



TOP NEWS

'Vision Van' helps eye doctors respond after natural disasters

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By Kathryn Doyle

NEW YORK (Reuters Health) - Eye doctors in Japan used a clinic-on-wheels to provide eye exams to earthquake survivors in 2011. Now, they have published a study showing what people in disaster areas needed most: glasses.

The doctors were prepared to treat a large number of eye infections due to contaminated water in the aftermath of the earthquake and tsunami. But in fact, what people needed most were replacements for lost eyeglasses, contact lenses or eye drops.

The Great East Japan Earthquake hit off the coast of Tohoku, Japan, in March of 2011. The magnitude 9.0 earthquake was the largest to ever hit the country. It caused a massive tsunami, which traveled up to six miles inland, according to the BBC.

The earthquake resulted in more than 15,000 confirmed deaths, most due to drowning, according to the National Police Agency of Japan, in addition to radioactive leakages at Fukushima Daiichi and Daini nuclear power plants.

Most eye care clinics in the Miyagi prefecture were damaged so badly that they could not be used. With infrastructure severely damaged, doctors from outside the disaster area had to travel to the region in their own cars bringing equipment they were able to carry themselves, said Dr. Hiroshi Kunikata, one of the authors of the new report in *JAMA Ophthalmology*.

Kunikata is an ophthalmologist at the Graduate School of Medicine at Tohoku University in Sendai, Japan.

After a month of this inefficient system, doctors from Tohoku University and the Miyagi Ophthalmologists Association and trained volunteers were able to travel around the area of devastation in the customized Mission Vision Van, a large bus outfitted with all the key equipment required to perform general

ophthalmologic examinations.

In the new paper, doctors report on the treatment they administered between April 15 and May 29, 2011.

Over 15 clinic days, the van visited 11 emergency districts and delivered treatment to 731 patients.

Only eight percent of their diagnoses were infectious diseases, like conjunctivitis. Most commonly, doctors diagnosed refractive disorders - like nearsightedness, farsightedness or astigmatism - as well as cataracts and dry eye. These would not have been caused by the earthquake or tsunami.

Doctors and volunteers handed out emergency prescriptions for more than 800 bottles of eye drops for conditions like dry eye, cataracts or glaucoma.

“One of the key effects of the 2011 disaster in Tohoku was to deprive survivors of eyeglasses, contact lenses and medications for chronic eye diseases,” Kunikata told Reuters Health by email.

“In some cases, this placed a severe burden on these survivors, in addition to the burdens already faced by all those who lived through the disaster, not only in the immediate aftermath of the disaster, but during the days, weeks and months that followed, while they waited for outside assistance,” he said.

The authors recommend that in the future, mobile emergency eye clinics have an auto lens edger and a large supply of medication on board.

“We found that a properly equipped mobile clinic was an indispensable way of ensuring that survivors of this disaster did not face additional hardships due to the simple loss of glasses or medicine,” Kunikata said. “Thus, we believe that mobile eye care vans will be of the greatest importance in future natural disasters.”

The Mission Vision Van used in the study, one of at least three such vans in the U.S. and which was assembled to aid in recovery after Hurricane Katrina in 2005, was airlifted from the Bascom Palmer Eye Institute of the University of Miami Miller School of Medicine to Sendai. It made the trip thanks to the friendship between Dr. Kazuo Tsubota of Keio University in Tokyo and Dr. Eduardo C. Alfonso, director of the Bascom Palmer Eye Institute.

“Eddie is my good friend; we did a fellowship together 25 years ago at Harvard,”

Tsubota told Reuters Health. “I called him because we had an emergency, and he had seen already the tragedy of the tsunami on TV.”

It would have cost \$1.6 million to transport the van to Japan, but Russia’s Volga Shipping Company agreed to make the trip free of charge.

The relief efforts in Japan went so well that the Japanese government presented the Miyagi Ophthalmologists Association with its own Japanese Vision Van in 2013.

The Japanese version is smaller and, unlike the American version, conforms to Japan’s lower emissions standards, Tsubota said.

The Japanese Vision Van has been used in Japan and in the Philippines following a typhoon in November of 2013, Kunikata said, and would also be of great use in many other kinds of large-scale disasters.

“I think the medical van in general is an excellent idea for disaster relief, particularly if the team has to cover a large area, like the (Great East Japan Earthquake) and Tsunami,” said Dr. Shun Kohsaka of the cardiology department at Keio University in Tokyo.

Kohsaka was part of a primary care relief team in Japan after the earthquake in 2011 and also published on the subject in Archives of Internal Medicine (now JAMA Internal Medicine) in 2012, but was not part of the new research team.

“We also had an ophthalmologist in our team and were surprised that so many patients needed his care, both for their refill of their usual medications and urgent trauma care,” Kohsaka told Reuters Health by email. “Our team was assigned to a station at one of the satellite clinics but having a mobile van would have probably helped us more.”

The Vision Vans are highly specialized to provide eye care and cannot be converted for other uses, but the idea of converting vans for other types of emergency care has great potential, Kunikata said.

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