

# Practice and effect of establishing emergency trauma team in county-level hospitals

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**Abstract:** In order to effectively improve the quality of medical services, further ensure the safety of patients and strengthen the management of the hospital, the hospital has set up an in hospital trauma team. After constant time, the responsibilities, work contents and tasks of the team have been determined. The professional ability and quality management awareness of the trauma personnel have been trained to promote their professional ability and ability to solve emergencies. It makes the treatment of trauma patients more standardized and further improves the overall satisfaction of the hospital. This paper reviewed the literature on the practice and effectiveness of establishing emergency trauma teams in county-level hospitals, and summarized and reported as follows.

**Keywords:** County-level hospital; Emergency trauma team; Practice and effectiveness

## 1. Introduction

The emergency trauma team is mainly responsible for intervening in time when the patient's condition occurs, and ensures that the green channel is opened for the patient under emergency condition. Reasonable organization and scientific use of the current resources in the process of treating the patient to fully play the advantages of the multidisciplinary team and improve the success rate of treatment. Since the establishment of the emergency trauma team, our hospital has developed scientific emergency strategies and achieved the results of rapid response, unified management and combination of medical care <sup>[1,2]</sup>. In the face of emergencies, scientific and reasonable treatment is carried out for patients with the shortest event to ensure the effect of treatment and reduce the probability of death <sup>[3,4]</sup>.

## 2. Composition of personnel

In recent years, the concept of the "time window" of trauma first aid has been widely accepted. "Golden time" is the key intervention order of trauma treatment, general acceptance, section. Although the first aid technology of trauma in China is developing rapidly in China, most of them still implement the situation of emergency department triage, surgeon operation and critical care discipline supervision. Lead to the clinical work coordination and mutual cooperation is obscure, so that the treatment effect is not satisfactory. The "trauma team" is composed of multiple professional physicians, responsible for emergency resuscitation of severe trauma patients, emergency ICU monitoring, definitive surgery after stabilization, and even early direct rehabilitation and reconstruction. An efficient trauma team is usually equipped with emergency department division seal anesthesiologists, team leaders and orthopaedic surgeons, with some foreign hospitals even equipped with radiologists, neurosurgeons and intensivists. Must emphasize is that the responsibility of the team leader, is the trauma team can run efficiently the most important guarantee, although the clinical professional senior personnel can be, but in view of the characteristics of severe trauma can cause massive bleeding, shock, asphyxia, and consciousness disorders and so on fatal signs, team leader must have the overall concept of treatment and timely according to trauma patients some important symptoms, signs, physiological parameters, individualized assessment, the severity of trauma patients, mobilize the team, coordination team, to quickly correct treatment. At present, the practice of major foreign hospitals shows that senior emergency doctors are the best choice to serve as team leaders. Next, Due to acute airway damage from severe trauma and respiratory assessment and management status, Team members must have a physician who very skillfully manages the airway, With a trained emergency physician or anesthesiologist, The member was also required to be able not only to skillfully manage the airway, but also to timely identify and

manage the body's acute access to collect bleeding and oral surgery, Find problems timely and immediately communicate them to team leaders and other team members, Therefore, his importance is often second only to the team leader to ensure the efficient operation of the team, including the team doctor star provides early continuity of medical care to patients, the handover between multiple teams and location shifts, The handover list and so on, The importance of the handover list must be emphasized, Because it can improve the critical safe transition of pre-measures and critical transit, If the patient is transferred to the computed tomography (CT) chamber for scanning, Operating room or to provide emergency care. Therefore, the team must be efficient efficiently, and the early treatment of severe trauma is extremely challenging for the ability of team members. Setting up communication and reporting mechanisms in the team, and obtaining and sharing this information is extremely important to help the team work efficiently and smooth the treatment process.

The established emergency trauma team mainly consists of 2 chief resident physicians of internal medicine, 2 chief resident nurses, 1 chief surgeon, 1 head nurse on duty, 1 surgical anesthesiologist, 1 B-ultrasound room physician, and 1 radiologist. The selected chief resident of medicine and surgery, determined by the Medical Department, should be a senior resident with more than 5 years of service and have passed the second-stage physician training. The chief nurse needs to have worked in the front line for more than 5 years, have the relevant practicing certificate, cannot be more than 26 years old, and have a college degree or above, and should be determined by the nursing department. B-ultrasound, radiology, anesthesiology physicians need to work alone for more than 5 years and have certain experience. All personnel need to have high professional quality, strong working ability, dedication, quick response, and strong communication ability.

### 3. Team responsibilities

By nursing and medical department formulate responsibilities, put forward the conditions, within the scope of the partial selection of comprehensive knowledge, skills of doctors and nurses as hospital chief nurse division and chief physician and appointed through examination, for half a year, 24 h on-the-job guidance on duty system, arrange 1 doctors and nurses every day, MET, to partial clinical department staff play a check the weak link.(1) Qualifications: College degree or above for inpatient chief nurse: Clinical medical staff with bachelor degree or above, nurse or physician qualification, more than 5 years of clinical work experience, and complete the rotation of clinical department.(2) Requirements: noble medical ethics, outstanding ability, good psychological quality, strong interpersonal, communication and coordination skills, rich professional theoretical knowledge, comprehensive professional skills, certain management ability, exploration spirit and excellent scientific research quality, serious and responsible for work, dedication.(3) Personnel training: personnel rotate in emergency department, MICU, PICU and SICU, learn commonly used first aid techniques, the use of various instruments and the process and treatment of emergency plan.(4) Duty requirements: there is a duty lounge, the chief resident physician and the inpatient chief nurse have a unified mobile phone equipped by the hospital to ensure on call, and arrive at the scene within 5min after receiving the call.(5) job content: daytime literature to complete related scientific research work, enrich their professional knowledge, at the same time responsible for the emergency treatment, after receiving notice and emergency patients with the least time to the destination, and medical staff to evaluate the patient, at the same time set scientific detailed treatment plan<sup>[2, 5]</sup>. In the face of emergency treatment, give quick and reasonable judgment, arrange and direct the relevant resources of emergency treatment, arrange the rescue equipment, adjust the equipment, ensure the reasonable allocation of manpower and material resources, and ensure that the rescue work can be carried out smoothly.

### 4. Management form

The emergency trauma team is managed by the resident director, the medical department and the nursing department. The important members of the team are the chief resident physician and the chief resident nurse, who are oriented to the leading group. The emergency trauma team is a form for the hospital to solve critical patients, but its personnel are not fixed. After this mechanism is opened, the medical staff on duty in relevant departments and the staff in all departments can be transferred according to the patient's condition, and all can be used as team personnel<sup>[6-8]</sup>.

## **5. The role of the emergency trauma team**

### ***5.1 Enhanced specialized knowledge and emergency response ability of the trauma team***

According to the development of specialized team, our hospital has set up the development form of multi-specialty trauma cooperation and formulated relevant norms, procedures and standards, thus contributing to an all-dimensional, multi-level and multi-functional trauma team. Before the establishment of the trauma management team, the emergency work in our hospital was complicated and difficult, and there was no clear division of labor, and the emergency staff lacked the knowledge of first aid for trauma patients. After the establishment of the trauma management team, relevant personnel were trained and assessed in aspects of specialized knowledge, process, quality, risk management, communication methods, etc., which promoted the professional level of team members and enabled them to further strengthen the management of their own work content by using their learned knowledge and skills<sup>[9, 10]</sup>. Through several years of development, the knowledge level and management ability of the trauma management team members in our hospital have been improved, which has laid a foundation for improving the quality of emergency medical treatment and nursing, and provided more comprehensive emergency services for trauma patients. Meanwhile, the comprehensive ability of the trauma team, including the disposal ability, teamwork ability, emergency response ability, practical ability and professional quality, has been improved<sup>[11]</sup>. Regular group meetings: the medical director in charge holds a monthly working meeting of the emergency team to discuss the problems and medical safety risks found in the hospital in the process of implementing the emergency team, communicate the information and experience of night shift, improve work skills and increase work confidence.

### ***5.2 The quality of trauma team personnel has been improved***

The trauma team members are the main personnel of trauma treatment in the hospital. They carry out specialized training for the personnel in other township hospitals, choose different forms to teach, analyze and discuss difficult cases, discuss adverse events of medical treatment, first aid and nursing, learn from and communicate with each other, so as to further improve the communication, emergency treatment and teaching abilities of the team members<sup>[12]</sup>. The knowledge level and skills of emergency trauma team members have been improved, their specialized knowledge has been further strengthened, and the overall quality of team members has been further improved.

### ***5.3 The treatment of trauma patients is more specialized, which has improved hospital satisfaction***

In order to improve the professional ability of trauma team members, they accepted scientific and comprehensive training with theoretical teaching, specialized operational ability training, and trauma patient treatment simulation exercise<sup>[13]</sup>. Strengthening the training of trauma management team can further improve the behavior of team members, promote the treatment of trauma patients to be more professional, promote the efficiency of hospital work and medical work, encourage more patients to come to the hospital for treatment, and promote the sustainable development of the hospital.

### ***5.4 Increased the enthusiasm of the trauma team***

Personnel in the emergency trauma team should go to the hospitals of municipal and provincial level for learning and communication, and receive the personnel from municipal hospitals for observation and learning. The risk management experience of the trauma management team has been recognized by hospital leaders, related personnel of the department, municipal nursing management personnel, patients and their families, which improves the sense of work achievement of trauma team members and further stimulates the work enthusiasm of them<sup>[14]</sup>.

## **6. Seamless integrated trauma first aid mode**

(1) Inter-group first aid management network: clinically experienced medical staff from various departments of the hospital are selected to set up a first aid team, clearly divide the responsibilities of each medical staff, and implement rescue work around the emergency department. Set up and improve the first aid management network system, improve the operating room, emergency room, ambulance and medical personnel needed for first aid. Communicate with the 120 command system, and set up a

forecast information system to dynamically track the condition of the ambulance in real time, and regularly feedback the location of the ambulance and the condition of the patient to the emergency department of the hospital. Then, the emergency department of the hospital will make the rescue plan and preparation according to the information system.

(2) Pre-admission rescue: The medical staff accompanying the pre-hospital rescue should quickly and accurately evaluate the condition, and timely respond the actual situation of the patient to the emergency department of the hospital. Establish venous access to maintain circulatory effectiveness. For patients with traumatic shock, normal saline should be given appropriately according to their actual conditions to meet the basic physiological needs of the patients, and plasma or low molecular dextran should be given to maintain the colloidal osmotic pressure. Closely observe the wound condition to reduce the possibility of infection and bleeding, and minimize movement. Before admission, it is necessary to synchronize the hospital emergency plan to shorten the hospital rescue time.

(3) Hospital emergency department rescue: after the patient is admitted, the rescue is carried out in time, and the division of labor is clear among the medical staff to ensure the smooth first aid work. The first aid team members are divided into 4 groups: 1 circulatory support group: responsible for establishing venous access, chest compression, drug administration, etc.; 2 group of airway support: responsible for sputum suction, endotracheal intubation and mechanical ventilation; 3 physical sign indicator group: responsible for monitoring the vital signs of patients, recording the wound bleeding condition and dressing; 4 Contact group: responsible for comforting family members and contacting other departments. During the implementation of rescue, the overall condition of the patient was evaluated, and each group worked together.

(4) emergency department and related departments: severe trauma in the emergency department after CT, B super, X-ray examination, need to transfer its other departments for corresponding treatment, open the referral each alleviate green pathway, shorten the examination time, before referral, need to inform the basic information about the treatment of patients, emergency materials and corresponding measures, patients directly to the operating room, simplify the referral process between departments and departments.

(5) Monitor the vital signs of the patient during the transport process and support them: transfer the patient, carry the required emergency drugs and instruments, and deal with the patient's injuries within the capacity, and prepare enough first aid supplies and drugs. Closely observe the physical signs and handle them in time.

## 7. Conclusions

In a word, for trauma patients, time is life, and the treatment time must be minimized. After adopting the trauma team mode, team members communicate with each other, divide their labor and cooperate tacit. First nurses to speed up the arrival of time, timely use of patients with suspected spinal injury and spine plate, for bleeding more patients use regular hemostatic drugs for hemostasis as soon as possible, quickly do blood routine identification and blood type to timely for patients with blood transfusion, timely give compound temperature treatment, for patients with low temperature and patients quickly reach CT examination consensus for the first time, the members play their own advantages, make nursing aging greatly improved. The service principle of the emergency trauma team is to focus on patients, and provide comprehensive, meticulous and high-quality emergency services for trauma patients. The personnel in the group cooperate with each other to determine the responsibilities. The personnel in the group belong to the executor of the work, and also as the implementation of the management work, establishing an integrated service mechanism for the treatment of trauma patients. Through scientific theoretical training, continuing education and skill training, the team members can improve their theoretical knowledge level, and at the same time, they have a strong practical ability to promote the improved quality of treatment for trauma patients.

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