Physician Assistant Education in India

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The first PA program in India was established in 1992 with a focus on expanding cardiovascular surgery. Since then, eight additional programs have developed (in total seven baccalaureate and two master’s level programs). Approximately 850 graduates are distributed throughout southern India with concentrations near their home universities. While all PAs are trained as generalists, most work in hospitals in specialized roles such as surgery. With service delivery a looming issue in India, there is an increased interest in the PA profession, and existing PA programs are beginning to work together to advance the field.

Introduction

India is a country of 1.34 billion people. The population of those who are 60 years and above is expected to grow from 77 million in 2001 to 300 million by 2050. The burden of non-communicable diseases is also on a steep rise, adding to the existing problem of communicable diseases. The aging population along with other factors will have major implications for the health care system. To cater to the health care needs of a growing population and other escalating health care demands, a nation’s health care workforce is the vital component. But India was ranked 52nd of the 57 countries facing a human resource crisis in 2010. According to a 2011 world health statistics report, the density of health care workers in India (doctors, nurses, and midwives) is 19 for a population of 10,000 compared to the World Health Organization’s recommendation of 25 per every 10,000 individuals. The production of doctors (along with nurses and other health professionals) has been eroded by a long tradition of emigration to former British Commonwealth and other western countries. In addition, a vacuum exists in primary care as a result of junior doctors pursuing specialization.

In 1987, K.M. Cherian, a cardiac surgeon, began to include physician assistants (PAs) in various services in his hospital, The Institute of Cardiovascular Diseases (ICVD), in Chennai. He provided the training and education that is typical for PAs to many of the paramedical employees that worked with him. In 1992, he began a formal, in-house, 2-year postgraduate diploma program with 14 science graduates. This program was soon upgraded and institutionalized at the Birla Institute of Technology and Science, a university in India. Within a few years, the program was converted to a 4-year, bachelor of science degree program to attract more candidates. In

Feature Editor’s Note:
The physician assistant (PA) profession in India is only now emerging, with the majority of programs inaugurated in the new century. The intent of this article is to serve as an introduction to the development and current status of the PA profession in India as part of a global movement to improve health care delivery and to provide a foundation for additional reporting on Indian PA education development.

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The Global Perspectives feature focuses on global issues relevant to PA education. Appropriate topic areas include development of PA-type programs in other countries, global health care curriculum issues, and first-person reports of international PA educational activities. Feature articles should be submitted to journal staff at jpa@PAEAonline.org.
India, students have 12 years of formal education and then either enter the workforce or continue their education by attending college. Among those attracted to the program were some who had applied unsuccessfully to the medical school. Graduate PAs were absorbed in the ICVD hospital, at first in cardiovascular services but also in other areas. Witnessing the contribution of the PAs in the ICVD hospital, physicians who trained there hired PAs to work with them when they left for new positions as physicians at other institutions. As a result, PAs began to be distributed to new geographical areas, which led to the establishment of new PA programs at other universities. In 2004, the Amrita University, Kochi, Kerala, began its new master’s degree PA program. Other PA programs followed and, by 2012, a total of nine PA programs were operational in India (see Table 1). As of 2012, more than 850 PAs are graduates of a formal education process.

### Lack of Recognition of PA Profession in India

The author (L.K.) traveled to Coimbatore, Tamil Nadu, India, in the fall of 2010 to learn as much as possible about the Indian PA movement and to give a keynote speech about the globalization of PA education and the PA profession at the eighth annual scientific meeting of the Indian Association of Physician Assistants. The meeting was well attended by Indian PA students and graduates. During the conference, attendees expressed their desire for the PA workforce to mature while also recognizing the need to address issues like uniformity in PA training, greater awareness and recognition of the profession, and regulatory and legal hurdles.

### Table 1. Physician Assistant Education Programs in India

<table>
<thead>
<tr>
<th>Training Institute</th>
<th>Affiliated University</th>
<th>Inaugural Date</th>
<th>Program Length</th>
<th>Degree Offered</th>
<th>Number of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute of Cardiovascular Diseases, Chennai, Tamil Nadu</td>
<td>Birla Institute of Technology and Science, Pilani, Rajasthan</td>
<td>1992</td>
<td>4 years (3 years + 1 year internship)</td>
<td>Bachelor’s degree</td>
<td>350</td>
</tr>
<tr>
<td>Amrita Institute of Medical Sciences, Kochi, Kerala</td>
<td>Amrita University, Kochi, Kerala</td>
<td>2004</td>
<td>3½ years (3 years + 6 month internship)</td>
<td>Master’s degree</td>
<td>120</td>
</tr>
<tr>
<td>Frontier Lifeline Pvt. Ltd., Chennai, Tamil Nadu</td>
<td>Birla Institute of Technology and Science, Pilani, Rajasthan</td>
<td>2005</td>
<td>4 years (3 years + 1 year internship)</td>
<td>Bachelor’s degree</td>
<td>20</td>
</tr>
<tr>
<td>Multiple hospitals</td>
<td>Vinayaka Missions University, Salem, Tamil Nadu</td>
<td>2005</td>
<td>4 years (3 years + 1 year)</td>
<td>Bachelor’s degree</td>
<td>45</td>
</tr>
<tr>
<td>Ganga Hospital and G. Kuppuswamy Naidu Memorial Hospital, Coimbatore, Tamil Nadu</td>
<td>Avinashilingam University, Coimbatore, Tamil Nadu</td>
<td>2006</td>
<td>4 years (3 years + 1 year internship)</td>
<td>Bachelor of science</td>
<td>130</td>
</tr>
<tr>
<td>Kovai Medical Centre and Hospital, Coimbatore Kidney Centre and K.G. Hospital, Coimbatore, Tamil Nadu</td>
<td>Bharathiar University, Coimbatore, Tamil Nadu</td>
<td>2008</td>
<td>4 years (3 years + 1 year internship)</td>
<td>Bachelor’s degree</td>
<td>90</td>
</tr>
<tr>
<td>Multiple hospitals</td>
<td>Osmania University, Hyderabad, Andhra Pradesh</td>
<td>2008</td>
<td>2 years (1 year + 1 year internship)</td>
<td>Postgraduate diploma</td>
<td>135</td>
</tr>
<tr>
<td>Multiple hospitals across Tamil Nadu</td>
<td>Dr. M.G.R. Medical University, Chennai, Tamil Nadu</td>
<td>2009</td>
<td>4 years (3 years + 1 year internship)</td>
<td>Bachelor’s degree</td>
<td>—— *</td>
</tr>
<tr>
<td>Rabindranath Tagore International Institute of Cardiac Sciences, Kolkata and CARE Hospital, Hyderabad, Andhra Pradesh</td>
<td>Netaji Subhas Open University, Kolkata, West Bengal</td>
<td>2009</td>
<td>3 years</td>
<td>Bachelor’s degree</td>
<td>30</td>
</tr>
</tbody>
</table>

*First class yet to graduate

**Courtesy: Indian Association of Physician Assistant Education Programs**
Two years later there are still no published reports to bring the PA profession into the limelight and to recognize this “hidden pearl” in India’s health care workforce.

A recent article shows the public’s lack of awareness regarding the PA profession in India in that the entire profession was not considered as an integral part of the Indian health care workforce. In India, the term “physician assistant” is not reserved for those who have successfully completed a PA program. In some hospitals in India, the term “assistant” is exploited and used to address any employee as physician assistants. Their services to doctors with whom they work may include any administrative, public relations, or even personal work. The casual and unrestricted use of the term physician assistant (PA) leads to misconceptions by the medical staff and the general community and also erodes the reputation of formally educated and trained PAs. Without regulations governing the name, many hospitals have initiated courses tailored to their needs and produce “PAs” who are used in patient care services. The latter do not account for the affiliated hospitals as portrayed in the table. Efforts beseeching the Ministry of Health to intervene and regulate the name, develop accreditation of PA programs, and standardize the curriculum are under way.

India PA Curriculum
The PA curriculum in India is built on a medical model and involves laboratory work, clinical exposure, and classroom education. Apart from medical subjects, the program includes computer applications, biomedical instrumentation, technical report writing, research methodology, and statistics. Such courses are designed to equip students with the knowledge and skills necessary to provide quality patient care and be able to handle the challenges of the ever-growing health care industry. Standards of PA education, certification, and accreditation issues are topics of importance as the networking of PA educators develops.

Role of Physician Assistants
In the outpatient setting, PAs function as specialists within the employing specialty and are usually responsible for the complete work-up of patients. Like PAs elsewhere, they make the provisional diagnosis and order relevant investigations. They are also involved with providing counsel to patients, explaining disease conditions, initiating treatment, and providing instruction on medications. In the in-patient settings, they work under the supervision of physicians to assist with patient management. PAs write progress notes and discharge notes as well as communicate with referring doctors or institutions.

In the surgical theater, PAs harvest veins for coronary bypass surgery, work as first or second assistant, chart operation notes, and monitor the progress of patients in the intensive care unit. They also prepare homografts for cardiovascular surgeries, work as transplant coordinators, and manage heart failure clinics, to name a few examples of their diverse roles.

PA graduates tend to find employment in the same institute at which they were trained. Formally trained PAs in India tend toward specialty care rather than primary care. As the first program was started at an institute specializing in cardiovascular surgery, the PAs who graduated from that facility settled there first. This set some precedent for subsequent graduates to choose specialty medicine over primary care, despite the curriculum being built on the general medical model. As a result, specialty practices, especially cardiovascular medicine/surgery, are popular among PAs in India. However, because the curriculum is broad-based, PAs find employment opportunities not only in hospitals and outpatient settings, but also in health care information technology, health insurance companies, medical device companies, and many other related health sectors and emerging fields.

The Future of PAs in India
There are a number of issues emerging in India relevant to the formally trained PA. The first is a need for higher education for PAs who complete a baccalaureate degree. The hope is that higher education will provide professional growth for PAs as well as a master’s degree and retain them within clinical medicine for a certain period of time. One strategy being discussed is to offer clinical postings in tertiary care institutions only for those PAs who complete a master’s degree education as a repayment for their education. The prerequisite for master’s degree enrollment is 2 years of primary care clinical service. The internship done at the bachelor’s level would also be focused on primary care. This way the PAs would have knowledge and experience in holistic health with a greater likelihood of remaining in primary care.

In Tamil Nadu State, the Dr. M.G.R. Medical University has inaugurated a PA program that collaborates throughout the state with a large number of hospitals. As Dr. M.G.R. Medical University is a state-administered state-run university, it is hoped that this would stir the interests of other states and eventually lead to the recognition of the PA cadre by the Ministry of Health.

Limitations
This report has a number of limitations. The authors are either host nationals (G.S., K.M.C.) or an invited observer (L.K.), and the element...
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emerged. The education of PAs in students for patient-centered roles has been tested, and no one model of concentration appears more similar than different. Like the global PA movement, different models are being tested and no one model of concentrating information and preparing students for patient-centered roles has emerged. The education of PAs in India is one of generalist training, although the current trend is for most graduates to work in the field of cardiac thoracic surgery and other specialties.

The development of the PA profession and its education and training model in India began in 1992 at one institution. Over the past two decades, eight more universities designed their own unique curricula addressing local needs. Most programs appear to produce the same level of education, and the degree granted upon completion of the training appears more similar than different. Like the global PA movement, different models are being tested, and no one model of concentrating information and preparing students for patient-centered roles has emerged. The education of PAs in India is one of generalist training, although the current trend is for most graduates to work in the field of cardiac thoracic surgery and other specialties.

Literature on PAs in India is lacking, and this report is the first attempt to address that deficit. We suggest, at the very least, that a descriptive study of graduates should begin immediately. Such work should include the hallmarks of a labor epidemiology inquiry noting age, gender, date of graduation, geographical location, type of employment, specialty, and roles of clinically active PAs. Additional studies should compare programs, education curriculum, retention and attrition rates, faculty, and other attributes of educational institutions. Role delineation is at the heart of what PAs do and will set the stage for organizational studies, economic models of care, and service delivery.

Finally, if the primary objective of PA development is the highest quality of health care delivered to the largest number of people in the most efficient manner, we submit that India may serve as that model. The PA movement in India suggests that history has a way of repeating itself—a remarkable metamorphosis of a new health profession in a short period of time.

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REFERENCES


