

# Current Status of Cardiac Surgery Allied Health Professionals in Asia

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HSR Proceedings in Intensive Care and Cardiovascular Anesthesia 2011; 3(4): 245-247

## ABSTRACT

More and more allied health professions are getting involved in clinical health care. One estimate reported allied health personnel makes up 60 percent of the total health workforce. In Asia, in the field of cardiothoracic surgery, allied health personnel includes perfusionists, physician assistants, physiotherapist, intensivists, rehabilitation therapists, nutritionists and social workers. They work in collaboration with surgeons to provide a range of diagnostic, technical, therapeutic, cardiac care and support services to the patients and their families.

Some allied health professions are more specialized. They must adhere to national training and education standards and their professional scope of practice. For example, the training of perfusionists consists of at least five years of academic in medical schools and another three-year-long clinical training in the hospital. The cardiac intensivists usually are medical doctors with a background in cardiology. They spend 3-4 years rotating in Internal Medicine, Anesthesiology, Emergency Rooms and Intensive Care Units. There have specialized medical societies to grant certified credentials and to provide continuing education. Other allied health professions require no special training or credentials and are trained for their work by the hospitals through on-the-job training.

Many young health care providers are getting involved in the allied health personnel projects. They consider this as a career ladder because of the opportunities for advancement within specific fields.

**Keywords:** cardiac surgery, allied health professionals, perfusion, nursing.

Presented at the Roland Hetzer International Cardiothoracic and Vascular Surgery Society 1<sup>st</sup> Expert Forum

Asian cardiac surgery has been developing rapidly in the past ten years.

For example, in 2003, the cardiac surgery procedures China were 7000 (with 6000 on-pump cases) while in 2009, the overall number raised up to 116000.

Japan with a population of one hundred and twenty-seven million, more than doubled the cardiac surgery yearly operations from 20000 in 1986 to 58000 in 2008.

Currently, China holds fifty-two percent of the cardiac surgery procedures in Asia, followed by Japan and India.

Cardiac surgery is absolutely teamwork. Cardiac surgeons need the allied health professionals to help confirm the diagnosis. During the operation, cardiac surgeons work with the perfusionists.

After the operation, intensive physicians and nurses help to care the patients. When the patients are discharged, rehabilitation doctors help the patients to go back to normal life.

In modern medicine, Allied health professionals are clinical health care professions distinct from nursing and medicine. Some data shows that allied health professionals make up to 60 percent of the total health workforce. Allied health professionals provide a range of diagnostic, technical, thera-

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peutic and direct patient care and support services.

Nowadays, there are 104 certified perfusionists in India, 156 in South Korea and 450 in China. In India, the certified perfusionist should have diploma in Perfusion Technology given by the Indian Association of Cardio-vascular and Thoracic Surgeons or Diploma given by any other Perfusion School, or Degree in Perfusion given by any recognized college or university.

The certified perfusionist should at least install fifty pumps a year. Board will conduct annual exam for certification. For recertification, the certified perfusionist is required to perform a minimum of forty clinical activities annually. During any two of the five year period, every certified perfusionist must earn twenty Continuing Education Units.

Chinese Board of perfusion was established in 2004. Annual training program is held to certify and recertify. In 2005, medical bachelor degree in perfusion was granted. More and more physicians with master or doctoral degree join the perfusion team. Certified perfusionist must renew the license every four years. From now on, all the beginners should go through one year long specialized perfusion training.

The first Cardiac Surgery Intensive Care Unit (ICU) in China was established in 1970. At the very beginning, there was no intensivist and cardiac surgeons rotated to cover the night shifts. Gradually, ICU is becoming a more and more specialized subject. In 2005, the Chinese Critical Care Association was established. Board holds certification exams to assess the physicians. Nowadays, the physicians in Cardiac Surgery-ICU usually obtain solid background in cardiac surgery and are able to perform procedures such as positioning intraortic balloon pump, extracorporeal membrane oxygenation, continuous renal replacement therapy, performing bronchoscopy, etc.

Currently, there are 1.49 million registered nurses in Japan. The minimum nurse-to-patient ratio in Critical Care is 1:2. Cardiac care nurses should have knowledge, skills and abilities in the field, should be familiar with ventilation and respiratory management and should be able to interpret hemodynamic monitoring.

The Chinese Nursing Association (CNA) sets up training courses for ICU nurses, to identify the standard of practice and professional performance, but not specifically for cardiac surgery. CNA developed non-mandatory certification for registered nurses after training and served to validate nursing knowledge and competency. The bachelor degree, at least diploma degrees are the recommended but not mandatory requirements as basic education.

A corresponding certification process at the graduate level is not yet available in China but is popular in other advanced area of Asia. Some cities in China are piloting in this area, like Shanghai and Beijing.

Registered nurses need to have at least 2 years clinical experience before working in cardiac surgery ICU. Nurses who work in cardiac surgery ICU must accept special ICU nursing training organized by Shanghai Nursing Association, then get certification for cardiac surgery ICU admittance.

Cardiac surgery ICU nurses should attend 6 months in-service training, including didactic, role play and simulation training after admittance. Cardiac surgery ICU nurses require at least 6 month clinical hand-on training follow with a designated mentor.

Nowadays, we are facing many challenges. The main concern is the shortage in allied health professionals.

In an aging society, many people are approaching retirement age, while many chronic medical conditions are placing an increasing strain on the shrinking medical human resource pool. Many specialized allied health professionals training are expen-

sive. For example, perfusionists are trained in medical schools, with expensive tuition fees. After graduation, the perfusionists-to-be will go through the years-long residency training, rotating in the associated clinical departments.

Usually the pay is not good at the beginning, and they are under huge stress. Some will quit in the middle. In Asian culture, allied health professionals are considered as an invisible profession.

To solve the problems, we should first promote a long term vision into the development of allied health professionals. Government should increase the investment.

We should foster collaboration and coordination among hospitals, health systems, education, research, business and government. We should pursue opportunities for public and private fund for training and education.

We must clear pathways with adequate support to the people who aim in this field to complete education and certification.

For example, we should increase opportunities for distance or part-time learning.

Meanwhile, increasing income and welfare, providing employment benefits in rural areas will help to improve the current status.

**Cite this article as:** Liu Z, Ye W. Current Status of Cardiac Surgery Allied Health Professionals in Asia. HSR Proceedings in Intensive Care and Cardiovascular Anesthesia 2011; 3(4): 245-247

**Source of Support:** Nil. **Conflict of interest:** None declared.