

# Framework for Medical Industry Hubs in East Kyushu

**East Kyushu Medical Valley – Framework**

October, 25<sup>th</sup> 2010

Oita / Miyazaki

## **Regarding the Creation of this Framework**

Production and development hubs for blood related medical instruments, such as those used in kidney dialysis, blood filtration devices, bags used in blood transfusions, and catheters, are concentrated in East Kyushu, the area that stretches from Oita to Miyazaki Prefecture.

East Kyushu is becoming one of the nation's most prominent production and development centers for blood related medical instruments in Japan. Both nationally and internationally many of the manufacturers based in this area control the largest share of their respective markets.

Japan's "New Strategy for Development" has designated the medical industry, which is typically stable and resistant to external economic influences, as a "Leading Development Industry". By creating new jobs and preventing young people from moving to big cities to find work, medical related industries are expected to play a critical role in invigorating both the economy and the citizens of rural areas.

In February of this year (2011), a conference consisting of representatives from industry, academia, and government, from both Oita and Miyazaki Prefectures, was held. Following an active debate over how the accumulation of medical corporations in East Kyushu could invigorate local areas, this framework, the "Framework for Medical Industry Hubs in East Kyushu" (also known as the "East Kyushu Medical Valley"), was drafted.

This framework outlines the creation of four hubs. These hubs will focus on "Research and Development", "Training Skilled Medical Workers", "Blood Related Medicine", and "Medical Instrument Production".

In implementing this framework, both Miyazaki and Oita prefectures, as well as corresponding universities and representatives from government, industry, and academia, will collaborate and strive to be a top medical production region while transmitting information both within Japan and around world. By spreading the benefits of blood related medical therapies, medical companies in this region will be able to sustain local communities and contribute to the entire Asian region.

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## **1 Goals of this Framework**

Today many blood related medical instrument manufacturing companies are being established in East Kyushu, the area stretching from Oita to Miyazaki. This region is rapidly becoming a center of production and development for the Japanese medical instrument industry. Today, blood related therapies are becoming increasingly prevalent and greatly impact other fields of medicine. For this reason, the medical industry, which is typically stable and relatively resistant to changes in the economy, is expected to see much growth, aid the economy, and create jobs. Thus, Japan's "New Growth Strategy" has designated the medical industry as one of Japan's "Leading Growth Industries".

A coalition consisting of industry, academia, and government representatives drafted this framework (the "Framework for Medical Industry Hubs in East Kyushu") following deliberations at the "Conference for Establishing Medical Industry Hubs in East Kyushu."

This framework delineates methods for attracting medical instrument manufacturers to East Kyushu, benefiting local areas, invigorating local communities, and giving back to the Asian region through the spread of blood related medical therapies.

## **2 Incorporating Industries Related to the Production of Medical Instruments**

### **(1) Current State of Medical Instrument Related Industries in Japan**

The total revenue from medical instruments in Japan is over ¥1 trillion (2008 Statistical Survey on Trends in Pharmaceutical Production). While this represents a 14% growth over the past 10 years, Japan's overall market share on the world's stage tends to be decreasing. The international medical instrument market, however, is expanding due to growth in developing countries, particularly those in Asia, and also from strong growth in the United States and Europe.

In response to this, Japan has stepped up its efforts to improve growth in its medical instrument manufacturing industries by drafting the "5 Year Plan for Revolution in the Production of Medical Supplies and Instruments" in 2007 (revised in 2009) and also by drafting the "New Vision for Medical Instrument Production and Skilled Medical Techniques" in 2008.

Medicine, nursing, and health related industries have been designated as one of Japan's seven strategic fields of interest in a plan titled "Strategies for Becoming a Health Focused Nation Through Life Innovation". These seven fields are laid out in Japan's "New Growth Strategy", which was approved by the cabinet in 2010.

Due to the explosive growth that is expected in the medical instrument field, the Japanese government currently views medical instrument production as an opportunity for economic growth as well as an opportunity to take advantage of the country's technical and creative skills.

## **(2) Current State of Blood Related Medical Instrument Production**

Much growth is expected in blood related medical industries as therapies such as kidney dialysis and blood filtration are becoming more commonplace and greatly impact other fields of medicine. These therapies provided in Japan are considered to be highly advanced even amongst industrialized nations. Cutting edge development research for blood related medical instruments is also carried out in Japan. For these reasons, many Japanese medical instrument manufacturers command large shares of the world's medical instrument market. Japan is highly competitive in the field of medical instrument production and is also a top global producer of medical instruments. The increasing standard of medical practices in Asia and other developing countries is expected to raise the demand for advanced medical instruments, which promises further growth in these fields.

## **(3) Attributes of East Kyushu and the Current State of the Medical Instrument Industry**

### **Structure of Industry in East Kyushu**

#### **i State of Industry in Oita Prefecture**

Occupying one corner of East Kyushu, Oita Prefecture has a warm climate and is known throughout Japan for its staple products of shiitake mushrooms, the citrus fruit *kabosu*, high quality horse mackerel, common mackerel, and marble sole flounder. Oita Prefecture also has the largest number of natural hot springs in Japan. The hot springs of Beppu, which face Beppu Port, and the Hot Springs of Yufuin, located in the center of Oita Prefecture, are famous tourist locations. During a period of high growth Oita was designated as a “new metropolis of industry” and a seaside industrial zone consisting of iron, oil, and chemical production sites were built there. Following this, high-end manufacturing and assembly sites, such as semi-conductor and automobile manufacturing sites, were established, making this a highly diversified and industrial area. The percentage of Oita Prefecture's economy derived from secondary industries is higher than the national average. The total income of Oita Prefecture in 1997 was ¥4.47 trillion and of this secondary industries accounted for approximately ¥1.30 trillion or roughly 30% of the total economy.

#### **ii State of Industry in Miyazaki Prefecture**

Miyazaki Prefecture is blessed with wonderful nature. The climate of Miyazaki is considered to be one of the most favorable in all of Japan, specifically in regards to average temperature, hours of sunlight, and number of fair weather days. Miyazaki also receives large amounts of rainfall and has abundant water resources. In regards to industry, Miyazaki is famous for such products as Miyazaki Beef, *shochu* (Japanese Spirits), and mangos, particularly the brand Taiyo-no-tamago (Sun's Egg). Miyazaki also has many valuable tourists resources. National parks, quasi-national parks, and prefectural nature parks make up approximately 12% of Miyazaki Prefecture's total land area, and places such as the Nichinan Coast and Ebino Plateau are well known throughout Japan. In Miyazaki, the cities Hyuga and Nichinan have been designated as “new metropolises of industry” and compose Miyazaki Prefecture's top manufacturing zone. Chemical and medical instrument related factories comprise most of the industries that are located in this area. It expected that industries in this region will also be

able to make products (such as food products, semi-conductors, and solar batteries) that take advantage of the region's geographic attributes. In 2007 the total revenue of Miyazaki Prefecture was approximately ¥3.53 trillion, with secondary industries accounting for approximately ¥790 billion or over 20% of the total economy.

### **Current State of Medical Instrument Manufacturing in East Kyushu**

The medical instrument manufacturing industry in East Kyushu is unique due to a large number of blood related medical instrument manufacturers located in the area. Often, medical instrument parts are produced in Miyazaki and then finished and stocked in Oita Prefecture. The total gross revenue of the medical instrument industry in Oita Prefecture is 4<sup>th</sup> overall in Japan at ¥114.5 billion. Miyazaki Prefecture is 27<sup>th</sup> overall at ¥11.5 billion (Both figures based on the 2008 Statistical Survey on Trends in Pharmaceutical Production). Producers of medical devices, such as dialysis and blood catheters, located in this region possess the largest shares of these markets. Further, blood filtration equipment made in this area accounts for the world's top market share. East Kyushu is becoming a top production center for blood related medical equipment. This is evidenced by the high revenues garnered by instruments produced in this area as well as the large market shares that they control. Specific examples are given below for companies that possess development branches and have been able to steadily increase their production capacities

#### **Asahi Kasei Kuraray Medical Corporation**

Asahi Kasei Kuraray Medical Corporation, a producer of artificial kidneys (dialyzers) and blood filtration (apheresis) instruments, possesses production and development centers in both Oita and Nobeoka cities. In order to increase production of these instruments, the company has recently begun consolidating production facilities in Oita City. They have begun building a new high-tech factory that is scheduled to be operational before April, 2011.

#### **Asahi Kasei Medical Corporation**

The Asahi Kasei Medical Corporation, producer of biological and blood filters, owns production and development centers in Oita and Nobeoka cities. To strengthen production the company has recently started increasing its number of hollow fiber production factories in Nobeoka and assembly plants in Oita City. In order to develop and spread a revolutionary system for blood related medical instruments, Asahi Kasei Kuraray Medical and Asahi Kasei Medical are planning to establish a research laboratory in Nobeoka by April, 2012. The new laboratory will consolidate the research abilities of four different input material related enterprises into a single facility.

#### **Kawanobori Chemical Industry**

Owner of production and development centers in Saiki and Bungono, Kawanobori Chemical develops and produces extracorporeal circulation related devices, such as dialysis equipment, blood filtration devices, artificial heart-lung machines, various intravascular catheters, and pharmaceutical products, such as physiological saline solutions.

In 2006 the company increased its number of factories in Saiki that produce blood transfusion containers with white blood cell separation filters and in 2010 continued with the production of molding and assembly plants in the city of Usuki.

### **Togo Medikit**

Togo Medikit, producer of various intravascular catheters (used in artificial dialysis and for the delivery of intravenous fluid) owns production and development centers in Hyuga. In 2008, the company began building its second Hyuga-based factory. This second facility will serve as a center for expanding production and overseas development.

## **3 Areas for Reform in the Medical Instrument Production Industry**

### **(1) Medical Instrument Research and Development**

#### **Cooperation Between Industry, Academia, and Government**

Blood related medical instruments are a fundamental part of modern medicine and are expected to further increase in demand. Thus, it is necessary to promote and maintain quality through research and development of these devices by increasing collaboration among representatives from industry, government, and academia. It is also necessary to promote research and development for new products that respond to the needs of both patients and medical practitioners.

#### **An Overhaul of the Current Research and Development Environment**

Representatives from industry, academia, and government have established the training and acquisition of university and corporate medical/industrial researchers, the use of medical school hospitals for clinical field research, and the implementation of a pharmaceutical-industrial coalition as necessary tasks for improving the current environment for research and development.

#### **Procuring Funds for Research and Development**

The high costs of equipment and clinical research studies make the procurement of proper funding for research and development a necessity. Thus, in order to improve the field of research and development an established means for acquiring adequate funds, such as competitive funds or funds offered by the Japanese government, is needed.

#### **Implementing a System for Promoting Research and Development**

Pharmaceutical regulation laws establish the standards of inspection for medical instruments and in turn impact research and development. Inspection times in Japan are generally longer than they are in western countries, and because of this the problem of “device lag” has been identified. Japan’s “New Growth Strategy” sets out plans for revising clinical trials and speeding up Japan’s approval process. In order to promote research and development it is necessary to implement a “synthesized regional system” in the East Kyushu Area.



## **(2) Training Qualified Medical Experts**

### **Restructuring the Training Environment**

In order to further spread blood related medical therapies, it is necessary to train medical professionals capable of utilizing high-tech medical instruments.

Medical instrument research and development is improving medical practices, and because of this the possibilities of medicine are expanding. In order for medical workers to keep up with these developments it is necessary that they receive education and training on the proper use of new medical devices.

Blood related medical therapies are becoming increasingly common, and as such it is essential to spread the benefits of these therapies to developing countries in Asia and around the world. In doing this a location for teaching implementation and maintenance techniques for medical instruments must be created. Further, training centers must be updated with the latest medical instruments and a new training curriculum for Japanese and foreign medical workers must be developed. Management bodies for these operations must be overhauled as well. The training environment for those that perform medical research, such as corporate engineers conducting clinical research, also requires restructuring.

### **Training for Future Generations of Medical Professionals**

In restructuring the education environment, training must not be limited to current medical professionals and corporate technicians. Education reform must plan for the next generation of medical workers that will control the future of their communities.

In order to train new generations capable of working in the field of high-tech medicine, university courses and faculties that focus on medical instruments must be established. Efforts should also be made to align with forward thinking high schools.

## **(3) Renovating Medical Hubs**

### **Providing High-tech Blood Related Medical Treatment**

East Kyushu is the largest development and production center for blood related medical instruments in Japan, but in order to continue developing the region must apply its high-tech medical instruments and experienced personnel toward providing high quality medicine. To accomplish this, hospitals that provide high-tech medical services (in many cases these will be medical school hospitals) will be designated as medical hubs, and a medical network between these hubs and other medical organizations will be established on a city level. Clinical data collected by these networks will then be applied to research and development. In the future, it will become necessary to evaluate which Japanese medical techniques have become standard practices abroad. Considerations must also be made towards establishing a network for connecting medical facilities around the world.

#### **(4) Further Efforts to Attract Industry**

##### **Attracting New Industries**

The attraction of industry must not stop with blood related medical instrument manufacturers. To maintain East Kyushu's status as a top industrial center, it is also necessary to attract manufacturers of instruments used for medical examination and medical testing.

One plan for attracting medical instrument manufacturers to East Kyushu is to implement a "synthesized regional system". This system is laid out in Japan's "New Growth Strategy" and is part of the "National Strategic Project for Regional Invigoration". It will also be necessary to attract organizations like CRO (Contract Research Organization) and materials safety testing centers. The improvement of roads, ports, and other types of infrastructure is also critical.

##### **Introducing Local Businesses into the Medical Instrument Industry**

East Kyushu is the largest development and production center for blood related medical instruments in Japan, but in order for this region to continue developing it is critical to increase and improve the production of the main medical instrument manufacturers in this group. A local group of businesses that can support the production of these manufacturers must also be formed. Medical instrument production is a highly technical industry, and as such it is necessary to take advantage of the skills that the semi-conductor and automobile industries in the region have helped to raise. From manufacturing to distribution, it is desired that local businesses will be able to take part in each stage of production for medical instruments and their parts.

#### **(5) Promoting International Medical Exchange**

For East Kyushu to develop internationally as a blood related medical industrial center, it is necessary to increase exchange with countries overseas. Thus, a new initiative similar to the "International Medical Exchange", which is laid out in the "New Growth Strategy", must be established. This new strategy will promote the natural beauty and hot springs of East Kyushu in order to advance the area's medical region internationally.

#### **4 Efforts Toward Using the Medical Industry to Invigorate Local Regions**

Under this framework four medical hubs will be established in East Kyushu. These hubs will not only work to promote East Kyushu's blood related medical instrument industry but also attract producers of medical instruments relating to other fields of medicine, invigorate local areas, and spread medical practices throughout Asia.

##### **(1) Creating a "Research and Development Hub"**

###### **Promoting Research and Development Through a Coalition of Industry, Academia, and Government**

Research and development for medical devices is increasing the possibilities of blood related medical therapies. Further, by responding to the diversified needs of today's medical environment (e.g. the development of a new dialysis system) it is also improving the quality of patient life. Research and development is also responsible for improving the treatment of infectious diseases such as hepatitis B and C (which are typically problematic in Asia); making

medical treatments for children safer, less dependent on pharmaceuticals, and with fewer side-effects; and improving preventative medicine, anti-aging medicine, and the treatment of intractable diseases through blood filtration treatments.

In order to ensure the future of blood related medical therapies, it is necessary to promote the medical devices that support this field. Further for the East Kyushu region to grow as a world class center for research and development, it will be necessary to work with representatives from industry, academia, and government and to facilitate research between top level medical instrument manufacturers and universities with researchers studying in related specialized fields.

### **Restructuring the Environment of Research and Development**

Improvements are being made to the research and development environment that will allow for representatives of industry, academia, and government to be more involved in the research and development of medical instruments. These changes include creating a research and development center where medical personnel and corporate engineers can exchange ideas freely and establishing a body to facilitate exchange between industry, academia, and government.

The Medical school hospitals of East Kyushu possess excellent environments for conducting research and development. These core hospitals are highly integrated and have amassed much data pertaining to the needs of the medical environment as well as regional medical information. The hospital at Oita Medical School is the only hospital in Western Japan to be designated a “Central Hospital for Clinical Trials”. Further, Miyazaki Medical School’s medical theory program, which relates heavily to research and development, is one of the top programs in Japan. Currently these core hospitals, in conjunction with other major medical facilities, are planning to create a clinical research and development program.

The blood related medical instrument industry is one based in high-end manufacturing and assembly, even the production of basic components for these instruments requires high-precision based skilled labor, such as electrical engineering. By promoting industrial-related fields of research a pharmaceutical-industrial coalition can be formed. Currently, efforts are being made to allow for local businesses to participate in production from the research and development stages. Also, various medical research methods are currently being investigated.

### **Procuring Funds for Research and Development**

A large amount of funding is necessary for the production of specialized facilities, instrument maintenance, and clinical tests that are associated with research and development. Representatives of industry, academia, and government will work together to procure government funds, subsidies, and other forms of open funding for research and development.

### **Implementing a System to Promote Research and Development**

In order to promote the development of cutting edge medical instruments in the East Kyushu region, the “Synthesized Regional System”, which is discussed in Japan’s “New Growth Strategy”,

will be implemented. In order to address the needs of the medical field, methods for enhancing the efficiency and speed of research and development are being investigated. Methods for using the “Synthesized Regional System” as a way to acquire national financial assistance are also being investigated.

#### **Specific Initiatives**

- **Establish Research Groups Covering New Blood Related Medical Therapies**
- **Establish Research Courses and Promote Collaborative Research Through an Endowed Chair**
- **Create Educational and Industrial Coalitions in Universities, Create a Medical-Industrial Coalition Research Center**
- **Promote Medical Instrument Development Through the Cooperation of Medical School Hospitals and Industries (Establish Medical Instrument Clinical Testing Centers etc.)**
- **Establish a Clinical Trial Network for the Development of Medical Instruments**

### **(2) Creating a “Hub for Training Skilled Medical Workers”**

#### **Training for Medical Workers**

East Kyushu Health and Welfare University has a clinical engineering faculty and is equipped with a training facility for the use of medical instruments. The hospital at Oita University Medical School has a “Skilled Lab Center” for the training of medical doctors and nurses. This hospital also has as a clinical site where high-tech medicine is practiced. Further, Ritsumeikan Asia Pacific University has a graduate level Public Health Management program as well as experience in accepting medical professionals from overseas. These facilities will be used to teach medical workers the proper use of new and high-tech blood related medical instruments.

In order to attract medical workers from Asia and other countries, various policies regarding the acceptance of foreign students will be revised. This will provide an opportunity to train foreign medical workers on methods of implementing and maintaining high-tech medical instruments and also provide an opportunity for international exchange with these workers.

A corporate training system that will allow for corporate engineers to conduct clinical research is also being investigated.

#### **Training Future Medical Workers**

Currently, investigations are being made into the establishment of faculties and courses focusing on blood related medicine and medical instrument development at institutions of higher learning. These courses will serve to educate the future generations that will carry on in the field of advanced medicine. To increase the number of workers in this field, efforts will also be made to work with high schools and other academic institutions.

#### **Specific Initiatives**

- **Establish Training Centers at Universities**

- Establish Offices in Charge of Accepting Foreign Medical Workers
- Research into the Creation of a University/High School Curriculum for Training Skilled Medical Workers
- Hold Related Academic and International Conferences

### **(3) Creating a “Blood Related Medicine Hub”**

#### **Designating Core Medical Agencies as Medical Centers and Constructing a Medical Agency Network**

In order for the cutting edge blood related medical techniques of East Kyushu to spread and become the international standard, research and development hubs as well as training hubs must be further established. The possible renovation of hubs that benefit from this research and skilled labor and provide high-level blood related medical therapies shall also be investigated.

Specifically, investigations into the use of national funds for renovating high-tech blood related medical facilities and for creating a network between preexisting medical agencies, including medical school hospitals and the region’s core hospitals shall be performed.

Data collected from this network of medical centers and medical organizations will be strictly managed. Currently, the creation of a system that would allow for this data to be applied towards research and development is being investigated. Striving to give back to the Asian region and other countries, investigations are being made into the establishment of a network that will connect medical facilities around the world.

#### **Specific Initiatives**

- Evaluate the Renovation of Blood and Vascular Related Medical Hubs that are Centered Around Medical School Hospitals
- Establish National and International Networks amongst Medical Agencies

### **(4) Creating a “Medical Instrument Industry Hub”**

#### **Attracting New Business**

By offering tax incentives and other forms of financial support, the “synthesized regional system” will be used to attract medical instrument manufactures to East Kyushu. Aside from corporations, efforts will be made to attract the highly efficient CRO (Contract Research Organization) as well as safety testing centers for materials. Renovation will be carried out on East Kyushu’s transportation related infrastructure such as highways and ports. Improvements will also be made to factory land sites.

#### **Support for Local Companies**

Based in high-end manufacturing and assembly, medical instrument production requires skilled labor relating to the use of raw materials, electric engineering, and working with machinery. In order for more local businesses to enter into this industry, corporations currently involved in medical instrument production will hold research sessions for entering in this field. These

corporations will also hold seminars on partnering with medical instrument manufacturers, licensing issues, and other relevant topics.

In order to attract a broad array of local businesses, companies relating to packaging and distribution will also be encouraged to attend these research groups.

#### Specific Initiatives

- Attract Medical Instrument Manufacturers and Testing Agencies Necessary for Medical Instrument Development
- Investigate into the Making of a “Synthesized Regional System” for Attracting Businesses
- Establish a Research Group for Introducing New Businesses into the Medical Instrument Industry and Support their Activities
- Promote the Renovation of Highways and Ports in East Kyushu

## **5 Invigorating the Local Medical Industry and Promoting International Medical Exchange**

### **(1) Invigorating the Local Medical Industry**

The creation of the four hubs (the “Research and Development Hub”, “Hub for Training Skilled Medical Workers”, “Blood Related Medicine Hub”, and the “Medical Instrument Production Hub”) listed in this framework will not only benefit blood related medicine but will also work to make East Kyushu into an attractive region for medical workers across various fields of medicine. Due to the accumulation of medical industries in the area an influx of medical workers to the region is also expected.

By renovating the blood related medical hubs and promoting regional medical networks, cooperation between local medical agencies will be increased and East Kyushu’s medical industry will be strengthened.

### **(2) Using Local Resources to Promote International Medical Exchange**

The “Research and Development Hub”, “Hub for Training Skilled Medical Workers”, “Blood Related Medicine Hub”, and “Medical Instrument Production Hub”, which are laid out in this framework, will work to benefit the Asian region and by promoting Kyushu’s natural resources and its medical industry abroad they will start a new type of international medical exchange. By promoting the region’s medical PET (Positron Emission Tomography) scanner devices, advanced anti-aging and preventative medical techniques, and natural resources (hot springs), international medical exchange in the region will advance.

## **6 Promotion of This Framework**

### **(1) Restructuring the System for Promoting this Framework**

A coalition of representatives of industry, academia, and government will develop a committee for the promotion of this framework. This committee will create specific goals and timelines for the establishment of medical instrument clinical testing centers, training centers for skilled medical workers, organization of research groups for introducing local businesses into the medical instrument industry, and establishment of the four medical hubs laid out in this framework. Through focused effort, the committee will address issues and will seek to further establish

organizations capable of effectively promoting the medical industries of East Kyushu.

**(2) Transmitting Information**

In order to further advance the understanding of this framework a convention will be held. This will serve as an opportunity for promoting this framework both nationally and internationally.

## Materials

### Changes in Gross Medical Instrument Revenues

(Index Values 1999 = 100)

Year	Total Revenues (Millions of Yen)	Yearly Fluctuations		Index (%)	Average Monthly Revenue (Millions of Yen)
		Fluctuation (Millions of Yen)	Percent Fluctuation (%)		
1999	1,487,902	-33,473	-2.2	100.0	123,856
2000	1,486,266	-1,637	-0.1	99.9	123,856
2001	1,516,989	30,723	2.1	102.0	126,416
2002	1,503,507	-13,482	-0.9	101.0	125,292
2003	1,498,918	-4,589	-0.3	100.7	124,910
2004	1,534,365	35,447	2.4	103.1	127,864
2005	1,572,401	38,036	2.5	105.7	131,033
2006	1,688,344	115,943	7.4	113.5	140,695
2007	1,684,465	-3,879	-0.2	113.2	140,372
2008	1,692,352	7,887	0.5	113.7	141,029

2008 Statistical Survey on Trends in Pharmaceutical Production

### Gross Medical Instrument Revenues by Prefecture

By Prefecture	Total Revenues		Yearly Fluctuations		Percent of Total Revenue	
	2008 (Millions of Yen)	2007 (Millions of Yen)	(Millions of Yen)	Percent Fluctuation (%)	2008 (%)	2007 (%)
All of Japan	1,692,352	1,684,465	7,887	0.5	100.00	100.00
1 Ibaraki	213,718	233,984	-20,266	-8.7	12.63	13.89
2 Shizuoka	181,779	187,714	-5,935	-3.2	10.74	11.14
3 Tokyo	141,674	155,130	-13,456	-8.7	8.37	9.21
4 Oita	114,521	109,489	5,032	4.6	6.77	6.50
5 Saitama	98,449	93,826	4,623	4.9	5.82	5.57
27 Miyazaki	11,508	11,394	114	1.0	0.68	0.68

2008 Statistical Survey on Trends in Pharmaceutical Production



## Overview of Production Centers in Oita and Miyazaki Prefectures

Company Name	Factory Name	Location	Products Made
Asahi Kasei Kuraray Medical Corporation	Artificial Kidney Production Factory	Oita City	Artificial Kidneys
	Aphaeresis Production Factory		Blood Purification Devices
	Okatomi Factory	Nobeoka City	Artificial Kidneys
	EV Factory		
	Tsunetomi Factory		
Asahi Kasei Medical Corporation	Sepacell Factory	Oita City	White Blood Cell Filters
	Planova Oita Factory	Nobeoka City	Viral Filters
	Planova Factory		
Kawanobori Chemical Industry	Mie Factory	Bungo-Ono City	Artificial Kidneys, Blood Circuits, Catheters
	Yayoi Factory	Saiki City	Products Relating to Blood Bags
	Saiki Factory		Blood Bags, Blood Drawing Kits, Blood Transfusion Related Products
Togo Medikit	Hyuga Factory	Hyuga City	Catheters, Indwelling Needles
	Hyuga Factory 2		
	Togo Factory		

## Major Product Market Shares

(Product Examples)

### Asahi Kasei Kuraray Medical Corporation, Asahi Kasei Medical Corporation

Dialyzers Japan No. 1, World No. 2

Aphaeresis Related Devices

White Blood Cell Separation Filters } Japan No.1, World No. 1

Viral Filters



Aphaeresis Device Artificial Kidney

### Kawanobi Chemical Industry

Blood Circuits

Blood Bags

} Japan No. 1



Blood Bags

### Togo Medikit

Blood Catheters



**Events Leading to the Drafting of the “Framework for Medical Industry Hubs in East Kyushu”**

August 5 <sup>th</sup> , 2007	A Joint Conference was Held Between Miyazaki and Oita, Both Sides Discussed Necessary Measures and the Setting of a Time Table
October 23, 2007	A Coordinating Committee was Held Between Miyazaki and Oita Prefectures
January 4 <sup>th</sup> , 2008	Miyazaki and Oita Prefectures Publicly Announced That They Would Work Together to Draft a Medical Framework.
February 15 <sup>th</sup> , 2008	The “Framework for Medical Industry Hubs in East Kyushu” Research Committee was Established and the First Meeting was held.
April 16 <sup>th</sup> , 2008	The First Meeting of Oita Prefecture’s Medical Framework Research Committee was held.
June 3 <sup>rd</sup> , 2008	The First Meeting of Miyazaki Prefecture’s Medical Framework Research Committee was held.
June 11 <sup>th</sup> , 2008	The Second Meeting of Oita Prefecture’s Medical Framework Research Committee was held.
July 6 <sup>th</sup> , 2008	The Second Meeting of Miyazaki Prefecture’s Medical Framework Research Committee was held.
July 26 <sup>th</sup> , 2008	A Coordinating Committee was held Between Miyazaki and Oita Prefectures
August 4 <sup>th</sup> , 2008	The Second Meeting of the “Framework for Medical Industry Hubs in East Kyushu” Research Committee was Held
October 4 <sup>th</sup> , 2008	The Third Meeting of Miyazaki Prefecture’s Medical Framework Research Committee was Held
October 5 <sup>th</sup> , 2008	A Coordinating Committee was Held Between Miyazaki and Oita Prefectures
October 6 <sup>th</sup> , 2008	The Third Meeting of Oita Prefecture’s Medical Framework Research Committee was Held
October 18 <sup>th</sup> , 2008	The Third Meeting of the “Framework for Medical Industry Hubs in East Kyushu” Research Committee was Held
October 25 <sup>th</sup> , 2008	The “Framework for Medical Industry Hubs in East Kyushu” (East Kyushu Medical Valley) was Drafted and Publicly Announced

Framework for Medical Industry Hubs in East Kyushu Research Committee Council Members

Asahi Kasei Kurarei Medical	CEO and Representative Director	Yasuyuki Yoshida
Asahi Kasei Medical	CEO and Representative Director	
Kawanobori Chemical	CEO and Representative Director	Yukihiro Kawano
Medikit	CEO and Representative Director	Hiroaki Nakajima
Oita University	Assistant Dean and Director of Medicine and Research	Toshio Fujioka
Oita University	Assistant Dean and Director of International and Social Cooperation	Matsuro Tanaka
Miyazaki University	Director and Head of the Miyazaki University Medical School Hospital	Shyomu Ikenoue
Ritsumeikan Asia Pacific University	Professor of International Business	Yusuo Uchida (~Until 2010, March 31 <sup>st</sup> )
Ritsumeikan Asia Pacific University	Associate Professor of Asian Pacific Studies	Serik Meirmanov (Starting from 2010, April 1 <sup>st</sup> )
Kyushu University of Health and Welfare	Dean	Yoichi Minamishima (Until 2010, March 31 <sup>st</sup> )
Kyushu University of Health and Welfare	Dean	Akihiko Wada (From 2010, April 1 <sup>st</sup> )
Oita Prefecture	Director of the Commerce and Labor Department	Kenzou Yoneda (Until 2010, May 31 <sup>st</sup> )
Oita Prefecture	Director of the Commerce and Labor Department	Kazunori Yamamoto (From 2010, June 1 <sup>st</sup> )
Miyazaki Prefecture	Director of the Commerce, Tourism, and Labor Department	Ryoichi Watanabe

Note: Chairman from Oita Prefecture, Chairman from Miyazaki Prefecture

(Advisors)

Kyushu Bureau of Economics and Industry	Director of Regional Economics	Hidefuno Nakashima
Japan Science and Technology Agency	Director of JST Innovation Satellite Miyazaki	Kou Kurosawa

## **East Kyushu Regional Medical Production Hub Framework Research Committee Members by Prefecture**

### **(Oita Prefecture)**

Asahi Kasei Kurare Medical Corporation's Oita Based Production Center

Asahi Kasei Kurare Medical Corporation

Kawanobori Chemical Industry's Oita Based (Production Center)

Federation of Oita Factories

Oita University

Ritsumeikan Asia Pacific University

Oita Prefectural Government, Commerce and Labor Department, Office for Attracting Industry

Oita Prefectural Government, Commerce and Labor Department, Division for Progressing Industry Formation

### **(Observers)**

Oita Prefectural Government, Welfare and Health Department, Medical Strategy Office

Oita Prefectural Government, Welfare and Health Department, Pharmaceutical Office

### **(Miyazaki Prefecture)**

Asahi Kasei Kurare Medical Corporation

Asahi Kasei Corporation's Branch office in Nobeoka

Togo Medikit Corporation

Miyazaki University

Kyushu University of Health and Welfare

Miyazaki Prefecture's Association of Industry

Miyazaki Prefecture's Medical Association

Miyazaki Prefecture's Industrial Support Foundation

Nobeoka City Government

Hyuga City Government

Miyazaki Prefectural Government, Prefectural Policy Department, General Policy Planning Division

Miyazaki Prefectural Government, Public Welfare and Health Department, Medical and Pharmaceuticals Division

Miyazaki Prefectural Government, Public Welfare and Health Department, Health Promotion Division

Miyazaki Prefectural Government, Commerce, Industry, Tourism, and Labor Department, Industrial Support Division (Head Office)

Miyazaki Prefectural Government, Commerce, Industry, Tourism, and Labor Department, Business Site Promotion Bureau, Business Establishment Division

Miyazaki Prefectural Hospitals Bureau

## **Framework for Medical Industry Hubs in East Kyushu (East Kyushu Medical Valley Framework)**

( Head Office )

Oita Prefectural Government, Commerce, Industry, and Labor Department

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