

**OVERALL SUMMARY**

**PROMISING PRACTICES AT WORK**

**In**

**CALIFORNIA COMMUNITY COLLEGE**

**HEALTH OCCUPATIONS PROGRAMS**

**The Center for Student Success**

**July 2003**

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## Acknowledgements

The Center for Student Success would like to express its thanks to the following individuals and colleges for their assistance, without which, this report would not be possible:

Jim Comins, Los Rios Community College District

Linda Zorn, Butte College

Barbara Whitney, California Community Colleges Chancellor's Office

Fresno City College

Riverside Community College

City College of San Francisco

Sacramento City College

Los Rios Community College District

**A note about this project:** This report represents a distillation of four reports from the Center for Student Success study assessing promising practices in Health Occupations Training Programs in the California Community Colleges. Any specific questions about this report, or the Center for Student Success, should be directed to Brad C. Phillips at: [Bradcpillips@yahoo.com](mailto:Bradcpillips@yahoo.com).

## Introduction

This paper presents findings from a study of California Community College health occupations programs. The California Community College Health Care Initiative (HCI) commissioned the study in 2002 to investigate and identify effective practices health occupations programs have developed to improve recruitment, orientation and other pre-program activities and to increase the effectiveness of early intervention and remedial student support services.

The study was made possible with funding from the Carl D. Perkins Vocational and Technical Education Act of 1998 through a grant awarded to Los Rios Community College District by the California Community College Chancellor's Office. The study was designed and implemented by the Center for Student Success (CSS), an offshoot of the Research and Planning Group of the California Community Colleges. The CSS was formed in 2000 to research and assess major issues facing the state's community colleges and to, as part of this work, identify and disseminate effective practices at work in areas ranging from technology integration to remedial instruction.

The HCI hopes that the findings presented in this report will contribute to increase both the awareness about best practices and the exchange of information among instructors and administrators about effective strategies that one program has developed and that another might want to replicate. The complete study report will be available at the CSS Website in the Fall of 2003.

**State of Health Occupations Programs in California Community Colleges:** The California Community College system is a major player in the State's health care sector. Ten percent of community college graduates receive their certificate or degree in a health occupations field. The State's 108 community colleges host some 250 health occupations programs and graduate 11,000 health care workers each year. This figure includes 60% of all of California's Registered Nursing graduates. The California Community Colleges also play a key role in diversifying the State's health care workforce. An estimated 50% of graduates from community college health occupations programs are people of color.

Presently, community college health occupations programs confront major issues, including:

- The pressure to increase the number of graduates to meet demand for more health care workers;
- The need to increase the participation of diverse and under-represented populations in the health care field;
- The need to work more effectively with reduced budgets;
- The need to maintain high completion and pass rates on state and national exams;
- The requirement that all students who meet minimum requirements have equal access.

In summary, the environment is one in which programs are expected to increase access and diversity while cutting costs, increasing enrollment and maintaining high levels of student success. As so many practitioners pointed out to the research team, it is virtually impossible to meet all these mandates simultaneously.

**The Study and the Need for Information:** This study is concerned about identifying successful practices. But what do we mean by success? We examine health occupations programs in light of three key measures of success: recruitment and retention of diverse and special student populations, including traditionally under-served groups; high completion and licensure pass rates; and increased enrollment in programs whose graduates are in high demand in the labor market.

The study is three-tiered and includes a *literature review* of existing research on successful strategies, a *survey* of 250 California Community College health occupations program directors, and an *ethnographic study* that included site visits and in-depth phone interviews with more than 150 faculty, administrators, students and staff from 25 programs. The study included seven allied health occupations fields: Nursing, Radiologic Technology, Respiratory Therapist, EMT/Paramedic, Dental Hygiene, Medical Assisting, Dental Assisting, and Psychiatric Technician. While the report covers all

of these fields, the preponderance of information comes from nursing because these are the largest and most numerous health occupations programs, and consequently the programs about which there is the most information. In presenting so many findings on nursing, the authors want to emphasize the need for further investigation of challenges and strategies employed in other health occupations programs.

The literature review uncovered a wealth of information about strategies baccalaureate institutions and medical schools employ to recruit, enroll and retain students from under-represented groups, but less information about community college health occupations programs. While useful and effective, many of the interventions studied were of limited relevance to community colleges which serve a student population that is older, works more, and has more family responsibilities than its baccalaureate counterpart. The survey findings underscored the importance of this difference as it highlighted the impact that student characteristics have on shaping student outcomes. The main reason students fail, the survey showed, is not academic. Rather, the primary obstacle to success is that students have too many work and family obligations to focus sufficient attention on their studies. As one student on probation noted: “It is very hard to be a good student, a good employee and a good single mother at the same time.”

A parallel conclusion that the study drew was that precisely because most existing research focuses on baccalaureate institutions, there is an urgent need for more current information about strategies that work in community college health occupations programs.

The need not just for additional information, but also for user-friendly ways to disseminate this information, was further highlighted by the ethnographic part of the study, which found that many health occupations program practitioners know little about what their colleagues across the state, across the district, or even across campus—are doing. The reason for this “silo mode of operation” is that most health occupations instructors and administrators are stretched to the limit taking care of their own programs and students. While the ethnographic research team found that practitioners were extremely interested in learning what others are doing, their workload simply does not allow them to engage in regular exchanges with colleagues. Further, the budget cuts and the resulting restriction on travel to conferences have undermined what used to be one of the few opportunities practitioners had to meet and learn about what works elsewhere. The likely result is that there will be even less information available about innovative and effective practices than in the past. This study indicates that the solution lies in the dissemination of information that is user-friendly and easily accessible within an outreach effort that informs busy health occupations practitioners of why and how learning about promising practices can benefit their students and their programs. The study presented here represents a first effort to increase the flow-of-information and dialogue between practitioners. A follow-up study to be conducted later this year will accelerate cross-program communication through the development of a users’ manual and a web-site with case studies of promising practices

The summary report that follows is divided into three sections. The first section focuses on pre-enrollment strategies and activities with special attention given to courses that introduce students to the health occupations field or to a particular health occupations program. The study focused on these courses because they are of special interest to the Health Care Initiative, the sponsor of this study. The second section reviews post-enrollment strategies and activities. The third section draws from case studies to consider the resources and conditions that are required to support the featured pre-enrollment and post-enrollment strategies and the balance between the two.

The sections that follow combine information and findings from the literature review, survey and ethnographic investigation. The entire report reflects the Health Care Initiative’s interest in identifying practices that further contribute to establish the California Community Colleges as a leading contributor to the development of an increasingly diverse health care workforce. The study team therefore considered each strategy from the perspective of how and whether it would accelerate or decrease the representation of diverse and special populations. Diverse populations refers to age, gender and ethnicity, while “special populations”, refers to six specific categories of students:

1. Limited English Proficiency Students

2. Single Parents
3. Disabled Students
4. Displaced Homemakers
5. Economically Disadvantaged Students
6. Non-Traditional Students

### **Section One: Pre-Enrollment Strategies and Activities**

**Introduction:** Colleges that are actively trying to shape the pre-enrollment phase are typically engaged in two types of activities: a) outreach and recruitment that will increase the number, diversity and readiness of prospective applicants; b) enrollment of students in introductory courses and experimentation with prerequisites. The first is designed to increase the applicant pool. The second seeks to increase the likelihood of student success.

**Recruitment & Outreach:** While most programs noted that they had far more applicants than available spaces, some still engage in outreach and recruitment activities. The purposes of these activities range from a desire to increase the diversity and skills of the current applicant pool, to a commitment to expose adult community members to job opportunities in a growth industry, and to inspire young members of minority and other under-represented groups to imagine what working in the health care field might be like. Another outreach goal is to broaden the knowledge in the community—especially among under-represented populations—about the wide range of career options and advancement opportunities the health care sector offers. Finally, through partnerships with local employers, an increasing number of nursing programs in particular have begun to recruit students from among current healthcare workers. These efforts tend to increase the number of students from underrepresented groups in the program because they recruit from the introductory steps on the nursing career ladder. This is especially true of recruitment focused on Certified Nursing Assistants, an occupational category that is extremely diverse.

**K-12 Outreach and Recruitment:** Program staff acknowledged that few of their students come directly out of high school, partially because of the large number of general education requirements and pre-requisites needed for entry, and partially because of long waiting lists. Pre-college activities tend to be long-range in focus and work on generating awareness and interest in the health care field, especially amongst students from underrepresented groups. The research team found that most programs engage at least occasionally in traditional career fairs and speaking engagements at high schools and, in some instances, middle schools. However, we also found examples of organized teams, often with representation from several health occupations programs within a division, conducting intensive and ongoing outreach to high schools and, sometimes, to the entire K-12 system. As an example, one Allied Health Division established a cross-program team to conduct outreach on behalf of all of its programs. The leaders of the team were three male program directors, one African American, one Hispanic/Latino and one Caucasian. This outreach team reflected the multicultural makeup of the staff and faculty in all of the allied health programs and helped to further reinforce the message of inclusion by providing students of color and male students with visible role models.

An important function of more traditional outreach is to inform students of classes they need to take in high school that will expedite their progression through college pre-requisites and into health occupations programs. Some notable outreach strategies included:

- Introduction to health occupations fields via introductory first-aid classes—which are usually sponsored by Emergency Medical Technician or paramedic programs, or courses that present an overview of health careers sponsored by an entire allied health division and sometimes career academies. Students may receive college credit for these courses, and taking them may expedite their entry into the community college program. Emergency Medical Technician courses may appeal to youth because they are very “hands-on” and exciting and include simulations of real-life rescue scenarios. Directors of Emergency Medical Technician

- /Paramedic programs have instigated outreach to public high schools in order to increase diversity in their programs. Early recruitment is seen as a promising way to recruit under-represented groups into a field dominated by Caucasian males.
- Articulation agreements that allow students to take some pre-requisite courses while in high school, allowing them to get onto the waiting list and into the community college program faster.
  - A “learning communities<sup>1</sup>” approach that, in one model, provides students with a summer course in health care careers and requires that they take a basic pre-requisite course (chemistry) with special instruction linking chemistry concepts to basic applications in the health field.
  - Conducting outreach to and counseling with high school students as part of a seamless articulation agreement between several community colleges and the local California State University. This strategy aims to accelerate the path from high school to Associate Degrees in Nursing and then Bachelor of Science Degrees in Nursing. As part of its outreach, this initiative included development of a comprehensive nursing careers and education website.
- **Outreach and Recruitment Targeting Adults:** A large number of students enrolling in community college health occupations programs are older than “traditional age” students, and many are second career students. Outreach and recruitment activities targeting members of these groups include delivery of presentations, workshops and flyers to shopping malls, adult schools and community college campuses. One program is enrolling immigrants with backgrounds in health care in courses that by orienting them to the American health care system prepare them to enroll in a health occupations program. The coordinator of this program explained that one of the benefits of this approach is that the target group comprises students who already have health care experience and who are frequently not only bilingual, but also bi-cultural.
  - **Employer-Based Outreach and Recruitment:** The study identified three major recruitment and outreach strategies at the employer level:
    - Collaboration with employers to recruit incumbent workers into health occupations degree programs: For hospitals, these programs enroll employees in degree programs and graduate them at what is often an accelerated rate. For hospital staff, these programs often include free tuition and professional development. For the colleges, the partnerships may entail new facilities, scholarship funds and other benefits. While these recruitment strategies are primarily designed to increase enrollment, they also tend to enhance diversity because they target incumbent workers on the lower levels of the health care career ladder.
    - Collaboration with employers to recruit health care workers from the general community: One hospital donated a new training facility in conjunction with local community colleges and offered tuition-free nursing education. The announcement of this new, tuition-free program in the media inspired some 2,000 phone inquiries about enrolling.
    - Finally, some educators have noted that health care careers might become more attractive to students if the industry works to improve conditions for incumbent health care workers. Rapid turnover in staff at hospitals and clinics increases the recruitment and education workload of both hospitals and educational programs. One college was working with local industry to investigate, identify and replicate best practices at hospitals with low nurse turnover rates

**Pre-Requisites & Selection Process:** Health occupations programs in the California Community Colleges struggle with the conflicting objectives of open access and the need to graduate large numbers

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<sup>1</sup> “A Learning Community is a group of linked courses offered to promote a community of learners among students and instructors. Interdisciplinary topics, themes and assignments are coordinated among courses, by instructors of different disciplines... In a Learning Community, intellectual exchanges take place when active interactions occur among and between students and faculty.” Fresno City College Website, <http://www.fresnocitycollege.com/titlev/>.

of qualified health care professionals to meet the growing demand for health care workers in the state. There is also a critical need for healthcare workers that reflect California's very diverse population. Because health occupations programs are more expensive than other community college programs, and because human health is involved, the stakes are high and the concern over balancing conflicting mandates is very serious.

Since the California Community College system changed its policies on enrollment limitations and pre-requisites in 1993, many health occupations programs have had to change their selection policies. In most cases, this has meant a move away from a ranked points system based upon grade point average and other factors towards a first-come, first-served basis or a lottery system that allows each student that passes pre-requisite courses with the minimum GPA of 2.0 an equal chance of admission, unless a program can prove statistically that a different standard guarantees greater student success. Some (but not all) educators believe the lottery system, with its minimum standards, is responsible for falling completion and pass rates. Some programs have taken proactive steps to work within the new system by researching factors that promote high grades, completion rates and pass rates. One advantage of this type of study is that the outcomes are clear and easily observed (grades, completion rates, test scores), making the study design relatively straightforward. Programs employing this strategy generally look at student data for a correlation between the GPA in pre-requisite courses and student success in the program. The use of a higher pre-admission GPA in selected pre-requisite classes may be validated if such a correlation is found. When this is done in conjunction with an adverse impact analysis, a program can balance the desire for diversity with the need for high completion and/or pass rates.

**Preparatory Courses and Experiential Requirements:** Many health occupations programs have developed special preparatory courses and activities that are pre-requisites or "highly recommended." These classes reflect many different purposes depending upon the needs of the program or division—they may serve as a recruitment tool, a booster course in technical or academic skills needed for the program, an orientation to program expectations, campus resources and study skills, as a reality check for students, or as a screening device that provides students with the information to decide which healthcare field, if any, is right for them. Finally, in some instances pre-enrollment introductory courses may serve as selection criteria that restrict access to a program to local residents, since such a pre-requisite may be impossible to complete at any other community college. As these courses become more common, however, the latter is becoming less of a reality.

Preparatory course are often faculty-driven and they tend to develop and change over time to meet the changing needs of the programs and their students. Since so many faculty members reported that students are entering their programs less and less prepared, and since preparatory courses represent one of the only tools faculty has to build students' skills prior to enrollments, it is easy to understand how many introductory courses end up with a very full syllabus. In response, some programs have divided introductory courses up into one-unit sections where, for example, the first is required and the subsequent units recommended. Many have added content over time, a change that has sometimes necessitated splitting a "health care professions" course into several program-specific courses. The two types of courses are described in detail below, along with course objectives and components that may be included.

- a) Courses That Introduce Students to the Range of Health Occupations Programs: These courses are typically offered by Allied Health Divisions that comprise at least three or four different programs. In some instances, the introductory course grew out of a joint decision among Health Occupations Program Directors to find a cost-effective solution to deal with a common problem or issue. At one college, all health occupations program directors identified high attrition as a shared problem and took joint action. They subsequently collaborated on a two-tiered intervention program. The first part is a general introductory course that prepares students to differentiate between different health occupations programs offered at the college. The second part, which is required by most of the health occupations programs at the college, places students in working labs in their health occupations field of choice. The Radiologic Technology program, for example, encourages students to complete six hours of lab time through hospital observations.

Another course that combines an overview of career opportunities with hands-on experience is Diablo Valley College's "Overview of the Dental Profession." The purpose of this program is to "recruit and inform" students about different career opportunities in the dental profession. The course offers an overview of the field and of the educational requirements associated with each dental career. The hands-on projects offer students opportunities to work in the lab alongside incumbent students. Specific assignments ask them to put on gloves and masks to X-ray a mannequin. Another session has students making impressions of plastic teeth. The hands-on projects test students' interest in the field and their comfort level with activities they will be required to perform as dental workers.

- b) Courses That Introduce Students to a Specific Health Occupations Field: More commonly, preparatory courses are program specific. While they are especially common in nursing and paramedic programs, the study also found examples in radiologic technology, dental hygiene, and in health care information technology. The curriculum often covers a large number of content areas ranging from an introduction to the field and to the program requirements to sessions targeting particular skill areas required in the program. Many of the courses also include an experiential component that may be a hospital visit, a required interview session with a person working in the field, or lab activity.

Cabrillo College Allied Health offers a number of short, program-specific preparatory courses. They initially offered an overview of health care professions course, but found that the single course became too cumbersome because it had to cover too much, and students who already knew what profession they were interested in found it a waste of time. The course was split into its component, program-specific labs, which are now offered as separate courses.

The intensity of the courses varies with the most common being either three-units or one-unit. One program, Introduction to Dental Hygiene at Sacramento City College offers a half unit for 9 hours of lecture. However, as faculty pointed out to the research team, "with cohorts entering less and less prepared" it is becoming every hard to "cover everything a student needs to know in the regular curriculum." To align the course with what students feel they need, the faculty surveyed entering students in the incoming class. In response to the findings, they will experiment this summer with an introductory session that emphasizes experiential or in-service learning.

Preparatory courses are fairly common in paramedic programs. Although entering students already have experience in the field, as they are required to have Emergency Medical Technician certification, they may need to work on math and patient assessment skills to pass the paramedic entrance exams. Faculty developing the 9-week Paramedic Prep Class at Southwestern College planned the class to address areas where students lack experience or typically have difficulty. The curriculum that resulted covers areas ranging from math to patient assessment, physiology and communication skills.

**Health Occupations Program Preparatory Course Components:** Preparatory courses in health occupations programs usually combine a number of objectives, topic areas and activities. The table below presents the focus and the main content areas or activities they typically cover:

<b>Focus</b>	<b>Content</b>
<b>Experiential or Clinical</b>	Clinical observation Interview a professional in the field Lab projects Panels of professionals Guest Speakers Volunteer or Work Experience Simulations
<b>Academic (Basic Skills)</b>	Math Reading Writing Critical Thinking Public Speaking
<b>Medical and Technical Skills</b>	Dosage Calculation Patient Assessment Medical/Dental Terminology Technology in the Health Care Field
<b>Introduction to the Profession</b>	US medical system Jobs and Roles Job Market Job Advancement History Ethics Professional Organizations
<b>Introduction to the Program</b>	Overview of program expectations Introduction to rigors of program Information on program's impact on students' families Introduction to faculty Introduction to cohort Introduction to students who entered the past semester
<b>College Survival Skills</b>	Study Skills Time Management Test Taking Campus Resources Learning Styles Assessment Teamwork

Programs that have developed curricula that offer a general introduction to health care professions include Foothill Community College, San Bernardino Community College and Diablo Valley College (Dental). Programs that offer an introduction to one particular health care field include Los Angeles Harbor (Nursing), Southwestern College (Paramedic), Palomar College (Paramedic and EMT) and Ventura (Nursing).

Experiential or Clinical Component: These courses are often developed in response to high attrition rates that result when programs accept students who may have strong academic track-records and shine in the didactic part of the program, but fail to understand what the clinical work involves. They are the students who “don’t like to touch patients,” or “just can’t look at a bloody mouth.” This reality check allows students to self-screen and may dissuade them from taking up space in high subscription and expensive courses *before* they decide to enroll—or at least in time for them to withdraw. The need to intervene to reduce early attrition is especially important for the most intense and costly programs where even a week into the program alternates replacing students who dropped will have a very difficult time catching up.

The problem of students not realizing what being a health care worker means is more common than most people think. Students often referred to former peers who “never made it back after the first clinical experience” and program directors told stories of dental students who dropped out when they realized they had to put their hands into peoples’ mouths and of radiologic students who thought they were going to take photos of people and failed to realize they would spend 10% of their time administering barium enemas.

At City College of San Francisco, instructors explain to high school students taking introductory health occupations courses that different health occupations fields require different personality types and dispositions. For example, they juxtapose the personality of a person who will thrive in the hectic and high-pressure environment that awaits the Emergency Medical Technician with that of a person who will enjoy the precise labor and “bloodless” patient contact required of a Pharmacy Technician.

An alternative strategy for ensuring that students realize what they are getting into is to promote first-hand work experience in the field *prior* to entering the program. At Santa Rosa Junior College, the nursing and radiologic technology encourage students to engage in 50-100 hours of work experience or volunteer work in the field.

Several faculty participants in a nursing program focus group said they would like to require that applicants to the program enter with work experience as a Nursing Assistant. This way, they explained, you could be certain that students would be comfortable dealing with patients. However, the clinical requirements are clearly not an issue for the increasing number of students who enter community college health occupations programs to upgrade existing skills and experience in the health care field.

Basic Academic Skills: A theme emerging from the CSS Survey was what faculty described as “an increasing number of students who lack even basic math, reading and writing.” Many programs include in their preparatory courses a component reviewing basic academic skills in the context of the health care field. For instance, an introductory course taken by many students prior to enrollment in the Santa Rosa Radiologic Technology program gives participants an overview of physics as it relates to the field. Paramedic students at Southwestern College review basic math as part of a course meant to better prepare them to pass Paramedic entrance exams and improve their chances of success in the program. Nursing students at Sacramento City College are required to practice public speaking and prepare an oral presentation because they will need to serve as educators to patients and their families. Other programs have responded, at least to the math deficiencies, by adding a “Dosage Calculation” component to their introductory course. The need for linking basic course content with the medical application was underscored by the experiences of some radiologic technology students who spoke of taking a (required) course in general electricity that focused on rewiring a kitchen!

Medical and Technical Skills: Dosage calculation (see above) is becoming a common part of introductory courses, as is medical or dental terminology. However, many programs require a stand-alone course in medical/dental terminology or dosage calculation as either a pre-requisite, or as a core class after enrollment. Several students mentioned taking an optional medical or dental terminology course prior to enrollment and feeling that it had been a wise investment of time.

Another frequent comment in the survey was that many students are non-native speakers who encounter serious language problems once they enroll in a rigorous health occupations program. In response, we

found a small number of programs that have tried to offer ESL courses in medical terminology. Meanwhile, Fresno City College is developing a new introductory course specifically for students from other countries who want to enter the US medical field.

**Introduction to the Profession(s):** This content matter may be included in either program-specific courses, or in courses that provide an introduction to several health care professions. Courses often cover the history of the field or fields, professional ethics and confidentiality issues, the job outlook, opportunities for advancement, the role of professional organizations in the field(s), the types of jobs in the field, and the US medical system in general. In the Santa Rosa Junior College Radiology Technology course, students learn about the job outlook in the profession along with technical skills. In the Cabrillo Radiologic Technology course, students are provided material on patients' rights and responsibilities along with information on more technical aspects of radiology, and lab experience. Diablo Valley College's "Overview of the Dental Profession" offers an overview of the field and of the educational requirements associated with each dental career.

**Introduction to the Program:** Introductory courses may serve some of the same purposes as program orientations or pre-enrollment counseling. They invite students to meet their cohort members, introduce students to the faculty and staff, and provide students with information about program expenses, expectations and requirements. For instance, Cabrillo's Introductory Skills for Radiologic Technology course covers the professional attire required for clinical assignments. Fresno's Introduction to Health Sciences has as part of its objectives forming a learning community and introducing students to a cohort with which they will move through classes in the program.

**Conclusion:** Anecdotal evidence from most programs offering introductory courses is very favorable with faculty reporting that the courses have played an important role in reducing attrition. Some faculty members felt that students who enrolled in recommended introductory courses did better during their first semester of classes.

Another trend was increasing interest in making recommended introductory courses mandatory. This change, however, is complicated by reductions in available funding (and by programs' failure to generate hard evidence confirming the positive impact these courses have on student retention and possibly even grades).

Finally, although some programs complained about declining enrollment in their introductory courses, more programs reported that student enrollment had increased. One faculty member attributed it to "word getting out" that you do better if you take the introductory course.

## **Section Two: Program Activities & Strategies**

**Introduction:** The following section describes promising post-enrollment strategies employed by health occupations programs to address student needs. Interviews with program staff and the survey data reveal several themes: 1) faculty feel that recent student cohorts are less academically prepared than prior cohorts; 2) students are more likely to be "special population" or "non-traditional" students with needs different from those of the traditional-age student of the past, 3) a major cause of attrition or poor academic performance is stress, family and work responsibilities, or financial problems. This may mean that today's students take longer to graduate and require more program resources than prior cohorts.

How are programs working to address the changing student population? This section introduces three main strategy areas—special orientations for new students to get them up to speed, support services that are primarily (but not solely) dedicated to retain students, and flexible delivery strategies that are meant to address not only changing student needs, but the demand for more health care workers.

**Support Services and Supplementary Courses:** The California Postsecondary Education Commission report found that the number of support services offered by a community college nursing program was correlated with student success in that program as measured by higher on-time completion rates, and lower delay rates (CPEC 2003). The CPEC report also found some correlation between the

*type* of support services offered and higher on-time completion and lower attrition rates. Those services positively correlated with student success were tutoring, the presence of a learning resource center, and remedial support services. While this study suggests that these strategies are related to positive outcomes for students, programs had little more than anecdotal evidence to support the utility of these strategies.

The CSS survey asked program directors what strategies or services they employ to help students succeed. College tutoring was the most frequent response, listed by about 50% of the program directors, while program-specific tutoring was cited about a third of the time. Other strategies frequently mentioned included having a faculty member serve as mentor/coach, offering special classes to prepare students for program demands, and increasing financial aid. While increased financial aid was frequently mentioned as a vital need, few programs had the resources to bolster student's incomes, although many referred students to scholarship programs or internships. A related theme was that most programs lack the funding required to institute the range of support services that their students need. In many instances, "support services" and remediation are reliant upon the extra (unpaid) effort and dedication of individual faculty. In many programs, faculty spends extra time mentoring, counseling or tutoring students individually. Unfortunately, many students do not seek help until it is almost too late, and the students who really need support services the most may not be the primary users of these services. This highlights the need for frequent assessment and early intervention.

Because support strategies are numerous and diverse, only the most important are highlighted below.

- **Orientation Sessions:** Many programs hold special pre-session orientations that provide information about program expectations, materials students need to purchase, and sometimes, advanced notice of readings. Orientations often introduce students to faculty, support staff, counselors, and their cohort. An increasing number of programs provide a special component for the incoming student's partner or family to help them understand how participation in the program will require life adjustments. Support of significant others is vital to student success, as survey results indicate that family responsibilities and cultural expectations about the role of women are major barriers to academic achievement for some students. Finally, some orientations provide students with additional information and referrals for "life management issues" such as childcare, transportation, and immigration. Addressing these issues may help remove barriers for some non-traditional students such as single mothers and foreign students.
- **Early Intervention, Assessment and Remediation Strategies:** A key strategy to reducing attrition is early intervention. For some programs this begins when entering students are tested for academic skills, critical thinking capacity, or learning styles. This may lead some students to be referred to Disabled Students Programs and Services (DSPS) for learning disabilities. Faculty and special support staff may also refer students to financial or psychological counseling. These early assessments or observations may help faculty tailor instruction for students. Frequently, remediation is triggered by test scores below a certain standard or problems in clinicals. Remediation may be informal, or entail the development of a formal remediation plan and contract. These strategies are especially reliant upon the sensitivity and observation skills of faculty.
- **Tutors:** Many of the programs we investigated employed tutors, but the nature of the tutoring services varied significantly. Some referred students who were having difficulty with basic skills to general tutoring (campus-wide). Some had program specific tutors. Tutors might be other currently enrolled students, faculty, or retired or adjunct faculty especially hired for this purpose. Most programs had limited success with peer tutors because candidates for such programs don't have time for the job. Some also felt that the rigor of health occupations programs meant that professional tutors were needed. Many programs provided tutoring in the context of a program-specific learning resource center or skills lab.
- **Support Courses:** Some programs have developed additional support courses or learning labs. In one case, a support course was offered to pre-matriculation students to bolster their skills so they would be ready to take Nursing I. In other cases, support classes are meant for "struggling" students and may be highly recommended or required as part of a remediation contract.

- **ESL:** While nearly all practitioners mentioned that ESL issues make it difficult for some students to participate fully and succeed, relatively few programs had specific programs or services for ESL students. While the CPEC study recommended this as a particularly important support strategy, funding is scarce—one such course (medical terminology in Spanish) was cancelled due to budget cuts and low enrollment; others were in the planning phases. Intermediate strategies such as outreach and recruitment in ESL classes, and pairing ESL students with English-fluent students have been tried.
- **Peer Support:** Despite the difficulty in recruiting and retaining student tutors, many programs had instituted different types of peer support amongst students. These included study groups and “big sister/big brother” type programs where students were asked to provide support and guidance to new students or students one level below them. Some students also get additional support and leadership development through their participation in student organizations in their field. Instructors at two different programs mentioned convening social gatherings and potluck dinners where students had to bring a dish from their cultural background to share. Students noted that these simple exercises helped them learn about and reach out to other students in their cohort across cultural and ethnic differences. Finally, the “learning communities” approach of moving students through a series of classes as a cohort is one method incorporating peer support into the curriculum. Faculty in this college explicitly related these peer support strategies to research on retention and support for minority students in health and science programs of study.

**Flexible Delivery:** A number of programs have moved to flexible delivery strategies utilizing accelerated timeframes and other creative scheduling, technology applications, and/or collaborations with other educational institutions to increase the number and diversity of students they can enroll and graduate. The purposes of and form of these strategies vary due to differences in program needs. The most common strategies are listed below:

- **Contract Education & Hospital Collaborations:** The single most effective strategy for expanding enrollment is for colleges to partner with employers to offer training to hospital employees. In this study, most hospital collaborations focused on the nursing field. Evidence from other studies, however, confirms that the strategy can be replicated in other health fields. For instance, Houston Community College and Houston Northwest Medical Center have such an arrangement to train current staff as radiologic technologists<sup>2</sup>.

The nursing program partnerships this study investigated were 18-month accelerated programs (rather than the usual 24 months) delivered to accommodate the work schedules of hospital employees. The didactic part of the program was delivered at the college on nights and weekends, while hospital staff taught the clinical classes on-site during the day. The success that these programs experience with expanded enrollment, increased participation of diverse and under-represented populations, and graduation of new health care workers is well documented. As the literature review for this study concluded:

“Collaboration and partnerships serve multiple purposes including: sources for student recruitment; practice-oriented learning; easier transition into the workforce; and enhanced relationships with local communities. In addition, such partnerships can serve as financial support for allied health programs. California Community Colleges have as core components of their mission workforce and economic development. Collaboration and partnerships are good avenues towards these core mission components.”

While hospital collaborations generate many benefits, it is also important to consider the special challenges that result when programs rapidly increase the number of students, faculty, and delivery sites. For instance, a Nursing instructor who is used to serving a class of 20 may suddenly face 50

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<sup>2</sup> Case Studies for Recruitment, American Society of Radiologic Technologists:  
[http://www.asrt.org/toolkit/recruitment/recruitment\\_case\\_studies.htm](http://www.asrt.org/toolkit/recruitment/recruitment_case_studies.htm)

incoming students. This kind of expansion requires deep changes in the instructional delivery and complicates faculty's ability to provide the one-on-one interaction with students that so often makes a difference for those who are at risk of failing. Instructors will experience significant workload increases as the enrollment increases—a situation that, not surprisingly, often results in discontent. Meanwhile, program directors will face the challenge of recruiting, training and integrating large numbers of new clinical staff.

- **Flexible Scheduling:** Flexible scheduling options may include part-time courses, evening/weekend scheduling, and accelerated or expedited programs. For instance, a part-time program might be intended to serve students who must work and cannot commit to two solid years of full-time education. A weekend/evening scheduling option may be intended to include the working student, but it may also be about space—if a program cannot take more students due to limited clinical or classroom facilities, an evening/weekend program might be added. Other scheduling practices include condensing rather than extending the timeframe necessary for completion of the program. For many students eager to start work in the field, the shorter timeframe for completion enhances retention.
- **Technology Strategies** including distance learning utilizing video-teleconferencing and online courses may satisfy the needs of students in a more rural area with a dispersed population, or students in a densely populated metropolitan area with traffic congestion. These strategies are often offered in collaboration with another community college, or a 4-year institution. Despite the initial investment required, the strategy may actually generate savings through the sharing of faculty and through the fact that the satellite college does not need to go through the work and expense of accreditation. These technology strategies, in conjunction with articulation agreements, allow ADN to BSN programs to move students through the levels more quickly, utilize staff and facilities more effectively, and help increase the pool of students who might eventually end up teaching tomorrow's nursing classes.

### **Section Three: Resources and Conditions**

**Introduction:** The purpose of this study is to persuade practitioners to learn from and replicate promising strategies. In the current budget environment, however, replication of even the simplest model that has proven effective elsewhere will depend on its price tag. A less obvious, but perhaps more important, consideration is what conditions are required to achieve a viable working model. For example, some support services work well in colleges where the faculty, united in their commitment to student success, functions as a single unit. Transferred into an environment where the pressure of rapid expansion and the need to work many new adjunct faculty members into the program has undermined the sense of community among faculty, the strategy may not work. This section draws from our interviews and site visits to identify the resources and conditions that are required to get different strategies to work.

#### **Resources**

**Where and How to Invest:** The study's examination of pre- and post-enrollment strategies highlighted the conscious—or sometimes unconscious—choices programs make to invest in activities that help shape the incoming pool of students or in interventions that are needed after the doors have closed and their program begins. One logical conclusion would be that the more attention a program places on recruiting a large pool of good candidates, preparing potential candidates by bolstering their skills and testing their commitment to a career in health care, and setting prerequisites that maximize the probability of success, the less it will have to invest in support services. For instance, one program director felt he needed to institute a tutoring program as a result of the change to the lottery system for admissions and the resulting influx of less prepared students. In other words, what a program does in Phase A has a great impact on what it will need to do in Phase B. In times of scarcity programs have to face some tough trade-offs. For example, how does an administrator decide whether to invest in an introductory course that persuades students who “faint at the sight of blood” to withdraw before they take up precious space in an expensive program or in extensive remedial services for students whose

work and family obligations are so demanding that they remain at risk of failing throughout the entire program.

Rather than attempting to answer these difficult questions, the following section considers the resources that are needed to support various pre-enrollment and program strategies and the resources that might be saved through some of these investments:

**Outreach & Recruitment:** Grants from foundations interested in increasing the diversity of the health care workforce support some program's recruitment and outreach efforts. For instance, Modesto Junior College, San Joaquin Delta College, Merced College and CSU Stanislaus received funding from the Helene Fuld Health Trust Grant for their ADN to BSN program, high school recruitment activities and outreach website. Cabrillo College received a three-year grant from the California Wellness Foundation that included funding for a Diversity Coordinator, and four community colleges were partners in the Central Valley Nursing Work Force Diversity Initiative, a major regional grant aimed at increasing and diversifying the local nursing workforce. Department of Labor and other government grants may be available for some recruitment and retention activities. As an example, Riverside Community College used H1B grant funding to host a retreat on the local nursing shortage with the leading representatives from six local hospitals.

Another type of outreach that can actually generate funds targets local community leaders and health care employers. For example, Riverside Community College's Nursing Program worked closely with the College President to build and expand partnerships with local community leaders and the largest local health care providers. The mutually beneficial collaboration has thus far resulted in the College and local employers jointly and successfully applying for a \$2.1 million grant from the US Department of Labor to address the local nursing shortage. Presently, the college President is preparing to stage a major fundraising campaign that will ask local community leaders to contribute to a new health occupations building.

One advantage of partnering with employers is that they often sponsor recruitment activities, and, as previously noted, facilities to host the new recruits. Sutter Health in Sacramento has not only pledged \$13.6 million to build a new nursing education facility, fund new faculty positions and provide scholarships to incoming students in conjunction with Sacramento City College, but has also produced outreach materials and press releases that have resulted in thousands of inquiries. However, external funding is not the only resource that can drive a project. During the past six years, a core group of faculty members from Fresno City College has demonstrated that a highly active outreach initiative can be launched and sustained by faculty members who like to work with the community and with each other. The group routinely makes presentations to students at all grade levels in K-12. The members also have a booth they bring out to local malls "where the people are." Fresno City College has not yet begun to track the impact of these very extensive outreach efforts. A review of enrollment figures, however, indicated that the students have become younger over the past years.

**Preparatory Courses:** As mentioned in Section One, introductory courses require an initial outlay, but this expenditure may produce long term savings due to reduced attrition and remediation. Many programs report anecdotal evidence that these courses significantly reduce attrition during the first semester and ensure that students are better prepared to handle the coursework once enrolled. Despite these reported benefits, budget cuts are forcing some programs to eliminate their preparatory courses. While programs have produced a wealth of curricular materials, few have empirical evidence of positive outcomes, hence the vulnerability of these courses in times of economic crisis.

**Pre-requisite Validation:** Pre-requisite validation activities depend upon the availability of qualified staff to perform the statistical research necessary to document the justification for higher standards, and enough cases (student records) to be statistically significant for analysis. Riverside's Department of Institutional Research required 200 person hours to complete a validation study for the college's nursing program. The study also entailed a substantial time commitment from the nursing faculty. The RCC study was complicated by the decision to test for adverse impact at several different GPA levels. However, even less complicated studies will require substantial resources in the form of research time.

Again, administrators need to determine whether the long-term benefits will outweigh the initial costs in terms of reducing the subsequent need for remedial support services.

**Support Services:** As noted previously, the most common, and possibly most effective, support service employed by health occupations programs is tutoring. Resources required for tutoring services varied according to the type and extent of tutoring employed. Although employing student tutors may be more cost effective, few students may have enough time to devote to tutoring others because health occupations programs are so demanding. The rigor of health occupations programs may also require a different level of assistance, hence professional tutors. However, professional tutors such as retired and current faculty, are more expensive. Some faculty were providing tutoring on their own time.

Early intervention, which often involves referrals to other support services, is a potentially cost-saving strategy. Intervention may be triggered by low scores on assessment tests administered at entry, or by low academic test or clinical scores later in the semester. For example, Ventura Community College provides mandatory faculty coaching for first semester students identified as at-risk and in subsequent semesters for those who score below a B on any test in theory or is doing poorly in clinical. At Riverside Community College, students who fall below a certain level on academic tests or clinical performance work with faculty who help them to develop a remedial plan or “Student Success Plan”, and subsequently monitor progress. The cost of pursuing a strategy of early intervention is the time required for a designated faculty member to work individually with the at-risk students. At Riverside Community College, a Department of Labor grant partially funds the Nursing Education Resources Specialist (NERS) who develops and coordinates remediation with faculty and student input.

Interviews with program staff revealed that many effective support services – and especially faculty tutoring activities—were funded with Partnership for Excellence or Carl D. Perkins Vocational and Technical Education Act of 1998 funds. The elimination of the former and the reduction in the latter will undoubtedly have serious consequences for programs’ ability to provide the support services that so many students need to be successful. One implication is that individual faculty members may continue to provide the additional hours of support services they were previously paid to deliver because, as one instructor put it, they “cannot stand by and see students fail.” To the extent that this “solution” fails to match previous grant-funded interventions in scope and intensity, more at-risk students may begin to fail. This could have serious implications on programs’ ability to retain students from underrepresented groups as evidence suggests that they are more likely than their “traditional peers” to be in a financial situation where they have to hold on to job responsibilities that undermine their ability to focus on their studies. As an example, a faculty member from Riverside Community College provided very intensive support services to help a group of Certified Nursing Assistant students complete a Licensed Vocational Nursing program. Half of the students had not completed high school. Most were limited English speakers. All students worked. More than 80% of the group of 26 students succeeded—including a single mother of eight with no transportation—largely because of the enormous amount of work the instructor and her colleagues contributed. Without this very intensive array of support services, the pass rate would have been much lower.

While there will always be faculty members who contribute substantial unpaid time, the reliance on faculty volunteering is already extensive. In the short run, this may appear to represent an attractive cost-savings, but down the line it may lead to greater costs in faculty recruitment and turnover as colleges face tough job market competition due to higher paying careers in the health care industry. This study does not have a solution to this problem, but it does underscore the need for programs that engage in rapid expansion to consider how their support service component will be able to accommodate the needs of a growing student population.

More evaluation research on the impact of support services on diversity, completion and pass rates would allow programs to assess the relative value of different strategies. Virtually every program encountered in the course of this study had extensive anecdotal evidence of the success of their support services. Without empirical evidence, however, it will be difficult for health occupations programs to make the case for more funding in this area.

**Flexible Delivery:** Flexible delivery strategies may serve two purposes. First, they facilitate the enrollment of students who cannot participate in regularly scheduled programs because of conflicting work commitments or, in some cases, because they are located in a physically remote location. Second, they allow schools to enroll and graduate more students by using resources effectively. For instance, colleges may not have the funds to build a new facility, get a new program accredited, hire more full-time faculty, or provide tuition to students. However, they may be able to institute a satellite program via technology innovations and share faculty across sites. Because hospitals in rural Tulare and Kings County had difficulty recruiting and retaining radiologic technologists, Fresno City College and West Hills College instituted a satellite program in radiologic technology at the West Hills Campus in Lemoore via video-teleconferencing. It is hoped that by “growing their own”, they will be able to develop technologists who already live in the area and want to stay there. Colleges may be able to take on more students in the same space by adding an evening/weekend program, or by partnering with a hospital to provide some courses offsite, or by offering online courses. Finally, hospital collaborations may be the most cost-effective way for colleges to expand enrollment in hard times as the hospitals may be willing to recruit students and provide facilities, tuition, clinical instructors and other support to colleges.

### **Conditions**

The research team considered three different types of conditions that shaped the health occupations programs we studied. They were:

- Commitment to student success
- Leadership support
- Willingness to innovate

The research team found that these conditions and the inter-play between them play a key role in determining what programs can and cannot achieve at the student, faculty and leadership levels

**Commitment to Student Success:** The strongest programs the study encountered were those that had a faculty united around the goal of promoting student success. The presence of such unity of purpose has a tremendous impact on morale and on how faculty view their jobs and responsibilities. At Riverside Community College, the commitment to student success begins with the leadership. During a luncheon session with the CSS research team, the College President repeatedly returned to this theme as central to everything the college does. Within the Nursing Department the commitment is expressed in faculty’s willingness to participate in long hours of joint planning, including a quarterly review of the entire curriculum. It is expressed less tangibly, but very powerfully in an atmosphere that makes it comfortable to compare NCLEX test scores to the curriculum to determine which content needs to be strengthened. Among students, we found several participants openly talking about how they are on probation and about the steps the faculty is helping them take to get back up to the right level.

Other programs reported that they enjoy a similar situation where most—if not all—faculty members love what they are doing. The benefits that students derive from learning in such an environment include additional tutoring and counseling and the solid framework for learning that is created when a curriculum is completely integrated and subject to continuous improvement. Further, in programs that enjoy these kinds of conditions, it is common for faculty members to take the initiative to respond to a need or an opportunity because “it makes sense to do so.” As an example, a faculty member at Ventura Community College is developing an entire program of courses and services that support and retain at-risk students. Her enthusiasm has already recruited five new faculty members to meet on a regular basis with at-risk students throughout the two year program.

At Fresno City College, the Program Directors for Radiologic and Respiratory Therapy and their faculty explained in a matter-of-fact-way that they dedicated dozens of unpaid hours each week to work with each student who needed additional support in order to “get it.” Faculty at so many other programs similarly stated that even though the funding for support services is sharply reduced, students’ need for additional assistance is as great as ever and “they just cannot stand by and let students fail.”

Several faculty members also linked their commitment to diversity to their willingness to stay late and make sure that “we don’t lose anybody.”

The question is how can this kind of attitude be replicated and how can programs that are lucky enough to have a majority of faculty committed to student success retain these individuals? How can programs avoid faculty burn-out, especially at a time that so many programs are implementing rapid expansions in collaboration with local hospitals? Both of these difficult, but critically important, questions should be subject to further research.

**Leadership:** As noted above, the leadership at Riverside Community College sets the tone for an agenda committed to student success. But leadership can do even more for a health occupations program. At the college level, the leadership can help the health occupations department or individual programs develop partnerships with, for example, local health care providers. The paper has reviewed the emerging trend of college health occupations programs entering into partnerships with hospitals to upgrade the skills of the incumbent workforce. A strong college leadership can forge these relationships with local health care employers and help negotiate a favorable deal for the college. The importance of this kind of involvement has probably never been greater since hospital-partnerships is one of the only strategies currently available to support expansion.

At the departmental level, strong leaders can bring different health occupations programs together so that, for example, they work with other parts of the college as a cohesive unit. This can help improve health occupations programs’ ability to argue their case at the college level and to work jointly to establish mutually supportive relationships with other departments that provide services their students need.

At the program level, the leadership can set the tone for how faculty work together and for how students are served. In the best programs the study encountered, the leadership was deeply committed to both faculty and students and the environment was one where there was no noticeable barrier between the program director and the faculty. All seemed to work as one cohesive unit with the program director serving as a program spokesperson, lead innovator, and cheerleader. The pride that the program director took in the faculty and the students was obvious as was the commitment faculty felt to the director and the students. One faculty member said that “it is well known that this is a great place to teach nursing.” Students in this program obviously got this message and the current faculty includes seven former graduates.

Obviously, this is the kind of environment all programs should strive to create and it is one that is especially crucial at a time when programs are being challenged to do more for less.

**Innovation:** The need for programs to be flexible and experiment with new strategies is especially important in the current situation where budgets are tight and the student population is changing both in terms of who they are and in terms of how prepared they are. We encountered many programs that have responded with innovations during either or both the pre-program and program phases. Some have experimented with interventions that increase the level of preparation of the incoming class through increased and targeted recruitment, initiation of studies that support changing prerequisites, or the development and continuous improvement of introductory courses. Other programs have focused on innovation at the program-side of the equation, trying new strategies to support students-at-risk and experimenting with new ways to work with internal and external partners that can contribute resources in the form of anything from basic skills training and counseling to major, hospital-funded expansions.

### **Conclusion and Next Steps**

The research team identified the following features as key ingredients in successful programs:

- Faculty and leadership commitment to student success and student awareness of this commitment (they are rooting for us);

- Leadership and institutional support for program goals and objectives from within the program, the department and the college itself;
- Teamwork to facilitate communication and innovation between faculty and administrators within, and possibly across, programs;
- Willingness to innovate in response to changes in the environment and in student characteristics;
- Use of data to drive program investments and decision-making;
- Community support that results in additional resources, from the recruitment value of a good reputation to employer collaborations and grant funding.

The research team recommends that health occupations programs around the state review their programs against these features to identify strengths, weaknesses and opportunities for improvement.

In addition, the research team found that the following strategies and interventions showed promise for advancing one or more of the three measures of success: recruitment and retention of students from diverse and traditionally under-served groups; program completion and pass rates on state and national tests; and capacity to increase enrollment in response to community needs:

- Recruitment strategies that use learning communities to get students through the pre-requisites and into the “right” health occupations program;
- Outreach to young students from underrepresented groups;
- Introductory courses that help students determine whether health care is for them and, if so, which health occupation is best suited for their skills and personality;
- Introductory courses that help students make sure they are in the right program and that help them develop skills, competencies and attitudes required for success in the program;
- Orientation sessions that include students’ families and that provide students with a realistic sense of what will be required;
- Prerequisites that maximize student success without negatively affecting the participation of diverse and under-represented populations;
- Early intervention and use of formal plans (eg. remedial contracts) to shape and monitor students’ efforts to catch up;
- Formal and informal tutoring and mentoring by committed faculty members;
- Hospital collaborations that provide opportunities for incumbent health care workers to take a step up the career ladder;
- Hospital collaborations that increase the resources available to health occupations programs.

In considering these interventions, practitioners should bear in mind that even the best strategy cannot succeed unless it is implemented in the right environment and under favorable conditions. Programs that are struggling to promote the key features for success that we identified above, are thus advised to consider what can be done to improve, for example, faculty commitment to student success, before they begin to replicate the promising recruitment, introductory or support service strategies identified in this study.

**The Need for Additional Research and Evaluation:** While the study identified and confirmed a range of effective practices, it also pointed to the urgent need for additional research to:

- Explore what programs do to attract, retain and develop diverse faculty committed to student success;
- Catalogue and document the curriculum and outcomes of pre-enrollment introductory health occupation classes;

- Further explore strategies that entail adjustment of pre-admission GPA and investigate how these strategies impact diversity and student outcomes depending on how they are used in conjunction with recruitment and support services;
- Identify flexible delivery options that increase participation of non-traditional students;
- Follow the progress of programs that expand enrollment through hospital collaborations and identify strategies by which they are able to maintain consistency in instruction and enhance faculty cohesion while continuing to deliver support services crucial for under-represented students;
- Continue to identify and disseminate information about cost-effective support services, especially those intended to retain students from underrepresented backgrounds;
- Identify and disseminate effective evaluation models.

The last item on the list of research priorities merits additional discussion. While health occupations programs are required to regularly and comprehensively assess how they are performing globally, the study found an almost complete lack of evaluation activity of individual program interventions. As the literature review for this study found, although there is much written about processes, methods, and approaches employed in allied health programs, the evidence regarding their success as measured by high program completion rates and low attrition rates is fairly scarce. Consequently, programs are largely unable to determine and compare the value of different interventions. The result—especially in light of budget reductions—is that programs are forced to make decisions about, for example, which support services to cut and which to maintain without knowing their relationships to student success. To change this situation, programs would have to invest additional staff time and resources from campus research. However, it is hard to make the case for such a strategy in an era of shrinking budgets and already over-committed staff time.

This study cannot provide a solution to this dilemma. We can, however, highlight the need for resources to be directed to this area, and we can help practitioners take a first step in the right direction by making the identification and dissemination of effective evaluation models central to the second part of the study.