

Medical Rescue of China International Search & Rescue Team (CISAR) in Nepal Earthquake

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ABSTRACT

On April 25, 2015, a massive 8.1-magnitude earthquake struck Nepal at 2:11 pm (Beijing time). The 68-member-strong China International Search & Rescue Team (CISAR) left for Nepal at 6 am, April 26, to help with relief work. The CISAR was the first foreign team to rescue a survivor who was trapped beneath the rubble in the Gongabu area after the earthquake. On May 8, the team fulfilled the search-and-rescue mission and returned to Beijing. During the 2 weeks of rescue work, the team treated more than 3700 victims and cleared approximately 430 buildings. In this rescue mission, 10 experienced medical officers (including nine doctors and a nurse) from the General Hospital of Chinese People's Armed Police Force (PAP) comprised the medical team of CISAR. In this report, we focus on the medical rescues by CISAR and discuss the characteristics of the medical rescue in Nepal. (*Disaster Med Public Health Preparedness*. 2018;12:536-538)

Key Words: CISAR, earthquake, medical rescue, disaster medicine

The China International Search & Rescue Team (CISAR) was founded on April 27, 2001, and consists of 480 people, including administrators and technical experts from the China Seismological Bureau, the 38th division of the military search and rescue corps, and medical teams from the General Hospital of PAP.¹ Its major task is to perform emergency search and rescue missions for people who are buried beneath rubble or collapsed buildings after earthquakes or similar disasters. CISAR is equipped with more than 20 search dogs and more than 20 000 pieces of search-and-rescue equipment in over 300 varieties and 8 categories. It is divided into 3 branches and 1 directly commanded team. Each branch consists of 5 units: a search unit, rescue unit, medical unit, technical unit, and insurance unit. The directly commanded team consists of the staff group, technical group, and insurance group. In November 2009, CISAR was recognized as a high-level international rescue team, becoming the 12th high-level team in the world and the second in Asia. As of April 26, 2015, CISAR had successfully rescued 63 survivors and provided medical treatment for over 40 000 people during 12 international aid missions, including the Algeria earthquake (2003), Indonesia tsunami (2004), Pakistan earthquake (2005), Haiti earthquake (2010), Japan earthquake (2011), and so on.^{2,3}

OVERVIEW OF THE RELIEF WORK OF CISAR IN NEPAL

The 68-member team—which consisted of 40 rescuers, 10 medical workers, 12 seismic experts, and 6 sniffer

dogs—brought the required equipment when they arrived in the Nepalese capital at noon on Sunday. The team also brought some emergency relief materials for the country, including tents, blankets, and power generators.

The first command meeting occurred on the airplane bound for Nepal and involved the formulation of a rescue plan based on the most recent information from the disaster area. Finally, the team chose the northwest of Katmandu for the search-and-rescue work because this area was the most heavily affected by the earthquake. When the team arrived at the Nepal airport, we connected with the Nepal government through the Reception and Departure Centre (RDC) of United Nations Office for the Coordination of Humanitarian Affairs (OCHA).⁴ The local government encouraged our rescue work at Balaju, which was located northwest of Katmandu. This recommendation was consistent with our previous rescue plan.

At 5:38 pm on April 26, the first trapped person, a 16-year-old boy, was saved after more than 4 hours of rescue efforts. A 21-year-old Nepali man under a load-bearing wall at the bottom of a 7-story collapsed building became the second survivor rescued by the Chinese rescuers after 34 hours of rescue work.⁵ According to the official report, the team treated more than 3700 victims and cleared approximately 430 buildings.

As the first international rescue team in the disaster areas with heavy equipment, CISAR assisted the arriving follow-up rescue teams and incorporated

CISAR's rescue work into the local disaster information. Every morning, CISAR's liaison officer would attend the On-Site Operations Coordination Centre (OSCCO)⁴ meeting to determine the joint rescue works of the day. Moreover, CISAR helped local emergency management authority (LEMA) coordinate with rescue teams from China and other countries, which ensured that these rescue teams would perform rescue work in the most needed areas.

MEDICAL RESCUE OF THE CISAR MEDICAL TEAM IN NEPAL

At 10:30 pm on April 25, the General Hospital of PAP received an order from the China Seismological Bureau to immediately send 10 experienced medical officers (9 doctors and a nurse) to form the CISAR medical team. The rescue team's medical officers consisted of medical specialists from the departments of emergency medicine, general surgery, gastroenterology, ultrasonic diagnosis, pharmacy, clinical laboratory, and nursing care. All of the members had previously participated in major disaster rescue missions, both domestic and overseas, had rich experiences in disaster rescue, and could communicate with others in English freely and fluently.

The medical team carried 52 pieces of medical equipment and multiple types of first-aid drugs to the disaster area, with a total value of 5.62 million CNY (Chinese Yuan) (including the second batch of drugs, which was worth 62 million Yuan,

sent from China on May 1). The team performed medical rescue work from the following aspects: (1) conduct emergency medical treatment at the ruins, (2) provide health care for CISAR members, (3) establish a mobile hospital and make rounds of medical visits, and (4) carry out epidemic prevention and health education. The medical rescue work lasted for 13 days, during which 7481 victims were evaluated, and 3750 sick and wounded people received medical treatment (Figure 1). More than 1.6 million Yuan worth of medical supplies and pharmaceutical drugs were sent out, and an area of 170 700 m² was disinfected. The medical team also donated 1.12 million Yuan worth of drugs and medical materials to the people in the disaster area. The CISAR medical team successfully completed the medical rescue mission, and returned home safely at 8:00 pm on May 8.

CHARACTERISTICS AND EXPERIENCES OF THIS MEDICAL RESCUE MISSION

(1) Use of Medical Guidance Promoted Rescue Activities

CISAR gained an abundance of lifesaving experiences from the earthquake ruins. The medical team was equipped with multiple medical modules for treating fracture injury, head trauma, and crush injuries. With the tight combination of medical and search-and-rescue operations, the largest number of survivors was saved. This was the highest-risk operation ever performed, which made the on-site emergency medical treatment very difficult and lengthened the average rescue time for every single survivor.

FIGURE 1

Medical Rescue of CISAR in Nepal.



(A) Cooperation with the local police. (B) Search for victims in building collapse. (C) Treating a girl with a foot injury in the tent hospital. (D) Making a round of visits at the tent village.

The most challenging problem was how to encourage a strong desire to live and maintain the basic vital signs in survivors after 34 hours of continuous search-and-rescue activities. However, despite these many difficulties and through unremitting efforts, we successfully rescued a survivor who had been trapped under the rubble for 62 hours.

(2) Medical Treatment in a Variety of Forms and Wide Coverage Had a Good Curative Effect and Saved Many Survivors

In the epicenter “rescue island” that was established with the China-Russia, China-Malaysia, China-Turkey joint rescue team, a mobile hospital was built on Durbar Square, where doctors made their rounds to “tent town,” shelters, military camps, remote valleys, orphanages, the homes of victims, Chinese institutions, and overseas Chinese people, which formed a diversified, all-around, multi-dimension medical rescue mode. The mode effectively treated more than 30 severe and common diseases, including severe trauma, heart disease with diabetes, pulmonary heart disease, hemorrhage of the digestive tract, acute gastroenteritis, upper respiratory infection, skin disease, and rheumatic arthritis. A total of 7481 patients were treated, and all had good therapeutic outcomes, which won high praise from the Nepalese government, disaster victims, officers, and soldiers in residence.

(3) Specification, Precision, and Epidemic Prevention

The medical team held the “Three Passes” of infectious diseases spread according to the physioclimate and custom of Nepal, and performed targeted epidemic prevention and education, the fecal-oral route of transmission was cut-off by purifying water, educating residents about hand washing, thus preventing intestinal infectious disease. Multi-frequency and large-scale disinfection was also performed for the camp site, with the total area reaching 170 700 m², which effectively blocked the insect-borne route of transmission. In addition, wind medicated oil and qingliang oil—2 types of Chinese traditional medicine that can repel insects, relieve itching, and avoid heat stroke—were delivered extensively to people in the disaster area. Isatis root—a kind of Chinese traditional medicine that can enhance immunity and prevent flu virus—and disposable mouth masks to effectively control the spread of infectious disease via the respiratory pathway were provided. Based on previous experiences, our medical team creatively proposed the slogan “two wear, three spray, and two soak,” a reminder of strict instructions to wear disposable masks and double gloves; spray the camp, clothing, and harness; and soak the hands and rescue boots. This practice strongly maintained the lifelines of health and safety, and achieving the goal of “zero infection.”

(4) Dig Identify the Greatest Potential for Creatively, Enlarge the Range of the Medical Security

In this mission, the General Hospital of PAP medical team offered provided strong medical security for CISAR.

At the same time, the medical team also undertook health care tasks for Kathmandu defense division and the French, Spanish, and the Blue Sky rescue teams. The team fully carried forward the international humanitarian spirit and was praised as an “excellent rescue team and outstanding doctor” by the multinational rescue crew.

Nepal is a landlocked country. Kathmandu, the capital of Nepal, is also surrounded by four major hills: Shivapuri, Phulchoki, Nagarjun, and Chandragiri. Many roads were blocked after the earthquake, and there was rubble and landslides, making the rescue and relief work very difficult. CISAR has participated in multiple rescue missions over the past decade. Different types of difficulties and challenges were encountered in each rescue mission. The challenges that CISAR faced were great, but they also help CISAR create higher standards for relief work and disaster preparedness in subsequent missions.

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