

Trends in Perfusion Education and Employment

Market Forces Affecting All Levels of Perfusion

By Jeffrey B. Riley, B.A., C.C.T.
Chairman, Department of Extracorporeal Circulation Technology
Medical University of South Carolina

This article is an analysis of past trends in perfusion education and employment, and a projection of future trends in these same areas. The statements within should be viewed as the author's opinions based on his research.

There has been great activity in the last four years to increase the quality and number of perfusion education programs in the United States. Reports of a perfusionist shortage and maldistribution of manpower have stimulated growth in the number of programs. As well, there have been requests for and a reported increase in the number, enrollment and clinical affiliates of many existing perfusion education programs.

A recent unpublished American

Board of Cardiovascular Perfusion (ABCP) and AmSECT survey concerning perfusion manpower supply and needs reports a "pipeline effect" (inadequate supply) in the number of perfusionists being graduated in 1985 as the cause for the apparent perfusionist shortage experienced in the last few years. The perfusion manpower survey reports only 65 graduates from accredited programs in 1985. [This figure is the result of incomplete data.] In addition, the survey refers to perfusion program student attrition as a challenging factor in delivering new perfusionists annually.

CAHEA reports the number of perfusion education programs is on the rise after a period of loss of programs

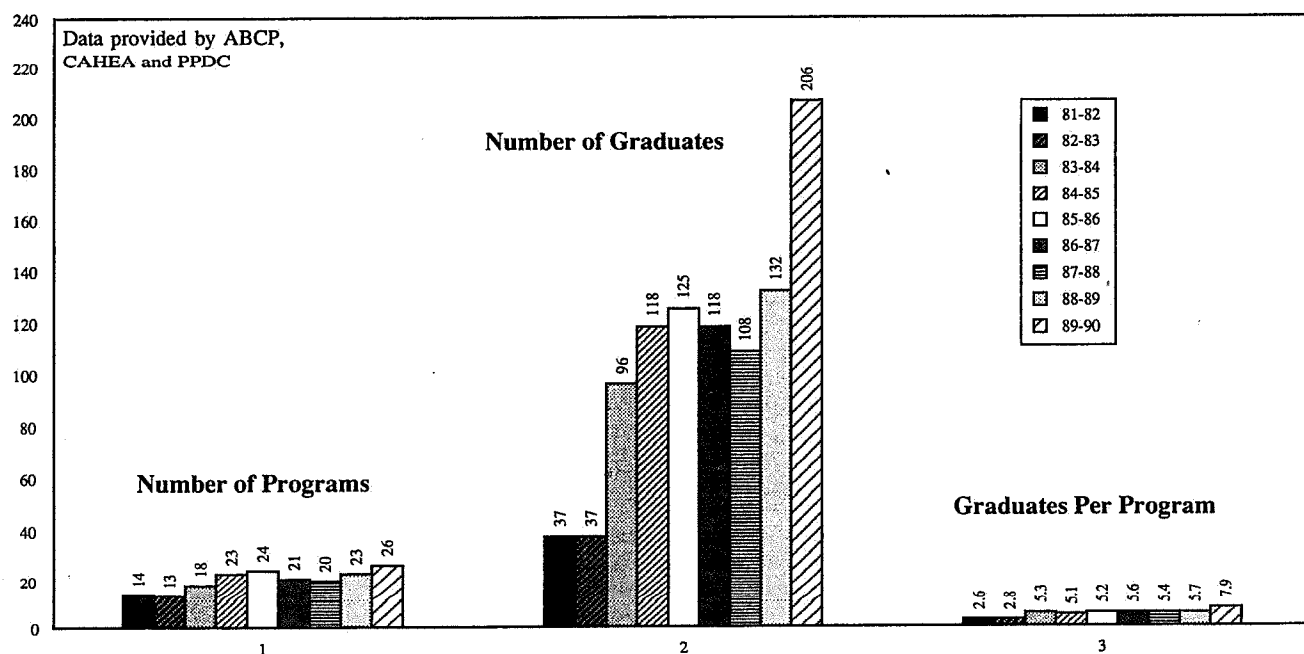
between 1984 and 1987.

Current Status of Perfusion Education

A survey of the Perfusion Program Directors' Council (PPDC) members yielded the number of persons accepted and graduated from the perfusion education programs each year since 1980, and the estimated expected numbers for 1990 to 1995. All United States CAHEA-accredited programs active in the time period since 1980, and programs expected to be accredited in the first half of the 1990s, reported their results and expectations.

It appears that the manpower survey draws its major conclusion of too few graduates from incomplete data. However, as reported in the manpower survey, there is a cyclic pattern

Perfusion Education Trends



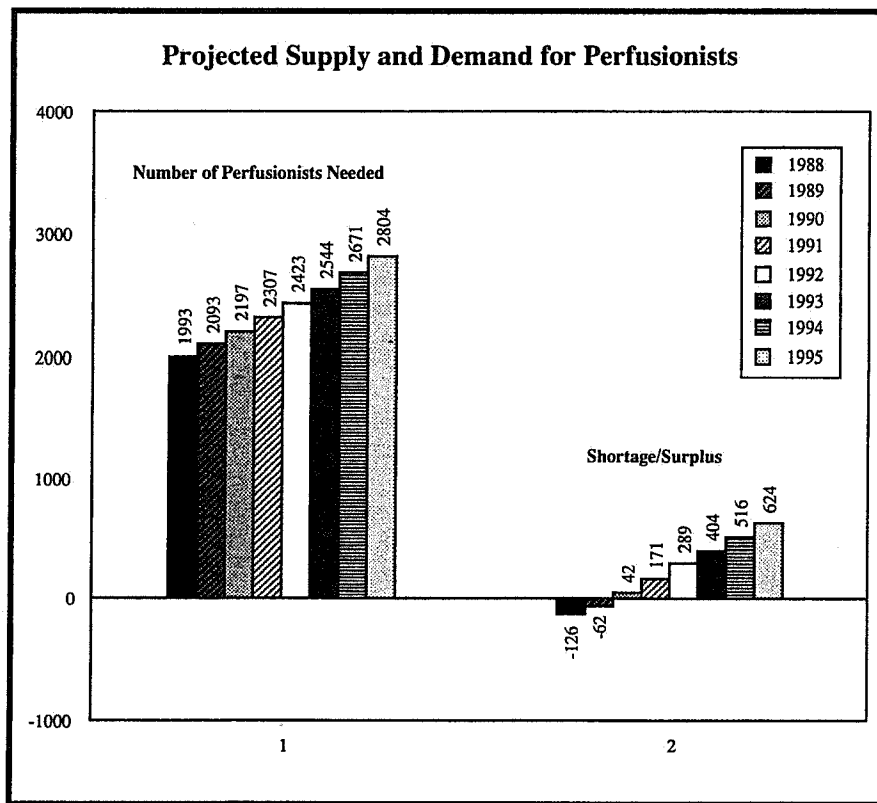
to the distribution of graduates by year. From 1985 through 1987 there was a decrease and plateau in the number of graduates, creating somewhat of a pipeline effect. Other PPDC and CAHEA data collected annually from accredited programs report a similar number of graduates in 1985 as the recent PPDC survey does.

Stabilized Student Attrition and Employment

The perfusion student attrition rate seems to have stabilized the last three years at about 8 percent. Directors report optimistic loss rates equal to 3 to 5 percent for the early 1990s. Programs are reporting that long term recruiting efforts and more stable and mature applicants are leading to lower attrition. Also, perfusion education programs report greater success at selecting students for retention. Many perfusion students are adult learners and O.W.L.S. (Older, Wiser Learners) who know what it is to perform as an allied health professional. Perfusion student attrition rates have decreased substantially, and appear to have stabilized near 5 percent.

Growth in Perfusion Education Programs and Number of Graduates

The perfusion community and perfusion education programs have responded to the perceived perfusionist shortage by increasing the number of programs and the enrollment within programs. The number of perfusionist graduates expected this year is double the number of graduates in 1987. Have we over-responded to the shortage? A recent



mail poll of perfusionists reports that their major concern is the growth of perfusion education programs.

The manpower survey reports 186 unfilled employment opportunities for perfusionists in 1988. Depending on the employment attrition among practicing perfusionists, at the current rate of graduates, the shortage will probably be alleviated within the next year.

There are still recent reports of perfusionist position vacancy. The rate for 1988 was 11.5 percent, and the rate for 1989 was 10.2 percent. Hospitals report that perfusionists are among the most difficult personnel to recruit.

Future Trends in Employment and Education

Certification, the perfusion education degree one has earned, personal activity in research and pediatric and infant experience will play more important roles in competition for desirable employment opportunities. The more diverse one's

education, research and mastery of equipment during his education, the more desirable the graduate will be as an employee. With adequate numbers of perfusionists, we can get down to the business of staking out our professional domain and scope of practice.

Market Forces Affecting Perfusion Education

Currently there are many outside forces acting on the profession of perfusion. Two contract perfusion groups have become the primary sponsoring and/or affiliating institution for select perfusion education programs, partially to help meet their own employment demands. It has been postulated that the attrition rate in perfusion education programs has decreased because the financial rewards for the graduate are worth completing a challenging course of study. It appears, in keeping with the

cyclic nature of perfusion education supply and demand, that the next force to act on perfusion education may be a glut of perfusion education graduates. There are many clinical applications for extracorporeal circulation and skills for which perfusionists may be cross-trained, such as extracorporeal membrane oxygenation (ECMO), plasmapheresis, laser management and femoro-femoral bypass.

A previous degree in another health related profession may become even more desirable for entry-level perfusion students so that future employers may benefit from an employee capable of contributing in two or more clinical care areas. For example, perfusionists who are

increasing salaries have brought re-entry for perfusionists who had previously left the field, the converse may occur: plateauing or decreasing salaries with the glut of graduates. The ramification of new scheduled decreases in thoracic surgeons' reimbursement will probably lead to increased perfusionist employment attrition. Then, persons in it primarily for the financial rewards may exit the profession or not enter perfusion education programs.

A Cry for Quality

Just two years ago, there was a market cry for more perfusion education programs, clinical affiliation and graduates to the degree that the CAHEA Joint Review Committee for Perfusion Education (JRC/PE), after much study and careful debate,

fer more than one type of degree.]

A baccalaureate degree, as a prerequisite, and a hospital-based perfusion education certificate are not equivalent to a baccalaureate degree in allied health sciences (BS-AHS) with a major in extracorporeal or perfusion technology. Attaining certification (meeting a minimal standard) in perfusion technology is not equivalent to a Bachelor of Science in allied health sciences. Certificate programs usually cannot provide the multi-disciplinary, classical education found in B.S.-AHS programs of study. Today's perfusion education graduates need the diversity and preparation of a degree in allied health science to adequately understand and communicate with their medical peers.

During the glut of perfusionists (1991-1993), perfusion educators and the JRC/PE should take the opportunity to shift the distribution of perfusion education programs and resources to four-year, university-based settings. If this does not happen, perfusion will stratify into three professional levels: the perfusion assistant, the certificate perfusionist and the perfusionist administrator.

Basic clinical perfusion competencies should not be taught on the masters of science level. M.S. education should be reserved to prepare clinical perfusionists as teachers, administrators and researchers.

Employers report that before this year there have been too few and only inadequately prepared individuals to employ.

Once employed, many perfusionists feel isolated, devoid of continued education and feel that they have no access to perfusion technology information when they require assistance.

Types of Programs

Four Year University or College	3
Academic Health Center/Medical School	7
Junior or Community College	2
Hospital or Medical Center of More Than 500 Beds	8
Hospital or Medical Center of 300-500 Beds	5
Veterans Hospital	1

nurses or respiratory therapists may work in either role as needed by the hospital. The recession may solidify perfusion as a profession for current perfusionists unless open heart surgery numbers decrease. One may debate the long-term financial stability of hospital-based perfusion education programs versus university-based programs, especially in a recession.

Future predictions strongly suggest that perfusionist attrition will be the major event to determine the supply of perfusionists, as opposed to perfusion education program production or the advent of new extracorporeal circulation applications and jobs for perfusionists. Just as

removed many of the perceived (though not previously "essential") barriers to starting new programs, such as the guideline of 10 pediatric and infant cases. Hence, more programs have started and more graduates are expected. It may be time for the JRC/PE to review the essentials again, what with the promise for a glut of perfusion education graduates. Compromises by the JRC/PE were viewed by some as a decrease in the quality of perfusion education. If a glut is in our immediate future, this is an excellent opportunity to move perfusion education to the baccalaureate and master's degree level.

Of the 26 currently accredited programs, 21 programs award certificates, two award associate degrees and eight award B.S. degrees. [Some programs of-

The Crisis in Allied Health Science and Perfusion Education

The threat of blood borne disease, poor recognition and respect by medical peers, the report of inadequate salaries and the lack of interest and retention in the sciences and mathematics have contributed to poor recruiting and retention of students in the allied health sciences. Perfusion education has suffered little from these forces. However, if there is a glut, these factors will also come to affect perfusion education as early as 1992.

The good news is the perfusionist shortage is over. The bad news is the perfusionist shortage is over. Another crisis in perfusion education revolves around the absence of well-

prepared perfusionist teachers with advanced degrees. There is little motivation for a clinical perfusionist to enter the highly stratified university faculty and have to pursue an advanced degree.

Perfusion education and its selection/entry process is extremely competitive and demanding and somewhat modeled after the preparation of the thoracic surgeon in a Socrates mentor/pupil model. The mentor model does not work well in perfusion education when the instructor-to-student ratio is greater than 1:4.

Perfusion education programs have failed to provide real continued education programs for the perfusion community. While many perfusion education faculty are active in supporting regional and national continuing education programs, more perfusion education faculty have not been able to participate, due partly to the shortage of perfusion educators.

The Cure

One prescription for the current challenges in perfusion education involves 1) letting market forces take their course, 2) not diluting valuable resources with wasteful growth of new programs, 3) increasing the quality of perfusion education by requiring B.S.-AHS or M.S. degrees, 4) finding other clinical applications for perfusion technology and perfusionists, 5) cross-training perfusionists in other allied health sciences and 6) working to maintain and improve the perfusionist's professional image through education, developing standards of care and quality control and stronger ongoing clinical and educational research. ■



Allied Cardiac Services Inc. Temporary Replacement Program

Vacations, sickness, professional meetings and other absences occasionally take the on-site Perfusionist away from the duties at your hospital. In this event, our temporary replacement program is an efficient solution. We will send a certified Perfusionist to perform exactly as needed during the absence. The broad experience and flexibility of our Perfusionists guarantees the smoothest transition possible. Reasonable rates and friendly personnel may make your time away worry free.

Contact:

**Ted Donnelly
(713) 664-7283**

or write:

**Allied Cardiac Services Inc.
2331 Dorrington
Houston, TX 77030**