The Evaluation of Cardiac Emergency Management in National Institute of Cardiovascular Diseases Hospital, Dhaka, Bangladesh AK Saha¹, SAA Mamun², DR Das³, WA Almajidi⁴, MSA Khan⁵, SMS Hasan⁶, F Nasrin⁷

Abstract Emergency department is one of the most important part of the hospital and also vulnerable to criticism. The reputation of a

hospital rests to a large extent on the service of emergency department. The sudden and unexpected nature on the emergency produces panic and psychological disturbances to the relatives, which must be valued and borne in mind during organization and management of services. A descriptive type of cross sectional study was conducted at Emergency Department of National Institute of Cardiovascular Hospital, Dhaka to evaluate the existing facilities, waiting time for the patients for receiving treatment, emergency referral rate and availability of health personnel, overall management and patient's suggestion to improve the services of the emergency department. A total of 150 patients were interviewed by a structured questionnaire and a checklist was utilized for equipment and drugs. The mean age of the patients was 49.59 years, 38.7% patients were attended by doctors within 6-10 minutes. Shifting of the patients from emergency department to another hospital was 12%. 87.3% patients were satisfied with time to complete treatment. In emergency department 69.3% patients were satisfied with reception facility, 89.3% patients were satisfied with given treatment, 92% patients were satisfied with doctor's service and 74% patients were satisfied with the service of the support staff. About 90% patients were satisfied with overall management. The findings of cardiac emergency services obtained through check-list were fairly comparable with the opinions expressed by the patients. For further management of emergency department patients gave suggestion for arrangement of waiting room and toilet facility, X-ray and other laboratory facility should be made available for all the duty shifts, drugs should be supplied adequately and on regular basis. They suggested for augmentation of the equipments, drugs and security and other facilities and recruitment of some trained service providers. According to the patients the Emergency Department is well-studded to manage most of the cardiac emergencies. However, specific problems identified by different stakeholders need to be critically appraised by the authority to improve the services further. Key words: Cardiac emergency, emergency ward, emergency patient, acute, ambulance treatment facility, specializing in acute care of patients Emergency means serious condition that needs quick who present without prior appointment, either by their

Department (ED), also known as Accident & Public Health, City Dental College and Hospital, Dhaka

attention and immediate action. Emergency department is primarily meant for immediate medical attention and

resuscitation of seriously ill patients. An Emergency

Emergency (A&E), Emergency Room (ER), Emergency Ward (EW), or Casualty Department is a medical 1. Dr. Arup Kumar Saha, BDS, Lecturer, Department of Dental 2. Dr. Shaik Abdullah Al Mamun, MBBS, MPH, (Public Health Administration), NIPSOM, Dhaka 3. Dr. Diti Rani Das, MBBS, Rajshahi Medical College and

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in all cases as highlighted, it is conceded that some

unfortunate outcomes are the result of inefficient

management of emergency services. In recent years a greater understanding of the pathophysiology of

ischemic heart disease and the development of

promising new treatments has led to an emphasis on

early intervention within the first 6 hours of ischemic

The Evaluation of Cardiac Emergency...

mirror patient volume, efficient service of the emergency starts to some extends before registration of the patients and immediately after reaching the hospital. All patients attending the emergency are to be registered after a quick preliminary assessment of the severity and urgency of their ailment by the Medical Officer on duty. This is particularly an important point; clerical work involving registration, etc. should never take priority over the urgent attention to the actually ill patient. ^{2,3}. All particulars as per the standard format should be recorded in the emergency register. The emergency ticket should be clearly filled up for name, age, sex, date, time, emergency registration number and clinical diagnosis clearly. A summary of all the relevant clinical findings along with the medical aid given, consultations and the progress of the patient is to be noted down on emergency register (register should contain clear description of treatment details) by the attending doctor (s) before he / she is admitted or discharged or referred to secondary or tertiary hospital.¹⁰ The original emergency ticket is handed over to the patient. Emergency Department of a hospital is always blamed with mismanagement of services resulting in death or disability of a patient. Although it is not absolutely true

own means or by ambulance.¹ The emergency

departments of most hospitals operate 24 hours a day,

although staffing levels may be varied in an attempt to

Dhaka was selected. Prepared questionnaire was used for collection of data from the patients or attendants

AK Saha et al

onset. Animal studies suggest that this 6-hour period is the longest interval of substantial blood flow reduction before maximal and irreversible damage occurs. Like any other developing countries, Bangladesh is also experiencing an increase in the incidence of ischemic heart diseases. To reduce death and disability from cardiac diseases, the policy of the government is to provide cardiac care at an affordable cost. As a part of the endeavor, management of services to deal with cardiac emergencies is imperative. 4-7 Prompt servicedelivery should be one of the aims of Emergency Department. Over the last decade the acute heart attack / failure attending at emergency department has increased beyond the manageable capacity of many hospitals / institutes resulting in unfavorable outcomes on the fate of the patients. Patients / attendants always complain of insufficient staff and facilities at ED as the cause of delay in seeing a patient. For proper management of emergency services, doctors, nurses and health personnel should be efficient, sincere and sympathetic to the patients and equipment for transportation and resuscitation should be adequate. The increasing demand for medical and health care services in the face of limited resources has brought to the need for careful planning and management which are considered essential if high standard of health and health care are to be achieved. Increasing the number of staff and extending the facilities may solve the problem; but it cannot be a cost-effective approach. Efficient management means maximum output at a reasonable cost. 15. Ischemic heart disease and stroke are the two most common causes of death and disability in the

worldwide. Over 80 percent of deaths and 85 percent of disability from Cardio-vascular Disease (CVD) occur in low- and middle-income countries. The Indian subcontinent (including India, Pakistan, Bangladesh, Sri Lanka and Nepal) is home to 20 percent of the world's population and may be one of the regions with the highest burden of CVD in the world. The nature of emergency medicine (EM) has changed significantly in recent years with the advent of new treatment options and the availability of more medical technology, such as specialized intravenous thrombolysis in stroke, stent placement in acute myocardial infarction, and the use of Echocardiogram. Many of these are time-critical Bangladesh Journal of Dental Research & Education

protested and finalized. During analysis, study

objectives were kept in consideration. Data processed and analyzed by using SPSS Software-17 version.

Results:

Age

41-50

Not Cordially received

Total

reception

[n=150]

[n=150]

Yes

No

Investigation

hospital [n=150]

Disease Diagnosis

Diagnosed

Not diagnosed

Total

Satisfied

Total

Poorly satisfied

Table 1: Patient Characteristics

attending the Emergency department. A well-through checklist also was utilized to find out the availability of the indispensable equipments and drugs at the Emergency department. The collected data was assorted and analyzed with the help of SPSS 17 software. The result was then verified and rechecked for marginal errors. **Materials Methods** The study was conducted in the period of 1st January 2012 to 30th June 2012. The study was conducted at National Institute of Cardiovascular Diseases Hospital; Dhaka, Bangladesh. The emergency room of National Institute of Cardiovascular Diseases Hospital was included in the study area. It was an observational descriptive type of study. Patients of all ages including male and female who were injured as a result of Cardiac patients attended in National Institute of Cardiovascular Disease Hospital from 24th April to 5th May 2012 were included in the study. The total number of cases during

procedures, leading to greater emphasis on the

resuscitation, stabilization; investigation and initial management in the ED. 8,9,14 Conditions for which

patients were previously admitted and observed are now

managed in the ED, allowing for direct discharge

without the added cost of inpatient hospitalization. In this study, a well-known government hospital named

National Institute of Cardio-vascular Disease Hospital,

the study period was 150 which comprises of the study population (due to time limitation, within which data collected sample size fixed by convenient sampling technique). A questionnaire and a check list were designed to obtain the required information. Questionnaire was used to obtained data from the respondent. The facilities related to Cardiac patient's management at emergency department were observed and recorded with the help of the check list. Ethical issue will be considered accordingly. The researcher herself attended the National Institute of Cardiovascular Disease Hospital emergency department for collecting data. One questionnaire was used for each patient for data collection. The questionnaire was filled up the author. The interviews were concluded directly with the patients in most cases. Questions were asked in Bengali but filled in both Bengali and English form. The interview was conducted after attending to the emergency in the mentioned period. When patient was seriously ill, any other near relatives of the patient was interviewed. Both the questionnaire and checklist were 53 Vol. 02, No. 02, July 2012

Frequency

104

41

3

satisfaction level regarding reception facility in ED of

Percent

36.7

38.7

17.3

4.0

3.3

100.0

Table 6: Distribution of the respondent by opinion

Frequency

8

138

Mean

±SD

±6.21017

9.7467

Percent

5.3

AK Saha et al

±24.3800

Mean SD

29.2467

Present

Present

Absent

Present

Present Present

Present

Present

Present

Present

Present

Present

Present

Absent

Distribution of the respondent by time

Percent

13.3

24.0

40.0

10.0

4.0

8.7

Table 13: Drugs available in ED (according to the

100.0

required to complete treatment in ED of the hospital

Frequency

20

36

60

15

6

13

150

Standard Operation Procedure of District Hospital)

Frequency

55

58

26

6

5

150

about doctor's service in ED of the hospital

Percent

1.3

69.3

27.3

2.0

Satisfaction level

Highly satisfied

Poorly satisfied

Dissatisfied

the hospital

Waiting time

(min)

□ 5

6-10

11-15

16-20

> 20

Total

Satisfaction level

Highly satisfied

Satisfied

[n=150]

[n=150]

□ 10

11-15

16-30

31-45

46-60

>60

Total

Spray Nitroglycerine

Injection Pathedine

Injection Morphine

Injection Adrenalin

Injection Dopamin

Injection Frusemide

Tablet Amlodipine

Tablet Ranitidine

Antiseptic Liquid

Injection Ranitidine

Injection Diazepum

Injection Ketorolac

Antiseptic liquid

Injection Streptokinase

Time (min)

[n=150]

±SD

49.5 ±17.522

22.0

100.0

Percent

96.7

Percent

93.3

6.7

100.0

Percent

2.0

89.3

8.7

100.0

3.3

Mea

Percentage n

18.7

Satisfied

20 12 8.0 12 8.0 21-30 31-40 26 17.3

Frequency

28

51-60 34 22.7 61 38 25.3 100.0 Total 150

Table 2: Distribution of the respondent by response of whether immediately attended by any service provider

Attending by service provide	der Frequency	Frequency Percentage	
Yes	140	93.3	
No	10	6.7	
Total	150 100.0		
	istribution of the 1	respondent by mode o	
Reception	Frequency	Percent	
Cordially receiv	ed 117	78.0	

Distribution of the respondent by the Table 4: 54

The Evaluation of Cardiac Emergency...

urgent investigation in ED of the hospital

Table 8: Distribution of the respondent by advised

Frequency

145

150

Table 9: Distribution of the respondent according to

their perceived clear diagnosis of disease in ED of the

Frequency

140

150

Distribution of the respondent by their

5

33

150

Poorly satisfied 4 2.7 100.0 Total 150 Table 7: Distribution of the respondent by opinion about service provided by support staff in ED of the hospital

Satisfaction level	Frequency	Percent
Highly satisfied	1	0.7
Satisfied	111	74.0
Poorly satisfied	37	24.7
Dissatisfied	1	0.7
Total	150	100.0

satisfactions upon treatment given in ED of the hospital [n=150]Satisfaction level Frequency Highly satisfied

134

13

150

First aid 40 26.7 Observation 22 14.7 Admission 70 46.7 Referred to another hospital 18 12.0 Total 150 100.0

Table 11: Distribution of the respondent by type of treatment given to them [n=150]**Treatment** Frequency Percent

Bangladesh Journal of Dental Research & Education		
during January 2012 to June 2012. The mean age of the		
patients was 49.59 years. Among the patients selected,		
25.3 % were in age group ? 61 years, next 22.7% were		
in age group 51-60 years. Therefore, 48% patients were		
in age group 41-60 years. According to the Health and		
Science Bulletin, ICDDR, B, the age structure of		
Chronic Diseases among the rural Bangladesh is over 60		
years.16 Moreover, the population aged over 60 years		
currently represents about 7 % of the 140 million		
population of Bangladesh and projected to represent 16		
% of the total population by 2050. As the older		
1 1		

population grows, the prevalence of chronic disease is also likely to grow. The encouraging side of the

management of cardiac emergency services was that 50.67 % of the patients were taken to the emergency

room, either on a wheel-chair or on a stretcher from where the carrying vehicle stops. The disappointing

finding was that about 49.33 % of the patients were

taken to the emergency room by walking which might

exert extra burden to an already ailing heart and

deteriorate patients' conditions further. This was due to

non-availability of stretchers or wheel-chairs or absence

of porters at the moment when the carrying-vehicle

stopped at the main gate of Emergency. This finding is similar to the study conducted by Rashid et al.

conducted at the ED of BIRDEM, Dhaka. The reception

facility was also good. Most of the patients, 78 %

reported that they were received cordially and 69.3 % of

the patients were satisfied regarding reception facility of

the ED of the hospital as against Aziz and Jahan found

77.4% and 94.6% patients were satisfied with the

reception facility respectively. In this study most of the

patients (93.3%) stated that they were attended by

service provider immediately and 57.3% patients were

attended by 2 service providers and 35.3 % patients

were attended by 3 service providers. The waiting time

is a very important factor for the satisfaction of patients.

It is considered as an important component for the

Tablet Frusemide Present Injection Hydrocortisone Present Tablet ⊡-blocker Present Tablet Ca-channel blocker Present Tablet ACE inhibitor

Table 5: Distribution of the respondent by waiting time

to attend by a doctor (service provider) in ED of the

hospital
[n=150] Discussion:
A descriptive type of cross sectional study was conducted at Emergency Department of National Institute of Cardiovascular Hospital, Dhaka, Bangladesh
55
Vol. 02, No. 02, July 2012
reported that due to urgent investigation done in the hospital, the disease was diagnosed promptly. 69.3 % of

the patients were satisfied regarding reception facility at

ED as they were received by service provider

immediately. On the other hand, 74 % patients were

satisfied about services provided by support staff.

Regarding doctors service this study shows that the

service was very good. Most of the patients, 92% were

satisfied about doctors service, 89.3 % patients were satisfied with the treatment they received from the ED.

Furthermore, 95.3 % patients were satisfied with the

cleanliness of ED, 87.3 % patients were satisfied with

the time required to complete treatment. About overall

required urgent investigation like ECG Echocardiogram and most of them 95.2% were done in the hospital; a few cases were referred outside for

The Evaluation of Cardiac Emergency...

Bangladesh.

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investigation. On the other hand 93.3 % of the patients

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14. Namita J. Ronan O'S, Tareg B, Suleman SA, Shahram L. Crowding and Delivery of Healthcare in Emergency Departments: The European Perspective. Western Journal of management of ED, 90 % patients were satisfied. These findings are more or less analogous to those of Aziz et al. There were a total of 22 service providers. Among them, 45.5% were doctors, 18.2 % were support staff, 9.10% were cleaners and 4.6% were paramedics and gatemen who provide services round the clock by shifting duties. The ED is well equipped. Most of the

facilities are present in ED except waiting room, toilet

facility and availability of adequate number of bed. The

other diagnostic facilities like X-ray, Echocardiogram, CT- Angiogram, Blood for Troponin-I, CBC, Lipid

Profile, Serum Urea, Serum Creatinine are not available

specially in ED but those are available in the hospital.

Drug supply was also inadequate as per demand of the

patients. Most of the instrument are available in ED

except Auroscope, Tape measure, Height scale, Suturing

material, Sterilizer, Stomach tube and Autoclave

machine. According to the Standard Operation

Procedure (SOP), 20 emergency drugs were listed. Out

of them Injection Streptokinase, Antiseptic liquid were

From the study it was found that emergency department

was more or less clean but not well equipped and well

staffed. More posts should be created for trained

Echocardiogram, should be available round the clock. Drugs are the vital part of treatment which are not available in ED as per need of the patients. The findings of this study will be helpful in the improvement of AK Saha st al Emergency Medicine. November 2009; Volume X, no. 4 15. DGHS, Primary health care related policy and strategy, 2000, 2. 16. Herren K R, Mackway-Jones K. Emergency management of cardiac chest pain: a review. October 2000;

management of quality service in the ED, as postulated Emergency Medical Officers for management of by some researchers. 38.7 % patients stated that waiting emergency case. There is no waiting room for time for doctor (s) was within 6-10 minutes, 36.7 % emergency department. So attendants and visitors move were attended within less than 5 minutes and only 3.3 % around aimlessly and create problem in management of were attended above 21 minutes. This result is emergency patient. There is no toilet facility for the satisfactory than the study done on the ED at DMCH. patient in ED which is extremely needed. Proper The excellent achievement of the ED was that almost all diagnosis is an essential part for management of the investigations related to cardiac problem was done treatment. Diagnostic facilities for emergency patients in the hospital and the most urgent investigation like of ED in this hospital are available to some extent like ECG was done immediately after registration of the ECG but other diagnostic facilities like X-ray and patient. This study shows that 96.7 % of the patients

not available.

Conclusion

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57