each casualty that is admitted more than 24 hours in hospital)

Z = total number of deadly injuries (DI)

(Each casualty that died within 30 days after the accident)

## **BALOCH COLONY**

### **INTRODUCTION**

Shahra-e-Faisal is one of the most important arterials of Karachi. It has a long run up taking traffic from Airport all the way to Metropole hotel. This arterial caters a lot of areas around. At certain sites of this Arterial, the level of risk is higher than the general level of risk in surrounding areas. Crashes will tend to be concentrated at these relatively high-risk locations. Black spots are points of peak performance demand. Engineering improvements in the road network lower performance demands on the driver. This increases the safety margin between the driver's performance level and the performance demands of the road environment, and reduces the probability of a crash. Locations that have an abnormally high number of crashes are described as crash concentrated, high hazard, hazardous, hot spot or black spot sites. Among these locations Baloch Colony flyover has a major no. of fatalities under it. This flyover has cross section between roads. one road collecting traffic from Shahrah-e-Quaideen and abandoning to Mahmoodabad along with there access to Shahra-e-Faisal under this cross section area has high pedestrian flow of people coming from the commercial area along the road as well high speed traffic.



### **TRAFFIC COMPOSITION**

According to volume count conducted by C.D.G.K on Shahra-e-Faisal in 2006, volume composition is as follows.

Motor bikes are 26.6%, Cars are 27.6%, Public transits are 13.67% and Animal Carts are 1% of the total volume on Shahra-e-Faisal near Baloch colony. This composition shows that cars and Motor Bikes are dominating groups on Shahra-e-Faisal.

## PROBLEMS

In general, the number of crashes is affected by three factors

- The road environment
- The condition of vehicles using the road system
- The skills, concentration and physical state of road users.

The situation here explains accidents as being a consequence of driver behavior (over speeding) that is not correctly matched with the demands of the road environment (pedestrian movement). The demands of the road environment vary due to factors such as traffic flow rates, geometric features of the road, pedestrian movement and type of road. Drivers normally adapt their performance level to the demands of the road system. A crash occurs when the driver's performance level is insufficient to meet the performance demands of the road environment. Most of the time, driver capabilities exceed performance demands.

Road has mixed traffic usually used by the passenger vehicles and private vehicles & rarely used by trucks and dumpers. But the situation become critical when over speed vehicles causes the loss of life of pedestrians crossing the road under bridge.



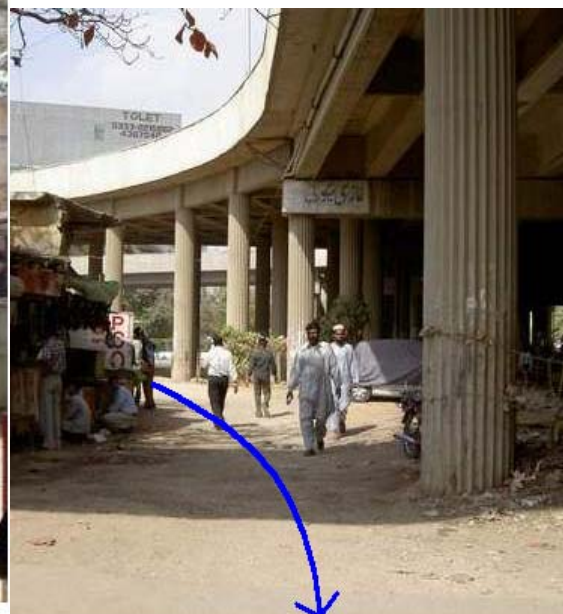
There are 2 pedestrian bridges provided, each at entry and exit of the flyover, but these haven't been utilized by the people due to the insignificant placement of bridge and lack of bus stop in the vicinity.



Usually the flow of pedestrian is under the fly over. A pedestrian facility provided at this junction is 1056 ft (0.2 miles) from the bus stop. Even if pedestrian wanted to cross the highway using side walks (3.5 ft) provided on bridge, he had to cross at least 4 roads including a median and intersection which comprise about 0.4 miles across. This situation instinctively wastes time.



picture taken from bus stop under bridge which is 0.2 miles away



people have to take long journey to reach the pedestrian bridge

Thus people preferred using high speed road over the bridge. Secondly, the fencing is not providing their basic purpose. People skip over the fencing to cross the road.



people jumping over fencing to cross road



the man is going through the fence which people cut through for their convenience

Karachiites like to live life in the fast lane. It isn't surprising to hear that a majority of traffic accidents are speed-related on this arterial. Crash risk increases as speed increases especially while overtaking – as road users underestimate this speed and overestimate the distance of an approaching vehicle. Especially motor cycle riders are seen zooming on roads without taking care of their own safety or that of other motorists or pedestrians.

## RECOMMENDATIONS

1. It is recommended that warning signs be placed for pedestrians crossing the road especially on the median to make them aware of the risk involved. Signs should also be placed telling the people to cross the road using the pedestrian bridges.
2. Presently the space below the Baloch Colony Flyover is acting as a de facto bus stop mainly due to large amount of shade available. Steps should be taken to end this practice and the proper bus stops built near the pedestrian bridges should be utilized for this purpose.

## ROAD ACCIDENTS NEAR FTC

### INTRODUCTION

Shara-e-Faisal is described as the backbone of Karachi. It enjoys an unrivalled position in the city, perhaps as its most important road, running from Karachi Airport all the way to Hotel Metropole. Every day, hundreds of vehicles and thousands of people use this thoroughfare.

Our concerned area is below FTC FLYOVER. This part of shahra-e-faisal is a very important road connecting many business centers mainly saddar town. It was a signalized intersection but due to large volume of traffic and to reduce congestion problem a flyover is constructed to provide better facilities to the road users. This is identified as a black spot although no universally accepted definition of a black spot or black zone is given, these locations will in general be described as high risk accident locations.

### PROBLEM

The FTC-Sindhi Muslim Housing Society portion of Shahra-e-Faisal has become dangerous for pedestrians due to heavy and high speed traffic making it difficult for people to cross the road. The construction of two flyovers - at the FTC / Gora Qabrستان and the second at Nursery - and the removal of signals along this stretch had compounded the problem. Most of the accidents reported from this location are of pedestrian and there the severity rate is high.



We observe that the vehicles on this road are moving with a very high speed and smooth flow, to this flow the sudden entry of a pedestrian crossing a road is posing great problem. One of the reasons of pedestrian crossing on this road is that buses stop in front of FTC on the opposite side of the road, so those people have to cross the road anyway instead of utilizing the pedestrian bridge located near Sindhi Muslim turning. Due to the bus stop designated at the end of FTC flyover, a conflicting point is generated between the public transport trying to approach bus bay provided at left and the vehicles descending from bridge and approaching to high speed lane. It is very risky to cross when it is a peak hour. It is easy for a young person to go on the other side of the road as compared to older people and women. Women take more time to cross the road while men are more confident. The other reason is that there is no fencing provided to stop the people from taking risk of their lives. An overhead bridge is provided near Aisha Bawani College but unfortunately it is not utilized to its maximum because it is not located at the place where pedestrian flow is present. Pedestrian movement is generated from Bizerta and lines area and they want to cross the road at the convenient spot and are not willing to travel a long distance to approach pedestrian bridge and then use pedestrian bridge to cross the road.



One of the geometrical discrepancies existing at that point was the presence of a zebra crossing below the flyover. The zebra crossing existed before the flyover was constructed & only signalized at-grade intersection was present. The construction of the fly over made this portion of the flyover a free-flow zone with almost full access control. This resulted in the increase of the vehicular traffic speed. Presence of zebra crossing allows the pedestrians to cross this heavy flow, high speed stream; endangering their lives & distracting the drivers, resulting in extreme rear-end & side swipe collisions of the vehicles.

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#### **RECOMMENDATION:**

Our task is that of improving road safety through alterations of the geometrical and environmental characteristics of the problematic sites in the existing road network. More specifically, this task involves targeting and treating intersections and road sections.

1. The first and foremost solution to this problem is that pedestrian bridge should be constructed along with the FTC fly over as there is huge flow of pedestrian under FTC flyover
2. Proper fencing should be provided so that people will use pedestrian bridge and will not be able to cross the road from wherever they want.
3. Bus stop situated at end of FTC flyover should be shifted forward near the pedestrian bridge to minimize merging problem at the end of flyover.

# ACCIDENTS ON NUMAISH INTERSECTION

## INTRODUCTION

Numaish intersection is one of the most important intersections of Karachi. On this intersection M.A. Jinnah road and Shakra-e-Quaideen are intersecting each other. This intersection is under high load of traffic all the time.

## PEDESTRIAN ACCIDENTS

Pedestrian are at high risk of accidents on Numaish Intersection. A large group of people is emerging on this intersection from lines Area. On investigation, following causes of pedestrian accidents have been determined.

1. Pedestrians are not using the designated bus stop; they stand before bus stop on the road where they are hit by vehicles coming from signalized intersection.
2. For road crossing on M.A. Jinnah road pedestrians are not using pedestrian bridge. This is due to the fact that initially there was a roundabout, which was then converted into signalized intersection but fencing present at the median was not extended to the intersection. Fencing on the median is not present at the place where the most pedestrian are crossing the road. This fact is clearly visible in the figure given below.



3. Vehicles coming from Shakra-e-Quaideen to M.A.Jinnah road are not following the signal installed for left turn, due to which zebra crossing is becoming hazardous.
4. There is heavy pedestrian movement on M.A.Jinnah road in front of Bagh-e-Jinnah due to the fact that people from all over country visit the Quaid's Mausoleum and religious activities in Shah Khurasan Imam Bargah but no facility is provided there for pedestrian to cross the road.

## VEHICULAR ACCIDENTS

Many vehicular accidents have also been reported on Numaish Intersection. On survey of this intersection it was known to us that vehicles coming from Lines Area to M.A. Jinnah road and Shakra-e-Quaideen are following wrong way to approach Numaish Intersection. Due to driving on wrong way these vehicles are always at a risk of head-on collision. Figure given below clearly shows this fact.



## RECOMMENDATIONS

For reduction in pedestrian accidents following measures are suggested.

1. Fencing present in median below pedestrian bridge should be extended to the intersection to deter the pedestrian from crossing on the main M.A Jinnah Road instead use the “Pedestrian Bridge” for crossing.
2. Enforcement measures should be taken to make sure that the Public Transport is stopped at “**Bus Stop**” near Pedestrian Bridge. (Karate Centre)
3. Encroachments from island near the pedestrian bridges should be removed.

For reduction in vehicular accidents following measures are suggested

1. Practicing of wrong way driving by drivers approaching intersection on M.A Jinnah Road from Lines Area should be stopped, enforcement measures suggested, till the time permanent solution is developed. Warning signboard to that effect may be installed.
2. Alternate route for vehicles approaching intersection from Lines Area should be upgraded (which is already present inside of lines area) to divert the flow of traffic approaching intersection from Lines area.
3. As the left turn signal is not being followed by the vehicles coming on M.A. Jinnah road from Shakra-e-Quaideen, so the option of closing exclusive left turn needs to be evaluated. This option will some how benefit the pedestrian who will still cross the road near the signalized intersection.

## ACCIDENTS ON JAMA CLOTH INTERSECTION

### INTRODUCTION

Jama cloth intersection is located on M.A. Jinnah road near Radio Pakistan station. On this intersection, M.A. Jinnah road is intersecting with Baba-e-Urdu road and the road that is coming from Shahra-e-Liaquat (also known as “frame wali gali”). After this intersection M.A. Jinnah road is one way. Just after this intersection a street (also known as phool wali gali) is connecting with M.A. Jinnah from Ranchor line. The movement of vehicles from phool wali gali to Baba-e-Urdu road is generating conflict points with vehicles coming from M.A. Jinnah road and vehicles coming from Shahra-e-Liaquat as shown in figures given below.



When this intersection was designed, no right of way was provided for the left turn of vehicles coming from Phool wali gali. Later on right of way was provided for left turn of vehicles coming from Phool wali gali and signal was installed without any change in geometry of intersection. Due to this reason it has become a black spot and many cases of accident have been reported from this intersection.

There are many pedestrian accidents, which have been reported from this location. Actually there a market, which attract a lot of personal and vehicular trips. Pedestrians stand near bus stop to hire public transport. While getting off and getting on public transport they are hit by other vehicle.

Wrong way driving is also observed from drivers of vehicles approaching intersection from street adjacent to Iqbal Centre.

## **RECOMMENDATIONS:**

For the reduction in number of accidents and severity of accidents, following measures are recommended

1. The end of this street may be converted into dead-end, as the alternate route is available for the vehicles coming from Phool wali gali. The vehicles coming from Phool wali gali may be diverted through street behind N.J.V building.
2. If the above proposal is not feasible then the geometry of intersection may be improved considering the existing flow and direction of traffic.
3. Wrong way driving practice from drivers of vehicles approaching intersection should be stopped by taking enforcement measures.

# **ROAD ACCIDENTS ON KORANGI ROAD**

## **INTRODUCTION**

Korangi road is one of the most important roads of Karachi. Here we are considering the section from Qayyumabad to Korangi Crossing. A heavy load of traffic remains on this road all the time specially during peak hours. On this road the traffic is characterized as mixed traffic which includes sand trucks, dumpers, coaches, buses, cars, bikes and non motorized vehicles.

Now a days korangi road has become one of the most dangerous road as 137 cases have been reported to our “Research Assistants” in the last two months. Considerable numbers among these 137 cases have been reported form the section which lies in between under construction Qayyumabad Bridge and “Korangi Naddi”. The criticality of this section is due to the following reasons.

## **PROBLEMS ON KORANGI ROAD**

### **CHARACTERISTICS OF THE TRAFFIC**

#### **i. TRAFFIC COMPOSITION**

According to traffic count conducted by C.D.G.K on above mentioned section of Korangi Road in 2006, the traffic composition is as follows.

Motor Bikes are 38.1%, Cars are 37%, Mini Buses and Buses are 12.07%, Pick ups are 2% and Trucks and Trailers are 4% of the total volume on this section of Korangi Road.

#### **ii. HIGH SPEED**

On this road the speed of traffic is very high and also the vehicles do not follow the lanes. Dumpers and coaches are operated on this road at a very high speed, which is very dangerous and increase the risk of accidents.

#### **iii. OVERTAKING**

Overtaking is usually observed on this road. Overtaking becomes more critical when a vehicle overtake another vehicle on the median. This over taking on median increases the risk of head-on collision, which is most dangerous type of collision.

**iv. STREET LIGHTS**

There are no street lights on the either sides of the road which is one of the causes of accidents on this road. In the night the road is very dark and risky toward accidents. In last two months most of the accidents were observed due to darkness on the road.



v. **MEDIAN**

On the critical section of the road traversable median is installed due to the small width of the road. The marking of median has become very much lighter and is not obvious even in the day light. Reflectors are also not present on the median as they were installed but have been stolen. Due to diminished median marking and absence of reflectors the median is not clear and most of the vehicles are observed to overtake the other vehicles on the median due to this reason. Figures given below clearly indicate this fact.



### **3. SAND LOADING TRUCKS ON THE SIDE OF THE ROAD**

On the side of the trucks are loaded with sand and aggregate and then it is supplied to different parts of the city. The problem created by these trucks is this that they come suddenly on the road due to which risk of collision is always present at this road. The drivers of trucks are usually involved in rough driving which is the cause accident.



### **RECOMMENDATIONS**

To reduce the number of accidents and severity of the accidents following improvements on the Korangi road are recommended

#### **LONG TERM**

The permanent solution of accidents on Korangi road is that,

Width of road should be increased so that a deterrent median may be constructed and it may be converted into Dual Carriage Way.

#### **SHORT TERM**

Immediate steps for minimizing the accidents on Korangi Road are as follows

1. Provision of Double Offset centre line markings.
2. Road edge delineation with the help of continuous yellow line and provision of delimiters.

3. Provision of high intensity sodium lights.
4. Provision of mandatory Traffic Signs.
5. Repair of pot holes.
6. Removal of illegal sand loading truck stand.
7. Provision of Asphalt Bituminous Shoulder.

# **ROAD ACCIDENTS ON GHANI CHOWRANGI**

## **INTRODUCTION**

Ghani intersection is one of the most important intersections of Karachi. Two very important and busy arterials, SITE Avenue and Sher Shah Road are intersecting each other at Ghani Intersection. It is a four leg intersection. This intersection remains under high load of traffic all the time. The load of heavy traffic and Lorries have been increased tremendously since last couple of years due construction of Sher Shah Flyover.

## **TRAFFIC CHARACTERISTICS**

### **a) TRAFFIC COMPOSITION**

According to traffic count conducted by C.D.G.K at Ghani Chowrangi in 2006, the traffic composition is as follows.

Motor Bikes are 23.4%, Cars are 38.3%, Mini Buses and Buses are 26.5%, Rickshaws are 5.2%, Pick ups are 2.1% and Trucks and Trailers are 1.2% of the total volume on Ghani Intersection.

### **b) VOLUME**

Ghani Intersection is under high load of traffic all the time. Due to high volume of traffic, Ghani Intersection is congested most of the time.

### **c) SPEED**

Due to high volume of traffic and depleted condition of road, the speed of traffic is low due to which accidents on Ghani Intersection are not so much severe.

## **PROBLEMS ON GHANI INTERSECTION**

### **a) PAVEMENT CONDITION**

Quality of riding surface at the intersection and link roads is very poor. Due to ditches and pot holes in the riding surface, two wheeler vehicles are misbalanced. This problem becomes more critical in dark conditions. Picture given below clearly indicates this fact.



Picture-1, showing poor condition of pavement

#### **b) INOPERATIVE STREET LIGHTS**

Street lights present in centre of intersection and on the link roads are not in working conditions. Due to this reason, it becomes a blind intersection in the night times and become a cause of accident on this intersection. Picture-2 shows the street light present in the centre of intersection, which is not in working condition.



Picture-2, street light in centre of intersection

#### **c) MERGING PROBLEM**

Ghani intersection is a four leg intersection with provision of exclusive left turn. No light signals are provided for the vehicles turning left on all four legs. It has been observed that most of the left turn signals are not being followed. So the intersection islands should be designed to provide safe exit to the left turning vehicles.

In the case of Ghani intersection, islands provided are too small to provide safe left turn and accidents in merging traffic are reported from this intersection. Picture given below clearly indicates the above stated fact.



Picture-3, island for left turn

## **RECOMMENDATIONS**

For reducing the numbers of accidents and severity of accidents, following improvements may be implemented.

1. Quality of riding surface should be improved by repairing existing pavement.
2. Street lights should be repaired to improve driver's visibility during night.
3. Proper Island may be constructed at the centre of intersection and light signals may be installed in the central island.
4. Geometry of intersection and alignment may be reconsidered.
5. Construction of Bus bay, Allocation of Bus Stop and its enforcement on all four legs of the Intersection.
6. Pedestrian Bridge should be constructed keeping in view the flow of Pedestrian.

## **ROAD ACCIDENTS AT HAROONABAD**

### **INTRODUCTION**

Haroonabad is a residential colony situated at Site Avenue near RC Cola Company. Due to this residential colony present at Site Avenue road, there is a huge pedestrian flow across the road. From the knowledge of local area people, it was known to us that pedestrians are involved in accidents very frequently on this road. These accidents are very severe because of the movement of heavy vehicles and high speed of vehicles. Another problem on this location is that the street lights present are not in operating condition or either they are not being operated.



### **RECOMMENDATION**

To reduce the number of accidents at Haroonabad following improvements are recommended

1. Pedestrian bridge should be constructed at Haroonabad to provide safe road crossing to the people living there.
2. Fencing should be erected along with pedestrian bridge to deter pedestrian to cross the road and optimum utilization
3. Bus stop should also be provided along with pedestrian bridge to attract the flow of pedestrian through pedestrian bridge.
4. Street Lights on this road should be repaired and their working should be ensured.

# **ROAD ACCIDENTS ON MAURIPUR ROAD**

## **INTRODUCTION**

Mauripur is one of the most important roads of Karachi as it provides connectivity to sea port traffic with the northern bypass and E.C.O highway. On either sides of the mauripur road, residential colonies are present, from where pedestrian flows are originated. In this regard, section of mauripur road from ICI Bridge to Gulbai Interchange has become critical for pedestrian. As mauripur road has become a high speed road due to increase in width and fine riding quality, so there is need to provide facilities for pedestrian.

High number of accidents on mauripur road prompted us to investigate the causes of accidents on mauripur road. On investigation, three locations were identified from where most of the pedestrian cases were reported. Lyari Ralilway Station, Peoples Sports complex and Ghulaman-e-Abbas School are included in those locations from where pedestrian cases are being reported.

Most of the vehicular accidents on Mauripur road are reported from uncontrolled intersection before Ghulaman-e-Abbas School in front of Machar Colony and from Gulbai Intersection. These locations have been analyzed separately except intersection at machar colony because that is under construction and its final shape is not clear to us.

# **ROAD ACCIDENTS NEAR LYARI RAILWAY STATION & TCF SCHOOL**

## **INTRODUCTION**

On Mauripur road most of the pedestrian accidents are reported from four locations which include Wazir Mension, near Crown Cinema, near TCF School and near Lyari railway station. Residential colonies are present all around Mauripur road. People living there have to cross the road to access public transport. Since, this road is a high speed so pedestrians are at a risk of accident. Two Pedestrian Bridges have been provided, one is near Lyari Railway Station and other is near TCF School but they have been underutilized. On investigation, following reasons were found.

### **1. HEIGHT OF BRIDGE**

Pedestrian bridge provided near Lyari railway station and near TCF School station is 23 ft high with a clear height of 21 ft. To climb 23 ft for crossing the road is not comfortable for pedestrian. So, pedestrian cross the road on ground instead of using pedestrian bridge.

### **2. ABSENCE OF FENCING**

Fencing should be provided on median near pedestrian bridge to deter the pedestrian to cross the road. But in this case instead of providing fencing on median, New Jersey barriers of height 2'6" are provided which can be traversed. Some time pedestrian are misbalanced while crossing the barrier and it may be very dangerous for them if they are hit by vehicle. New Jersey Barriers are not sufficient to deter the pedestrian to crossing the road, fencing should also be provided along with barrier. Picture-1, given below clearly indicates this fact that people are not using pedestrian bridge but crossing the road under the bridge because they are not deterred to cross the road by barrier.



## **RECOMMENDATIONS**

To reduce the number of pedestrian accidents, following improvements may be implemented.

1. As the pedestrian bridge is erected unnecessarily high, so its height may be reduced to make it more user friendly. Also small concrete steps should be used in pedestrian bridges as the people are more comfortable with it
2. Fencing should be erected on the existing New Jersey Barrier to deter the pedestrian from crossing the road and divert them, from road to the pedestrian bridge.
3. Bus stops on both carriage ways should be connected with the pedestrian bridge to attract the pedestrian flow through the bridge.
4. Street lights should be provided on Mauripur road from ICI Bridge to Gulbai Interchange.

# ROAD ACCIDENTS NEAR CROWN CINEMA AND WAZIR MANSION

## INTRODUCTION

On Mauripur road most of the pedestrian accidents are reported from four locations which include Wazir Mansion, near Crown Cinema, near TCF School and near Lyari railway station. Residential colonies are present all around Mauripur road. People living there have to cross the road to access public transport. Since, this road is a high speed so pedestrians are at a risk of accident. Two Pedestrian Bridges have been provided, one is near Lyari Railway Station and other is near TCF School.

### 1. LACK OF PEDESTRIAN FACILITIES

There is a huge flow of pedestrian near Wazir Mansion (people Sports Complex) and near Crown Cinema but no facility is provided there for pedestrian to cross the road. A 2'6" high New Jersey Barrier is constructed in the median which has to be crossed by the pedestrian to approach opposite side of the road. Crossing this 2'6" high barrier is not an easy task for children, aged people and women and it is becoming hazardous for them.

No designated bus stops are allocated and no bus bays are provided to the passenger buses for loading and unloading of passengers.



Pedestrian flow Near Wazir Mansion



Flow of pedestrian near Crown Cinema

## **2. INSUFFICIENT ILLUMINATION**

No street lights are provided through out Mauripur Road and insufficient illumination is becoming a major cause of night time accidents

### **RECOMMENDATIONS**

To reduce number of accidents on Mauripur road following improvements are recommended

1. User friendly Pedestrian Bridge should be constructed near Wazir Mansion and near Crown Cinema.
2. Fencing should be erected on existing New Jersey Barrier from ICI bridge to Ghulam Abbas School.
3. Bus stop should also be provided & allocated with the constructed pedestrian bridge to attract pedestrian flow through Pedestrian Bridge.
4. Mauripur road from ICI Bridge to Ghulaman-e-Abbas School should be declared as no pedestrian crossing road by providing two more pedestrian bridges and fencing on existing New Jersey Barrier.
5. Street lights should be provided on Mauripur road from ICI Bridge to Gulbai Interchange.

# ROAD ACCIDENTS ON GULBAI INTERSECTION

## INTRODUCTION

Gulbai Intersection is basically is Y-shape intersection. At this intersection Mauripur road and Hawks Bay Road are intersecting each other. Recently a flyover is constructed on Gulbai Intersection to provide uninterrupted flow to the sea port traffic on grade. At ground level, an ellipse shape Central Island is present.

## PROBLEMS

On investigation, following causes of accidents have been identified

### 1. OBSTRUCTED SIGHT DISTANCE

Due to the flyover constructed on Mauripur road to provide uninterrupted flow to the sea port traffic, the vision of drivers coming from Mauripur road to Hawks Bay Road is obstructed and they can not see the traffic coming from Shersshah to the Hawks Bay road, hence a severe collision may take place. Figure given below clearly indicates the above mentioned fact.



### 2. GEOMETRY OF ROUND ABOUT

Geometry of central island of Gulbai Intersection is designed in ellipse shape. The design of round about would have been influenced by graves present there in Central Island. The existing shape of Central Island is creating problem when Lorries and other large vehicles take turn around it.



### **3. IMPROPERLY DESIGNED ISLANDS**

The islands of Gulbai Intersection are not properly designed. Island provided for segregation of traffic approaching intersection from Hawks Bay Road, is not properly aligned and designed hence becoming hazardous.



Another problem which is obvious from above picture is that bikes are slipped on the railway line due to slippage on steel rails.

### **4. INSUFFICIENT ILLUMINATION**

No street lights are provided at this intersection and insufficient illumination is becoming a major cause of night time accidents.

## **RECOMMENDATION**

To reduce the number of accidents and severity of accidents on Gulbai Intersection, following improvements are recommended.

1. Warning signal (which repeatedly blinks on and off) may be installed near the intersection to resolve the problem of obstructed sight distance by giving an indication to the drivers that there is an intersection ahead.
2. Exclusive left turn may be provided for the stream of traffic coming to the Hawks Bay road from Mauripur Road to minimize risk of collision.
3. Geometry of Central Island may be altered to provide safety and flow, as its existing geometry is not designed properly.
4. Improper Island provided for segregation of traffic approaching intersection from Hawks Bay Road should be redesigned.
5. Street Lights should be installed at the intersection to improve driver's visibility during night times.
6. Rumble strips should be provided near the rail tracks so that the bikers slow their speed down and the problem of slippage does not occur.

## **UNDER CONSTRUCTION KORANGI INDUSTRIAL AREA ROAD**

### **INTRODUCTION**

Korangi Road is one of the most important arterials of Karachi. It connects Quaidabad to Hino Chowrangi and passes through all major industries of Karachi. This road provides access and mobility to major industries of Pakistan.

On this road traffic is characterized as mixed traffic whose most part consists of heavy loaded trucks and multi axle vehicles. Nowadays, this road is under construction. On most of the parts which are under construction, usually two way traffic is being operated on one road. On this under construction road, when two way traffic is operated on one road, protection should be provided against head on collision and also to the pedestrian but no protection is provided there on the sections of the road which are under construction. Due to no safety measures on under construction sections of the road, it has become hazardous for pedestrians.

All the intersections on Korangi Industrial Area Road are also under construction since a long time period without any safety measures, due to which a sequence of pedestrian casualties and head-on collision victims are being reported in last few months.



Pictures showing two way traffic operated on one road, near Chamra Chowrangi without any safety measure

## **RECOMMENDATIONS**

It is recommended for all under construction roads and especially for Korangi Industrial Area Road that

1. First Service road may be upgraded and traffic may be operated on that service road to minimize head-on collision and pedestrian accidents.
2. If service road is not available, alternate route may be provided for the time period in which road is under construction.
3. And if above two proposals are not possible then contractor should be liable to provide proper safety measure on under construction road e.g. by providing temporary barriers to segregate the traffic and refuge for pedestrian if two way traffic is being operated on one road.

# **ROAD ACCIDENTS ON NORTHERN BYPASS AND HUB RIVER ROAD**

## **INTRODUCTION**

Northern bypass is one of the important highways which bypass the seaport traffic from out of the city to Super Highway. Hub River Road is starting with Northern Bypass and connecting with Balochistan. Many cases of accidents have been reported from Northern Bypass and Hub River Road.

## **CAUSES OF ACCIDENTS**

On investigation, following causes of accidents have been investigated.

### **1. PASSENGER BUSES**

Intercity and Local passenger buses are being operated on Northern Bypass, which are causing accidents on Northern Bypass. In buses, passengers suddenly ask the driver to stop the bus for unloading; therefore driver is bound to stop the bus. When driver stops the bus on the highway, vehicle coming behind the bus is not aware of it, so it becomes a cause of accident.

Passengers after getting off from bus, look for crossing the road while there is no provision on Northern Bypass to cross the road so pedestrian has to jump the fencing and hence may involve in accidents.

### **2. MOTOR BIKES**

Motor bikes and light vehicles should not be allowed to operate on Northern Bypass. Most of the Bike Riders are resident of area around Northern Bypass. They look to cross from Northern Bypass to Hub River Road, which is becoming a hazardous practice. Motor bikes and Bicycles riders while descending from Northern Bypass to Hub River Road are unbalanced and hence may be involved in accidents.



Space from where rider descend form Northern Bypass to Hub River Road

### **3. SPEEDING DUMPERS**

Dumpers are usually observed in over speeding and overtaking on Northern Bypass. Northern Bypass is a not divided two way road so overtaking of speeding dumpers may become very dangerous and may result in a severe head-on collision.

### **4. INTERSECTION AT LUCKY CHARHAI**

A Y-shape intersection is present at Lucky Charhai on Northern Bypass. Vehicles coming from Hub River Road and Northern Bypass merge here and vehicles coming from Hub Chowki diverge on Hub River Road and Northern Bypass at this intersection.

Vehicles coming from Hub River Road to Lucky Charhai are in high speed and there speed is not reduced when they approach Intersection. Three strips of rumble strips are provided which are not sufficient to reduce the speed of vehicles. Vehicles approaching intersection in high speed collide with vehicles approaching intersection from Northern Bypass and vehicles coming from Hub Chowki to Northern Bypass. Pavement markings and reflectors are provided at the intersection but they are not able to direct the traffic and reducing the speed of traffic while approaching Intersection.



## 5. UNCONTROLLED INTERSECTION NEAR LUCKY HOTEL

There is an uncontrolled intersection near Lucky Hotel after descending from Bridge of Lucky Charhai. This uncontrolled was the main cause of accident. At this intersection, right turning vehicles coming from Hub River Road to Northern Bypass create a conflict point with the vehicles coming from the Bridge of Lucky Charhai Intersection toward Lucky Hotel. Vehicles while descending from Bridge are in high speed and there is a high risk of serious head-on or right angle collision.



Figure showing uncontrolled intersection near Lucky Hotel

## 6. PEDESTRIAN MOVEMENT

Pedestrian access is restricted on Northern Bypass. On one side of the Bypass fencing is erected while on the other side of the Bypass a high concrete wall is constructed to restrict the pedestrian to come on road. But people have made some spaces in fencing to access the road. Pedestrian movement across such a high speed highway is very much dangerous not only for pedestrian but also for the driver of vehicle because some times drivers while saving the pedestrian get involved in accidents.

In evening people residing near Bypass, use the walls along Northern Bypass for recreational purpose.



#### **7. INSUFFICIENT ILLUMINATION**

No street lights are installed throughout the Northern bypass and Hub River Road which is a major cause of accident during night time on this road.

#### **8. DISPOSAL OF GARBAGE ALONG ROADS**

Vehicles responsible for dumping of solid waste of the city dump the waste along Northern Bypass and Hub River Road instead of disposing the waste in Land Fill Site Near Jam Chakro. This practice is illegal and creating environmental hazards. Also, after dumping the garbage these dumpers make a U-turn on the fast moving road, to go back to the city, hence creating a risk of an accident happening.



## **9. TWO WAY TRAFFIC**

On Hub River Road two way traffic is operated on single road. Most of the vehicles operating on Hub River Road are heavily loaded vehicles and this operation of two way traffic on a single road has a high risk of head-on collision.

### **RECOMMENDATIONS**

To reduce number of accidents and severity on accidents on Northern Bypass following improvements are recommended

1. Motor Bikes and Bicycles should not be allowed to operate on Northern Bypass.
2. Passenger buses should not be allowed to operate on Northern Bypass.
3. Speed of dumpers on Northern Bypass should be monitored and they should be bound to obey speed limit and lane marking.
4. Speed limiting devices should be installed in dumpers so that overspeeding and rash driving can be controlled. With this device a dumper will not be able to go above a specified speed.
5. More rumble strips should be provided on Hub river road to reduce the speed of traffic approaching Lucky Charhai intersection.

6. Pedestrian movement across Northern Bypass should be restricted and fencing and wall provided for this purpose should be monitored that either they are fulfilling their purpose or not and it should be ensured that people will not use Northern Bypass as recreational spot. If possible, Northern Bypass should be declared a no pedestrian zone.
7. Street lights should be installed throughout the Hub River Road especially on those locations where local roads are intersecting and pedestrian flow is high and should be adjusted in such a way that Northern Bypass is also illuminated by these street lights.
8. Hub River Road should be upgraded to Dual Carriage way.
9. A round about may be constructed at uncontrolled intersection near Lucky Hotel.

# **ROAD ACCIDENTS ON MATRIC BOARD OFFICE INTERSECTION**

## **INTRODUCTION**

Matric Board Office Intersection is a T-Intersection at which Shahrah-e-SherShah Suri is intersecting with the Collector leading to Abdullah College.

## **PROBLEMS**

Vehicular Stream moving towards Hyderi while descending the Nazimabad Bridge is at high speed, section of the traffic diverts to Jinnah Women University, the road leading to Abdullah College and major vehicular flow moves straight on to Sher Shah Suri Road.

The problem emerges with the vehicular stream moving left to Jinnah Women University from the Bridge. Two conflict points are generated

- Low volume traffic coming from Sharah-e-Dilawar Figar attempts to embark on the hi-speed road of Nazimabad # 7 Bridge either to move straight on Sher Shah Suri or to take a U-turn and embark on the opposite side of the road leading to Nawab Sadiq Ali Khan.
- Traffic stream moving along Jinnah University: Sectional low volume traffic attempts to get on Shahrah-e-Dilawar Figar makes an illegal wrong way route through Petrol Pump and hence comes in contact with High speed vehicular stream coming from the Bridge to Jinnah University.
- Another conflict point is generated where the stream of traffic turning left to Shahr-e-Sher Shah Suri from Jinnah University come in conflict with the vehicles coming straight form Nazimabad # 7 bridge.

Secondly, Water pumping station located at the signal of Board office is also one of the factor of accidents here. Water is often seemed to be spread on the road nearby station, thus specifically motorcyclist while turning at high speed lose their balance and fall and sometimes get crushed.

## RECOMMENDATIONS

- Proper Maintenance of Water pumping station should be ensured so that no water spillage from pumping station can take place on roads. If proper maintenance cannot be ensured then the option of relocation of pumping station should be considered.
- Geometry of intersection should be changed in such a fashion that vehicles approaching intersection from Shahra-e-Dilawar Figar can not adopt wrong way.
- Pavement marking and reflectors should be provided to give safe exit and safe merging to the vehicles taking left turn coming from Abdullah College to Shahra-e-Sher Shah Suri.
- Bus Bay should be provided at allocated **BUS STOP** near Mullah Sweets and it should be ensured that the public transport stops at the designated bus stop. The self created bus stop at the turning from Orangi Town should be stopped so that the conflict of merging traffic gets resolved.
- Pedestrian Bridge should be constructed near **BUS STOP** to allow safe pedestrian movement across Shahra-e-Sher Shah Suri supported by proper fencing.
- Speed breaker constructed near Jinnah University should be redesigned.

# SHAHEED-E-MILLAT EXPRESSWAY

## INTRODUCTION

Shaheed-e-Millat Expressway is one of the important roads in Karachi. It connects Hino Chowrangi with the Baloch Colony flyover. It is a high speed grade separated road which remains very busy.

## PROBLEMS

### CONCRETE BARRIER

A concrete barrier is constructed in the middle of two grade separated roads to deter the pedestrians and bikes so that they would not be able to cross the road except at their designated spots and the cars do not come on to the wrong side. This barrier presently is in a dilapidated and rundown condition now and is completely absent at some sections. In absence of the barrier, motorcyclists, cyclists and pedestrians are crossing the road wherever they want giving rise to a dangerous situation



On the horizontal curves on Shaheed-e-Millat express way concrete barrier have been deteriorated from most of the places due to which high speed vehicles from upper road may fall down to lower road and may cause a chain reaction.

## **SIGNS ON HORIZONTAL CURVES**

There are a few big curves on this high speed road, at which in the past, accidents have occurred as the fast moving vehicles have lost control on the curves and crashed into the barrier or may fall down to the lower road.

Proper warning signs should be placed before horizontal curves on the road to warn the drivers that they need to be slow down their speed as horizontal curve is ahead.

There are some warning signs on the curves which have been placed by Alamgir Welfare Trust but they are not placed at the appropriate position and not accurately directed therefore they are not serving their purpose.



## **WRONG WAY MOVEMENT**

Wrong way movement is being practiced on Shaheed-e-Millat Expressway, by bikes and cycles, near the PAF School intersection. This has given rise to an unsafe situation which needs to be addressed.



### **INOPERATIVE STREET LIGHTS**

Street lights present along the Shaheed-e-Millat extension are not in operating conditions or either they are not being operated.

### **PAVEMENT CONDITION**

Riding surface of Shaheed-e-Millat extension is deteriorated and many pot holes are observed on this road especially near Defence View. As it is a high speed road, so its riding quality should be high class. Presence of pot holes in a high speed road where there is no proper illumination in absence of day light is very dangerous for the riders of two wheelers as the vehicle may get unbalanced due to these pot holes.

### **PAVEMENT MARKINGS**

There are no pavement markings present on this express way. Pavement markings are very essential to improve driver's visibility.

### **PEDESTRIAN CROSSING**

Stairs are provided between the upper and lower carriageways for pedestrian crossings at specific points. As this is a high speed road, crossing the road for pedestrians is risky and dangerous.

## RECOMMENDATIONS

1. The concrete barrier should be rebuilt
2. The warning signs should be correctly placed wherever they are needed
3. Opening near PAF School intersection from where wrong way is taking place should be closed
4. Proper working of street lights should be ensured
5. The pavement should be repaired so as to achieve a good riding surface
6. Pavement markings including lane marking, edge marking and cat eyes should be provided
7. Warning signals should be provided near pedestrian crossing points so that drivers become aware of the risk ahead

# **FIVE STAR CHOWRANGI**

## **INTRODUCTION**

Five Star Chowrangi located at the intersection of Shahrah-e-Sher Shah Suri and Allama Shabbir Ahmed Usmani Road is an important junction of the city. It is a four leg signalized intersection which remains very busy.

## **PROBLEMS**

### **OBSTRUCTED SIGHT DISTANCE**

There is a water pump located in the center of the intersection. It is causing obstruction in sight vision especially for the right turn movement from Shakra-e-Sher Shah to Shabbir Ahmed Usmani Road and the straight traffic coming from Sakhi Hasan to Five Star. Drivers have a habit of breaking signals and coupled with this obstruction, it has been the cause of accidents in the past.

Also, banners are tied at this intersection which causes further obstruction.

Another important issue is that when the signal is non-functional due to load shedding and is being manually operated by a traffic constable. Due to site obstruction it is difficult to get a view of the constable from all four directions which leads to traffic jams.



### **SERVICE LANE FROM IMAM HOSPITAL**

The service lane coming from Imam Hospital to the main road is a problem spot as the vehicles come onto the main road in speed and a chance of accident arises. Wrong way driving practice is also observed by the drivers of vehicles coming from Imam Clinic toward Shipowner's College.



### **SERVICE LANE FROM BAB-UL-ILM**

The service lane from Bab-ul-Ilm to the main road is problematic, as a left turn and the main road are merging at the entrance of the service road which creates a conflict among the vehicles going into the service lane and the ones left turning.



### **SERVICE LANE FROM TAIMURIA LIBRARY**

Service lane from Taimuria Library is also becoming hazardous. Vehicles taking right turn from Shahra-e-Sher Shah Suri going towards service lane of Taimuria Library generate a conflict point with the vehicles turning left from Shahra-e-Sher Shah Suri toward Taimuria Library.

### **RECOMMENDATIONS**

- The water pump should be shifted from its present position to either near Taimuria Library or near Imam Hospital
- Service lanes all around the four legs of intersection should be converted to dead-end
- A UPS should be installed with the traffic signal so that in the event of a power failure the signal remains functional and traffic flow remains smooth

## **U-TURN ON MAI KOLACHI BYPASS**

### **INTRODUCTION:**

Mai Kolachi Bypass is an important road of the city, linking Karachi Port with Korangi & Clifton & D.H.A. with I.I. Chundrigar Road. This road remains busy all the time with heavy vehicles comprising a significant portion of the traffic. It is a high speed road with MT Khan on its one end and Khy-e-Roomi on the other. A railway line is also crossing this road and this point has become a problem spot.

### **TRAFFIC CHARACTERISTICS:**

#### **TRAFFIC COMPOSITION:**

The traffic is characterized as mixed traffic on Mai Kolachi Bypass. It includes Cars, Motor Bikes, Cars, Buses, Mini Buses, Coaches, Trucks and Lorries.

#### **VOLUME:**

Mai Kolachi Road has medium volume. It does not suffer from congestion. It is a wide road having high speed.

#### **SPEED:**

Due to good pavement condition & medium volume, the speed on the road is very high. In fact for a section of the road, the design speed is 80 km/hr. Due to high speed it is a danger for pedestrians crossing the road.

### **PROBLEMS ON MAI KOLACHI BYPASS:**

#### **U-TURN ON RAILWAY LINE:**

The U-turn on the railway line is the most dangerous section of the road. There is a residential area on the side of the road along the railway line which generates pedestrian movement. There is also a service lane along the Bypass which attracts traffic.

The conflict arises when a car comes out of the service lane onto the opposite side of the road and a car from the opposite side of the road is looking to come into the service lane. They both are looking towards the adjacent road for the traffic to thin so that they can cross the road without looking at the other end, so there is a chance that the accident may happen.

## **PEDESTRIAN CROSSING:**

Pedestrians are facing problems crossing the road due to high speed of traffic especially during the morning and evening times.



## **WRONG WAY DRIVING PRACTICE THROUGH U-TURN**

Wrong way driving practice is observed by the drivers of vehicles as they adopt wrong way from this U-turn to approach Hijrat Colony which is located at some distance this U-turn. Small portion of the traffic going from Boat Basin toward Tower is diverted from this U-turn and destination of some of these vehicles is Hijrat Colony for which they have to adopt a wrong way to approach Hijrat Colony. This wrong way driving practice is very dangerous as it is a very high speed road whose design speed is 80 km/hr and may result in a serious head-on collision.



### RECOMMENDATIONS:

1. It is recommended that a movable steel barrier be placed on the U-turn spot so that U-turn is not allowed and wrong way driving also stops. The U-turn cannot be closed permanently because of the railway line. The advantage of the steel barrier is that it can be moved by the railway chowkidar present at the spot whenever a train comes. There is another U-turn located near this spot. This will be utilized by the traffic for U-turning. It is safer as compared to the previous one.
2. A pedestrian bridge may be built adjacent to the railway line so that people can cross the road safely.
3. Bus stop may be allocated to the public transport near pedestrian bridge for safe loading and unloading of passengers as there is a huge pedestrian flow from Tikri and Hijrat Colony near this U-Turn.

## **ACTIVITIES**

### **OFFICE SETUP**

Initially the main office of 'Road Traffic Research and prevention centre' was furnished with only one table from where work was started. Then the room of main office was properly furnished and four PC's were setup in the office for data entry purpose.



After collection of data of three months form September to December, it was realized that the team of Road Traffic Injury and Prevention Centre should be enforced with a civil engineer for advanced analysis of data and analysis of hazardous locations. Therefore a civil Engineer was hired in December 2006 for above stated purpose. With the expansion in the team of project it was realized that only one room is not sufficient for office work and another room is essential for routine works of the project. So, the room adjacent to the existing office was also assigned to the project. At present two rooms are dedicated to the project one for data entry and other routine works and other is dedicated to the engineers for their research work.

### **TRAINING SESSION AT JPMC SEMINAR ROOM**

A training session was arranged on 4<sup>th</sup> December, 2006 for the 'Research Assistants' to enhance their awareness about locations and major land marks on major arterials of Karachi. In this meeting Program Manager Mr. Ameer Husain was assisted by Road Safety Engineer Afzal Ahmed and Dr. Maria Wahid. Principal Investigator Dr. Rasheed Jooma also addressed the 'Research Assistants' and admired their efforts. In this training session, 'Research Assistants' were trained on maps and medical information of RTI victims.



Research assistants are being trained on maps

### **MEETING WITH TOYOTA OFFICIALS AT DR. JOOMA'S OFFICE**

A meeting was arranged on 23<sup>rd</sup> December at Dr. Jooma's office with Director of Corporate Planning Department of Toyota Mr. Shah M Saad Hussain assisted by Mr. Shehryar Paracha and Mr. Usam Mirza. In this meeting consultant of Road Traffic Injury Research and Prevention Centre Mr. Asad Jahangir and Professor Mir Shabbar Ali were also present. In this meeting progress of four months from September to December was presented to Toyota officials. Future plans were also presented to them and need of extending the duration of project was highlighted because of dynamic changing in the Road network of Karachi and construction of Under Bypasses and Flyovers. Toyota officials were principally agreed upon extending the Duration of project for the year 2007.



Mr. Saad Hussain announcing extension in duration of project

## **VISIT BY SAUD MIRZA**

D.I.G Traffic Police Mr. Saud Mirza visited the office of “Road Traffic Injury Research and Prevention Centre” on 13<sup>th</sup> December. Dr. Raseed Jooma described the working and progress of the centre. Mr. Saud Mirza admired progress and working of the Centre and offered his cooperation for the great cause of reducing accidents.



## **FIRST MEETING OF 'ROAD SAFETY ADVISORY GROUP' AT GOVERNOR HOUSE**

First meeting of Governor's 'Road Safety Advisory Group' was arranged at Governor House on 24<sup>th</sup> January, 2007. in this meeting following were the participants

- **Honorable Governor Dr. Ishrat-ul-Ibad Khan (In Chair)**
- Prof Noushat Sheikh, The Secretary to Government of Sindh, Health Department Karachi
- Mr. Jehangir Mirza, IG Sindh Police,
- Mr. Malik Zaheer ul Islam, The Director General, Karachi Mass Transit Cell, CDGK
- Prof. Rashid Jooma, Principal Investigator, Road Traffic Injury Research & Prevention Centre
- Mr. Falak Khursheed, DIG Police Traffic Karachi
- The Chief CPLC Karachi
- Mr. Mohammad Athar, EDO, Transport & Communication Department, CDGK.
- Mr. Asad Jehangir, Consultant, Road Traffic Injury Research & Prevention Centre
- Mr. Pervaiz Ghais, Chief Executive Officer, Indus Motors, Karachi.
- Dr. Junaid Razzak, Incharge Emergency AKUH, Karachi
- The Operation Officer WHO, Sindh Karachi
- Dr. Mir Shabbar Ali, Prof Transport Engineering, Department of Civil, N.E.D University of Engineering & Technology.
- Mr. Aizaz, Executive Director, National Road Safety Commission, Ministry of Communications, Govt. of Pakistan.
- Syed Ameer Hussain, Programme Manager, Road Traffic Injury Research & Prevention Centre
- Mr. Afzal Ahmed, Road Safety Engineer, Road Traffic Injury Research & Prevention Centre

### **The Following are the Minutes...**

1. The Honorable Governor inaugurated the Meeting by communicating his commitment to the Road Safety, following which Prof Rashid Jooma introduced the Objectives & Operation of the Research Centre and introduced the members of the Centre to the Honorable Governor.
2. The Governor was apprised of the Statistics collected by the Research Centre and the Current Scenario of Road Accidents in the Presentation given by Prof Rashid Jooma.

3. The Presentation elaborated the role of “Research Assistants” designated in five major hospitals, their Mechanism of operation and collection of data from the Road Injuries.
4. The Honorable Governor took keen interest in the Analysis of the data and asked relevant information so as to develop intervention systems out of it.
5. The Honorable Governor was concerned with the high number of Road Accidents and particularly with the vulnerable road user groups.
6. Black spots / Black corridors was the key area where the Governor issued instructions to develop the “Top Ten Black spots / Corridors List” to be issued jointly by CDGK, Police & Prevention Centre. The Governor intends to visit the Areas to personally assess the situation and issue direction to the concern for the rectification.
7. The Governor suggested to streamline the current Medico-legal department afresh and extending its scope to the all 18 towns so that the existing pressure on the three major hospitals was reduced. Private hospitals to be encouraged to set up their medico-legal system sections. AKU Emergency Incharge was assigned the task of “Reviewing the Trauma system of Karachi” in its totality as well as reviewing Medico-legal system.
8. The Governor emphasized the role of Media to highlight the gravity of the problem, the visit of the Governor to the Black spots will increase awareness of the road user to the problem.
9. All out efforts be made by CDGK & Police to reduce number of road crossing injuries, particular attention to be given on Major Arterials. Governor was of the opinion to promote the culture of crossing the road through pedestrian bridges and incorporating the features of appropriate location, design, fencing and Bus stops in designing the Pedestrian Bridges.
10. In response to the information presented on the causation of motorcyclist injuries by slippage on water dripping from water tankers, the DCO informed the meeting that an attempt was being made to restrict tankers movement with the town where it has been charged with water, this was appreciated by the Governor but in addition he stressed that the bowers should not be spilling water while on way to distribution.
11. Mr. Pervaiz Ghais informed the Governor of the initiative of IMC on the Road Safety Issues particularly in educating the children, the Governor appreciated the efforts of IMC Ltd

12. The Governor appreciated the efforts of the “Road Traffic Injury Research & Prevention Centre” and asked to give suggestions with regard to Roads re-engineering, immediate ambulance service, streamlining the issuance of Traffic licence, Vehicle fitness program so that a right direction could be pursued to cope up with the impending issues.
13. Dr. Rashid Jooma suggested the following to make the “Road Safety” a permanent feature
- Accept Responsibility for road safety in its multi-sectoral dimensions
  - Establish a COMMISSION FOR ROAD SAFETY to define polices and carry out periodic review
  - Create a multi disciplinary Executive Committee to initiate and coordinate Commission’s policy
  - Setup a permanent group (RSC) with an independent secretariat and private partnership to steer the action
  - Plan and assign adequate technical and financial resources to the Executive Committee
  - Evaluate outcome of actions

## **ACTION PLAN**

	<b>Action by</b>
<ul style="list-style-type: none"> <li>• Top Ten Black spots/ Corridors list to be prepared and presented to the Governor.</li> </ul>	RTIRPC / CDGK
<ul style="list-style-type: none"> <li>• Review of the Medico Legal system with the inclusion of Private sector.</li> </ul>	AKU                      Emergency Incharge
<ul style="list-style-type: none"> <li>• More Pedestrian bridges locations to be identified on Major Arterials, efforts should be focused to make it more pedestrian friendly by incorporating better design, locations in terms of pedestrian flow&amp; Bus stop allocation, and median fencing.</li> </ul>	CDGK / RTIRPC
<ul style="list-style-type: none"> <li>• Water tanker Movement should be restricted to those areas where water supply was in short. Tanker owners should be notified about the dripping / sprinkling of water during transportation as these are causing the ruining of newly built roads and Flyovers apart from serious accidents.</li> </ul>	DCO Karachi
<ul style="list-style-type: none"> <li>• Helmet enforcement law to be implemented</li> </ul>	Traffic Police
<ul style="list-style-type: none"> <li>• Training of Drivers of commercial vehicles to be made mandatory and licensing should be issued to people who qualify.</li> </ul>	Police
<ul style="list-style-type: none"> <li>• Road Safety Advisory Meeting to be conducted periodically.</li> </ul>	Principal                      Secretary, Governor House

## **TRAINING SESSION OF 'RESEARCH ASSISTANTS' AT AGA KHAN UNIVERSITY HOSPITAL**

A training session was arranged at Aga Khan University Hospital on 7<sup>th</sup> march for training of research assistants on landmarks, locations and medical information. In this training session, the staff of project was informed about the progress and importance of work which they are doing. They were also informed about the importance of location recording and trained on accident investigation techniques. In this session Dr. Professor Mir Shabbar Ali and Dr. Junaid Razaq also addressed the research assistants.



### **COLLABORATION WITH SUPARCO**

In last six months about 15,000 road traffic injuries have been recorded at an average of 2,500 cases per month. If we project this average to the end of year 2007, data of about 40,000 injuries is expected. Presentation of this huge amount of data can be efficiently done with the help of GIS. GIS will not only present the data in a presentable form but it will also help in analyzing location based accidents which will be helpful in the analysis of hazardous locations.

In this regard, a meeting was arranged with the D.G SUPARCO. In this meeting Principal Investigator of 'Road Traffic Injury and Prevention Centre' Dr. Rasheed Jooma was assisted by Mr. Ameer Hussain and Mr. Afzal Ahmed. In this meeting, SUPARCO representative explained that how the system of GIS works. He also presented their past projects which they have done for Aga Khan University and Pakistan Rangers. Now, we are working on the feasibility of 'GIS Based Accident Reporting and Analysis System' with SUPARCO and soon this project will be started.

### **COLLABORATION WITH CDGK**

We are not only collecting the data of accidents but also identifying hazardous locations analyzing problems and proposing remedial measures. The CDGK has the power to do municipal work regarding road safety. So, the collaboration with CDGK was

essential. Road safety is one of the responsibilities of Transport and Communication Department of CDGK. We have developed a good working relationship with CDGK. We present our reports to them and then they implement the proposal. A meeting has been scheduled in first week of every month with EDO of Transport and Communication Department in which we share outcomes of data and issues with him.

### **SUPERVISION OF FINAL YEAR PROJECT**

The Road Traffic Injury Research & Prevention Centre is also supervising a final year project of students belonging to the Civil Engineering Department, N.E.D University. The project is related to the Identification and Analysis of Black Spots. The group consists of four students and their services are being utilized in analyzing and improving the black spots.

### **FUTURE PLANS**

- Continuous collection of data
- Advanced analysis of data and development of regression correlation model
- Development of GIS based Traffic Accident Analysis System
- Identification, analysis and improvement proposals of Black Spots
- Identification of Critical Issues
- Accident Investigation Program (Investigation of accident on the spot)