



## Rapid Assessment and Treatment System in Western and Indian Hospitals

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### ABSTRACT

*In any multispecialty hospital an emergency department exists. Role of emergency department is crucial as patient in critical condition like patient suffering from heart attack, accident case are admitted. The role of this department is to admit the patient, stabilize his condition and either discharge him or transfer to Intensive cardiac care unit (ICCU) / Intensive care unit (ICU) / Ward. It is expected that this time from admission of patient to stabilize his health should be minimized. The time by which patient has to stay in emergency department for stabilization or to get his health stabilize is an important parameter governing the performance of ED. This paper is an attempt to study the procedure followed in emergency department in the super speciality hospital in central India and suggests improvement in it.*

**Keywords-**RAT, Emergency department, waiting time, critical patient, Intensivist

### INTRODUCTION

Every Multi specialty hospital or Government Hospital has emergency department where critical patients whose lives are under threat or accidental cases which requires prompt emergency treatment are admitted. Emergency department admits the patient and treats him till he gets out of danger and stabilizes. Then the patient is shifted to ICC/ Ward.

The emergency department is a core clinical unit of a hospital. Its function is to receive patients, conduct effective triage, stabilize and provide emergency management to patients who present with a wide variety of critical, urgent and semi urgent conditions. The emergency department also provides for proper reception and management of patients who are victims of a disaster occurs in that

region. The aspect of speed, accuracy and sympathy are important in the emergency department.

Emergency department has to give treatment for critical patients because time factor plays very important role to save the life of patient. Every minute decide the scope for life of the critical patient. Following are the objectives of emergency department

1. To start the treatment in between arrival of patient and stabilization of his health condition.
2. Time required to stabilize the patient should be minimum. And it governs the performance of of the emergency department and the hospital as a whole.

### Role of RAT in Foreign scenario

The Rapid Assessment Team (RAT) is a team of senior nursing and medical staff who work from the triage area and provide a rapid assessment of patients who present to the Emergency Department. This team consist a senior nurse and medical officer on all Early and Late shifts. Patients are referred to the RAT after they have booked in at triage. This team then performs a clinical assessment and commences treatment such as insertion of cannulaes, taking blood for pathology testing, sending clients for X-rays, ultrasounds or CT scans, and providing vital fluids and pain relief. The principle idea behind Rapid assessment team (RAT) is to provide a team of senior clinicians to assess and implement a prompt care plan for patients with major incidents. The intention is to make early senior decisions about patient care thus improving the quality of care and reducing the length of time in the ED.

Speciality of the RAT system is that senior medical practitioner executes the patient and starts the treatment. He is the first medical staff to check the patient immediately and start checking and gives treatment to stabilize the patient and other tests are carried later on after starting the treatment and treatment is modified after the test results if required. But most of the cases, the treatment is continued for the patient till he gets stabilised.

RAT characteristically includes the early assessment of 'serious' patients in ED, by a team led by a senior doctor, with the beginning of investigations and/or treatment to provide early senior assessment of undifferentiated 'serious' patients. The model already has been implemented by number of emergency departments in the foreign countries, with significant benefits to patient safety and satisfaction. This model is also help full for emergency department to achieve both it's 'time to assessment' and 'time to treatment' indicators.

This approach intentionally removes 'triage' and initial junior medical assessment from the patient pathway. Instead, the first doctor a patient sees is one who is able to make a capable initial assessment, define a care plan and make a decision

whether the patient requires admission or recommendation to an in taking specialist team. Nurses and junior doctors in the RAT team then execute the first stages of the care plan<sup>[1]</sup>

Grant S. et. al. introduced rapid assessment team consisting rapid assessment team doctor and triage nurse. Authors applied RAT for every category of patient irrespective of their severity and medically assessed the patients quickly prior to expiration of the waiting time appropriate to their National Triage Scale. RAT helped to reduce waiting time as a performance indicator, and length of stay of patient in emergency department.<sup>[2]</sup>

Choi Y.et.al. introduced Triage rapid initial assessment by doctor (TRIAD) which is a team triage system incorporating a three person team composes of a senior doctor, nurse, and healthcare assistant. TRIAD reduced waiting time and processing time by putting a senior emergency doctor in triage to screen patients and initiated prompt investigation and treatment. There was no additional staff provision. Trauma patients and patients needing radiography particularly benefited from this new system.<sup>[3]</sup>

Partovi S.et.al. introduced concept of faculty triage consisting an additional faculty member stationed at the triage desk and compared the performance with and without additional faculty member. Author carried comparison study measuring the impact of faculty triage verses no faculty triage on length of stay of patient in emergency department. Faculty triage improved ED efficiency in terms of decreased ED length of stay<sup>[4]</sup>

Author introduced RAT and showed significant positive impact on the quality of care, as the patient is assessed by the right healthcare professional, at the right time, in the right environment with prompt referral to speciality teams including medicine, psychiatry, surgery and any other services required. RAT has also improved the patient experience by reducing the anxiety for patients and relatives through quicker management of the patient's acute condition.<sup>[5]</sup>

In BWH's Emergency Department (ED "Rapid Assessment Team" is implemented with result of

decreasing wait time and length of stay in the department, while decompressing the ED. Likewise, an improved Triage System has further improved categorizing ED patients to make sure they efficiently receive appropriate and timely care. They identified those patients with life threatening problems and cared for them as soon as possible. That new system had helped them to identify the acutely ill patients and move them through the system more quickly, while eliminating some of the nursing variability in triage, making the triage process smoother. <sup>[6]</sup>

Cronin J.et. al. explored the concept of the Rapid Assessment and Initial Patient Treatment team (RAPT) within the Accident and Emergency (A&E) environment. Authors explained initial practical difficulties that were encountered during implementing the RAT. They described associated benefits for the RAPT approach including improved teamwork, better communication with the family, avoiding unnecessary duplication of work and discussed the benefits of having a direct referral process in place for emergency patients. <sup>[7]</sup>

Michael J.et.al. introduced rapid assessment zone(RAZ) and carried 14 446 potentially relevant studies and concluded that although the results were consistent for reducing patient waiting time, and low acuity patients were benefited the most from a RAZ. <sup>[8]</sup>

Imperato J. et. al. introduced additional attending physician in triage area who was assigned to triage from 1 p.m. to 9 p.m. daily. Result of introducing additional physician in triage improved median time to attending physician evaluation, median length of stay (LOS), number of patients who left without being seen (LWBS), and total time and number of days on ambulance diversion. <sup>[9]</sup>

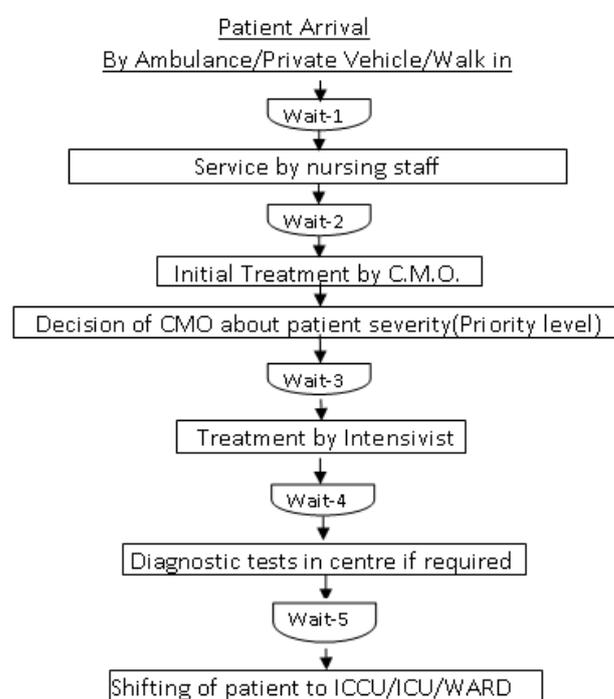
MacKenzie R.et.al. introduced rapid assessment unit [RAU] model, with built-in themes of “team triage” and “parallel evaluation and treatment,” which reduced crowding and significantly improve median ED Length of stay in emergency department. <sup>[10]</sup>

Patel P.et.al. designed and implemented an emergency department (ED) team assignment

system, each team consisting of 1 emergency physician, 2 nurses, and usually 1 technician. An emergency department (ED) team reduced time to physician assessment, a reduced percentage of patients who left without being seen, and improved patient satisfaction. <sup>[11]</sup>

### Role of RAT in Indian scenario

To understand the present working of emergency department, time study is carried in emergency departments of speciality hospitals in central India. Procedure carried out in emergency department is represented by patient flow diagram in casualty unit



**Patient flow diagram**

Wait-1 stands for waiting time for availability of ward boy, Wait-2 stands for time to start treatment by CMO. Wait-3 stands for waiting time for availability of Intensivist, Wait-4 stands for waiting time for availability for diagnostic tests, Wait-5 stands for waiting time for availability for bed in ICCU / ICU / Ward

Patients arrive either through ambulance or vehicle, is shifted on stretcher and then shifted to bed in Emergency department. Senior Nursing staff measure the Blood Pressure, oxygen level, pulses of the patient. Casualty medical officer checks the patient health status and starts initial treatment. If

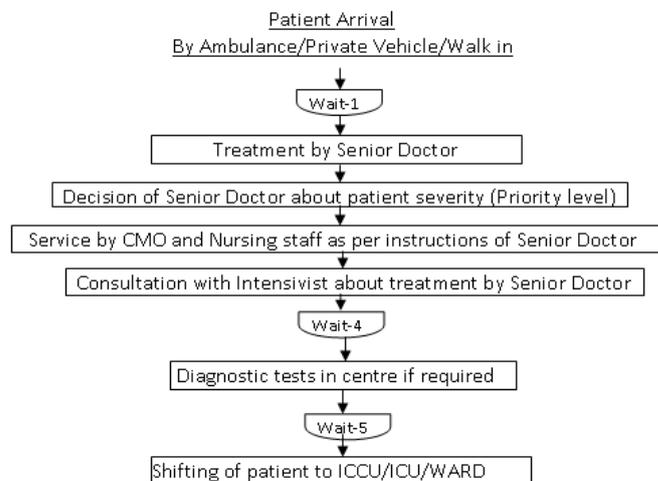
patient is serious, CMO contacts Intensivist and tells him health condition of patient telephonically. As the Intensivist can not be available immediately, patient has to stay for the Intensivist for some minutes. After some time Intensivist arrives and start the treatment of patient. If the diagnostic procedure is required, patient has to shift to Diagnostic centre. But if Diagnostic centre is already busy, patient has to stay in emergency department. After some time patient is shifted to diagnostic procedure. After completion of diagnostic tests, patient is shifted to ICCU/ICU/WARD if bed is available. If bed is not available patient is again shifted to Emergency department. After availability of bed patient is shifted to ICU/ICCU/WARD.

It is observed that in the Indian hospitals, treatment is started initially by CMO and nursing staff. There are chances that treatment may not be accurate. The treatment will have to be modified by the Intensivist and the chances of recovery of patient are deteriorated, if initial treatment is not correct. It is proposed here that the modified RAT system can be applied by hospitals by deputing senior doctor who will check the patient and start the treatment and stabilize the patient which can be called as Rapid Assessment and Treatment model(RAAT).

For developing the RAAT model author studied literature review representing other systems used elsewhere in the foreign countries, and used their research to tailor a model by analysing present working of emergency department in India. The rapid assessment and treatment system consists of the senior doctor with casualty medical officer and senior nursing staff which are already available in emergency department. The rapid assessment and treatment system ensures fast treatment to patient specially having life threatening health status by reducing steps of assessing and treatment of casualty medical officer.

Author proposes the introduction of Rapid Assessment and Treatment model (RAAT) for such critical patients. RAAT directly eliminates the non-value added activity. Researcher is confident that after inducting senior doctor with vast experience,

he can give treatment immediately after patient. It helps to save the life of the patient. Assessment by senior doctor without waiting will help the critical patient more



**Modified patient flow diagram**

Modified patient flow diagram represents impact of RAAT in emergency Department. RAAT reduces the steps in patient flow diagram. These steps earlier consume some minutes. By avoiding these steps time can be reduced. Patient can directly treated by senior doctor and treatment can be started immediately. Previous steps including service by nursing staff and initial treatment by CMO are going to be omitted. Waiting time that is Wait -2 and Wait-3 are also omitted. Both service time and waiting time are reduced. Critical patients are directly treated by senior doctor and necessary treatment is going to be started immediately without waiting time.

Performance of Rapid Assessment and Treatment model (RAAT) includes Early Medical Assessment, Urgent treatment with study of vital signs, early recording of patient's history with initial complaint, Analgesic requirements, ordering relevant investigations

Proposed Advantages of this approach includes Critical treatments and investigations are initiated at early stage, the clinical risk associated with waiting for Intensivist treatment is reduced, Diagnostic decisions can be taken quickly at early stage, Value-adding steps in the patient journey are commenced earlier, Unnecessary investigations and tests are

reduced due to early senior clinician input, Patients for admission are identified earlier and can leave the department more quickly. Length of stay of patient in emergency department gets reduced.

Disadvantages of this approach may include increase in cost of human resource (Senior Doctor)

### Suggestions and recommendation

Present literature stated the importance of Rapid assessment team for not only reducing patient waiting time but patient satisfaction also. Proposed Rapid Assessment and Treatment model(RAAT) concept will definitely reduces Intensivist waiting time and risk of deteriorating health condition of critical patient. Introduction of RAAT will decrease the time to start the treatment after patient arrival in casualty department. Early diagnosis will lead faster improvements in health condition of critical patient. As per Indian system there is no need to increase number of nursing staff as compare to RAT concept in foreign countries. Present nursing staff and CMO will be under the supervision of senior doctor. Only introducing senior doctor in emergency department will definitely reduce all service time as well as patient waiting time.

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