

Transportation Systems

Better Accessibility to Medical Services

If only medical personnel had gotten to the patient sooner, if only medical care had been administered sooner, a life might have been saved. At the scene of a medical emergency, where help is urgently needed, time is the enemy.

Recent years have brought a constant stream of amazing advances in medical technology and modes of transportation. For example, urban areas in developed countries are seeing an increase in the number of hospitals with a full array of leading-edge medical equipment and facilities. But what about “medically underserved areas” that have no medical center or where medical help is not easily accessible? You might think this is a situation common only to emerging nations, but in fact it is a serious problem that occurs in developed countries, too.

To knock down those walls of distance and time, and enable sufficient access to medical care in any location, helicopters are increasingly being used to expedite emergency medical services (EMS). According to a report * regarding injuries sustained in traffic accidents, a 40% decrease in mortality was expected when EMS helicopters were deployed, compared with situations that assumed no EMS helicopters had been deployed. The results also indicated that expedited medical attention allowed 1.6 times more people to return to normal life after the accident.

The Kawasaki BK117 C-2 helicopter, our newest model, offers a spacious cabin area, reflecting comments from doctors, nurses, and clinical sites, and rear doors that open wide to facilitate quick transfer of patients in and out of the helicopter. Not only does this model feature all the necessary medical equipment, changes made to the helicopter body itself contribute to reduced noise and other improvements. In addition, if an overland route to a medical emergency would take too long or is impassable due to a catastrophe, an EMS helicopter ensures access.



Kawasaki BK117 C-2 helicopter

-40%



We aim to solve medical access problems through transportation systems, and contribute to a society in which complete medical care is available to everyone. KHI will continue to address medical scene issues with technological expertise, based on the concept “Powering your potential”—the promise behind the Kawasaki brand that seeks to open up possibilities for customers and communities through diverse technology-driven solutions.

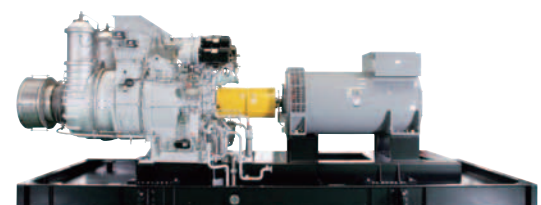
* Source: “Analysis of Actual Situations of EMS Helicopter Systems,” funded research by the Ministry of Health, Labour and Welfare, March 2006

Energy & Environmental Engineering

Stable Supply of Power to Medical Sites

People are so accustomed nowadays to having ready access to electricity that when the power goes out, everything comes to a standstill. Consider the events of the Great East Japan Earthquake. The associated disasters impacted power-generating capacity in the region and had serious consequences on many fronts, from rolling blackouts to restrictions on power consumption. Disruption of power may invite problems beyond damage caused by a disaster. What would happen if the power goes out while doctors are performing surgery and the operating room is plunged into pitch-black darkness? And how would fire-fighting equipment, such as fire extinguishing devices, sprinklers, indoor hydrant systems and smoke exhaust fans, work without electricity? Nearly all such equipment is powered by electricity, making a stable supply of power vitally important to ensure that facilities operate normally in any situation no matter how unlikely a failure scenario may be.

Guided by the corporate slogan “Powering your potential,” KHI seeks to contribute to society through technology. As part of this approach, we offer the Kawasaki PU Series of gas turbine emergency generators, which are vital components of power supply systems that can be counted upon to operate reliably even in times of crisis. The series comprises 21 types of emergency generators with capacities ranging from 150kVA to 6,000kVA to match energy requirements at each installation. Another advantage of this series is ease of operation and maintenance, and it can be installed both indoors and outdoors. In designing this series, KHI also gave consideration to reduced exhaust emissions so that the generators will fit nicely into environmental protection initiatives as well. Maintenance and management of the equipment have little impact at the standby site or to the surrounding environment. More than 7,000 generators in the Kawasaki PU Series have been delivered to date, and we are ready for when demand jumps anywhere in the world.



Gas turbine emergency generators “Kawasaki PU Series”

365 days



Emergency generators are the unsung heroes of power supply at hospitals and other medical treatment facilities. They do not take center stage but rather, from the shadows, ensure that medical facilities remain safe and secure. Medical staff and patients always have peace of mind with our generators standing by to provide stable power supply in any situation no matter how unlikely the scenario might be. Our generators also support the realization of a society in which no one need to worry about being left in the dark—quite literally—even in times of disaster. Our efforts are never-ending because it is our enduring mission to make power readily available at all times.

Industrial Equipment

Striving for Zero Risk in Pharmaceutical and Medical Services

Research into advanced medical treatment is constantly yielding new therapies and remedies. But even today, with the latest that modern medicine has to offer, many diseases remain difficult to cure because their causes have yet to be identified. Great leaps forward are expected in drug discovery, which yields new pharmaceuticals, and from such fields as regenerative medicine, which enables the body to repair, replace, restore and regenerate damaged or diseased cells, tissues and organs. Meanwhile, hospitals and other facilities providing healthcare services await practical access to medical-use robots, which have the potential to save more lives through early detection of illness, reduce the physical burden that currently accompanies surgery and courses of drug therapy through minimally invasive treatment to promote a quicker recovery, and support medical personnel.

KHI seeks to acquire the ability to open up new possibilities for customers and communities through diverse technology-based solutions. Just what do we have at KHI to promote growth in the areas of pharmaceuticals and medicine? Well, we developed a robot for drug dispensing and manufacturing by applying the experience and expertise we had accumulated in automating operations at production sites making a variety of products. Designed to have a flat, smooth surface and excellent chemical resistance, this robot contributes to faster operation and improved work environments. In addition, this robot essentially eliminates the risk of human error and bacterial contamination in operation.

In other pursuits, we have been exploring possible applications of various core proprietary technologies, mainly in robotics and plant and infrastructure construction, for use in the pharmaceutical and medical fields. We devised an automated cell culture system for cultivating such cells as induced pluripotent stem (iPS) cells.* The system will contribute to an environment conducive to safe and stable culturing of human cells for practical use in regenerative medicine.

We also invested equally with Sysmex Corporation to establish Medicaroid Corporation, a marketing company covering the development, manufacture and sale of medical-use robots.

*Using results realized through a project supported by the New Energy and Industrial Technology Development Organization (NEDO)



Pharmaceutical- and medical-use robot

Toward Zero



Society is graying, but as the population ages, everyone—patients, people who work in the medical field, and patients' families—will live comfortably and have access to good healthcare. That is our view of the future, supported by expectations heralded by advances in robots for use in developing new drugs, facilitating regenerative medicine and providing medical treatment to save more lives.

We will continue to refine our technological skills with an eye to the future to fuel progress in research toward new destinations in the areas of pharmaceuticals and medical.



Automated cell culture system