# Comparision Between Provisional Diagnosis made in Emergency Department vs Final Discharge Diagnosis at Ramkrishna Care Hospital, Raipur C.G

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### Abstract

*Objective/Hypothesis:* Objective of this study was to find out the diagnostic accuracy made by emergency physician, this will ensure improvement in patients care and will help to implement better accuracy in determining diagnostic accuracy.

*Background:* Department of emergency medicine is a specialized care facility in tertiary health care centre whose main function is to take care of patients with immediate and emergent health issues. In view limited literature in EM in India a study between PD vs FD was performed for future reference in continuous quality improvement.

*Methods:* A prospective, observational study was done among 200 patients between provisonal diagnosis made in emergency department vs final discharge diagnosis.

*Results:* Majority of the patients (n=153, 76.5%) were from the age group of patients between 15-64 followed by (n=40, 20%) in the age group with patients of >65 years age, followed by (n= 7, 3.5%) in the age group of 1-14 years. Most matched diagnosis were from department of internal medicine (18.5%) followed by department of cardiology (16%), followed by department of neuromedicine (13%). It was found that 81% (n=162) cases were accurately matched) diagnosed during Emergency department admission, while there was unmatched diagnosis of 19% cases (n=38).

*Conclusion:* Result obtained suggests that the provisional diagnosis was made by the emergency physicians were mostly matched with final discharge diagnosis that was made by the concerned specialist doctors. This shows that the choice of treatment done in the ER were a prompt and accurate treatment. This has a positive effect on the prognosis, mortality and outcome in patients. Department of internal medicine had more diagnostic errors. Improving history taking of patients with proper clinical evaluation correct diagnosis in the ER. Early availability in blood reports during emergency stay will help as a better diagnostic interpretation of disease. it is required to upgrade clinical skills of emergency physicians in diagnosing pediatric age group.

**Keywords**: PD: Provisional Diagnosis; ED: Emergency Department; FD: Final Diagnosis; ER: Emergency Room.

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## INTRODUCTION

The Emergency Room (ER) is a very sensitive and very critical unit in any hospital requiring immediate skilled physicians attention to prevent any delay in treatment and recognition of any life threatning disease. The ER is the point of first contact in any hospital for patients with emergent health issues and concerns.[1] Emergency department is required to save life the first few minutes to hours Which is very crucial and determinent of patients well-being and for better clinical outcome.

Every patient has a new unexpected problem and Diagnosis is not known in most of the patients, hence its a clinical challenge. Before the introduction of Emergency Department as a speciality. Acutely ill patients in casualty was managed by medical officers (MO) and there was no dedicated attending specialist.[2]

Casualty meant seriously injured patient. It was a military word, which was used for accidents after a battle, the dead, the wounded, and the sick together known as "casualties". Sir Harry Platt, the chairman of the Accident and Emergency Services Sub-Committee of the Standing Medical Advisory Committee, produced the famous report in 1962 stating the name "casualty" should be altered to "Accident and Emergency"[3] which later drew there attention for the need for trained doctors with good clinical skills and knowledge all over the world to provide the highest quality of emergency care to reduce the increasing death rate from injuries.[4]

David pioneered the practice of emergency medicine in India and founded first emergency department in Christian Medical College (CMC) in Vellore in the year 1994. Later in the same year, The Sundaram Medical Foundation (SMF) established the first ED in the private sector. Modeled on the American community hospital emergency system, and was supported by the Long Island Jewish Medical Center. In 2009 Emergency department was formally recognized as an independent specialty by the Medical Council of India (MCI), and since that time EM training programs have been initiated in both public and private hospitals. It is rapidly evolving field in India and its expertise is mainly utilised in tertiary care hospitals in most of the bigger cities.

The need for diagnostic accuracy in critically ill patients may determine life or death, it affects patients care, the prognosis of the patients, financial and legal implications. It indirectly reduces the revisit to ED and thus reducing burden to the health sectors. Early and accurate diagnosis improves positive clinical outcome and reduces the length of stay in hospital. Studies in India regarding the comparison of admission diagnosis made in an Emergency Department and final outcome diagnosis are limited.[5,6] Our aim of this study is to compare the diagnosis Made in ER and the diagnosis made during discharge i.e " provisional vs final" diagnosis as It will help to evaluate current performance of specialist emergency doctors and improve quality of care provided to patients.

High degree of precision in diagnosis patient at the earliest will lead to reduction on number of investigations which in turn will reduce cost and reduce burden to the health care system.[7] A study conducted by Hussain et al. stated that 15% of diagnostic errors, including wrong and delayed diagnoses resulted in severe harm to patient or death.[8]

Diagnosis patient Accurately in emergency department is most important in effective management and it influences the outcome of a patient. Despite our advances in health care systems and established medical facilities in developed countries, and errors in diagnosing in patients in emergency department has found as the important factor for where patients expired. Other studies conducted on diagnostic discrepancies between emergency diagnosis and discharge diagnosis have found variable in results ranging from 3% to 52% discrepancy in diagnosis.[9]

Study carried out by Mc Nutt et al. found that the average length of days stayed in hospital was significantly increased in patients in the not matched diagnosis group, an average of almost 1.90 days increased in length of hospital stay in comparison with matched diagnosis (P < 0.001).[10]

Better application of knowledge along with continuous academic updates with its application of clinical skills including history, physical examination and correlating them is important to reduce the diagnostic variation between provisional diagnosis made in the emergency department and in turn it will reduce consequences. Our present study was done at a single centric higher tertiary care center. It has established department of emergency medicine, which included trained emergency medicine specialists and the necessary equipment's which is required to provide the best possible care to acute patients in the ER.

### Aims and Objectives

1. Our aim of this study is to conduct a

prospective observational study between provisional diagnosis made in emergency department in comparison with final diagnosis made at the time of discharge in all patients in a single centred tertiary healthcare of Raipur.

2. It will help to identify the extent of gaps at the context of knowledge, practice and systems.

3. For determining the diagnostic accuracy of emergency medicine department.

4. Our study will help in improvement and to implement better accuracy in determining accurate diagnosis. As an accurate choice of treatment in the ER is very important in cases where a prompt initiation of treatment has a vital effect on the prognosis and outcome.

5. To produce necessary intervention and take measures towards reducing gaps.

6. For Feedback to ED regarding diagnostic accuracy, treatment, effectiveness, or Morbidity or the mortality of the patients.

### Review of Literature

Hospitals is a complex buildings and it provides health care services 24 hours in a day. Emergency department is the most important department of a hospital. It provides emergency services 7 days week and 24 hours a day, to reach and provide medical facility to all emergency or non-emergency patients. It play a very important role in managing disaster situations and mass casualties also.

Patient management in the Emergency department starts with the assessment of patient on priority basis, depending on the urgency for need of treatment, known as Triage. It rapidly screens the patients who require immediate emergency treatment. According to the patient's clinical severity the triage is divided into divided into Red I.e emergency, Yellow Zone i.e priority and Green I.e non urgent. In Emergency, Management of the patients always precedes diagnosing them, as this can lead to further destabilisation of patients and increase in mortality. This approach is done in emergency room.[11]

Every patient has a new unexpected problem and Diagnosis is not known in most of the patients, and its a clinical challenge. Where an emergency physician is required to save life of patient in the first few minutes to hours. It is is a very crucial and determinant factor of patients well-being and its better clinical outcome.

Although management of acute ill patients in emergency department is important but it is an utmost need to diagnosis these patient accurately in emergency department. As Some of these patients because of the an incorrect diagnosis suffers adverse event (amounting to ~2.0%), and ~0.3% are of serious nature.

It was a research conducted by Agency for Healthcare Research and Quality Evidence-based Practice Center Program Methods Guidance.[13]

It is Most often found that an Unscheduled returns to hospital is associated with medical errors in treatment of patients, follow up care of them, or in adequate information. It leads to Patients dissatisfaction and is often associated with medical errors, or in level of triaging. Often patient educational level and its time in emergency department are modifiable factors.[14]

*Fariz Hussain et al.* in his study stated that modifications are needed that provide clinicians with better support in assessing the patients and in investigation interpretation of investigation done. Standardising the checklists, with early reporting of investigation will improve patient care. And it will help in accurately diagnosing them.[15] He conducted the study on diagnostic errors in emergency department. Total of 2288 cases, 1973 (86%) delayed and 315 (14%) wrong diagnoses.

*Chiu et al.* in his study stated that while comparing the provisional diagnosis made in emergency department, 71.4% of all matched diagnosis is similar with the final discharge diagnoses. The accuracy for diagnosing traumatic cases was statistically better, in male and in young adults.[16]

*Goh et al.* in his study reported that a high degree of accuracy was obtained in diagnosis the surgical patients (82.9% of them from general surgery, and 95.8% are from the orthopaedic surgery), and they obtained acceptable degree of accuracy i.e (77.6%) for general medicine patients.[15]

*Pope et al.* found That the percentage of patients who had presented to the emergency room with an acute unstable angina or myocardial infarction most of such patients were hospitalized, but such patients discharge was associated with greater mortality rates. Diagnoses that is missed in cardiac specialty are fatal. It should be reduced. Pope *et al.* conducted his study on total of 10,689 patients who had presented to ER with history of chest pain, 8% of them was diagnosed acute myocardial infarction, 9% with unstable angina, 6% with stable angina, 21% with other cardiac problems, and 55% with non-cardiac issues. Out 889 patients with a diagnosis of acute myocardial infarction, 19 patients

I.e (2.1%) were discharged from the emergency department by mistake (95 percent confidence interval, 1.1 to 3.1%); similarly, 966 patients had an unstable angina, in which 22 patients I.e (2.3%) were mistakenly discharged (95 percent confidence interval, 1.3 to 3.2%. For patients who had acute infarction, mortality ratio increased who were not admitted, in comparison to those who were, was 1.9 I.e (95 percent of confidence interval, 0.7 to 5.2), and with the patients of unstable angina, it was 1.7i.e (95 percent confidence interval, 0.2 to 17.0).[17]

*R U kothara et al.* Conducted a study in 446 patients and they were evaluated in the department of emergency. In which 76 patients had diagnosis of intracerebral or subarachnoid hemorrhage. The diagnosis was correctly made by the emergency physicians (showing sensitivity, 100%; with positive predictive value of 100%). And 351 patients had diagnosis of is chemic stroke or TIA, in which 346 patients were correctly diagnosed by the emergency physicians (showing sensitivity of 98.6%; positive predictive value of 94.8%). Nineteen patients who were diagnosed as stroke or transient is chemic attack but they had a final diagnosis other than the stroke. Suggestive of achieving higher accuracy in disgnosing CVA, neurological emergencies unto 98%.[18]

*Priyanka patel et al.* conducted a study on 3000 patients. In which 81% I.e 2430 number of patients that was diagnosed in emergency department was found to be same as the discharge diagnoses, and this concordance of diagnosis was found to be statistically significant.

Maximum number of patients that was diagnosed correctly were from the Internal Medicine Department of i.e 10.6% followed by Department of General Surgery i.e 8.7%.

They observed had the most errors were seen in diagnosing patients were from department of Gastroenterology (number of patients were 152 i.e 40%) followed by those who patients who were admitted in the Department of Urology (number of patients were 115 i.e 23.47%).

And the departments with the least unmatched diagnoses were from cardiology (number of patients were 156 i.e 9.61%), Internal medicine (n=317;10.09%) Endocrinology (n=79;13.92%) followed by CTVS (n=49,14.28%).[19]

## MATERIALS AND METHODS

### *Study area*

The study was conducted at Ramkrishna care Hospital, Raipur, Chhattisgarh, India.

Which is 359 bedded tertiary hospital, It has a well established Emergency department. In this centre, patient care is provided by dedicated emergency medicine physicians, consultants and senior emergency residents. Our study included All the patients who were admitted through emergency department.

### *Study Population*

It is important to identify the population from which the data is collected. For our thesis we have collected the data from all the patients admitting through emergency department of Ramkrishna care hospital. We have included patient of different age groups i.e. Paediatric, Adult and Geriatric, and both male and female.

All patients were selected by method of simple random sampling. With the total of 200 consecutive consenting patients were taken for our study.

### *Inclusion Criteria*

Patients from all the age group admitted through emergency department to hospital have been included and have been classified in paediatric, adult and geriatric, where ages between 0-14 years of age are classified as paediatrics more than 14 and upto 64 years as adults and more than 64 years as geriatric.

| Groups | Ages | Total |
|---|---|---|
| Pediatric | 0 to 14 years | 7 |
| Adult | More than 15 upto 64 years | 153 |
| Geriatrics | More than 65 years | 40 |

### *Exclusion Criteria*

1. All the patients who arrived in emergency room in dead on arrival state are excluded.
2. All patients who were treated in OPD basis.
3. All patients who already have been diagnosed on OPD basis or other hospital or referred after the diagnosis.
4. All patients who went discharge against medical advice after getting admitted to the hospital.
5. Previously diagnosed oncology patients presenting with an oncological emergencies.

### *Study Design*

The author proposes to conduct a prospective,

observational study between provisional diagnosis made in emergency department vs final discharge diagnosis after obtaining the institutional ethical committee clearance.

It is single centric study and It is conducted in Ramkrishna care hospital, Raipur Chhattisgarh in the period of 2 years i.e July 2021 to July 2023.

Our focus of study is to analyse the level performance of emergency room by doctors and to improve the patient care.

To create awareness about role of emergency physicians in early diagnosis and prompt treatment which in turn can reduce mortality significantly.

Written and informed consent was taken from the patients prior to the study.

*Study Period*

The study was carried out over a period of 2 years from July 2021 to July 2023.

*Sample Size Calculation*

Sample size calculated by using Cochran formula

$$n_0 = \frac{Z^2 pq}{e^2}$$

With 95% of confidence level (z) with +/– 5% of precision (e)

Where by:

N= minimum sample needed

p= population proportion 88.6% = 0.886

e= margin of error (0.05)

z= 1.96 value for significance level

Substituting these figures in formula

Minimum Sample Size

=156 cases

There minimum required sample size was 156 patients

$$N = \frac{1.96^2 * P * (1 - P)}{e^2} = \frac{1.96^2 * 0.886 * (1 - 0.886)}{(0.05)^2}$$

*Statistical Analysis*

The data will be entered in MS Excel spread sheet and analysis will be done using Statistical Package for Social Sciences (SPSS) version 20.0. Continuous variables will be presented as mean ± SD, and categorical variables will presented as absolute numbers and percentage. Data will checked for normality before statistical analysis. Comparison of mean for normally distributed continuous variables will be compared using the unpaired t test, where as the Mann-Whitney U test will be used for those variables that will not be normally distributed. Categorical variables will be analysed using either the chi square test or Fisher's exact test.

*Statistical Significance*

P>0.05 is not significant

P<0.05 is significant

P<0.01 is highly significant

*The Arithmetic Mean*

The most widely used measure of central tendency is arithmetic mean, usually referred to simply as the mean, calculated as:

$$\text{Mean}_x = \frac{\sum Xi}{N}$$

*The Standard Deviation*

The standard deviation (SD) is the positive square root of the variance, and calculated as:

$$SD = \sqrt{\frac{\sum (X - MEAN)^2}{N - 1}}$$

where, n= no. of observation

*Chi square test*

Chi square value, degree of freedom = (r-1)(c-1)

$$\sum \frac{(O - E)^2}{E}$$

O = observed frequency

E= expected frequency

*Methodology*

The patients were admitted from the Emergency Department and they were primarily being diagnosed by an Emergency medicine specialist during study period i.e July 2021 to July 2023. Emergency Room diagnoses and the final discharge diagnoses of various, gender, different age groups and various specialties, were included. Patients

were selected by simple random sampling method.

Patients upon the initial assessment, Detailed History taking and investigations that was carried on to make a provisional diagnosis was made by Emergency specialist, the patients were then admitted to specific speciality after stabilisation them. All these Patients were admitted under the specialty depending on the specific nature of their current illness.

In a very limited time and on the basis of examination, history taking, basic investigations that is required at the utmost is done and depending on it a provisional diagnoses made by Emergency physicians. Hence it is a clinical challenge to stabilise the patient, work the diagnosis within limited time frame and to deal with the anxious relatives at the same time.
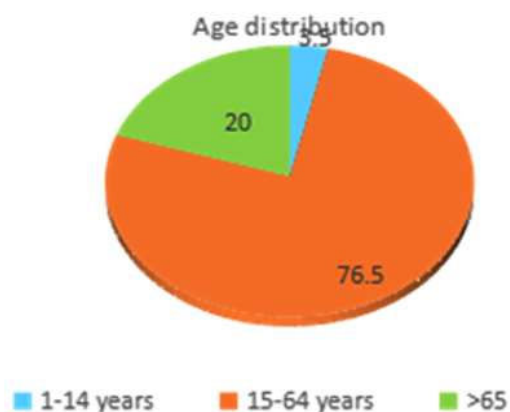
## RESULT AND ANALYSIS

Descriptive tables

1. Epidemiological Parameters

**Table 1A:** Distribution of patients according to Age

| Age group (years) | N | % |
|---|---|---|
| 1-14 years | 7 | 3.5 |
| 15-64 years | 153 | 76.5 |
| >65 years | 40 | 20 |
| Total | 200 | 100 |



The age of the subject varied from 3 years to 95 years (mean=48.13 median 50). The subjects were divided into 3 groups i.e 1-14, 15-64 and >65 years. Majority of the patients (n=153, 76.5%) were from the age group of patients between 15-64 followed by (n=40, 20%) in the age group with patients of >65 years age, followed by (n= 7, 3.5%) in the age group of 1-14 years.

**Table 1B:** Distribution of patients according to Sex

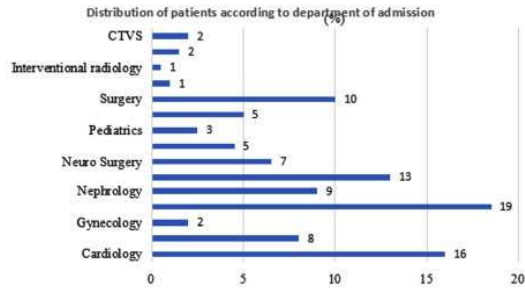| Sex distribution | N | % |
|---|---|---|
| Male | 130 | 65 |
| Female | 70 | 35 |
| Total | 200 | 100 |

The number of male patients (n = 130, 65%) while female patients constituted (n=70, 35%) in our study group.
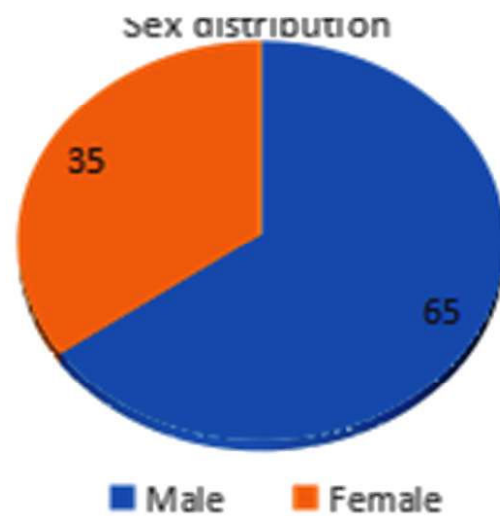


2. Study Specific Findings

**Table 2:** Distribution of patients according to department of admission

| Department | N | % |
|---|---|---|
| Cardiology | 32 | 16 |
| Gastroenterology | 16 | 8 |
| Gynecology | 4 | 2 |
| Internal Medicine | 37 | 18.5 |
| Nephrology | 18 | 9 |
| Neuro Medicine | 26 | 13 |
| Neuro Surgery | 13 | 6.5 |
| Orthopedic | 9 | 4.5 |
| Pediatrics | 5 | 2.5 |
| Pulmonology | 10 | 5 |
| General Surgery | 20 | 10 |
| Urology | 2 | 1 |
| Interventional radiology | 1 | 0.5 |
| Critical care team | 3 | 1.5 |
| CTVS | 4 | 2 |
| Total | 200 | 100 |

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Distribution of patients according to department of admission

It is characterised in table 3,

That most of the patients were from department of internal medicine (18.5%) followed by department of cardiology (16%), followed by department of neuromedicine (13%).

**Table 3:** Diagnostic Accuracy between provisional diagnosis made in emergency department vs final diagnosis

| Agreement | N | % |
|---|---|---|
| Matched diagnosis | 162 | 81 |
| Unmatched diagnosis | 38 | 19 |
| Total | 200 | 100 |

Comparison between provisional diagnosis versus final diagnosis was performed in above table 3 it was found that 81% (n=162) cases were accurately (matched) diagnosed during Emergency department admission, while there was unmatched diagnosis of 19% cases (n=38).



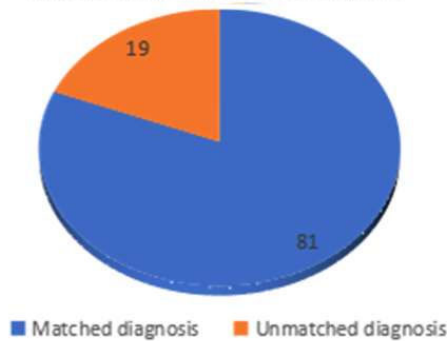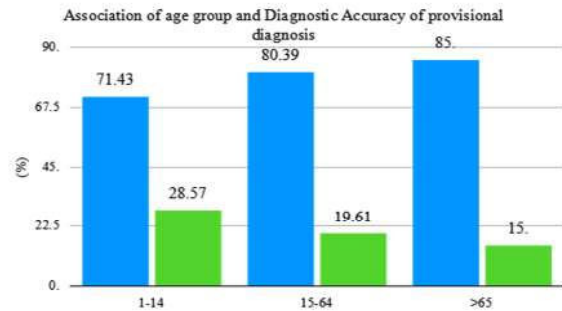Diagnostic Accuracy between provisional diagnosis made in emergency department vs final diagnosis

■ Matched diagnosis ■ Unmatched diagnosis

**Table 4:** Association of age group and Diagnostic Accuracy of provisional diagnosis

| Age group (Years) | Matched | | Unmatched | | P value |
|---|---|---|---|---|---|
| | N | % | N | % | |
| 1-14 years | 5 | 71.43 | 2 | 28.57 | 0.51 NS |
| 15-64 years | 123 | 80.39 | 30 | 19.61 | 0.69 NS |
| >65 years | 34 | 85 | 6 | 15 | 0.47 NS |



Association of age group and Diagnostic Accuracy of provisional diagnosis

No significant association between age group and diagnostic accuracy of provisional diagnosis

*Inferential stats*

P value is insignificant with age group bcoz all 3 age groups are having high matched %.

No significant association between age group and diagnostic accuracy of provisional diagnosis.

It was obseserved that more errors in diagnosis were seen with age group of 1-14 years (n=2,28.57%) as compared with age of 15-64 years (n=30,19.61%) and in age group of >65 years (n=6,15%).

Highly significant association between sex distribution and diagnostic accuracy of provisional diagnosis.

**Table 5:** Association of sex and Diagnostic Accuracy of provisional diagnosis

| Sex Distribution | Matched | | Unmatched | | P value |
|---|---|---|---|---|---|
| | N | % | N | % | |
| Male | 114 | 70.37 | 16 | 42.11 | |
| Female | 48 | 29.63 | 22 | 57.89 | 0.001 HS |
| Total | 162 | 100 | 38 | 100 | |

As shown in above table 5.

It was observed that more errors in diagnosis were seen in female patients (n=22,57.89%) was compared to male patients (n=16,42.11%).
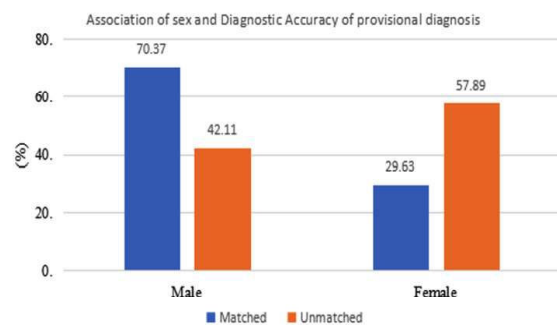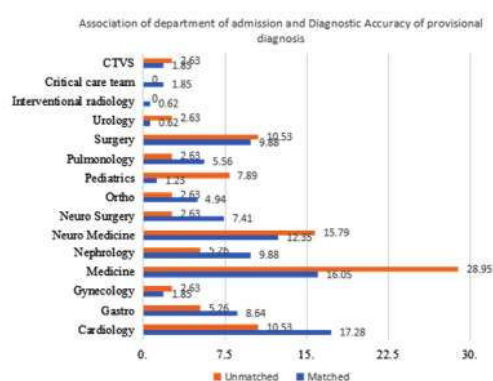


Association of sex and Diagnostic Accuracy of provisional diagnosis

■ Matched ■ Unmatched

**Table 6:** Association of department of admission and Diagnostic Accuracy of provisional diagnosis

| Department of admission | Matched | | Unmatched | | P value |
|---|---|---|---|---|---|
| | N | % | N | % | |
| Cardiology | 28 | 17.28 | 4 | 10.53 | 0.30 NS |
| Gastro | 14 | 8.64 | 2 | 5.26 | 0.49 NS |
| Gynecology | 3 | 1.85 | 1 | 2.63 | 0.76 NS |
| Medicine | 26 | 16.05 | 11 | 28.95 | 0.06 NS |
| Nephrology | 16 | 9.88 | 2 | 5.26 | 0.37 NS |
| Neuro Medicine | 20 | 12.35 | 6 | 15.79 | 0.57 NS |
| Neuro Surgery | 12 | 7.41 | 1 | 2.63 | 0.28 NS |
| Ortho | 8 | 4.94 | 1 | 2.63 | 0.54 NS |
| Pediatrics | 2 | 1.23 | 3 | 7.89 | 0.018 S |
| Pulmonology | 9 | 5.56 | 1 | 2.63 | 0.45 NS |
| Surgery | 16 | 9.88 | 4 | 10.53 | 0.90 NS |
| Urology | 1 | 0.62 | 1 | 2.63 | 0.26 NS |
| Interventional radiology | 1 | 0.62 | 0 | 0 | 0.63 NS |
| Critical care team | 3 | 1.85 | 0 | 0 | 0.40 NS |
| CTVS | 3 | 1.85 | 1 | 2.63 | 0.76 NS |
| Total | 162 | 100 | 38 | 100 | |



Association of department of admission and Diagnostic Accuracy of provisional diagnosis

It was observed that more that more error in diagnosis were seen in patients admitted to the department of medicine (n=11, 28.95%) followed by those admitted to department of neuromedicine (n=6,15.79%) The department showing least unmatched diagnosis were, from critical care (n= 1, 23.63%), interventional radiology (n=0, 0%), pulmonology (n=1 , 2.63%) followed by gynecology (n=1, 2.63%), neurosurgery (n=1,2.63%), orthopedic (n=1, 2.63%), urology (n=1,2.63%) and CTVS (n=1, 2.63%).

## DISCUSSION

As previously stated ER is the point of first contact in any hospital for patients with emergent health issues and concerns.[1] As soon as the patients enter we start with the assessment of patient on priority basis, depending upon the urgency for need of treatment, this is known as Triaging the patients. It rapidly screens the patients who require immediate emergency treatment. According to the patient's clinical severity the triage is divided into divided into Red I.e emergency, Yellow Zone I.e priority and Green I.e non urgent. In Emergency, Management of the patients always precedes diagnosing them, as this can lead to further destabilisation of patients and increase in mortality. The need for accurate diagnosis in critically ill patients with immediate prompt treatment may determine life or death. It affects patients care, the prognosis of the patients, financial as well as legal implications. Accurately understanding the illness and promptly treating them indirectly reduces the revisits of the patients to ED and thus reducing burden to the health sectors. Early and accurate diagnosis improves positive clinical outcome and reduces the length of stay in hospital.

Despite its importance, Studies in India regarding the comparison of admission diagnosis made in an Emergency Department and final outcome diagnosis are very limited.[5,6] Our study is conducted at the state of chattisgarh, it is fastest developing state in central India, With roughly 30 millions population. There is no other study conducted on comparison between PD vs FD in

state of chattisgarh.

We did study on 200 patients, out of them majority of the patients were between the age group of 15-64 followed by patients of >65 years of age followed by age group of 1-14 years. Out of this male patients were 130 (65%) and female patients were 70 (35%). In our study most of the patients were from department of internal medicine (18.5%) followed by department of cardiology (16%) followed by department of neuromedicine (13%).

In our study accuracy of matched vs. Unmatched diagnosis was that of 81%. (n=162) were accurately matched diagnosis during emergency medicine admission, while there Was unmatched diagnosis of 19% Cases (n=38).

It was observed that more errors in diagnosis were seen with the age group of 1-14 years (n=2,28.57%) as compared with the age group of 15-64 years (n=30, 19.61%) and in age group of >65% (n=6, 15%). It was observed that more errors in diagnosis were seen in female patients (n=22, 57.89%) as compared with male patients (n=16, 42.11%).

In our study it was observed that more errors were seen that more error in diagnosis were seen in patients admitted to the department of medicine (n=11, 28.95%) followed by those admitted to department of neuromedicine (n=6, 15.79%) The department showing least unmatched diagnosis were, from critical care (n= 1, 23.63%), interventional radiologyb (n=0, 0%), pulmonology (n=1 , 2.63%) followed by gynaecology (n=1, 2.63%), neurosurgery (n=1,2.63%), orthopadic (n=1, 2.63%), urology (n=1,2.63%) and CTVS (n=1, 2.63%).

*Fariz Hussain et al.* in his study on diagnostic errors in emergency department. Total of 2288 cases, 1973 (86%) delayed and 315 (14%) wrong diagnoses.

In our study we found that there was unmatched or wrong diagnosis of 19% cases (number of patients = 38) in total of 200 cases.

*Chiu et al.* in his study stated that while comparing the provisional diagnosis made in emergency department, 71.4% of all the matched diagnosis is similar with the final discharge diagnoses. The accuracy for diagnosing traumatic cases was statistically better, in male and in young adults.[16]

Where as In our study accuracy of matched vs. Unmatched diagnosis was that of 81%. (n=162) were accurately matched diagnosis during emergency medicine admission, while there Was unmatched diagnosis of 19% Cases (n=38). Majority of the patients with matched diagnosis were between the

age group of 15-64. And most of the patients were male i.e 130 (65%) was accurately matched.

*Goh et al.* in his study reported that a high degree of accuracy was obtained in diagnosis the surgical patients (82.9% of them from general surgery, and 95.8% are from the orthopaedic surgery), and they obtained acceptable degree of accuracy i.e (77.6%) for general medicine patients .[15]

In our study it was observed that most of the patients with matched diagnosis were from department of internal medicine (18.5%) followed by department of cardiology (16%), followed by department of neuromedicine (13%).

*Priyanka Patel et al.* conducted a study on 3000 patients. In which 81% I.e 2430 number of patients that was diagnosed in emergency department was found to be same as the discharge diagnoses, and this concordance of diagnosis was found to be statistically significant.

Maximum number of patients that was diagnosed correctly were from the Internal Medicine Department of i.e 10.6% followed by Department of General Surgery i.e 8.7%.

They observed had the most errors were seen in diagnosing patients were from department of Gastroenterology (number of patients were 152 i.e 40%) followed by those who patients who were admitted in the Department of Urology (number of patients were 115 i.e 23.47%).

And The departments with the least unmatched diagnoses were from cardiology (number of patients were 156 i.e 9.61%), Internal medicine (n=317;10.09%) Endocrinology (n=79;13.92%) followed by CTVS (n=49,14.28%).[19]

Our study was conducted in 200. Patients accurately matched was that of 81%. (n=162) with provisional diagnosis during emergency medicine admission, while there Was unmatched diagnosis of 19% Cases (n=38). Maximum number of patients diagnosed correctly were from department of internal medicine (18.5%) followed by department of cardiology (16%) followed by department of neuromedicine (13%). We observed that more errors were seen in diagnosing patients admitted to the department of medicine (n=11, 28.95%) followed by those admitted to department of neuromedicine (n=6,15.79%) The department showing least un-matched diagnosis were, from critical care (n= 1, 23.63%), interventional radiology b(n=0, 0%), pulmonology (n=1, 2.63%) followed by gynecology (n=1, 2.63%), neurosurgery (n=1, 2.63%), orthopadic (n=1, 2.63%), urology (n=1, 2.63%) and CTVS (n=1,

2.63%).

## CONCLUSION

As per our study conducted at Ramkrishna Care hospital, Raipur, Result obtained suggests that the provisional diagnosis was made by the emergency physicians were mostly matched with final discharge diagnosis that was made by the concerned specialist doctors. This shows that the choice of treatment done in the ER were a prompt and accurate treatment. This has a positive effect on the prognosis, mortality and outcome in patients.

It also draws our attention for the need of improvement in diagnosing patients admitting to department of internal medicine as more errors were seen in patients admitted to the department of medicine. Taking adequate history of patients and a proper clinical evaluation by assessing primary and secondary survey is important to reach correct diagnosis in the ER. Early avability in blood reports during emergency stay will help as a better diagnostic interpretation of disease. It is evident from above study that more errors in diagnosing pediatric age were seen and it require to upgrade clinical skills of emergency physicians in diagnosing paidiatric age group.

### *Limitations of Study*

1. The Sample size was low.
2. The study was carried out in a tertiary care hospital, so hospital bias cannot be ruled out.
3. Single centric study.
4. Non unavailability of blood reports during emergency stay causing mismatched in provisional diagnosis vs final diagnosis.

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